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# THE JOURNAL

OF THE

# American Medical Association

A MEDICAL JOURNAL CONTAINING THE

OFFICIAL RECORD OF THE PROCEEDINGS OF THE ASSOCIATION, AND THE PAPERS READ AT THE ANNUAL  
SESSION, IN THE SEVERAL SECTIONS, TOGETHER WITH THE

MEDICAL LITERATURE OF THE PERIOD

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EDITED FOR THE ASSOCIATION UNDER THE DIRECTION OF THE BOARD OF TRUSTEES

BY

GEORGE H. SIMMONS, M.D.

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VOLUME XLVIII.

JANUARY—JUNE

1907

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CHICAGO

AMERICAN MEDICAL ASSOCIATION PRESS

1907 +





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TRANSACTIONS, 1851.

# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVIII.

CHICAGO, ILLINOIS, JANUARY 5, 1907.

No. 1.

## Original Articles

### TRYPANOSOMES.\*

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Until very recently the bacteria or plant organisms have been given a preponderating and almost exclusive rôle in the production of infectious diseases. The studies in the past few years, however, have brought to light another group of organisms which play an exceedingly important part in the causation of diseases peculiar to the warm countries. Unicellular forms of animal life are to-day the recognized causes of a large number of diseases, whereas but a few years ago they claimed but scanty attention. The pathogenic protozoa in a remarkably short time have risen from an obscure to a commanding position by the side of the pathogenic bacteria.

Under the head of *Protozoa* are classed: First, the *Trypanosomata*, which are met with free in the blood plasma; second, the *Hemocytozoa*, which find their habitat within the blood cells and are represented by the malarial organisms in man and by related forms in the lower animals; also by the piroplasmata found in Texas fever and allied affections; third, the *Amebæ*, which are found in the intestine in dysentery. Many other forms of pathogenic protozoa are known, but they are of relatively little interest compared with those mentioned above.

Although the first of these, the trypanosomes, have acquired special importance during the past decade, it is nevertheless an interesting fact that the first representatives of this group were described more than 60 years ago. The credit of the discovery of this group, belongs to Valentin who in 1841 found the first trypanosome in the blood of salmon. In the following year a similar organism was found in frog's blood and it was to this that Gruby gave the generic name *Trypanosoma*, implying a screw-like or auger-like body, the name being suggested by the peculiar motion of the parasite. It will be seen from this that the discovery of these organisms antedates that of anthrax (1849) and of the *Spirillum obermeieri* (1873).

Up to 1850, trypanosomes had been found in the blood of several mammals, notably field mice, moles and rats, but these observations were eventually lost sight of and it was not until 1877 that they were rediscovered by Surgeon-Major Lewis at Calcutta. It was the interest aroused by the findings of Lewis that led to the discovery by Evans in 1880 of a trypanosome in the

blood of animals afflicted with a disease known in India as surra. This organism, now designated as *Trypanosoma evansi*, is consequently the first known really pathogenic trypanosome inasmuch as the organisms met with prior to that time are commonly looked on as harmless parasites.

During the following 15 years although many observations were made on the trypanosomes in rats, fish, frogs and birds they attracted but little attention largely because of the all absorbing interest in the study of bacterial diseases. The past decade, however, has witnessed a truly remarkable progress in our knowledge of the diseases due to protozoal organisms and the credit of bringing about a just recognition of the etiologic rôle of trypanosomes belongs to Colonel David Bruce of the British Army Medical Service. In 1894 he began the classical investigation of the terrible tsetse-fly disease or nagana of Zululand, the results of which study were published in 1895, 1897 and 1903. He showed that this disease was due to the presence in the blood of a trypanosome, now known as *Tr. brucei*, similar to that studied in surra by Evans and Lingard, that the disease was transmitted from the infected to healthy animals by the bite of the tsetse-fly, *Glossina morsitans*; and that the persistence of the disease was due to the presence of the parasite in the large game which consequently acted as a reservoir for the virus. The trypanosome which he discovered was transported to England by Dr. Waghorn in 1896 and it is this virus which has been utilized in most of the researches carried out in Europe and in this country.

During his travels in East Africa, in 1898, Koch presumably encountered this same disease which he considered to be identical with the Indian surra. He pointed out at the time the morphologic differences which exist between this trypanosome and that of rats, and by means of a simple animal experiment he was able to differentiate sharply between the two organisms. Thus, in the blood of the rat the two organisms develop side by side and are easily distinguished by the aid of the microscope. If, however, the blood of such a rat is injected into a dog the nagana trypanosome alone appears in the latter and eventually causes death.

This work of Koch served as the immediate incentive for an exhaustive study of the rat trypanosome which was made in 1899 by Rabinowitsch and Kempner. To these workers much credit is due for introducing the staining methods which have thrown so much light on the structure of these organisms. They were able to demonstrate many facts bearing on the mode of multiplication and in addition they showed that active immunity to *Tr. lewisi* could be produced in rats. The study of the rat trypanosomes, begun in 1900 by Laveran and Mesnil, has led to the splendid series of researches on the pathogenic trypanosomes which have come from the Pasteur Institute.

\* This paper was presented in substance before the Harvey Society of New York. The lecture was illustrated with numerous lantern slides of which only a few are here reproduced. For the sake of brevity the discussion of the relation of trypanosomes and spirochetes to the intracellular parasites has been omitted.



The *Tr. lewisi* as found in the common rat is an excellent type of the whole group and owing to the almost universal distribution of its host it has been found in all parts of the world. There is probably no city in which the rats are wholly free from this infection. This fact is of interest because it enables any one who is desirous of studying this organism to procure readily the needed material. It should be borne in mind, however, that the infection is not, necessarily, evenly distributed throughout a community but that it may be and is often localized in one or more places. Thus, at Ann Arbor of the first 107 rats caught at different places and examined 5 were found infected and all of these came from the same barn. During the past six years we have repeatedly secured rats from this particular barn and invariably one or more in a catch have been found to harbor the parasite, whereas rats taken in other parts of the city have been relatively free from the infection.

It is an interesting fact that at times the white rat will be found to be spontaneously infected with *Tr. lewisi*. The first observation on this point was made by Laveran and Mesnil in Paris, and later by Terry in Chicago. We have also repeatedly met with infected white rats purchased from dealers in the large cities.

#### STRUCTURE AND MODE OF MULTIPLICATION OF THE RAT TRYPANOSOME.

Before taking up the more strictly pathogenic forms it will be desirable to consider briefly the structure and mode of multiplication of the rat trypanosome. In general, the facts ascertained by the study of this parasite hold true for the other forms.

In the fresh blood film, when examined by the means of a medium objective, such as Leitz No. 7, the trypanosome readily attracts attention by the sudden commotion of the blood corpuscles in its immediate neighborhood. These are pushed aside or lashed about as the organism moves from place to place. The motion is fairly rapid, more so than is usually the case with the other blood trypanosomes. It will be seen that the body of the parasite is somewhat spindle-shaped and that one end terminates in a single long free whip or flagellum (Fig. 1). The presence of this organ is an important characteristic and it is because of it that the trypanosomes are classed among the *Flagellata*. On careful observation it will be seen that the trypanosome usually moves with its flagellum foremost, picking its way among the corpuscles. The flagellar end is consequently spoken of as the anterior end. The opposite extremity or posterior end is rather sharply pointed, a fact which distinguishes it readily from the other trypanosomes.

On further inspection it may be possible to note the presence of an undulating membrane, a fin-like structure which extends from a point near the posterior end of the body to the base of the flagellum. This undulating membrane constitutes the real locomotive organ, the free flagellum probably having very little to do with the actual movement of the cell. This is seen in the fact that at least one blood trypanosome (*Tr. dimorphon*) is devoid or nearly so of a free flagellum. Moreover, in artificial culture many trypanosomes, although provided with a very long free flagellum, show scarcely any motion owing to the rudimentary character of the undulating membrane. The body of the trypanosome in the living condition is colorless or nearly so and the contents are nearly homogeneous, at most a fine granulation may be observed.

Further details as to structure can only be made out by the application of suitable staining methods. For this purpose the Romanowsky method in some of its numerous modifications is generally employed. No other process of staining brings out so well the structural characteristics of the trypanosomes and for that matter of all protozoa. The principle of the method consists in the use of a "ripened" or polychrome methylene blue which with eosin stains the nuclei and other nuclear structures a deep rose-red, whereas the plasma of the cell shows a pale to deep blue. In this way the details of the structure are brought out in sharp relief. The altered methylene blue owes its peculiar staining properties to the presence of at least two decomposition products, methylene azure (dimethyl and trimethyl thionin) and methylene violet. The use of the former in the pure state is the basis of Giemsa's modification while the latter has been similarly utilized by MacNeal.

An examination of the illustration of the rat trypanosome (Fig. 1) will show the typical spindle form with the sharp posterior end. Near this extremity will be found a small but prominent roundish body known as the micro-nucleus, centrosome or blepharoplast. The function of this body appears to be that of a motile center. At all events starting from the blepharoplast is a prominent line which passes along one side of the parasite to the anterior end at which it is prolonged as the free flagellum. Strictly speaking, the flagellum extends from the blepharoplast to the tip of the free portion. For about two-thirds of its length it is connected with the body of the parasite by means of a delicate membrane or fin-like structure known as the undulating membrane. It will be seen from this that the flagellum forms the backbone, so to speak, of the undulating membrane. Under certain experimental conditions this delicate membranous connection may be dissolved away in which case the flagellum now freed for its full length may continue to lash about vigorously for some time. The base of the flagellum does not originate immediately in the blepharoplast, but from a colorless or achromic zone which surrounds this body.

Near the anterior end of the rat trypanosome will be seen a large oval or roundish body which is the nucleus proper. In well stained preparations the nucleus and flagellum are stained a deep red, the blepharoplast is dark red or almost black, whereas the plasma of the parasite is stained blue. The periplast or enveloping membrane may also take a red stain.

The length of the adult trypanosome, including the free flagellum, is about 25 microns or about 3.5 times the diameter of a red blood corpuscle. The ordinary width is about 1.5 microns. The divisional forms may of course be much longer and wider, while the young cells may be considerably smaller and this is also true of the cultural types.

The stained preparations are especially useful in demonstrating the mode of multiplication of trypanosomes which it may be said consists of a more or less unequal longitudinal division. Transverse division is wholly unknown. As might be expected slight variations in the division process are observed in different species.

In the case of the rat trypanosome the cell which is about to divide becomes longer and wider and at the same time the nucleus approaches the blepharoplast while the posterior end of the cell rounds up. The blepharoplast is usually the first to show evidence of beginning multiplication. It elongates transversely and divides into two parts. To one of these the original



flagellum remains attached whereas the other half as shown by MacNeal, gives rise to a new rudimentary flagellum which then grows into the path of the former, probably because of least resistance at that place, and thus gives the impression that the flagellum is the first structure to divide. The division of the nucleus into two equal parts follows. Exceptionally, the division of the nucleus may precede that of the blepharoplast and in that case the cell may be seen to have three or even four nuclei with but one blepharoplast. Such forms have been noted in tsetse flies (Koch) and in cultures of *Tr. lewisi*, etc. (Novy). Eventually the plasma of the cell undergoes fission resulting in the production of a young trypanosome which may then detach itself from the larger or mother cell.

In addition to this direct division, the *Tr. lewisi* may show during the first few days after infection has taken place, a modification of this process which has been commonly designated as segmentation. The result is a group or rosette of 4, 8, or even 16 small trypanosomes with their flagella directed outward. The rosette formation is not essentially different from the simple direct division outlined above. It is rather the result of a delayed division of the protoplasm while the nuclei and blepharoplasts rapidly increase in number by consecutive binary division, thus giving rise to 4, 8 or more individuals. The successive stages can readily be followed in properly stained preparations. Thus, the parent cell rounds up at the posterior end, while the nucleus and blepharoplast approach. The latter then divides, forming a rudimentary whip. At this stage the cell contains a single nucleus and two blepharoplasts, one having attached the original whip, the other having the new short one. At the next step the nucleus divides and the parent cell which shows no evidence of division of the protoplasm contains two nuclei and two blepharoplasts and two whips, one long and the other short. The two blepharoplasts in turn divide and the resulting cell, still undivided, will show two nuclei and four blepharoplasts. The division of the nuclei soon follows and the body now contains four nuclei, four blepharoplasts, three of these having rudimentary flagella, while the fourth still shows the original parent flagellum. Again the blepharoplasts divide and as a result the cell may show four nuclei and eight micro-nuclei. At the next stage the cell will show eight pairs of nuclear bodies and about this time the common protoplasm divides, thus giving rise to 8 young cells. Figure 2, taken by Dr. MacNeal, shows such a rosette of 8 cells, together with the remnant of the original mother cell. The rosette formation as described is met with only during the early stages of infection. Brumpt has described a similar condition in the case of *Tr. blanchardi* which he found in the garden dormouse. For some reason the really pathogenic trypanosomes do not give rise to multiplication rosettes in the blood.

#### CONJUGATION.

Inasmuch as among the ordinary protozoa conjugation appears to be an essential condition for rejuvenation and perpetuation of the species it would seem that a similar process must exist for the trypanosomes. The evidence on this point, however, is by no means as definite as might be desired. Schaudinn was the first to describe male, female and indifferent trypanosomes which he found in the stomach of mosquitoes which fed on owls infected with intracellular parasites. Prowazek more recently has described similar forms of *Tr. lewisi* in the stomach of lice and Keysselitz has done likewise

for the trypanoplasma of fish as met with in the digestive canal of leeches. It must be confessed, however, that much work remains to be done before it can be said that the life history of one of these organisms has been fully worked out.

#### PERSISTENCE OF TRYPANOSOMES.

In general, protozoal parasites tend to persist in the blood of the host for a long period of time, even after a condition of immunity has been established. This fact is particularly seen in cattle which have recovered from Texas fever. Although in the blood of such animals it is impossible to detect the piroplasma which causes the disease, yet such blood, months and even several years after the attack, may convey the infection when injected into healthy cattle. Again, in malaria, as is well known, the plasmodium may remain in the blood for a considerable length of time. A similar condition to the above is met with in the case of trypanosomes. This is especially true for the so-called non-pathogenic forms found in rats, birds, fish, frogs, etc. In the case of the rat, the trypanosomes appear in the blood on about the fourth day after inoculation; they then rapidly multiply and reach their maximum about the tenth or twelfth day after which they decrease in number. It is not an uncommon occurrence to find them entirely absent at the end of two or three weeks. On the other hand the parasites may persist in the blood, though in small numbers, for many months. For example, in one rat which we have had recently under examination the parasites were constantly present for more than eleven months, at which time it accidentally died. In like manner we have observed the persistence of a trypanosome in a canary for about three months. The same is true for the flagellates of frogs, fish, etc.

Pathogenic forms may also persist in the blood of the host for a long period and it is because of this fact that such animals, though apparently well, are likely to spread the disease. In the smaller experimental animals these trypanosomes may multiply with sufficient rapidity as to cause death in a few days, but in the larger ones as the guinea-pig, rabbit, horse and cow, and even in man the disease may last for months and even years. Hence the necessity for promptly destroying infected animals, especially when these are brought into a non-infected territory in which the other conditions for transmission exist.

#### CULTIVATION OF TRYPANOSOMES.

The rat trypanosome was the first protozoön successfully cultivated in a pure form. Since 1903 when MacNeal and Novy reported their first results with *Tr. lewisi* a considerable number of other trypanosomes have been grown by them outside of the body, notably *Tr. brucei*, *Tr. evansi*, various bird trypanosomes and those of mosquitoes. Thiroux has obtained like results with *Tr. paddæ* and *Tr. duttoni*, while other workers have obtained partial results with a number of the pathogenic forms.

There appears to be a notable difference among the trypanosomes in the ease with which the first generation can be obtained. Little or no difficulty is encountered in starting a culture of *Tr. lewisi*. This is especially true of the bird trypanosomes which can be grown with the greatest ease. Indeed, the detection of these organisms in birds is effected readily by the cultural method although the microscopic examination is usually negative. The flagellates present in mosquitoes are likewise easily cultivated, the only difficulty is the likelihood



of the cultures being overgrown by the bacteria which are invariably present in the stomach contents of these insects.

The cultivation of the more strictly pathogenic forms is somewhat more uncertain, but when the initial culture is once obtained the sub-cultures, it may be said, are assured. In other words the adaptability of the trypanosomes to the artificial medium appears to be variable, but without doubt all of the trypanosomes, even the pathogenic ones, can be cultivated although for some special conditions may be required.

As a rule little or no difficulty is experienced in carrying a culture through a large series of sub-cultures. For example, *Tr. lewisi* has been kept under artificial cultivation for about two and a half years, during which time it passed through nearly 100 generations. In like manner the *Tr. brucei* was carried through about 100 sub-cultures in about fifteen months. Similarly, the bird trypanosomes have been kept in tube culture for over two years and a mosquito trypanosome has been maintained for about one year. Apparently there is no reason why these cultures can not be kept up as in the case of bacteria for an almost indefinite period.

The culture medium, in general, is a blood agar consisting of equal parts of defibrinated rabbit's blood and nutrient agar. The latter is melted and cooled to about 50° C., after which the rabbit blood is added and thoroughly mixed. The tubes, thus prepared, are allowed to set in an inclined position, after which they are at once inoculated. It is essential that the surface of the medium be moist and soft and if this is not the case the tubes should be placed in an upright position for some minutes until some water of condensation accumulates at the bottom. After inoculation the tubes are closed with rubber caps and set aside either at room temperature or at 25 degrees C.

The initial culture usually requires a week or more although not infrequently, fairly rich growths may be obtained in three or four days. The sub-cultures when once adapted to the culture medium give an abundant growth in a few days and necessitate transplantation every seventh day. Unless this is done the cultures which are very prone to undergo involution changes may die out. With many of our cultures it has been found necessary, owing to the rapid growth at room temperature to retard the multiplication by placing the tubes in a cool room.

On inspection the surface of the medium usually shows but little evidence of a growth. If, however, a loopful of the fluid from the surface is placed on a slide and examined under the microscope it will be found to be extremely rich in trypanosomes. At times, a thick, moist growth can be observed on the surface of the agar and when streak cultures are made, on blood-agar plates, isolated colonies may be obtained. This fact has been utilized to effect a separation of trypanosomes from the accompanying bacteria.

Pure cultures are admirably adapted for the study of the life-history of an organism inasmuch as the multiplication process can be followed under the microscope. The cultural forms as met with in the tubes differ in some important respects from the original blood forms. They are usually smaller, ranging from about 5 to 15 microns in length although with some species a length of 50 to 75 microns or more may be observed. The blepharoplast is usually, though not in all cases, lateral or anterior to the nucleus, thus giving rise to the so-called *Herpetomonas* forms. This fact strongly indi-

cates that the herpetomonas as found in various insects is not a distinct genus, but in all probability a mere multiplication form of a trypanosome. Moreover, some species, as for example, *Tr. avium*, show a distinct differentiation into two unlike forms which are suggestive of sexual types, male and female forms.

Trypanosomes which have been found in the stomachs of mosquitoes, tsetse flies, house flies, etc., present essentially the same characteristics of growth as those which have been grown artificially. In other words they are to be regarded as cultural forms which develop in the alimentary tract in a manner analogous to those cultivated in the test tube. From the evidence on hand it is more than probable that the genera *Herpetomona* and *Crithidia* really represent cultural forms of true trypanosomes.

The cultivation of trypanosomes finds an immediate application in the differentiation of species. Many of the flagellated protozoa are much alike in shape and size and for that reason can hardly be distinguished with the aid of the microscope. The cultural forms, however, are so markedly different in the several species which we have studied as to make it very easy to recognize each kind. Thus, the *Tr. lewisi* in culture is very unlike that of *Tr. brucei* or of *Tr. avium* and it is probable that fairly marked distinctions will be found for the trypanosomes of sleeping sickness, surra, etc. For this reason it is very desirable that persistent efforts be made to bring under cultivation all the important, more especially the pathogenic trypanosomes. That this will in the end be realized there can be no question.

#### PATHOGENICITY.

The rat trypanosomes are ordinarily considered to have no injurious action on the host. This is not strictly correct for in severe infections of white and even wild rats, there is evidence of fever and of marked depression. Occasionally, though very rarely, the infection may be so intense as to cause the death of young animals. Usually, however, the infected rats show little or no effect as the result of the presence of the parasite. The continued presence of the organism for many months may be looked on as the result of an immunization of the parasite against such anti-bodies as form or are present in the blood. A symbiotic condition may thus be established which may persist almost indefinitely.

It is an interesting fact which serves to distinguish *Tr. lewisi* from all other trypanosomes that this organism can not be transferred to any species of animal other than the rat. The injection of rat blood containing this trypanosome into white, gray or black rats results in an infection in about three or four days. Even large doses of such blood introduced into other animals are without effect except in the case of the guinea-pig in which possibly a slight, though transitory, infection occurs. There are many other examples of trypanosomes having but a single definite host. On the other hand, the known pathogenic trypanosomes usually, as will be seen, are capable of infecting a large number of species of mammals.

#### TRANSMISSION.

The early studies on surra and especially on nagana demonstrated the rôle of certain biting flies as agents of transmission and Rabinowitsch and Kempner influenced by these observations endeavored to find a similar mode of conveyance in the case of *Tr. lewisi*. They were able to show that healthy rats developed the infection when



placed in the same cage with the infected ones. Furthermore, they obtained positive infection by placing fleas from infected rats on healthy ones or by injecting the latter with suspensions of the crushed fleas. MacNeal was able to show in a similar way that the rat louse could convey the disease. In lice which have recently fed on infected animals the living trypanosomes can be readily detected in the ingested blood. Suspensions of such lice when injected into rats produce the disease, and, in one case, a healthy rat was infected by transferring to it a large number of lice taken from an infected rat. Thus it follows that the infection is carried from rat to rat by fleas and lice and this fact explains the localized infections as often met with. Recently, Pro-wazek has endeavored to follow out the life-history of *Tr. lewisi* in the body of the louse. In the stomach he observed "cultural" forms of a trypanosome and even described conjugation of male and female forms, but he was unable to infect rats by placing on them infected lice. On *a priori* grounds one might expect to find *Tr. lewisi* to multiply in the gut of the louse as readily as in the test-tube, but the identity of such forms should be established.

Although it is not proven for all cases, insect transmission appears to be the rule for the trypanosomiasis of mammals. There is good reason to believe that in the most important of these diseases, notably the tsetse fly diseases of man and animals the insect plays but a passive or mechanical part. In malaria transmission, on the other hand, the insect is an active host and not a mere vector of the virus. The infection of fish and amphibians, etc., likewise appears to be in relation with certain blood-sucking organisms, notably the leeches.

#### IMMUNITY.

It has already been pointed out that the *Tr. lewisi* disappears from the blood after a variable length of time, depending on the individual resistance of the rat. This usually occurs in from four to six weeks, although it may happen as early as two weeks and as late as a year. The rat which has once become free from the parasite can not be reinfected. In other words it has acquired an active immunity. Rabinowitsch and Kempner were the first to show that the blood of such rats, after receiving a number of injections, possessed well marked preventive properties. In a dose of 1 c.c. the immune serum protected rats either when given before, simultaneously or after inoculation with the trypanosome. A condition of passive immunity can hence be readily established.

The curative treatment of infected rats by means of such serum has given little or no result, undoubtedly because of its feeble activity. Similar efforts at causing the disappearance of *Tr. lewisi* by injections of arsenite of sodium, human serum, trypan-red, have been equally unsuccessful although in several of the trypanosomiasis the experimental treatment with these agents has given fairly satisfactory results.

The production of active immunity in the case of the pathogenic trypanosomes is more difficult since with few exceptions the test animals usually succumb to the infection. In no case has it been possible to obtain an immune serum which could be used practically as a preventive much less as a curative agent. It has been possible, however, to immunize cattle, sheep, goats, etc., against several of these organisms and such actively immunized animals have been utilized by Laveran and Mesnil as a means of differentiating trypanosomes.

Thus, an animal immunized against *Tr. brucei* remains susceptible to *Tr. evansi* and to the other pathogenic forms. And, *vice versa*, a cow immunized against surra will remain susceptible to nagana. In this way they have been able to establish a multiplicity of species, which conclusion, however, Koch has questioned.

In a somewhat recent paper Koch has divided the six best known trypanosomes into two groups according as they presented constant or inconstant properties, especially with reference to their morphology, virulence and their behavior to the host. In the first group he placed the rat trypanosome and that of galzielte for the reason that these are readily distinguished morphologically from the other pathogenic forms. Also, because in their virulence they show no variation. Notwithstanding consecutive passage through rats in the one case and through cattle in the other the virulence remains the same. Furthermore, their relation to their respective host is fixed since *Tr. lewisi* can infect only rats and *Tr. theileri* only cattle. Because of these facts he regards the organisms as fixed species which have acquired definite characteristics as the result of exclusive association with a special host, in much the same way as the malarial organism in man. Obviously this group can be enlarged by the addition of a number of other trypanosomes having the same general properties.

In the second group he places the four more strictly pathogenic trypanosomes, those of surra, nagana, caderas and of man. To these should be added the dourine and Gambian horse trypanosomes. He considers these organisms as lacking in definite distinguishing properties. Thus, morphologically they are scarcely distinguishable among themselves; in virulence they show a very great variation and they are not limited to a single host. He interprets these facts to mean that the parasites have not become fully adapted to their hosts and hence have not developed into fixed species, but are rather in a state of mutation.

The views of Koch implying essentially a unity of species among the pathogenic trypanosomes can not be said to be established. The immunity reactions of Laveran and Mesnil and others can not be accounted for satisfactorily by the assumption that these workers have studied one and the same trypanosome having merely a variable degree of virulence. Koch himself was inclined to regard the caderas trypanosome as distinct from that of nagana and of surra. Moreover, in a more recent publication he himself has endeavored to differentiate the trypanosomes of the last two mentioned diseases by the "cultural" peculiarities of the flagellates found in the different species of tsetse flies. The organisms found in the stomachs of these flies have been supposed to represent multiplication forms of the pathogenic trypanosomes but this view, as I have shown elsewhere, is open to serious question. The conclusion which has been reached by most observers is to the effect that the several pathogenic trypanosomes represent distinct species although each kind may be subject to considerable variation in virulence.

#### TRYPANOSOMES OF MAMMALS.

A large number of mammals have been shown to harbor in their blood, at times, parasites belonging to this group. Additional observations are being made from day to day and it almost seems as if there is scarcely a species of animal which may not show an infection of this kind. In the large majority of such animals the infection is of a mild type indicating that the trypanosomes present are practically non-virulent. On the other



hand, in a small number of animals, trypanosomes are met with which are highly virulent and hence give rise to an almost invariably fatal disease. The great importance of this small group of trypanosomes will be readily recognized.

From the foregoing it will be seen that we may divide the mammalian trypanosomes into: 1, Non-pathogenic group; 2, pathogenic group. The non-pathogenic species are represented by the well-known rat trypanosome. Without going into any unnecessary detail it will be sufficient to state that similar parasites have been found in the field-mouse, mole, dormouse, house mouse, hamster, bat, squirrel, gopher, guinea-pig, rabbit, monkey, etc.

The pathogenic forms require a special although necessarily a very brief description. They will be considered in the order as given in the following table:

Name.	Discovered	The cause of
<i>Tr. evansi</i> .....	1880	Surra.
<i>Tr. brucei</i> .....	1894	Nagana.
<i>Tr. equiperdum</i> .....	1894	Dourine.
<i>Tr. equinum</i> .....	1901	Caderas.
<i>Tr. dimorphon</i> .....	1902	Gambian horse disease.
<i>Tr. theileri</i> .....	1902	Galzielte.
<i>Tr. Gambiense</i> .....	1901	Human trypanosomiasis
<i>Tr. ? (Piroplasma) donovani</i> .....	1903	(Sleeping sickness). Kala-azar.

#### SURRA.

This term, implying a rotten or diseased condition, is a common designation in India for a disease of horses and camels. In the blood of the affected animals Evans found in 1880 an organism or *spirochaeta* which he considered as the cause of the disease. It is interesting to note that the discovery of the malarial organism in man by Laveran and that of the first pathogenic trypanosome were made within a few weeks of each other. Since then the *Tr. evansi*, as the organism is now known, has been repeatedly observed in outbreaks of the disease not only in India, but elsewhere.

The disease is characterized by a remitting fever, considerable anemia and wasting, edema of the legs, belly and genitals, discharges from the eyes and nose, great muscular weakness and finally paralysis. Horses, mules, camels, dogs and cattle are particularly subject to the disease. As a result of the study of the disease in India it has been assumed that cattle usually recovered from an infection. While this apparently holds true for the Indian cattle it is not generally correct. Thus, during the Boer war the island of Mauritius became infected as a result of the importation of cattle from India and as a consequence enormous losses were sustained among the domestic cattle (25 to 30 per cent. dying) as well as among the horses. Similarly, American cattle imported into the Philippines have been found to succumb to the disease.

At present surra is known to exist in many places outside of India. Thus, to the east it has been recognized in Burmah, Cochin-China, China, Philippines and in Java; on the west in Persia and on Mauritius. In Africa its presence has been established among the camels on the east coast, also in Central Africa and in the Soudan. The diseases of camels known in different places as mbori, soumaya and el debab and the Algerian horse disease called mal de zoufana, are probably all mild forms of surra. This fact has been clearly established by immunity experiments in the case of mbori. Similarly, the *Tr. vivax* described by Ziemann in Cameroun is probably identical with the surra trypanosome.

Morphologically, the *Tr. evansi* is so much like the *Tr. brucei* as to be hardly distinguishable. Its length as

given by Laveran and Mesnil is about 25 microns, including the free flagellum, which is about 6 microns long. The width is about 1.5 microns. In general it is narrower and has a longer free whip than *Tr. brucei* and is more actively motile. Like the other pathogenic trypanosomes it is characterized by a well developed prominent undulating membrane (Figs. 3 and 4).

The artificial culture will probably afford the surest means of distinguishing it from the closely related nagana trypanosome. The Philippine surra organism has been grown on blood-agar for a period of 65 days. Although all efforts at transplantation failed there was no question but that multiplication had taken place within the tubes. The cultural forms present were entirely different from those of *Tr. brucei* (Novy, MacNeal and Hare). Laveran and Mesnil were likewise able to keep it alive for 3 months, into the second generation, but further efforts at transplantation failed as did also the animal inoculations. Thomas and Breinl obtained similar results, the organism remaining alive for 37 days. In view of the variations shown by the surra of different countries it is very desirable that attention be given to the cultural characteristics of the divers strains of *Tr. evansi*. In this way it will be possible to pass on the question of the identity or non-identity of the various forms of so-called surra (Figs. 3 and 4).

#### TRANSMISSION.

It is noteworthy that biting flies were credited with the transmission of the disease by the natives of India and that this view was accepted by Evans and others long before the rôle of insects was recognized in Texas fever, malaria, etc. It is only recently, however, that the question has been submitted to an experimental test. The tsetse fly which plays so important a part in the spread of the African trypanosomiasis is not known in Asia and hence other genera of biting flies must be considered. These are represented more especially by the *Stomoxys calcitrans* and *Tabanus tropicus*. Several investigators have found trypanosomes in the alimentary tract of flies which have fed on infected horses and Rogers, Musgrave and Clegg and others have conclusively shown that infected flies will transmit the disease provided they are allowed to bite clean animals within a few hours after the infective feed. It is evident therefore that several species of flies may serve as transmitters of the virus, probably as mere mechanical agents. The possibility of transmission by other insects can not be excluded for the present. The infection of dogs is usually ascribed to their eating the carcasses of animals which have succumbed of surra, the virus probably entering through abrasions in the mouth or alimentary canal, though obviously fleas and flies may also take part in the transmission.

#### NAGANA.

Early travelers in South Africa, among them Livingstone, encountered a disease of domestic animals which they designate as the tsetse-fly disease or the fly disease for short, this name being given on the supposition that it was caused by the bite of the tsetse-fly, *Glossina morsitans*. The term nagana which has come into use since Bruce made his studies of this disease implies, in Zulu, "to be low or depressed in spirits."

The disease has evidently existed in Zululand from the earliest times. It is not confined, however, to that region, but has been met with on the west coast as far as Senegambia and on the east as far as the Red Sea.



Like the surra of India it affects the horse, mule, donkey, ox, dog, cat and many of the wild animals. It is said to be invariably fatal to the horse, donkey and dog, while but a small percentage of the cattle recover, in which respect it has been supposed to differ from the surra of cattle in India, where recovery was apparently the rule. Singularly enough, while nearly all mammals are subject either to natural or to experimental infection, man, on the other hand, appears to be perfectly immune.

The duration of the disease varies greatly not only among the different species of animals but also among animals of the same species. Thus death may occur in from one to two weeks or as late as two to three months. Cattle may likewise die early, though the disease may be protracted for a year or more. Occasionally they may recover as in the case of the experimental inoculation of Brittany cattle by Nocard. In sheep and goats the course of the disease is also chronic and may last for two to six months and recovery may take place as has been noted by Laveran and Mesnil.

Animals which recover from the infection acquire an active immunity, as is seen in the fact that they can not be reinfected with the same virus. Repeated injections serve to hyperimmunize the animals and the serum of such possesses a slight preventive action. Animals immunized to nagana remain susceptible to infection with the other trypanosomes, as has been shown by Laveran and Mesnil, also by Nocard and Vallée, and consequently this reaction may be interpreted as demonstrating that nagana is specifically different from surra and the other trypanosomiasis.

In the large animals the affection is characterized by fever, anemia, edemas of the extremities and abdomen, and extreme emaciation. The animal may waste to a mere skeleton and often becomes blind. Its appetite may last until the end.

In the blood of the diseased animals Bruce discovered in 1894 the trypanosome which now bears his name. (Fig. 5.) As has been pointed out heretofore, this organism is scarcely to be distinguished either morphologically or biologically from the *Tr. evansi*. The immunity experiments referred to have served to show that the diseases are distinct entities.

The *Tr. brucei* was the first pathogenic trypanosome successfully cultivated (Novy and MacNeal). Some difficulty is experienced in securing the first generation but after that there is none. It has been possible to carry such a culture through nearly 100 generations at room temperature and at 25 degrees C. When once thoroughly adapted to the blood-agar medium a very rich growth can be obtained in from three to four days. Even after cultivation for two years such cultures are capable of infecting guinea-pigs. It has not been possible as yet to obtain non-virulent cultures which could be used for the purpose of vaccinating animals against the virulent type.

The cultural characteristics are very marked and serve to differentiate it from *Tr. lewisi* on the one hand and *Tr. evansi* on the other. In view of the fact that nagana of some parts of Africa differs to a greater or less extent from that of Zululand, which fact has suggested the existence of a number of varieties or even a group of allied diseases, it is desirable that in such cases the cultural characteristics of the organism be ascertained.

#### TRANSMISSION.

The general impression regarding the rôle of the tsetse-flies in the transmission of nagana was fully established by the splendid investigation of Bruce. This was executed in Zululand on the top of Ubombo at an elevation of about 1,900 feet. Although this hill was in the midst of the fly-country, Ubombo itself remained free from tsetse flies from the beginning of the investigation in 1894 until 1897 at which time nagana for some reason spread beyond its former boundaries and even reached the top of the hills. Bruce early noted the remarkable fact that no cases of the spontaneous disease occurred on Ubombo hill notwithstanding the constant and close association of healthy horses, cattle and dogs with those suffering from the disease and the presence of several species of blood-sucking flies other than tsetse flies. This observation was confirmed later by Martini who found two infected Togo ponies in the Berlin Zoological Garden, and yet in spite of the presence of ordinary biting flies the infection did not spread among the other animals. These facts go to show that nagana is not spread by ordinary biting insects such as stomoxys, mosquitoes and fleas.

Bruce further showed that horses when taken for a few hours into the fly-country, even though they were not allowed to eat or drink while there, contracted the disease, thus showing that the latter was not conveyed by the food or drink but in all probability by the bites of the flies.

It was further proved that tsetse flies brought to Ubombo and kept for several days could then bite dogs without producing the disease. Infection, however, occurred if they were allowed to feed on dogs immediately after feeding on an infected animal. This result was also obtained if the flies were allowed to bite at 12, 24 and 48, but not at 72 hours after the infective feed.

Bruce examined the proboscis of the flies at varying hourly intervals after they had fed and found rarely more than a single trypanosome. In the stomachs of such flies the trypanosomes were usually present as long as the blood remained. Up to 55 hours they were always present, but none were found on the sixth day. Owing to the presence of the trypanosomes in the stomachs it might be expected that such flies, if minced up and injected into a dog would produce the disease. This, however, Bruce was unable to accomplish except in one case in which the fly had fed but half an hour before on an infected animal. This result is difficult to explain, especially since we have been able to infect mice by injecting mosquitoes which had an infective feed 24 to 36 hours before.

Within the past year it has been shown by Koch that several species of tsetse flies contain trypanosomes in their stomachs, at the time of capture, even when there is no evidence of the presence of blood to indicate that the flies had recently fed on an animal. It was supposed by him that the flagellates found in the stomachs of the flies represented developmental forms of *Tr. brucei*, although he was unable to infect flies by feeding on infected animals, and moreover failed to infect rats by injecting the contents of the stomachs of such flies. As will be seen similar observations have been made by Gray and Tulloch with reference to the trypanosome of sleeping sickness. The facts noted, however, are all open to an entirely different interpretation and it is more than likely that the organisms seen in the flies represent, as I have shown elsewhere, a harmless intestinal



parasite much the same as that found in mosquitoes and other insects.

Notwithstanding this, the fact remains that the tsetse flies can and do convey the disease provided that they bite within a day or two after they have fed on a diseased animal. The fly therefore acts as a mere carrier of the trypanosome, and that being the case it was necessary to establish the natural source of the disease. It had been shown previously by Lingard in India and confirmed later by Musgrave in Manila that rats may harbor the surra trypanosome. Bruce was led therefore to believe that a similar source might be found in the big game of the fly-country, especially as the general impression prevailed that where there was no wild game there was no nagana. Accordingly, he examined the blood of various animals shot in the fly-country, but could find no trypanosomes in their blood. Subsequently, however, he found the adult organism in three wild animals. Acting on the supposition that the parasites might be present in such small numbers as to escape microscopic detection, he injected the blood into dogs with the result that in the first series nine out of thirty-five dogs thus inoculated developed nagana.

In brief it has been shown that the large game harbors the parasite without any injurious effect in much the same way that the common rat carries *Tr. lewisi*. In such animals the disease is probably chronic and non-fatal and hence they serve as a reservoir for the virus which they supply to the tsetse. It has since been shown that with the extermination of the large game in some parts of South Africa, a result of the introduction of rinderpest, the fly disease itself has become a negligible quantity.

Although considerable effort has been expended to discover a preventive and curative treatment for this infection the results thus far have not been very satisfactory. The administration of arsenic is of no preventive value, but in infected animals serves to prolong life. When given in sufficient dose to the small animals it causes the trypanosomes to disappear from the blood, but only temporarily. After a few days they reappear, and on repeating the injection of arsenic they vanish as before. By repeating the treatment it has been possible to keep rats alive for seventy-nine days, whereas the controls die in about five days. Laveran and Mesnil were unable to effect any cure with arsenite of sodium employed in this manner. Thomas has obtained much better results with a compound of arsenic and anilin known as atoxyl. With this he has been able to cure infected rats, guinea-pigs and a rabbit.

The trypan-red introduced by Ehrlich and Shiga likewise causes a temporary disappearance of the trypanosomes, but only exceptionally is it able to do more than prolong the duration of the disease. A number of other anilin dyes have been used, some of which have given very encouraging results. The recent studies of Mesnil and Nicolle are very promising and it is to be hoped that an efficient "chromotherapy" will be discovered. The alternate treatment with trypan-red and atoxyl has given fair results and it is possible that some modification of this procedure may prove serviceable in practice.

The action of human serum as a curative agent is of especial interest. It may be assumed as established that man is not subject to infection with *Tr. brucei*. At all events though man is attacked in the fly-country by the tsetses no ill effects have been noticed from such bites. The normal sera of diverse animals have been tested by Laveran as to their effect on the trypanosome

and of such only the human serum was found to be efficacious. It not only can prolong the duration of the disease but is capable of curing mice. An alternate treatment with arsenic and serum has given still better results.

From this brief outline it will be seen that arsenic, certain anilin dyes and human serum are the only agents known at present which can influence the course of the infection with *Tr. brucei*. A practical, preventive and curative treatment, however, has not yet been discovered, and as it is obviously impossible to reach and destroy all infected animals the prevention of nagana remains a serious problem.

#### DOURINE.

Unlike surra and nagana, this disease is not limited to tropical countries, for in the past it has been met with in many parts of Europe and it is even said to occur in the United States. Such reports, however, are based purely on circumstantial and clinical evidence, for up to the present time no one has demonstrated the presence of the specific organisms in such cases. The disease, it should be stated, is especially prevalent along the Mediterranean littoral.

The trypanosome of Dourine, *Tr. equiperdum*, was discovered in 1894, the same year as *Tr. brucei*, by Rouget, a French army veterinarian (Fig. 6). By successive passages through rabbits he was able to keep the organism, derived from a stallion in Algeria, for over two years. Since then other observers have confirmed and extended his work.

One notable feature of the disease is that it is not spread, so far as is known, by flying insects. In this respect it differs therefore from surra and nagana and the other trypanosomiasis. The evidence on hand goes to show that it is spread exclusively by sexual contact, hence the designation *mal du coit*. It is restricted to breeding equines and on account of the peculiar skin lesions it is sometimes spoken of as horse syphilis. The usual chronic form of the disease is characterized by edema of the genitals, a moderate fever and slow wasting. In from one to two months, plaques of varying size appear on different parts of the skin. The wasting becomes more pronounced and paralysis of the hind quarters becomes manifest. In the last stages of the disease the anemia is profound, the animal becomes paralyzed and is unable to rise. The infected animals may die in from two to ten months, exceptionally they may live for as long as two years.

Experimentally the disease is readily reproduced in the horse, ass, dog and rabbit. Rats, mice and guinea-pigs are apparently refractory to the fresh virus, but after repeated passage the latter will prove infective. It is an interesting fact, first established by Rouget, that a lesion of the mucous membrane is not necessary in order that infection shall result. The direct application of the virus to the conjunctiva or to the vagina is sufficient to cause an infection. The disease has not been produced by ingestion of the parasite.

Although very scarce, the trypanosome can be detected in the blood of the infected animal and especially in the freshly formed plaques. Morphologically it can hardly be distinguished from the other pathogenic trypanosomes. The most important difference, according to Laveran and Mesnil, consists in the absence of the protoplasmic granules such as are present in *Tr. brucei*. Thomas and Breinl were able to keep the organism alive on blood-agar for 17 days, at which time it was still infective, but no subcultures could be obtained.



Animals, such as dogs, which have recovered from the disease, possess an active immunity. But when inoculated with caderas (Lignières) or nagana (Nocard) they promptly succumb to these diseases, thus showing that dourine is specifically different.

The treatment of dourine is, on the whole, as unsatisfactory as the other trypanosomiasis. Arsenic, trypan-red and human serum have a similar action to that noted in connection with nagana.

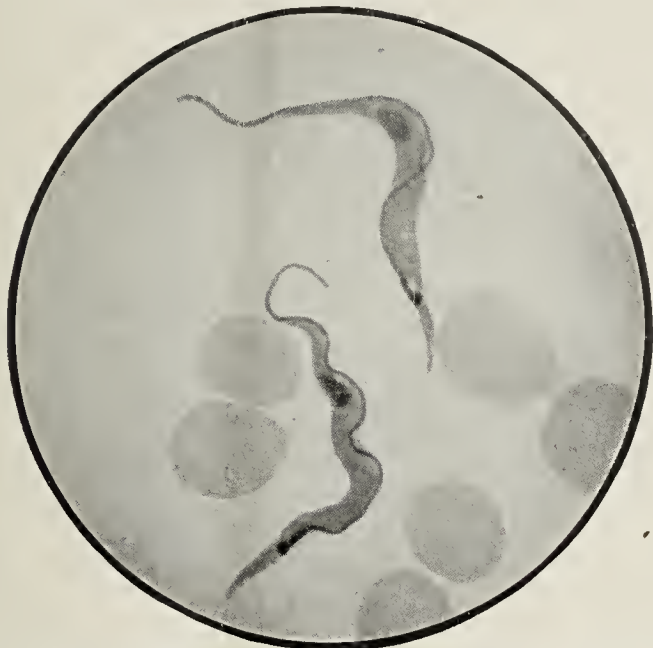


Fig. 1.—*Trypanosoma lewisi* in blood of rat. Note the sharp posterior end opposite the free flagellum; also nucleus and micro-nucleus. Magnification 1,500 times.

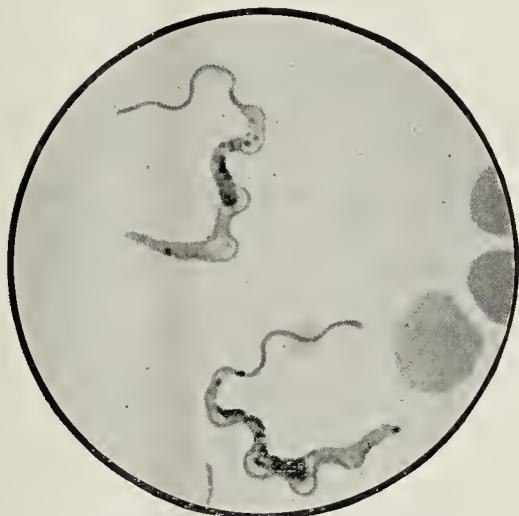


Fig. 3.—*Trypanosoma evansi* (Surra) from Mauritius, in blood of a mouse. Magnification 1,500 times.

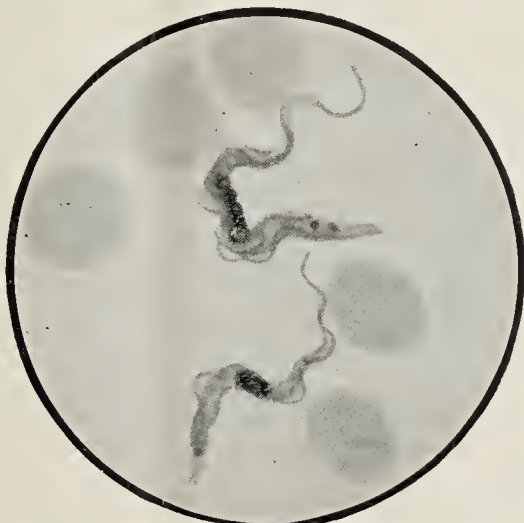


Fig. 5.—*Trypanosoma brucei* (Nagana or tsetse-fly disease) in blood of rat. Magnification 1,500 times.

#### CADERAS.

The disease known as mal de caderas is widely prevalent in many parts of South America from the Amazon on the north to Bolivia on the south. It is the only trypanosomatic disease which has been recognized on the American continent. It has been the subject of re-

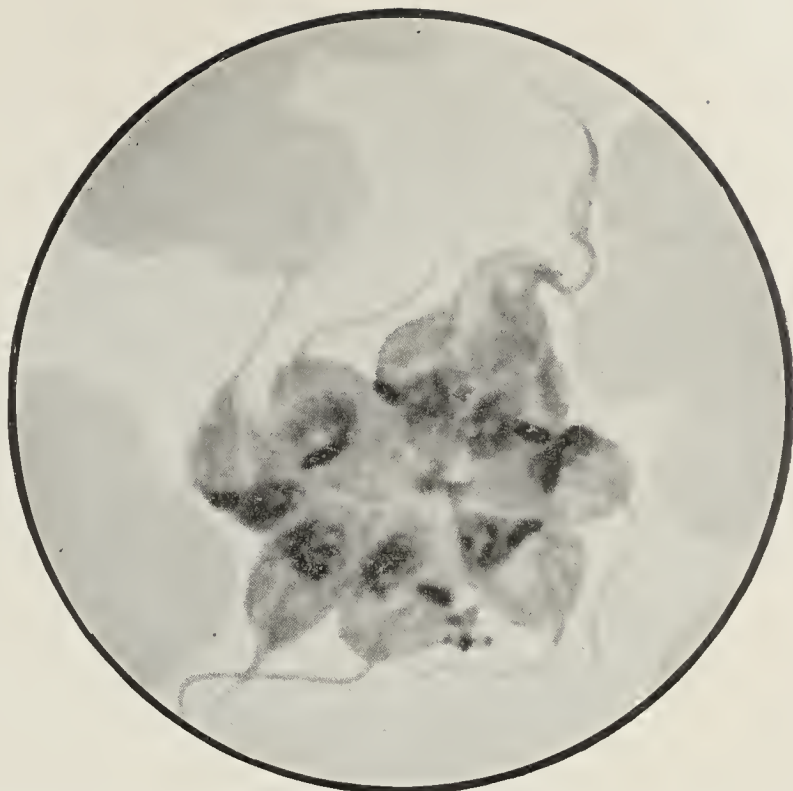


Fig. 2.—A multiplication rosette of *Tr. lewisi*, in blood of rat, showing division into eight cells and remnant with flagellum of original parent cell. The elongated micro-nucleus in each young cell shows two flagella, a long and short one, indicating that further division is about to take place. Magnification 3,000 times.

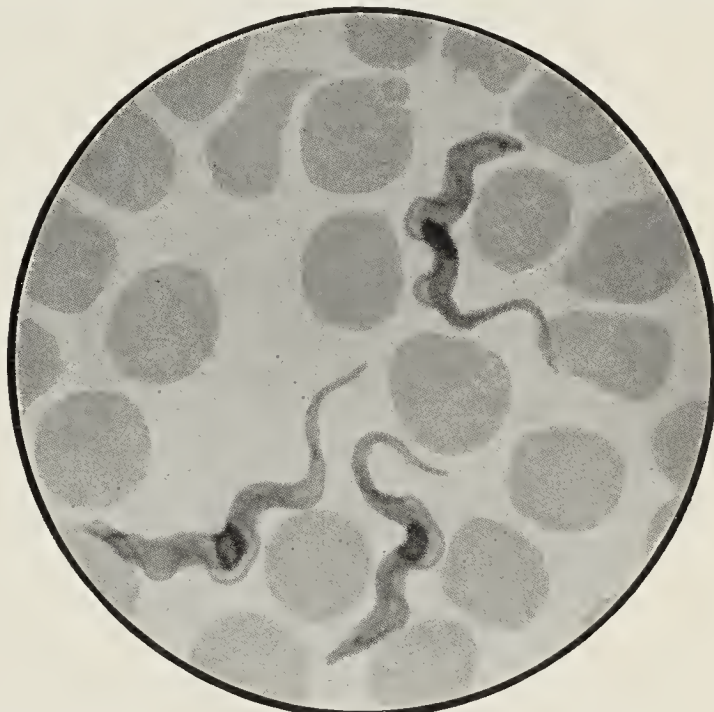


Fig. 4.—*Trypanosoma evansi* (Surra) from India, in blood of guinea-pig. Magnification 1,500 times.

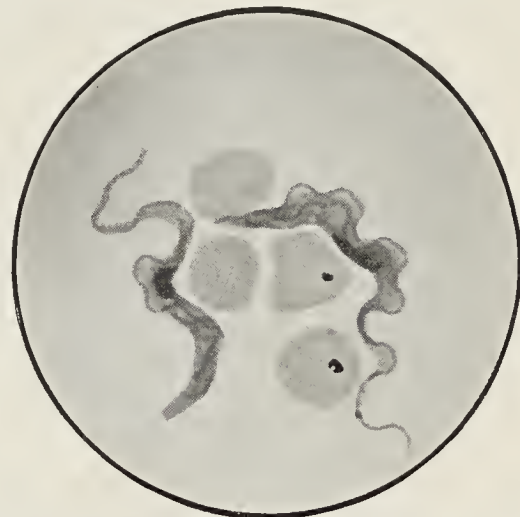


Fig. 6.—*Trypanosoma equiperdum* (Dourine or Mal du coit in blood of mouse). One of the cells in process of division. Magnification 1,500 times.

peated studies, but its nature was not recognized until 1901, when Elmassian at Assumption discovered the trypanosome which Voges designated as *Tr. equinum*. Caderas refers to the characteristic symptom of the disease, the paralysis of the hip or hind quarters.



It occurs almost exclusively among horses, although instances of spontaneous infection of dogs are known. The ass and mule are more resistant than the horse. The disease may last from a few weeks to 1 or 2 months, or it may be very chronic, persisting for many months.

It is attended with a marked remitting fever; the animal rapidly loses weight, although the appetite continues. Eventually the hind quarters begin to drag and finally complete paralysis results. Anemia and albuminuria are common and hematuria may be present. A notable feature is the almost complete absence of edemas

less readily differentiated from these by one important characteristic, and that is the apparent absence of the micro-nucleus or blepharoplast. This structure is so inconspicuous that its existence has been denied (Fig. 7).

Attempts at cultivation have been made by Rabinowitsch and Kempner and Laveran and Mesnil, but without any definite success. Thomas and Breinl observed an apparent multiplication in a blood-agar tube, 29 days old, and with this successfully infected a rat. Subcultures were not obtained.

As to the mode of transmission of caderas very little

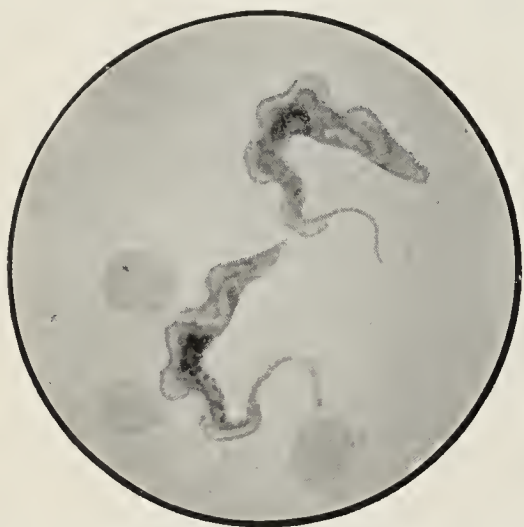


Fig. 7.—*Trypanosoma equinum* (Caderas) in blood of mouse. Note apparent absence of blepharoplasts or micro-nuclei. Double flagellum indicates divisional changes. Magnification 1,500 times.

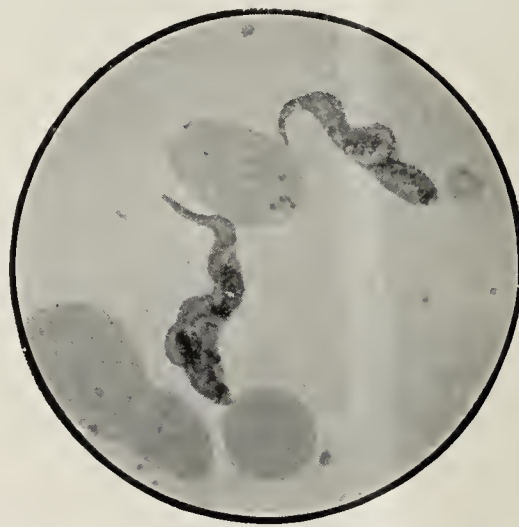


Fig. 8.—*Trypanosoma dimorphon* (Gambian Horse disease) in blood of mouse. One cell is dividing. Note the absence of a free flagellum. Magnification 1,500 times.

which are almost always present in nagana, surra, etc. The trypanosomes are not very numerous in the blood and often can not be detected microscopically. The inoculation of such blood into susceptible animals will result in infection.

Rats and mice are particularly susceptible, and in these the trypanosomes become extremely rich and death occurs in from one to two weeks after inoculation. Most of the smaller mammals are likewise susceptible, but the disease is of longer duration. Goats, sheep, cattle and

is known at present. The conveyance by insects is by no means established, although it has been possible to infect horses by stomoxys which had previously fed on infected animals. On the other hand, healthy and infected animals have been kept together or, at most, separated by a fence without the infection spreading.

The results of treatment in caderas have, on the whole, been more favorable than in the case of the other trypanosomiasis. Thomas and Breinl obtained with

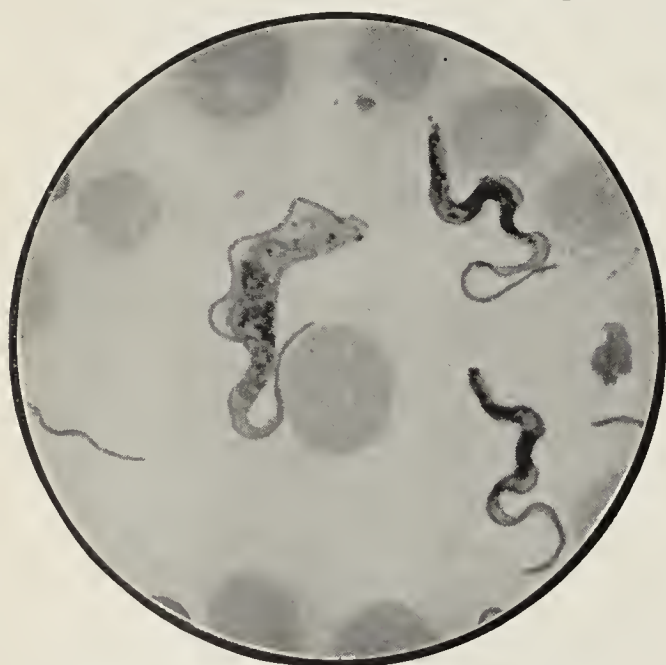


Fig. 9.—*Trypanosoma gambiense* (Sleeping sickness) in blood of a rat. Two types are shown; the broad pale form (female?) is dividing. Magnification 1,500 times. MacNeal's stain.

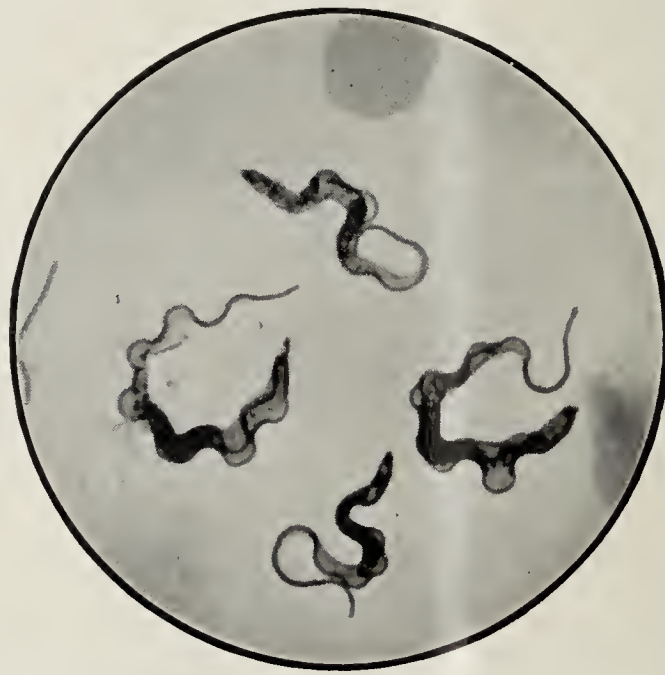


Fig. 10.—*Trypanosoma gambiense* from same preparation as preceding, showing the usual form, some of the cells in process of division. Magnification 1,500 times.

hogs develop a very mild infection without any visible manifestation. The organism is present in the blood in such very small numbers that it can scarcely be detected except by inoculation of the blood into mice. By this means it has been shown that the blood may harbor the trypanosome for from 2 to 6 months. With these animals, recovery is the rule and they become immune.

Although it is of the same form and size as the other pathogenic trypanosomes, the *Tr. equinum* is neverthe-

atoxyl cures in rabbit, guinea-pig and rat. Ehrlich and Shiga were able to cure mice by means of their trypan-red. Moreover, previous inoculations with the dye served to prevent infection. Several other dyes are now known which in a single injection will cure infected mice (Mesnil and Nicolle). Human serum is as active against caderas as against nagana. The disease is prolonged in infected mice and rarely a cure is effected.

(To be continued.)



LUPUS VULGARIS OF THE EAR IN RELATION  
TO ITS LATE RESULTS.\*A. RAVOGLI, M.D.  
CINCINNATI.

Lupus vulgaris, the true exponent of the cutaneous tuberculosis, although so well studied and thoroughly known, still deserves consideration. Usually it is a disease of a long and tardy process. It remains for years in the form of small, innocent nodules, which scarcely call the attention of the patient for any treatment, and yet its consequences are very serious, and at times fatal. This prompts me to refer to the history of two cases which have lately come under observation.

## CASE REPORTS.

CASE 1.—M. J. T., aged 52, a man of splendid physique, always had good health. No one in his family had ever shown signs of tuberculosis. His children are types of perfect health and vigor.

*History.*—At the age of 28 he began to notice some little pimples on the lobules of the right auricle. He did not think anything of it and let them go until they began to ulcerate. Other nodules were formed in the concha, which, on ulcerating, began to make their way down into the tissues. He consulted several physicians, who all agreed it was a case of cancer. The patient was greatly discouraged, and for a long time contented himself with a simple medication to keep the ulcerated surface clean.

*Examination.*—The process, however, kept progressing. When he was first seen, after nineteen years, the auricle had been nearly destroyed. A piece of the upper portion of the helix was ulcerated and hanging down, which was removed and kept for biopsy. The antihelix and the concha were entirely destroyed and the surface was converted into two deep, tuberculous ulcers. One of them, of the size of a half dollar, working backward and up on the squamous and on the mastoid process, showed at the bottom decayed and ulcerated bone. The other ulcer was seated in front and underneath the auditory canal, and with its granulations and the edematous swelling of the tissues, had entirely closed the meatus. Its progress had gone so deep that the auditory function had been totally destroyed, and patient had paralysis of the eyelid and of the facial nerve of the same side. This showed that the tuberculous process had spread deep in the pars petrosa, had destroyed the cavum tympani, and had very likely damaged the labyrinth. From the facial paralysis we can argue that the same process had made its way into the canalis Fallopii, producing pressure on the seventh pair, the facial nerve. This condition became more and more apparent toward the end, when patient could no longer swallow his food, on account of the anastomoses between the comunicans and the nervi palatini descendentes, which are motor ramifications for the muscles of the palate.

*Treatment.*—When patient was taken under treatment the ulcers were touched up with pure lysol, the granulations were scraped off with the sharp curette, and in a short time the condition of the ear was such as to promise a speedy recovery. The improvement, however, was only illusive, because after some time the ulcer began to extend upward on the squamous portion of the temporal and backward, with necrosis of the mastoid process. Opening the mastoid cells in a downward direction, the ulcerative process, round in shape, with thick infiltrated edges, showed at the bottom of the ulcer the exposed muscles and the ramifications of the nerves. At this point deglutition could not be effected, the digestion was impaired so much that the patient lost over 40 pounds. He became very weak, and the end came very likely from the implication of the nervus vagus in the ulcerative process.

In this case there were used also the Finsen light, x-rays, and every device which could have been suggested

in the case in order to stop the tubercular process, but nothing succeeded in doing so. While the patient was under my treatment, over one year, he never had any fever or showed symptoms of infection in the general system. The symptoms were only of local origin, consisting in paralysis and in a burning and boring pain, which was especially troublesome at night. The application of the x-rays only had a beneficial effect on this continuous pain.

CASE 2.—F. W. H., farmer, aged 26, of splendid physique had always enjoyed good health.

*History.*—In his mother's family some members had died with tuberculosis. He was in Colorado camping for some time in order to attend one of his family who was affected with tuberculosis. He has never shown a sign of pulmonary trouble, nor has his family. The climate and the open air treatment proved beneficial to his relative, and he returned to his Kentucky farm. He claims that his trouble started from a wound



Fig. 1.—Tubercular ulcer of the ear from lupus of 18 years' standing.

produced by a corn cob striking his right ear in 1886. The wound ulcerated, for which he sought medical attendance. The auricula was scraped, and after the operation erysipelas set in, which caused loss of tissue. He has received medical attention off and on, as he was discouraged by the stubbornness of his affliction. Some two years ago he called on me for treatment. The auricula had been totally lost and the whole surface was ulcerated. Indeed, he called on me more for a patch of whitish nodules in the form of tuberculosis lupoides affecting the zygomatic region, extending to the internal angle of the right eye. The tuberculous ulcer of the ear was for him of a secondary importance. The tuberculous nodules of the face were scraped off and cauterized with pure lysol, and with this method was obtained a regular superficial scar, which is scarcely visible.

*Treatment.*—The ulcer of the ear was treated with the light treatment of the Lortét and Genou appliance. In the beginning

\* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.



it did much good, so much as to make me hope for a perfect recovery. The surface, however, began to ulcerate again, and the treatment was discarded. The x-ray treatment came next, which did not produce any beneficial effect. For a while I have limited myself to touching the new tuberculous ulcers with pure lysol, and dressing the surface with sublimate gauze. The lysol has often been substituted by iodoglyeerin.\* In this way the tuberculous ulcers have been kept in check and healed up. When the best eicatrix had been obtained, suddenly under the scales small miliariform tuberculous ulcers formed, round or oval shaped, with a yellowish bottom, and

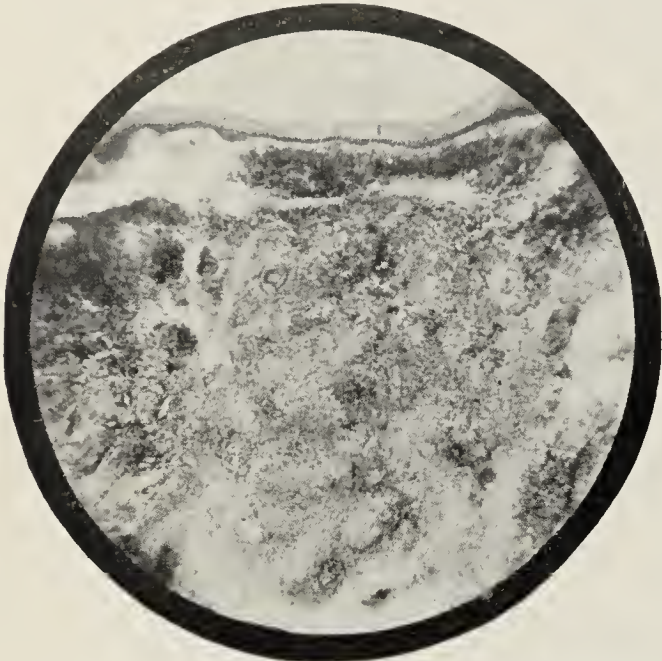


Fig. 2.—Tuberculous infiltration free from limits.

with a tendency to spread. The ulcerated surface is somewhat triangular in shape, with the apex at the place of the destroyed lobulus, and with the base on the squamous portion of the temporal bone (Fig. 1). One of the angles reaches the mastoid process, the other the zygomatic. The bony substance of the squamous portion of the temporal has been denuded and has fallen in a superficial necrosis, which has sloughed off and is at present cicatrized. The internal ear has not been disturbed and a small piece of cartilage still remains, forming the meatus of the auditory canal. The hearing is maintained per-

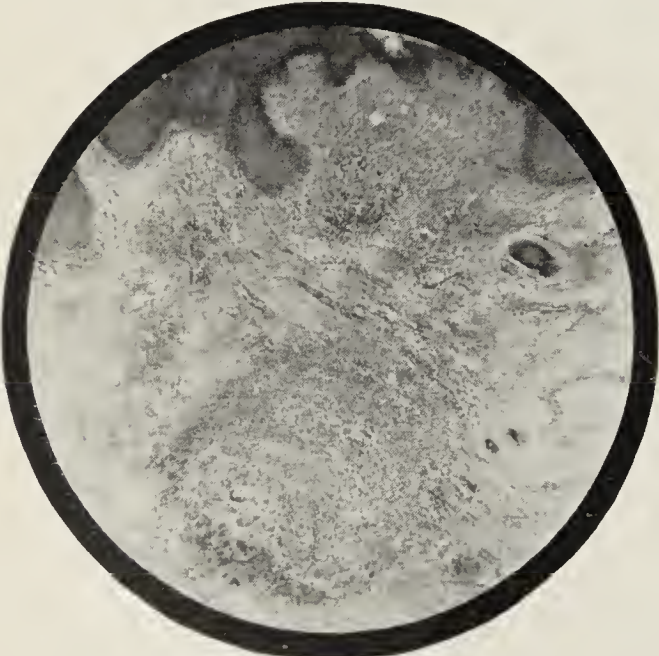


Fig. 3.—Lupus tubercle in the derma.

fect, so that if a little secretion stops the canal he requests to have it removed on account of closing his ear.

ETIOLOGY.

In both cases I examined the secretion of the ulcer by smear preparation, and have been able at times to

see the presence of the tubercle bacilli. Of its presence there could never be any doubt, after seeing the lupoid reproduction on the patient's face in Case 2, and not long ago the formation of a warty production on the back of his left hand, which was a clear case of tuberculosis verrucosa. It was easily destroyed by cauterization with pure *lysol*, leaving only a superficial scar.

It seems that the tubercle bacillus which does not find a good ground for its development in the derma, when it affects loose connective tissues, or its equivalent, as fasciæ, bones, etc., takes on great activity. The derma with its resistant stroma and elastic fibers, more easily surrounds and encapsules the tubercle bacillus, which sometimes remains a long time in the skin in a dormant state without producing infection. The bacillus may remain concealed for a period of years in the scars of lupus, as a potentiality without causing trouble. But the time comes when, waking out of this dormant stage, it develops tubercles with the reproduction of the dreadful process and with destructive consequences.

The etiologic origin of lupus vulgaris was established from the discovery by Koch of the bacillus tuberculosis. The histopathologic nature of lupus to attack connective tissues was at first revealed by Auspitz,<sup>1</sup> and confirmed by Virchow,<sup>2</sup> so much so that the question seemed set-



Fig. 4.—Tuberculous process, invading Haversian canal, from a decayed scale of bone.

tled forever. When Schüppel found the giant cells in tubercular glands, and Bizzozero<sup>3</sup> and Friedland<sup>4</sup> demonstrated their presence in lupus of the skin, then the microscopic anatomy of this disease took a new direction. Lang<sup>5</sup> thought that the diagnosis of lupus rested on the finding of the giant cells. But he also called attention to a proliferation of the connective elements of the blood and lymph vessels forming meshes around the cellular infiltration of the tubercle.

The interest, however, in the part which the connective tissues play in the process has remained, and I believe that to them is due the different reaction of the skin in the different morbid types of cutaneous tuberculosis. Since the experiments of Krompecker and Zimmermann<sup>6</sup> proving equal virulency of the tubercle bacilli in a rapidly developing case of lung tuberculosis, and in a chronic tuberculous process of the bones, we can

\* This consists of:  
Iodin pure .....gr. x | 65  
Potassium iodid .....3ss | 2  
Glycerin .....3vi | 25  
Mix. Use externally.

1. "Ueber die Zelleninfiltrationen der Lederhaut bei Lupus," Wien. med. Jahrb., 1864.  
2. "Geschwülste," vol. ii, quoted by Lang.  
3. "Tuberculose der Haut," Centrbl. f. d. med. Wiss., 1873.  
4. "Untersuchungen über Lupus," Virchow, Arch., lx.  
5. "Zur Histologie des Lupus," Vierteljahr, 1875.  
6. Centrbl. f. Bact., 1903, xxxiii, p. 580.



not attribute the difference in the forms of cutaneous tuberculosis to a different intensity of virulence of the bacillus. The difference of clinical pictures may be also attributable, according to Pick,<sup>7</sup> to the difference in the nutrient soil, rather than in the source of the causative factor. From my observations I infer that so long as lupus remains in the domains of the thick structure of the derma its progress is greatly restrained. When lupus has affected the loose connective tissues of the skin, then it is no longer under any control, and in a short time is reproduced in a nodular or in a diffused form, which represents miliary tuberculosis of internal organs.

#### PATHOLOGY.

The infiltrating cells which form the lupus nodules, by faulty process of their protoplasm have no longer the power to appropriate nutritious materials carried by the blood, and die, forming foci of degeneration. Unna<sup>8</sup> names this kind lupus radians, when in consequence of the pressure on the tissues from free foci, degenerative changes soon take place. Tubercular infiltration does not form nodules any more, but spreads in all directions into the spaces of the tissues. Figure 2 gives a good idea of the irregular infiltration, while Figure 3 shows lupus nodules surrounded by collagenous fibers. In the first, all presence of plasmom is lost, and to plasmom



Fig. 5.—Papillary proliferation from lupus infiltration.

is due the faculty of encapsulating tuberculous infiltration. In the other the infiltration is guarded by the connective tissues. In cases of radians lupus the tubercle bacilli act with more intensity and after the dissolution of the plasmom easily destroy the other tissues. Figure 1 clearly shows the spreading of tubercular infiltration around an Haversian canal. There is no plasmom to restrain the diffusion of the tuberculous process.

It seems that the intensity of the virulence of the tubercle bacilli is prevented from spreading by the solid structure of the derma. Figure 5 has been taken from a vegetating focus of lupus, growing on the nasal angle of an inferior eyelid in the patient in Case 2. It was the result of an accidental inoculation. Plasma cells are thickly disposed in the form of a wall around the foci of the infiltrating lupus. They are lined in the papillary layer around the blood vessels and down in the thickness of the derma. It seems they are a protection to the blood vessels which are not compressed by the in-

filtrating process, and are spared from destruction. The plasma cells are mostly made by the connective tissue corpuscles, and by the collagenous fibers. The elastic fibers are also well maintained between the lines of the plasma cells.

The tuberculous infiltration when out of control from the plasma cells spreads and invades cartilage and bone. In Figures 6 and 7 the line of tuberculous infiltration is clearly shown, invading the cartilage whose cells soon die. In the same way as shown in Figure 4 the bone



Fig. 6.—Tuberculous infiltration invading cartilage cells.

cells invaded by the tuberculous infiltration are converted into a tuberculous mass. The degenerative process soon takes place and tuberculous ulcers with necrotic bottoms result in the bones and in the cartilages.

When the tuberculous process has reached the subcutaneous tissue, it forms large nodes, or tuberculous gummata. It finds also an easy way to spread in every direction and attacks fasciæ, periosteum, and the bone is no obstacle to its invading virulence.



Fig. 7.—Tuberculous process invading cartilage.

This kind of lupus causes an acute serofibrinous inflammation, which causes the tissues to be imbibed with lymph, and the quick spreading of the process. In one of my cases a lady who has been afflicted for many years with lupus of the face and arms, now healed, has recently shown tuberculous nodules on her left foot and leg, with hard persistent edema of the whole foot and toes. The nodules made their appearance as red round patches of the size of a dime or greater, are swollen and

7. "Tumorlike Forms of Tuberculosis of the Skin," Transl. by Klotz, Journ. Cut. Dis., July, 1904.

8. "Die Histopatologie der Hautkrankheiten," p. 579.



exceedingly painful. In a short time they appear soft, showing fluctuation. When opened, a scanty bloody serum issues, together with adherent masses of necrotic tissues. In the smear preparation of this serum, tubercle bacilli were present several times. It seems that a degenerative condition affects tissues and cells, causing a fluidification of the substance of the cells. The lymph spaces filled with abundant serum offer good channels for the spreading of the process as interstitial edema. The serum which infiltrates the tissues is soon coagulated and the process through it spreads to the deep structures. The virulence of the tuberculous infection causes the acute inflammation and the prompt fluidification of the infiltrating elements, and the tissues are converted into necrotic masses. The edema, which forms lupus tumidus, is remarkable on account of its development and of its persistence. Whenever it is present it shows that lupus is of rather a severe nature.

Indeed, any case of lupus has to be considered as a serious affection, and has to be treated to the end. The cases referred to had been dragged along for years without accomplishing any permanent curative result. The disease which at first looked like one of little importance, has taken such proportions as not only to mutilate the patient, but to menace life. Prognosis, therefore, requires great seriousness, and the patient must realize that he has to be cured in the beginning of the disease, because later on, when it has spread, cure will be more difficult, or probably impossible.

#### TREATMENT.

In reference to the treatment, I have used every possible means, but the results have been discouraging. The application of Finsen light with Lortét and Genou apparatus, in the first case was of no benefit, in the second case it proved at first beneficial. The process, however, took more severe proportions, so much so that I was obliged to change treatment. The exposure to *x-ray* proved beneficial in the first case, so that it had caused nearly all ulcerations to heal, but it was unsuccessful in the second. In the first case the *x-ray* treatment had stopped the continuous pain, in the depth of the ear, in the second it irritated and caused so much discomfort that its use had to be stopped. In both cases I had moments of hope, the process seemed conquered and recovery assured. Suddenly new ulcerations were formed, undermining the bones. In the first case the process had gone too deep and scraping was not advisable. In the second case, in which the process was more superficial, the whole surface was scraped off and covered with skin grafts. For a while it seemed to be healing, but after a time new ulcers were formed in the center and in the periphery, which soon left the ulcerated surface in the former condition.

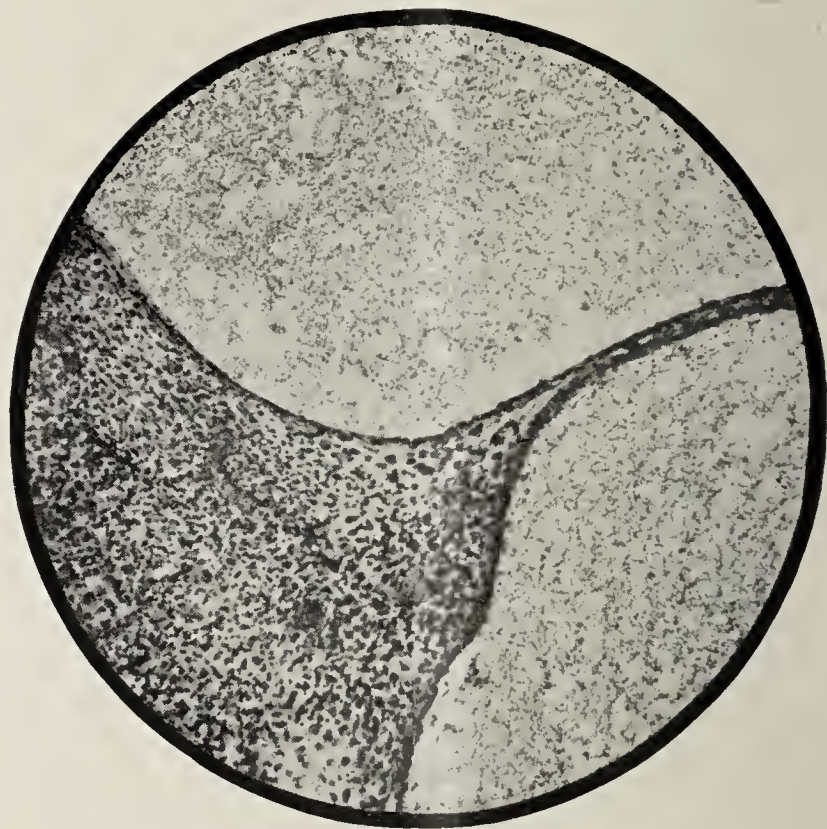
The best results so far have been obtained from the applications of pure lysol. The new ulcers are touched up with a piece of cotton dipped in lysol; the pain is not excessive. It produces a coagulation of the serum of the tissues, so as to form a hard, whitish eschar, which falling out leaves a healthy tissue which soon cicatrizes. In the case of diffused lupus of the foot, I have obtained the best results from lysol. When the nodules appear, I open them and remove their contents, and insert a piece of cotton saturated in lysol. In a short time the nodules are brought to recovery.

#### DISCUSSION.

DR. M. L. HEIDINGSFELD, Cincinnati, asked if the tuberculin test had been applied in the cases reported by Dr. Ravogli. Dr. Heidingsfeld has resorted to this test in many cases with

the most satisfactory results, and he places great reliance on it. He can recall cases which he regarded as tuberculous, and which on histologic examination proved to be something else after the tuberculin test had proved negative. In certain superficial forms of epithelioma which have a tendency to progress very insidiously, the resemblance to lupus is very close, and the injection of tuberculin is a valuable diagnostic aid. Many cases, he said, are doubtless reported and recorded as tuberculosis which would be given an entirely different interpretation if tuberculin were more generally employed. Of the value of the Finsen rays, Dr. Heidingsfeld said that the poor results often attributed to that method of treatment may be more justly ascribed to defective technic. A 5-ampere lamp can not be expected to be as efficacious as a 50-ampere lamp, and he does not believe that anything under a 25-ampere lamp can be depended on to give any results.

DR. A. RAVOGLI, Cincinnati, said that he has given tuberculin a prolonged trial in tuberculous affections of the skin. He began with the older tuberculin, and afterwards used the tuberculin T. R., and his experience with both of these preparations has been very discouraging, as he has seen serious results following the injections. He mentioned the case of a woman with lupus erythematosus who was given an injection of tuberculin T. R., which was followed by a high temperature and marked local reaction. Subsequently she had a re-



ILLUSTRATING THE ARTICLE OF DRS. GAYLORD AND CLOWES.

Fig. 1.—Microphotograph.  $\times 81.6$ . (Low power.) Original slide of Dr. Loeb showing character of primary sarcoma of the thyroid in the second Chicago rat. This slide is made from a recurrent mass which developed on the site of the primary tumor. To the left sarcoma tissue which extends into and subdivides a large cyst containing coagulated serum.

lapsing fever, and died with the symptoms of pulmonary tuberculosis within a month or two. He also mentioned another case which he saw in consultation, in which an injection of von Ruck's preparation of tuberculin had been made. At the site of the injection a tuberculous ulcer developed, which subsequently involved the neighboring glands, and the patient died in the course of a few weeks. Since then, Dr. Ravogli said, he has entirely abandoned the use of tuberculin in spite of some fairly satisfactory results with the older preparation, which he published a number of years ago in the *Chicago Clinic*. In his work in the future he will refuse to resort to it unless he can be convinced that it will not injure the health of his patients. The diagnosis of tuberculous affections of the skin can be made by inoculations in lower animals without resorting to tuberculin. The method in which the lesion extends, its clinical appearance and anatomic and pathologic features usually furnish sufficient data on which to base the diagnosis.



# EVIDENCES OF INFECTED CAGES AS THE SOURCE OF SPONTANEOUS CANCER DEVELOPING AMONG SMALL CAGED ANIMALS.\*

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The employment of small animals suffering from cancer for purposes of laboratory experimentation has brought to light the fact that the endemic occurrence of

cancer in animals is a not uncommon phenomenon. The classical case of carcinoma in rats reported by Hanau<sup>1</sup> and the more recent observation of endemic occurrence of carcinoma of the breast in mice by Borrel<sup>2</sup> are well known. Michaelis<sup>3</sup> has likewise recently reported the finding in the course of one year in a single cage of 5 cases of carcinoma in the mouse. Loeb<sup>4</sup> refers to an article by Cooper, in the *Veterinarian*, on the endemic occurrence of cancer of the parotid and submaxillary

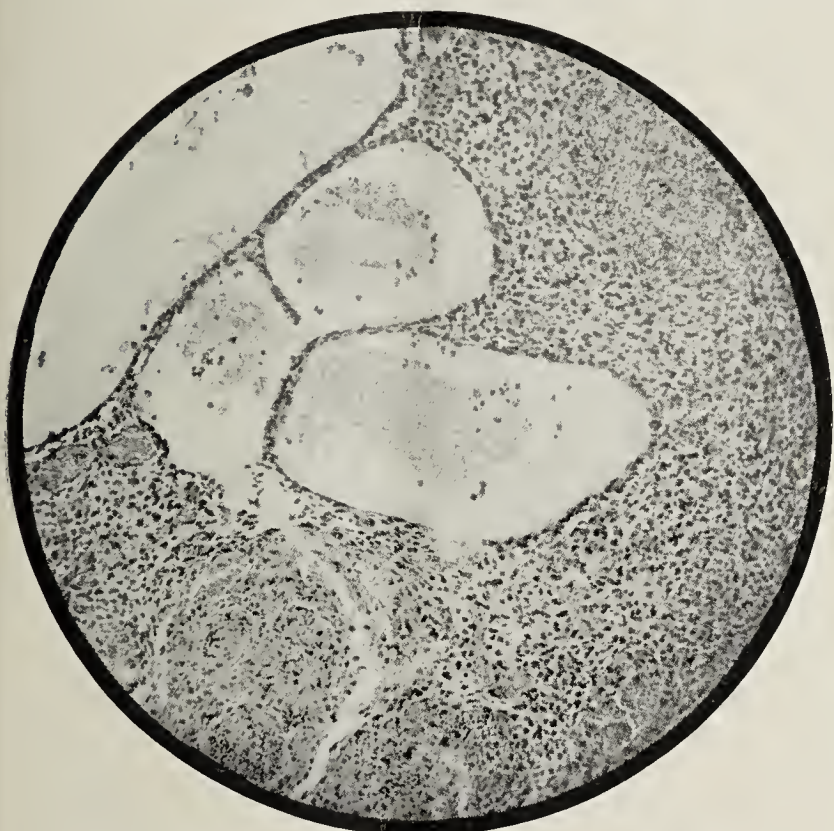


Fig. 2.— $\times 81.6$ . (Low power.) Transplantation tumor (Dr. Loeb) after 19 days from primary tumor shown in Fig. 1, showing tendency to cyst formation.



Fig. 3.— $\times 280$ . (High power.) From section of tumor transplanted from the same source by Dr. Loeb while in Buffalo. This indicates the characteristics of the tumors developing in the rats which occupied the cages during the period of Dr. Loeb's stay at the New York State Cancer Laboratory.

Through the kindness of Dr. Loeb we are able to present three microphotographs. Figures 1, 2, and 3, taken from the second primary cystic sarcoma of the thyroid found in Chicago, from the small intraperitoneal transplanted nodule made by him before coming to Buffalo and a high power microphotograph of a transplanted tumor made in Buffalo from the same source. These when compared with Figures 4, 5 and 6 from similar primary and transplanted tumors from our own Rat B clearly show the striking similarity of these tumors, both primary and transplanted.

\* From the New York State Cancer Laboratory.

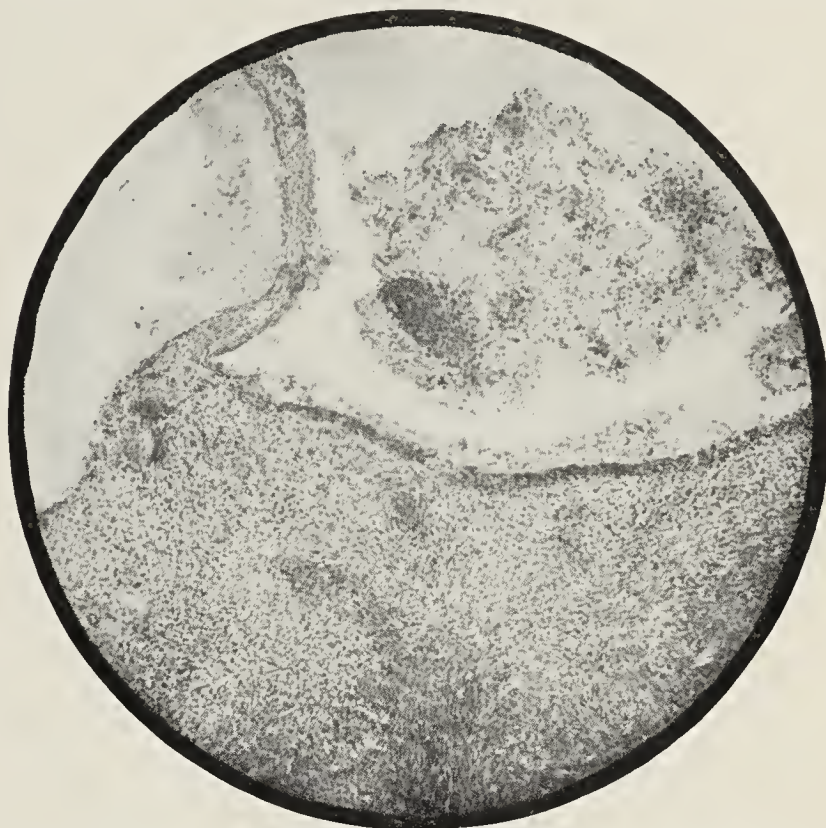


Fig. 4.— $\times 81.6$ . (Low power). Section of primary sarcoma of the thyroid in Buffalo Rat 3, showing the sarcoma tissue below extending upward and subdividing large cyst containing disintegrating sarcoma cells and serum; to be compared with microphotograph. Fig. 1, from Dr. Loeb's primary tumor.

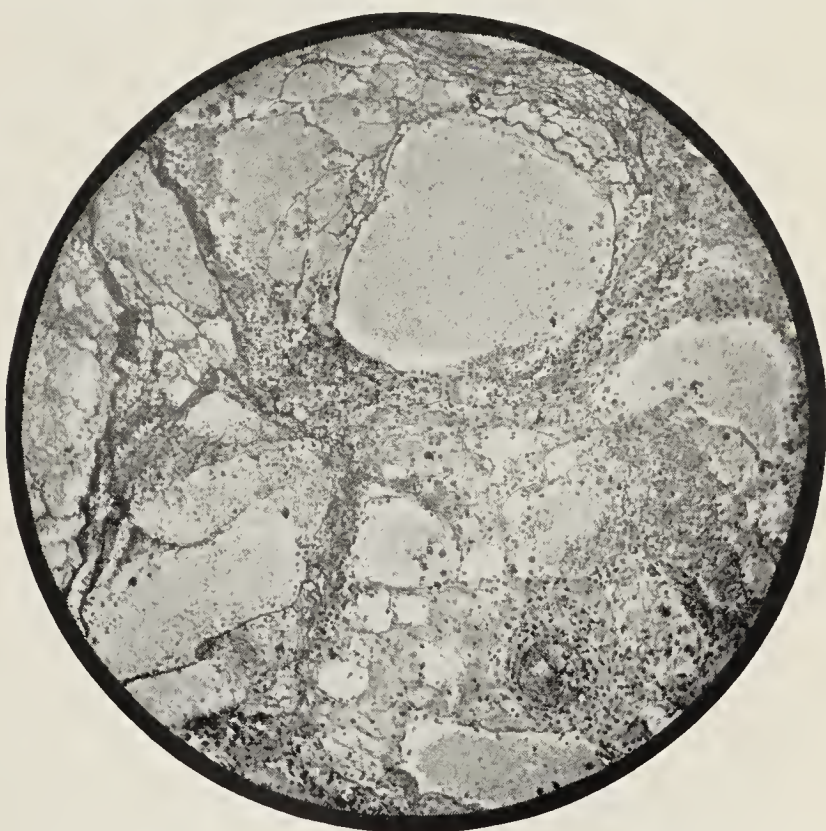


Fig. 5.— $\times 81.6$ . (Low power.) From cystic portion of tumor transplanted from Rat 3, third generation, showing tendency to cyst formation persisting in transplanted tumors; to be compared with Figure 2 of Dr. Loeb's tumors.

glands in the cow, and has himself reported the endemic occurrence of epithelioma of the inner angle of the eye in cattle observed in the Chicago stockyards.

1. Fortschr. d. Med., 1889, vii.
2. Ann. de l'Inst. Pasteur, 1903, xvii.
3. Ztschr. f. Krebsforschung, 1906, iv, No. 1.
4. Centrbl. f. Bakt., 1904, xxxvii.



The endemic occurrence of malignant tumors in animals, especially laboratory animals which are confined in cages, and whose diet is controlled, and which are under much closer supervision than even the animals of the field, renders observations in regard to the infectiousness of cancer among these animals of much greater significance than many of the similar observations applying to

ing from 2 to 7, and he refers to an epidemic of this affection reported by Bonnet<sup>6</sup> which occurred in the fish hatchery at Torbole on the Gardesee, which, between the middle of February and the end of June, destroyed no less than 3,000 fish. Pick's investigations show that certain hatcheries are entirely free from this affection; that when the fish are affected the disease is confined to

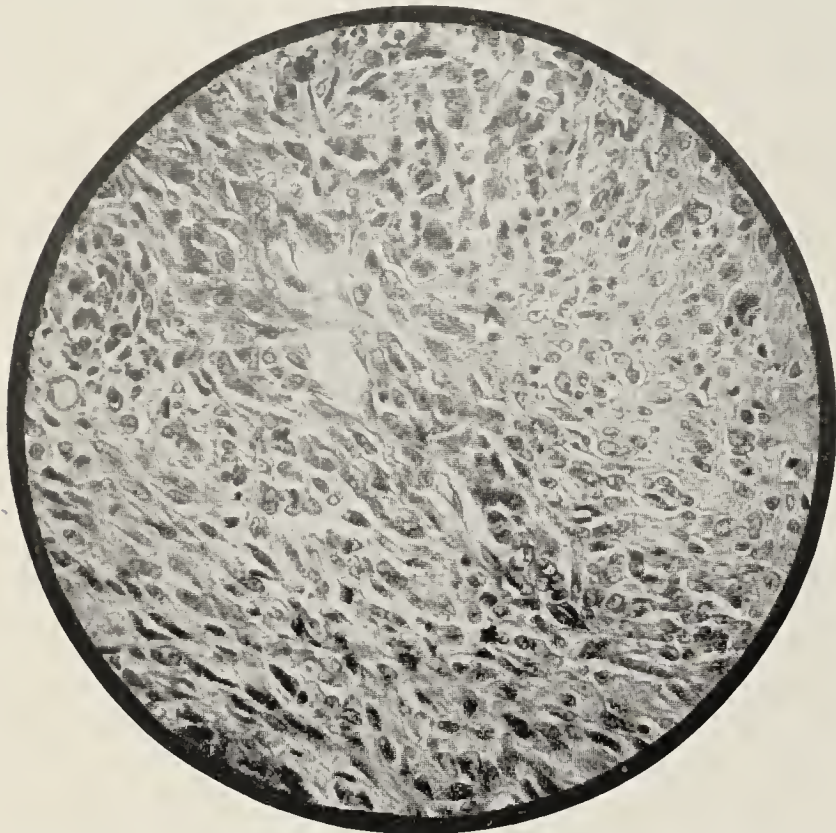


Fig. 6.— $\times 280$ . (High power.) Sarcoma tissue from transplanted tumor, first generation from Buffalo Rat 3; to be compared with Figure 3 of Dr. Loeb's tumor.



Fig. 8.— $\times 280$ . (High power). Primary tumor of rat 2, showing fibrous character of primary tumor.

cancer houses and the endemic occurrence of cancer among human beings.

In the light of these interesting observations, the recently reported discovery of the endemic occurrence of cancer of the thyroid in the brook trout hatcheries in

individual tanks or pools in which the fish are kept; that wild fish introduced into these ponds for the purpose of replenishing the stock acquire the disease, which observation, to his mind, obviates the necessity of considering heredity an important factor in the development of the

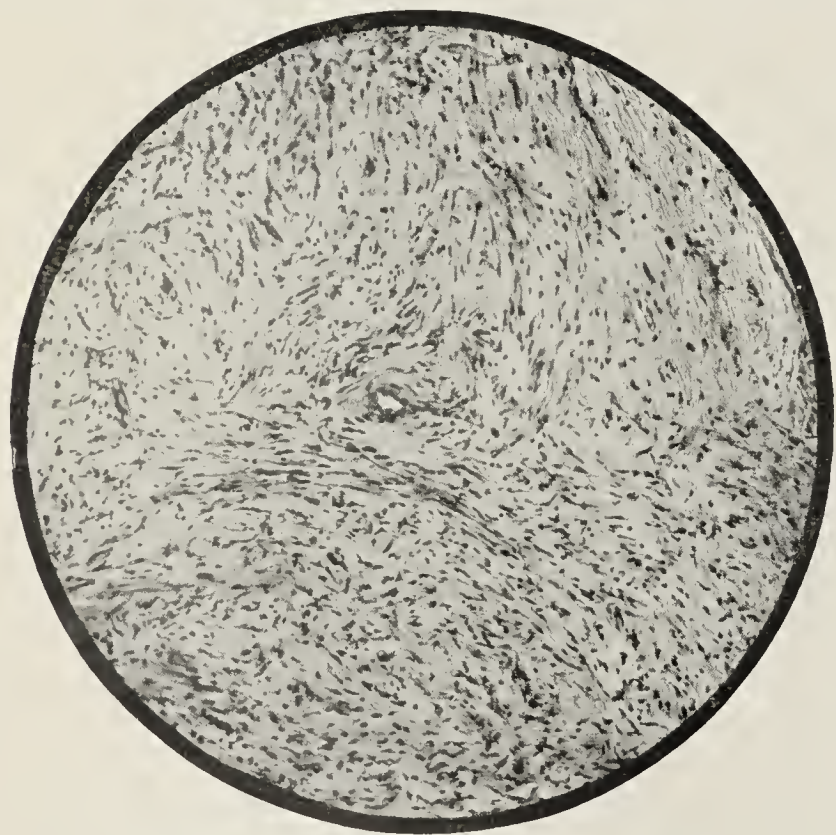


Fig. 7.— $\times 81.6$ . (Low power.) Section of primary tumor of Rat 1, fibrosarcoma on abdominal aspect. First rat discovered in cage in 1904.



Fig. 9.— $\times 280$ . (High power.) Buffalo Rat 2. Section of metastasis in median fissure of liver showing sarcomatous character of tumor and the tendency to formation of intracellular fibrous substance.

Germany by Pick<sup>5</sup> is of the greatest significance. Pick finds that cancer of the thyroid in the various varieties of trout occurs in certain hatcheries in a percentage vary-

infection. His observations establish beyond doubt the nature of the affection, which is true carcinoma, and he concludes that the endemic occurrence of cancer among

5. Vortrag gehalten i. d. Berl. med. Gesell., 1905, October.

6. Bayerische Fischereiztg. München, 1883, No. 6, p. 79, *et seq.*



trout only in certain tanks of hatcheries indicates that the water of these tanks contains the agent which is the cause of the disease. This occurrence he compares with the drinking water origin of struma as it exists in Switzerland, and concludes that the agent, whether chemical, bacterial or protozoan, must be present in the water in which these fish have been kept. During the past two years cases of endemic occurrence of tumors in small animals confined in cages have come under our observation which strongly indicate that cages under given conditions can become infected.

In the case of the sarcoma rats about to be reported, the manner in which the cage became infected would appear to be fairly obvious. The facts pertaining to this observation are as follows: In 1904, Loeb<sup>4</sup> describes the endemic occurrence of primary cystic sarcoma of the thyroid in rats confined in a group of cages in the laboratory of the Chicago Policlinic. The rats in question were found in three or four closely arranged cages which were used to confine a number of rats which were presumably the offspring of a few males and females which had originally been brought into the laboratory. The rats were changed about from cage to cage during the period referred to. In January, 1900, a case of cystic sarcoma of the thyroid was found in these cages. This

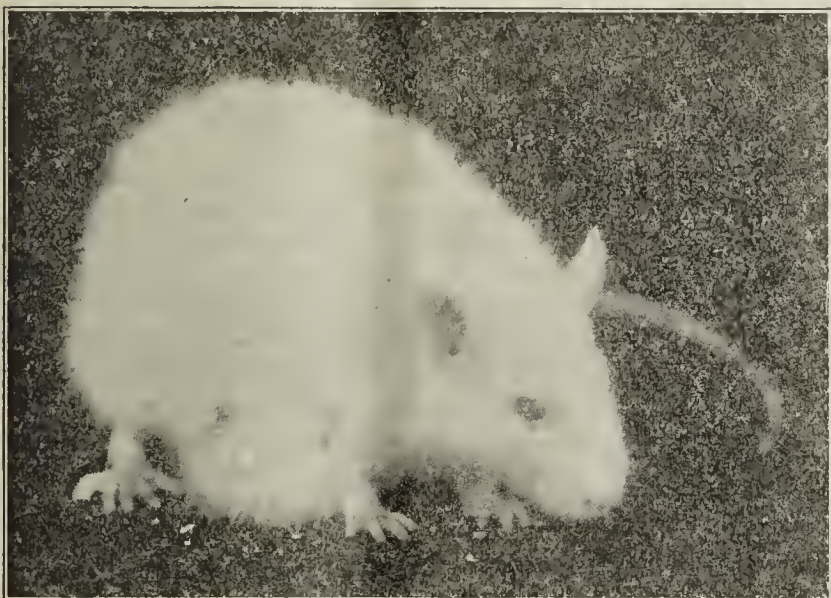


Fig. 10.—Buffalo Rat 1. Large fibrosarcoma of abdominal aspect. Found in cage, July, 1904, which had contained Dr. Loeb's rats in 1903.

tumor was transplantable. In August, 1901, a second rat with cystic sarcoma of the thyroid was found in these cages. This was also transplantable. In the autumn of 1903, a third case of cystic sarcoma of the thyroid was found in these cages and this, in the hands of Dr. Herzog, who reported the fact, did not yield results on transplantation.

The structure of these tumors showed but slight differences. Loeb called attention to the fact that the great similarity of the tumors and the fact that they occurred in a relatively small number of rats, which had all at one time or another, occupied the same cage, indicated that the tumors must owe their origin to a common source. Inasmuch as the rats were all descendants of common ancestors, he was unable to exclude the possibility of the endemic occurrence of these tumors being due to heredity, but felt that the observation just as strongly indicated the possibility of a common source of infection in the cages.

These three cystic sarcomas of the thyroid proved on microscopic examination to possess practically identical histological characteristics. These characteristics in the first and second tumor persisted on transplantation. The

clinical course of the disease in inoculated rats was the same. They grew rapidly on inoculation and in the later stages developed cysts of considerable size which contained a straw-colored serum which coagulated on exposure to the air. Areas of necrosis were not infrequent in both primary and transplanted tumors. Loeb demonstrated that the inoculated tumors were derived from implanted cells and that the tumor was a true sarcoma and not an infectious granuloma, in the sense which Bashford<sup>7</sup> has recently employed in attempting to show that the round-celled sarcoma of Sticker<sup>8</sup> was not a true tumor.<sup>9</sup> Dr. Loeb demonstrated sections of both the primary tumors and the inoculation tumors on various occasions before scientific societies and the universal opinion of all pathologists has been that they were true spindle-celled sarcoma.

In the spring of 1902 Dr. Loeb was engaged in the

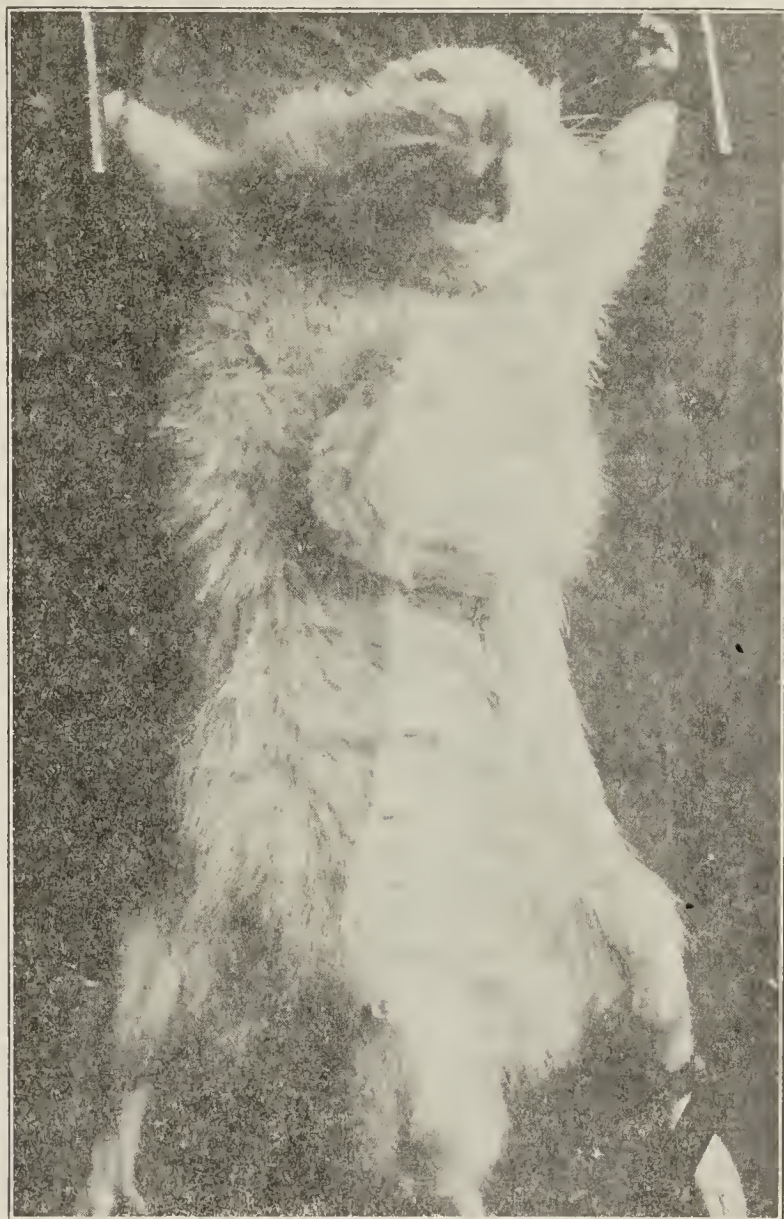


Fig. 11.—Buffalo Rat 2. Large fibrosarcoma of abdominal aspect. Developed tumor in same cage and was first observed October, 1905.

transplantation of the second tumor and at our invitation came to the State Cancer Laboratory in Buffalo, bringing with him a number of inoculated rats from the second tumor. This tumor had at that time been transplanted through a number of generations. For his accommodation two large cages and a number of smaller ones were made. During the course of his stay in Buffalo these cages all contained at one time or the

7. Scientific Reports on the Investigations of the Imperial Cancer Research Fund, 1905, part 2.

8. Ztschr. f. Krebsforschung, 1904, i, No. 5.

9. In this connection it may be stated that Ewing and Beebe have recently investigated a similar round-celled sarcoma in the dog to that of Sticker and have arrived at the conclusion that Bashford's interpretation is not correct and that both of these tumors are round-celled sarcomas.



other, numbers of successfully inoculated rats. In October, 1902, Dr. Loeb went to Montreal, taking his rats with him. Some inoculated rats were left in the cages but none of these developed tumors, and by December, 1902, the remainder were disposed of. *During the period from December, 1902, until the summer of 1903, there were no rats in the laboratory.* The smaller cages were placed in the hot-air sterilizer and sterilized; the two larger, being too bulky for this procedure, were brushed out and stored in the back part of the animal room, where they remained unused until the summer of 1903, when they were employed for a number of rats brought into the laboratory for purposes of study other than tumor implantation. These rats were killed at various periods and on the conclusion of the work perhaps a dozen rats were left in the two large cages; in one cage 4 rats, in the other 6 or 8. This entire lot of rats was obtained from a totally distinct source from those which Dr. Loeb had employed.

In July, 1904, in one of the two large cages, which had not been subjected to sterilization after Dr. Loeb's departure, and which at that time contained 4 rats, a rat was discovered with a large tumor on the right abdominal aspect and a smaller tumor adjacent to it in the axillary region, about the size of a hazelnut. The large tumor was movable, dense, and about the size of an English walnut. The rat appeared to be in good condition and on July 12, the large tumor was removed by operation. It proved on section to be a slow-growing fibrosarcoma. Portions of the tumor were inoculated into a number of rats but none of these subsequently developed tumors. There was no local recurrence of the tumor at the site of operation and on the death of the rat some months later, the smaller nodule in the axilla was found not to have changed in size. The remaining rats were removed from both cages.

Eight rats were now placed in the cage in which the tumor had appeared from an entirely new source. In the other cage of similar size were placed 6 or 8 rats from the same source as the rats now placed in the infected cage. Both cages were now removed to the basement. They had previously been in the animal room of the laboratory, which is on the fourth floor. The conditions in the basement were not essentially different, except that the room was not so well heated and possibly more damp. The rats remained undisturbed in these cages in the basement of the laboratory from August, 1904, until October, 1905. At that time 3 adult rats were in the cage in which the first tumor had been found. They were the survivors of the 8 which had been originally introduced into the cage in August, 1904, 5 having died of intercurrent disease (tuberculosis) one three-quarters grown female which had obviously been born in the cage and a litter of 10 half-grown rats, not over 6 months old, all of these the offspring of the adult rats originally placed in the cage. Of the 3 adult rats, 2 were males, 1 a female. The two males were found on examination each to have a large tumor. One of these had a tumor located on the right side of the abdominal aspect directly behind the right fore-leg. It was about the size of a fifty-cent piece, 1 cm. in thickness. The other male adult rat possessed a tumor the size of a walnut in the thyroid region. This tumor, because of its great size, embarrassed the respiration of the rat and it died, October 6. This rat is known as Buffalo Rat A. The notes of the autopsy are as follows:

The tumor occupies the thyroid region and extends from the chin to the sternum. It is nearly spherical. It measures 35

mm. in the long axis by 45 in the transverse axis. The skin over the tumor is thin, of bluish appearance, but everywhere perfectly movable. The tumor is fixed at its base, is nowhere adherent except in the median line in the deeper portion of the neck. The greatest thickness of the tumor is 35 mm. its weight is 19.8 gm. On dissecting up the tumor it is found to be distinctly encapsulated, easily dissected from the skin, with areas of deep purple mottling on its superior surface and injected blood vessels in the capsule. Toward the base the tumor is of lighter color and greater consistence. It is easily dissected down to a point where its anatomic relations correspond with the thyroid. There is no evident compression of the trachea.

On opening the abdominal cavity the mesentery is found to contain a considerable amount of fat. Intestines are collapsed and pale. The liver is greatly enlarged and presents a typical nutmeg appearance.

On examination of the lungs the lower lobe on the left side is found to be in a state of consolidation, with mottlings of deep red, on which are distributed well defined areas of pale white. The upper middle lobe on the right side shows the same condition. The left adrenal is enlarged, hyperemic and nodular in appearance, is very friable on removal. The kidney is soft and large. The right adrenal is small and of normal appearance. Kidneys on both sides present the same appearance, somewhat enlarged, dark red, granular surface.

The liver on section presents the characteristics of high-grade fatty degeneration and cyanosis, typical nutmeg appearance. The spleen and pancreas appear to be of normal size and appearance. The retro-bronchial lymph nodes are not enlarged, the mesenteric lymph nodes are also not enlarged. The enlarged left adrenal on section is of dark red color, friable and soft.

On opening the tumor the left half is found to consist of a thick-walled cyst containing clear, straw-colored fluid which, on exposure to the air, coagulated. The wall of the cyst is pinkish white, the interior smooth and glistening. The right lobe of the tumor consists of friable, pinkish white tissue, with large areas of hemorrhage. The entire tumor, after removing specimens for microscopic examination, was ground up with salt solution and injected into rats.

Histologic examination of this tumor shows it to be a spindle-celled sarcoma, containing frequent cysts. Here and there in the primary tumor are remnants of thyroid epithelium, arranged in the form of irregular nests, but showing no evidence of proliferation. The typical sarcomatous structure is well-defined at the margins of the large cystic cavity, which forms the bulk of the tumor. After removing sufficient material for hardening, the remainder of the tumor was broken up into small pieces, under aseptic conditions and used to inoculate 10 white rats and 6 parti-colored rats, by placing small pieces of the tumor beneath the skin with a sterile trocar. Four rats were also inoculated with the serum obtained from the large cystic cavity. The result of the first attempts at inoculation yielded 4 tumors, all in the white rats, none appearing in the parti-colored; 2 of these in white rats inoculated with fragments of tumor through a trocar, and 2 from the 4 rats inoculated with the serum of the cyst cavity.

From the 4 tumors thus obtained the tumor has now been carried to the tenth generation of successful transplantation. In the course of inoculation we have had one or two tumors develop in the parti-colored rats, and although the percentage of successful inoculations is not as yet very high, the virulence of the tumor and the percentage of successful inoculations, appear to be increasing.

Sections from the tumors obtained by implantation present the histologic characteristics of the primary tumor. These tumors grow to great size and in the later days of the disease rapidly form cysts, by taking on large



quantities of serum. The behavior of these tumors is in every way like the implanted tumors which Dr. Loeb had in the laboratory in the spring and summer of 1902. The histologic characteristics of this tumor both in the primary and implanted tumors, differ from Dr. Loeb's primary and his secondary implantations, only in minor details. They show the same characteristic structure of sarcoma tissue into a network surrounding the cysts. The only point of difference is an occasional appearance in the arrangement of the cells which suggests alveolar sarcoma, but most of the tumors are of the simple spindle-celled variety.

The second rat, Buffalo Rat B, found in the cage in October, 1905, was in good condition. On October 23 this rat was subjected to an operation at which the tumor was removed. At the operation it was found that the tumor extended beyond the median line. There was a small nodule detached from the tumor on the thoracic aspect and this was left *in situ*, after being cut in several directions with sterile shears. The tumor weighed 19.8 grams. It presented the macroscopic appearance of a fibrosarcoma. It was transplanted into 20 white rats. On section it proved to be a fibrosarcoma, identical in appearance with the tumor in the first rat discovered in the cage in the summer of 1904. Attempts at transplantation were all unsuccessful, no tumors developing in the 20 rats inoculated. The rat lived until January 10, 1906, when it was found dead in its cage.

The autopsy showed that the nodule which was left in place at the operation in October had increased in size, had infiltrated the surrounding tissues, and proved on section to be somewhat softer than when incised at the time of operation. The liver showed marked evidence of fatty degeneration. In the median fissure between the right and left lobes was a large metastasis of irregular shape, somewhat larger than a hazelnut. It involved the structure of the liver and on section was pinkish white in color. On elevating the liver numerous mesenteric metastases, one somewhat larger than a pea, and numerous metastases scattered over the peritoneal surface of the intestines, spleen and mesentery, were found. The tumor material and organs of the animal appeared to be badly contaminated and transplantation experiments were not undertaken. Histologic sections of the metastases of this tumor showed that it had assumed the characteristics of a rapidly growing spindle-celled sarcoma.

During the period in which these 3 tumors were found in one cage in the State Laboratory, no tumors appeared in the control cage, in which there were kept approximately an equal number of rats during the entire period, nor in the other cages in the laboratory, although during the greater part of the time, there were no less than 100 rats in various cages. No tumors developed in the smaller cages which were used by Dr. Loeb, but which were subsequently sterilized.

Sarcoma of the thyroid in the rat appears to be a rare affection. We have been unable to find reports of this disease except in the case of the 3 primary tumors observed by Dr. Loeb. For the purpose of ascertaining how frequent this affection might be, there was sent from this laboratory to 325 breeders of small animals in the United States, a postal card on which was printed a photograph of Rat A, with the inquiry as to whether or not these dealers had observed any case of a rat with a similar tumor in the neck and offering \$25 reward for each animal so affected. The inquiry was also made as to how many white rats the dealer had observed or handled during the preceding 3 years. Answers were received from 57 dealers, who reported having had approximately 20,000 white rats in their establishments. All but one or two stated they had never seen anything

like the photograph of Rat A, and none were able to give a description which clearly indicated that they had observed anything but abscesses or indefinite swellings in other regions in their animals.

A summary of the facts in this observation is as follows: There were 7 rats in all which survived in the infected cage. In the first instance 4 rats remained in the cage for a period somewhat over a year. One of these developed a large fibrosarcoma on the abdominal aspect. In the second case 3 rats survived in the cage a period of 14 months. Two of them developed sarcomas, one, Rat A, a primary sarcoma of the thyroid, Rat B a fibrosarcoma on the abdominal aspect. The histologic findings showed that the first fibrosarcoma and the second fibrosarcoma were neither transplantable. They presented the same histologic characteristics. The first one was totally removed and did not recur. In the second a nodule was left *in situ* and the animal died with abundant metastases of rapidly-growing spindle celled sarcoma. These tumors must then be looked on as malignant tumors, although they were not transplantable and the first one did not recur. The thyroid tumor presents all the essential characteristics of Dr. Loeb's sarcoma of the thyroid, implanted rats from which had previously occupied this cage.

It would be natural to attempt to separate the two fibrosarcomas from the transplantable and rapidly-growing sarcoma of the thyroid, and we should have expressed a possible doubt that they were derived from the same form of contagion, were it not for the recent experiments of Ehrlich and Apolant, which have demonstrated beyond doubt that even a carcinoma can, under given conditions, lead to the development of a sarcoma in connective tissue immediately adjacent to it. For this reason it would seem an unnecessary refinement to consider that the 3 cases of sarcoma, although in different regions in the animal and somewhat different in histologic details and experimental characteristics, were attributable to other than a common source. In the light of Borrel's<sup>2</sup> observations on the endemic occurrence of carcinoma in mice, in which he succeeded in tracing the origin of 20 mouse tumors to one cage, it would seem that the source of infection in this case is vested in the cage in which these rats were contained. That we may positively exclude heredity, is owing to the fact that the rats which occupied the cage from 1903 to 1904 were derived from a distinct source in a widely distant city from the rats which occupied the cage from 1904 to 1905. That local environment is not the essential factor is shown by the fact that the cage occupied space in the animal room on the fourth floor of the building from 1903 to 1904; from 1904 to 1905 in the basement of the laboratory.

The most logical explanation of the manner in which this cage became infected with the contagion of sarcoma, is found in the fact that it was used in 1902 by Dr. Loeb, who kept in it at that time rats inoculated with the second cystic sarcoma of the thyroid discovered in Chicago. It is to be noted that a period of 3 years elapsed from the time of its employment by Dr. Loeb to the development of the primary cystic sarcoma of the thyroid in 1905. From this it would appear that the contagion of sarcoma in the rat is extremely persistent as to time, extending over a period not less than one-third the life of the rat.

It is of interest to note that two of the three primary sarcomas of the thyroid in Chicago were first detected in the summer or autumn; that all three of our rat tumors were likewise detected during the summer or



autumn, and that in both cases a period of approximately one year intervened between the development of the different tumors. From this it seems probable that the incubation period, or the period in which a rat must be exposed to the contagion, must extend over a number of months. Our cage at present contains a number of rats which have been undisturbed in it since October, 1905. To these have also been added a number of rats during the past month. The conditions of the cage are unchanged. These rats have been obtained from another source distinct from that of any of the rats thus far employed and a further report will be made after sufficient time has elapsed to make it probable that tumors will or will not develop.

Our second observation relates to the endemic occurrence of cancer among mice in the establishment of a dealer who has been engaged in the raising of these ani-



Fig. 12.—Buffalo Rat 2, showing infiltration at site of primary tumor following operation and large metastasis in median fissure of liver.

mals for several years, in Springfield, Ohio. In view of the completeness of the data placed at our disposal, we consider that this case affords the most striking illustration of cage infection thus far reported.

One of us visited the establishment in question June 8, 1906, in the company of Dr. Rand, of Springfield, who heard the entire statement made by Mr. Landes, the owner of the establishment and a man of intelligence. The statement which he gave us regarding the occurrence of these tumors, many of which came under our own personal observation, appeared to be perfectly logical and entirely free from discrepancies. In the course of the previous year Mr. Landes had sent this laboratory six white mice with spontaneous tumors, which

proved on microscopic examination to be adenocarcinoma of the breast. They were all in females and all located on the abdominal aspect. We found on inquiry that Mr. Landes recognized the fact that the source of these tumors was one old cage, built of wood, one end of which was screened off with netting. He stated that the cage was 3 years old and that it had contained for 3 years an average of about 100 old mice. He estimated that these mice bred to such an extent that he was able to get between one and two thousand young ones out of this cage, annually.

The history of this cage is as follows: It was built in July, 1903, at his place of business, which was then at the corner of Shafer and Columbia Streets,  $2\frac{1}{2}$  miles distant from its present location. It was kept in a barn, the boards of which were poorly matched, and the place was cold and windy in winter. It remained nearly a year in this barn and contained during this period about 100 mice. During the course of the winter he found one or two mice with tumors in the cage. In April, 1904, he moved to the corner of Light and Cedar Streets, two or three squares from the first location, and the cage was kept in a large coal shed, which was warm and comfortable. It remained from April to November, 1904, in this locality and during that period he removed from the cage 25 to 30 mice with tumors. In November, 1904, he moved to his present location,  $2\frac{1}{2}$  miles distant from the first two mentioned. Before the cage was removed from Light and Cedar Streets he observed 12 mice at

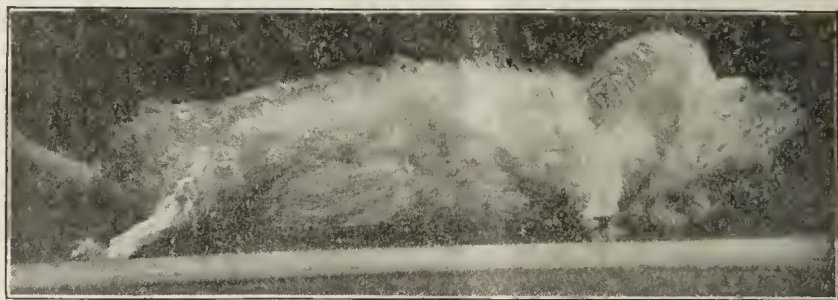


Fig. 13.—Buffalo Rat 3. Primary cystic sarcoma of thyroid developed in cage at the same time with Buffalo Rat 2, October, 1905.

one time with tumors and for the purpose of ridding himself of this unfortunate development of tumors, he decided to change entirely the stock in the cage. All the mice which had occupied the cage were removed and 12 adult, healthy mice, 10 females and 2 males, were imported from Washington, D. C., and introduced into the cage, which was placed in a small, detached outhouse, at least 50 feet distant from the present location of the cage. During the course of this winter 3 or 4 tumors developed.

Since the spring of 1905, the cage has been in a large room 30 by 50 feet in size, which was previously a dance hall and it now stands on a table 6 to 7 feet from a window where the conditions of light and ventilation are excellent. It previously stood in a different position in the room about 20 feet from its present location. During the last year he has removed between 25 and 30 mice with tumors from the cage, several of which have been sent to us. Owing to a misunderstanding on his part he had the idea that only tumors between the front legs were what we desired, and those which appeared on the flanks or lateral aspect of the abdominal region, he killed. At the time of my visit one mouse was in the cage with 2 large tumors on the right abdominal aspect. He pointed this out as an example of the kind of tumors which he thought we did not require. He states that he has never seen a tumor on the back of any mouse. He



thinks they were mostly females and in several instances when he examined them as to their sex he found they were females. He has never seen a male with a tumor. The tumors have frequently grown to great size.

Besides the old cage, his establishment contains 12 or 15 other cages of similar construction. One of these is 2 years old, the remainder 1 year old. They are regularly stocked from the old cage. His custom is to remove from the old cage 12 or more females with one or two bucks and place them in the new cages and allow them to remain there until each cage contains approximately 100 mice. The half and three-quarters grown offspring are removed and sold. In the cage which is now 2 years old he has during the past year observed 4 to 6 mice with tumors. So far no tumors have appeared in mice in other cages in the establishment. He remembers having seen one or two tumor mice in some of his old cages in his previous establishments, but these cages were always stocked from the old cage already described, which seems to have been the source of all his operations, and which he referred to as his incubator. The cage was purchased by the laboratory and brought to Buffalo with the mice in it. On reaching the laboratory it was found to contain 3 mice with large tumors. The interior of the cage is dark and damp, incrustated with excreta and presents a generally unhygienic appearance. Examination on the date of sending this manuscript for publication, August 3, shows that the cage contains 28 adults and perhaps twice as many half-grown and young mice. On the floor of the cage is the carcass of a mouse which has apparently been dead some hours with a large tumor on the abdominal aspect. This is ulcerated and shows evidence of having been gnawed. A second mouse with a tumor the size of a large hazelnut protruding between the hind legs and evidently springing from the posterior part of the mammary tissue is also found. The skin over this tumor is adherent and the tumor is evidently far advanced.

Briefly stated, the facts in the above case are as follows: A cage has been discovered in which upwards of 60 spontaneous tumors have occurred in the course of 3 years. The fact that the location of the cage was frequently changed and the stock entirely renewed on at least one occasion without any permanent interference with the production of tumors, makes it apparent that the cage itself was the source of infection.

Besides these observations which point directly to the cage as the source of infection, the endemic occurrence of cancer among mice in breeding establishments is well known and is illustrated to a remarkable degree in our own experience. For instance, from January, 1905, until the present time, this laboratory has had a standing reward of twenty-five dollars for any small animal affected with cancer. This offer, as already stated, was sent to 325 dealers in pet animals. It is possible that many of them have not appreciated the significance of the offer, or have overlooked cases of cancer in their stock, but during this period we have had constant business relations with seven dealers in different parts of the country, from whom we have purchased large numbers of mice, and who, we feel perfectly certain, have fully appreciated the monetary value of cancer mice. From one of these dealers we have received no less than eighteen female mice with cancer of the breast; from a second dealer, five of the same nature and sex; from two other dealers, one each, and from three from whom we have had repeated shipments of mice, none whatsoever. From one of these dealers from whom we have received

in the last two years not less than 1,200 normal mice, we learn that he has never, in his own stock, seen an example of cancer of the mouse, but that he was able to recognize the affection was shown by his having secured for us from another dealer a single specimen.

These figures conclusively indicate that in certain breeding establishments cancer in white mice is endemic. The condition of affairs in the breeding establishment of a dealer in Massachusetts is interesting when compared with that of the Springfield dealer where the evidence pointed to a single cage as the source of infection. This Massachusetts dealer has shipped to us, in all, eighteen cancer mice, in lots of nine, four and five, and it is of great interest that the tumors in all of these mice were of relatively the same size. On inquiry as to where the tumors had developed, if they could be traced to a given cage or group of cages, we were notified that the mice were scattered indiscriminately through the entire establishment. This condition of affairs was so interesting that we made a trip to Massachusetts to personally inspect the premises, whereupon it was found that this dealer, in order to combat infections and contagious disease had her stock distributed among a large number of small boxes. These mice were moved about from box to box and the different families were regularly subdivided and used for the purpose of forming new families. This practice is entirely different from that of the Springfield establishment and easily explains the general distribution of the tumor mice through the different breeding boxes. The fact that the tumors have developed in lots of half a dozen or more at one time and that in the various shipments to us the tumors have been of relatively the same size, suggest that small epidemics have occurred at frequent intervals. The attempt to trace the origin of the infection to any particular box in the establishment is, of course, under the present system, impossible, and it is not improbable that this method has led to the dissemination of the contagion through a large number of the boxes.

The foregoing observations indicate that both sarcoma in rats and carcinoma of the breast in mice must be looked on as contagious, and when considered in conjunction with the classical observations of Loeb<sup>4</sup> and Borrel,<sup>2</sup> in which, however, it was impossible entirely to exclude the factor of heredity, should lead us to pay more serious consideration to the interesting statistics constantly accumulating which show the probable infection of the surroundings of human cancer cases in so-called "cancer house." It should also lead to earnest consideration of the desirability of sterilizing the dressings of cancer cases and the complete sterilization of rooms which patients have occupied, and it should, at least, to no inconsiderable extent, offset the recent statement of Hansemann, that we have no right to add to the difficulties of the cancer patient by the unnecessary suspicion that he is suffering from an infectious disease. It should tend to combat the belief among pathologists that there are no grounds for even suspecting an infectious factor in malignant tumors.

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**Fright in the Etiology of Chlorosis.**—De Renzi of Naples states that two sisters, 17 and 21 years old, suffered for several days from extreme fear during the recent eruption of Vesuvius. Almost immediately afterward they both began to exhibit symptoms of chlorosis, which developed into the typical clinical picture almost simultaneously in each. The occurrence is quoted in the *Presse Médicale* for October 3, from an Italian journal.



SOME OBSERVATIONS ON THE EFFECT ON THE BLOOD PRESSURE OF THE WITHDRAWAL OF FLUID FROM THE THORAX AND ABDOMEN.\*

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In order to appreciate the effect which the aspiration of pleural effusions exerts on the blood pressure, it is well to bear in mind the influence which the collection of fluid in the pleural cavity has on the arterial circulation. Our knowledge of this subject has been obtained chiefly through experiments on animals.

If olive oil is allowed to flow slowly into the pleural cavity of a dog, the blood pressure undergoes a moderate initial rise and then remains almost constant. It is only after the entrance of a very large amount of fluid that the arterial pulse waves become slower and of greater amplitude and a marked fall in blood pressure takes place (Rosenbach). The respirations, however, are affected early, becoming more labored and less frequent until they cease entirely.

quently from aspiration, while untoward symptoms, such as weakness, faintness and temporary collapse, are common. The occurrence of unfavorable symptoms is usually sudden and with little or no warning. Any sign, therefore, that would indicate the approach of danger would be of great value. It was with the hope that blood pressure determinations might be of such service that these observations were undertaken.

Very few records have been made on the arterial pressure during aspiration. Kapssammer states that twice he has noted a fall in blood pressure after thoracentesis, but he gives no data. Hensen records a fall in arterial pressure in 7 cases of pleuritic aspiration, in which he made one reading before and one after the operation.

In the accompanying series (see Table 1) of 15 cases of pleural effusion, 4 of which were tapped twice, I have taken the blood pressure at short intervals before, during and after thoracentesis. In every instance aspiration was used.

*Constant Features.*—Varied in character as the blood pressure charts are, they have some common features

TABLE 1—THORACENTESIS.

Case	Diagnosis	Side tapped	Duration of effusion, wks.	No. c. c. withdrawn	Length of op. in min.	B. P. in mm. Hg.				Remarks
						Before op.	Minimum	Total fall	One hr. after	
1	Hydrothorax, ascites, cirrhosis. albuminuria.	r.	3	2,500	22	152	119	33	140	Hard cough, dyspnea at end of aspiration.
1	Hydrothorax, ascites, cirrhosis, albuminuria.	r.	1½	2,500	12	142	115	27	132	Hard cough, dyspnea at end of aspiration.
2	Pleurisy, arteriosclerosis.	r.	4	1,300	34	105	70	35	85	Age 80 years, became faint and dizzy.
3	Pleurisy.	r.	5/7	2,000	13	106	98	8	102	Severe pain from needle, no faintness.
4	Pleurisy, chron. nephr., arteriosclerosis.	r.	2	1,750	10	185	160	25	173	Dyspnea and faintness near end of aspiration; age 70 years.
5	Pleurisy, myocarditis, nephritis.	l.	2	400	15	163	152	11	153	No discomfort.
6	Pleurisy.	l.	3	600	11	110	102	8	109	No faintness.
7	Pleurisy, pulmonary tuberculosis.	l.	1	1,600	42	95	80	15	90	Slight faintness at end of aspiration.
7	Pleurisy, pulmonary tuberculosis.	l.	1	300	16	95	88	7	93	
8	Pleurisy, phthisis.	l.	13	2,000	9	120	106	14	110	Epigastric angina during aspiration with rise in B. P. from 106 to 156 in 5 minutes.
9	Pleurisy.	l.	3	1,000	5	112	72	40	104	Grew faint; profuse perspiration.
10	Hydrothorax, chronic nephritis.	l.	4	300	4	234	208	26	218	No discomfort.
11	Pleurisy.	r.	1	2,000	17	112	100	12	108	No discomfort; considerable pain, no faintness.
11	Pleurisy.	r.	1	1,100	10	112	90	22	103	
12	Hydrothorax, nephritis.	l.	8	2,000	15	148	112	36	130	Considerable cough, pain and distress.
12	Hydrothorax, nephritis.	l.	1	1,300	14	152	122	30	138	Very little discomfort.
13	Pleurisy, myocarditis.	r.	2	1,400	7	90	80	10	80	Bloody fluid; no faintness.
14	Hydrothorax, double mitral insufficiency.	l.	2	1,250	15	102	98	4	104	Pneumothorax caused by lung puncture with needle; no ill effects.
15	Pleurisy.	r.	2	750	40	130	122	8	140	Pneumothorax by entrance of air through needle; no ill effects.

Pleural exudates during the expiratory act are often under a positive pressure of 5 to 26 mm. Hg. (Quinke, Leyden, Schreiber). This positive pressure acts in direct opposition to the normal intrathoracic negative pressure and, when the exudate is large, impedes the flow of venous blood from the abdomen into the thorax. An effort is then made by the respiratory muscles to restore the negative pressure within the chest. Deep inspiration increases the intrathoracic negative pressure to such an extent that compensation or partial compensation may occur and the venous flow be maintained. When such compensation fails, the right heart receives an insufficient amount of blood, the left heart does not fill the body arteries, the blood pressure rapidly sinks and death is imminent.

THORACENTESIS.

The withdrawal of fluid from the pleural cavity is attended with less danger than its introduction or accumulation. Nevertheless death does occur not infre-

that are almost constant. During the excitement of preparation and the pain of puncture there is usually a temporary rise in pressure. During the withdrawal of fluid the pressure falls constantly, reaching, as a rule, the lowest point at the time of, or subsequent to, the removal of the needle. The average fall in 19 aspirations was 20 mm. Hg. The final pressure taken an hour or more after tapping is generally 5 to 15 mm. lower than the initial pressure, the average fall for 19 aspirations being over 8 mm.

*Special Influences.*—The amount of fluid withdrawn is an important factor in determining the degree of fall in pressure. The rapidity of withdrawal is no less important. Other things being equal, slow aspiration causes less fall in pressure than rapid aspiration (compare Cases 7 and 9, Table 1). The duration of the effusion is of great influence (compare Cases 3, 7 and 11 with 1, 2 and 12, Table 1). In cases of short duration the fall in blood pressure is usually not marked and the recovery is rapid. In long-standing cases the fall in pressure is greater, doubtless because the lung expands less completely and with greater difficulty than in the recent cases.

\* Read in the joint session of the Sections on Practice of Medicine and on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



Senile changes in the blood vessels and heart seem to favor a relatively rapid and deep fall in pressure and a slow recovery (Cases 2 and 4, Table 1). Heart disease alone, however, has apparently little effect on the pressure curve (Cases 5, 13 and 14, Table 1). Pneumothorax, even when fairly extensive, does not appreciably affect the blood pressure (Cases 14 and 15, Table 1). *Epigastric angina*, caused by a reflex spasm

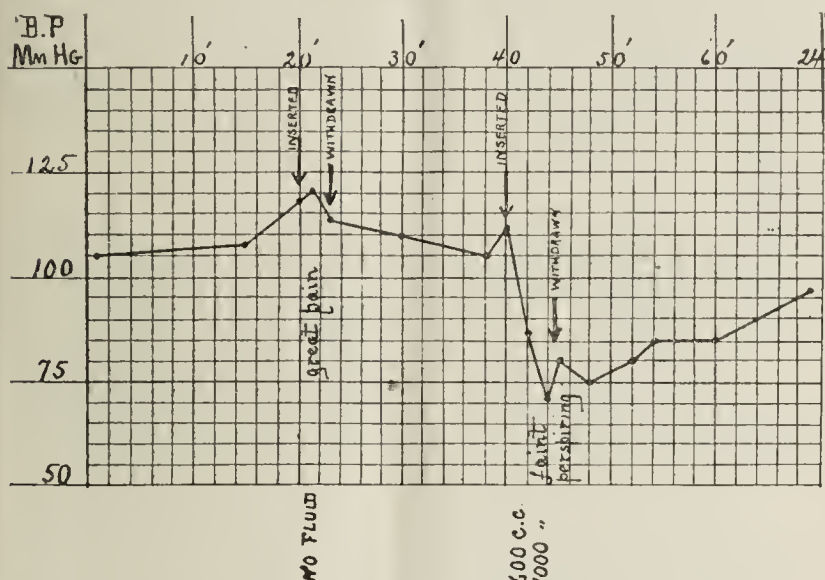


Fig. 1.—Case 9. Left thoracentesis showing the effect of rapid withdrawal of fluid.

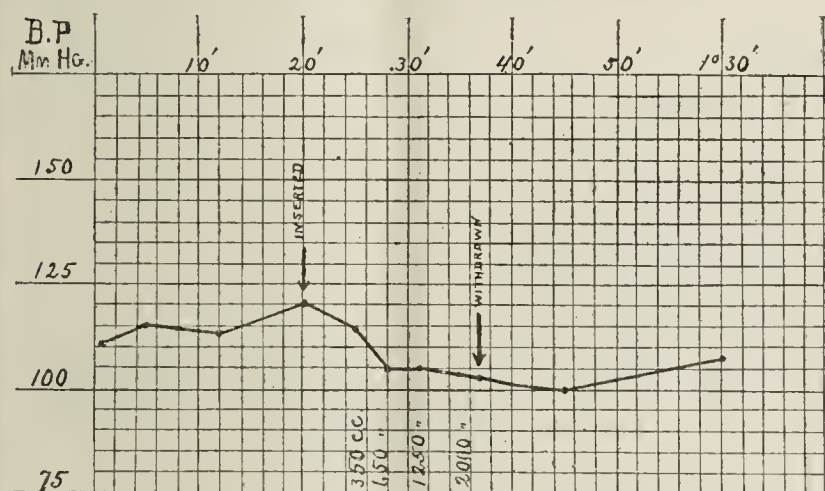


Fig. 2.—Case 11. Right thoracentesis showing a moderate fall in a case of one week's duration.

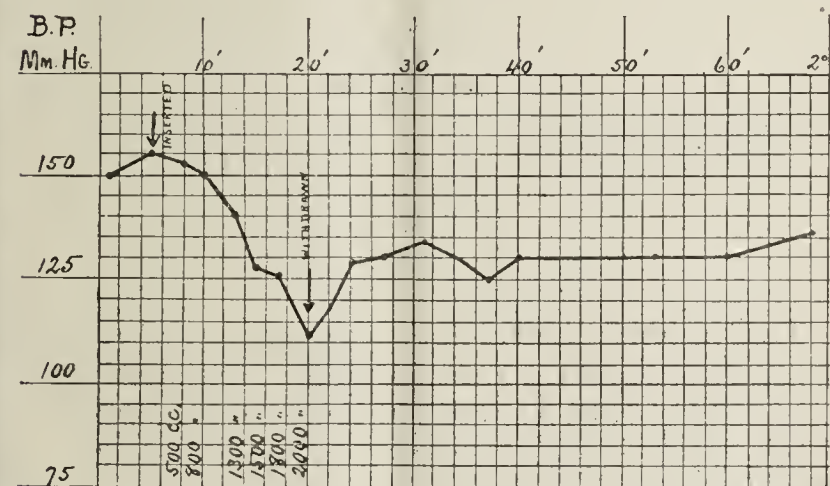


Fig. 3.—Case 12. Left thoracentesis showing marked fall in a case of eight weeks' duration.

of the abdominal arteries brought on by the irritation of the needle, produces a very rapid rise in the general arterial pressure (Fig. 6).

#### ABDOMINAL PARACENTESIS.

Up to a certain point the general arterial pressure increases with an increase in the pressure of intra-abdominal fluid; beyond this point the blood pressure falls.

Quirin attributes the early rise in blood pressure to increased resistance by compression to the flow of blood through the abdominal arteries; the fall occurs when the heart, handicapped by a diminished supply of venous blood, is no longer able to overcome the resistance of the abdominal arteries. Aseptic fluids have an intra-abdominal pressure of 19 to 42 mm. Hg, according to Quinke,

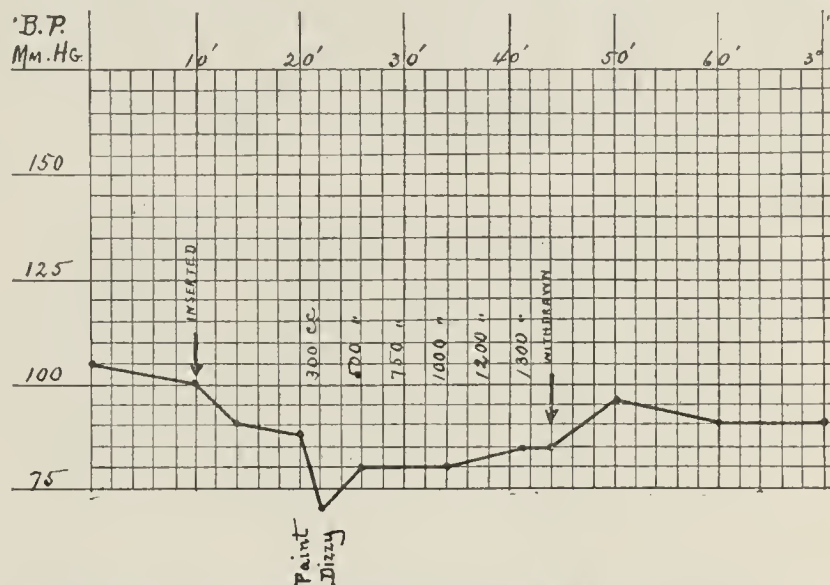


Fig. 4.—Case 2. Right thoracentesis in a man of 80 years. Note decided fall in pressure.

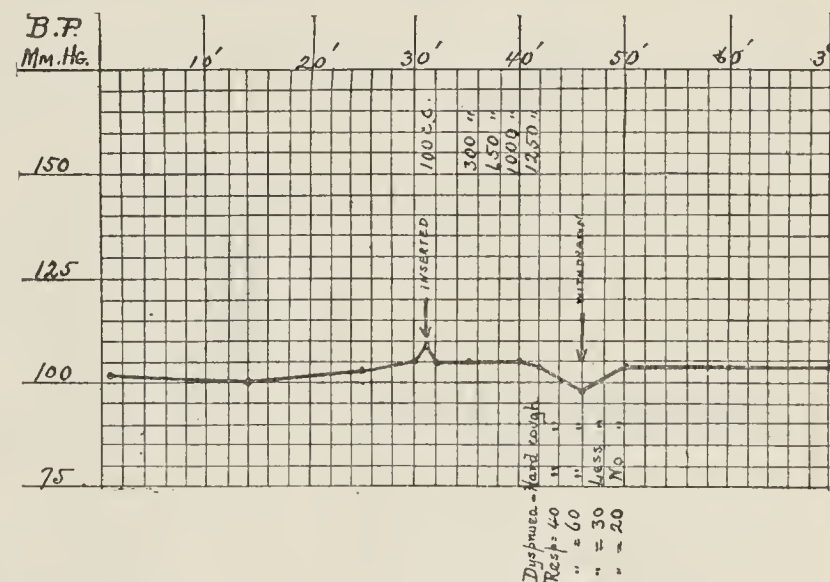


Fig. 5.—Case 14. Left thoracentesis showing the slight effect of accidental pneumothorax.

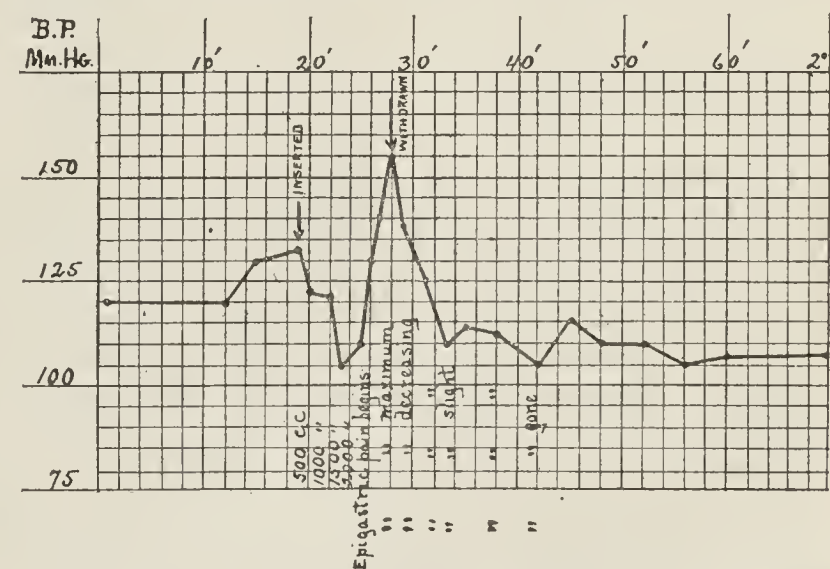


Fig. 6.—Case 8. Left thoracentesis complicated by abdominal angina.

Quirin found that the intra-abdominal pressure fell 10 to 14 mm. after tapping and that this corresponded with the simultaneous fall in arterial pressure of 5 to 10 mm. Hg after paracentesis in four cases. Cook and Briggs record one case of abdominal paracentesis in which the pressure fell 35 mm. Hg during the withdrawal.



My own observations were on 9 cases of ascites, the patient in each case being tapped in a sitting position. Three were tapped twice or more.

**Constant Features.**—During the drainage of the fluid, as a rule, a fall occurs in the arterial pressure that averages 32 mm. The lowest pressure comes usually several minutes after the needle is withdrawn, but it may come at any time during the procedure. Once a fall of 62 mm. took place in the first minute of drainage when 2,000 c.c. of fluid escaped in that length of time (Fig. 7). This fall was probably in the nature of a tem-

porary collapse due to a sudden relaxation of the splanchnic vessels. In other instances the fall in pressure was very slight. The final pressure taken an hour or more after paracentesis on an average is 12 mm. lower than the initial pressure. This decrease corresponds closely to the average fall of 10 to 14 mm. in the intra-abdominal pressure after tapping that was noted by Quirin.

**Conclusion.**—I realize that the number of observations here recorded is insufficient to warrant any final conclusions. It is desirable that records be made of the blood pressure curve in a large number of cases of thoracentesis in which simple siphonage without aspiration is employed. Finally, there is need of further experimentation with both mechanical and medicinal agents directed toward the prevention and relief of untoward circulatory symptoms occurring during the withdrawal of fluid.

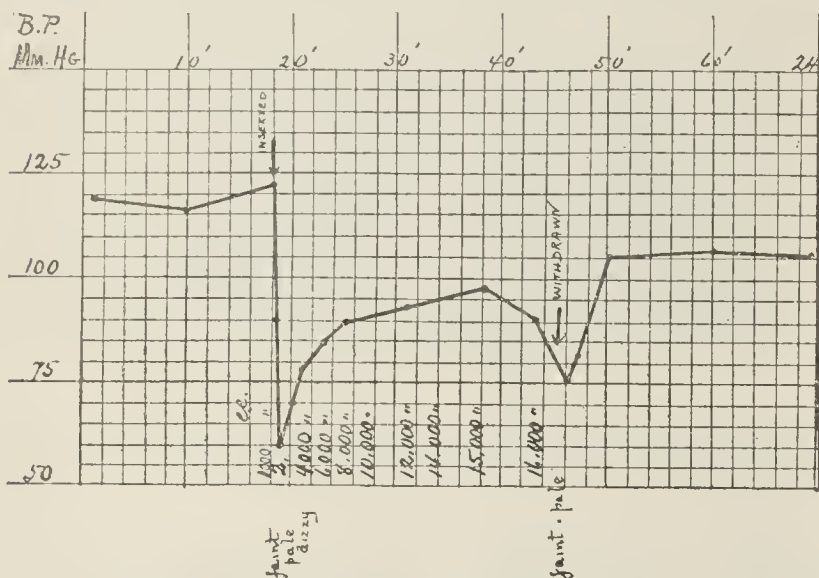


Fig. 7.—Case 7. Abdominal paracentesis; effect of very rapid withdrawal.

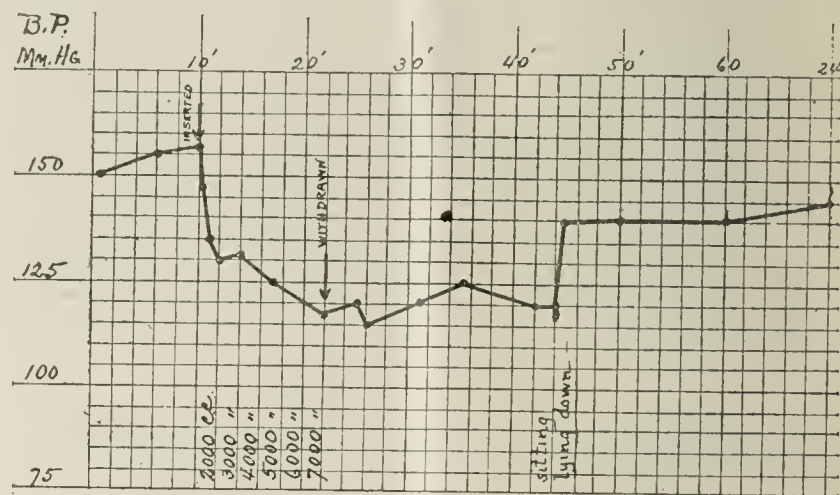


Fig. 8. Case 1. Abdominal paracentesis showing the effect of posture.

TABLE 2—PARACENTESIS ABDOMINIS.

Case	Diagnosis	Duration of effusion wks	No. c. c. withdrawn	Length of op. minutes	B. P. in mm. Hg.				Remarks
					Before op.	Minimum	Total fall	One hr. after	
1	Ascites, nephritis, cirrhosis of liver. . . . .	3	7,000	16	150	115	35	125	Before tapping; sitting, B. P.=150, lying=145
1	Ascites, nephritis, cirrhosis of liver. . . . .	5	6,700	13	144	115	29	132	After tapping; sitting, B. P.=120, lying=145
2	Ascites, cirrhosis of liver. . . . .	4	3,000	16	146	106	40	120	Before tapping; sitting B. P.=148, lying=146
3	Ascites, cirrhosis of liver. . . . .	3	3,000	14	118	60	58	104	After tapping; sitting B. P.=106, lying=120
4	Ascites, nephritis, dilated heart. . . . .	2	1,000	12	160	144	16	158	Before tapping; sitting B. P.=119, lying=110
5	Ascites, nephritis. . . . .	4	6,000	14	145	120	25	130	After tapping; sitting B. P.=75, lying=104
5	Ascites, nephritis. . . . .	7	7,500	22	172	148	24	155	No discomfort.
5	Ascites, nephritis. . . . .	8	6,500	15	176	145	31	165	Faintness near end of tapping.
6	Ascites, myocarditis, nephritis. . . . .	3	6,000	13	160	140	20	155	Faintness near end of tapping.
7	Ascites, cirrhosis of liver. . . . .	4	21,500	33	125	86	39	104	Faintness; pressure on flanks raises B. P. from 155 to 170 mm.
7	Ascites, cirrhosis of liver. . . . .	5	16,000	27	116	60	56	108	No discomfort.
8	Ascites, cirrhosis of liver. . . . .	2	3,500	24	95	80	15	90	Slight faintness.
9	Ascites, cirrhosis of liver. . . . .	4	8,000	22	100	95	8	100	Faint, pale and small pulse after withdrawal of 2,000 c.c. for very short time. Pressure on flanks does not raise B. P. materially. No discomfort.

## ACUTE INFECTIONS OF THE THORACIC CAVITY.\*

J. H. MUSSEY, M.D.  
PHILADELPHIA.

This paper is limited to a consideration of empyema in its earliest stage, when loculated, first, between the lung and the chest wall; second, between the lobes, interlobar; third, between the diaphragm and the lung. It should be our aim to determine the presence of small collections of pus in the pleural cavity. It is no credit to the profession at the present time to send to the surgeon a patient with the chest half filled with pus or even with half a pint or a pint of such accumulation. Members of the profession have not taken to heart the lessons of Murphy,<sup>1</sup> Willard<sup>2</sup> and Eisendrath<sup>2</sup> and the

\* Read in the joint session of the Sections on Practice of Medicine and on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Surgery of the Lung," THE JOURNAL, A. M. A., July 23, 1898, p. 151.

2. THE JOURNAL A. M. A., Sept. 20, 1902, p. 665.



excellent essays and reports of Withington, Sears, Jackson, Munro and others.<sup>3</sup>

The force of the necessity of recognizing early small collections of pus can be appreciated only when we recall the disastrous results that follow accumulations of large amounts, either from general systemic infection or from the local changes in the lungs, the pleural cavity, or the chest wall. One can scarcely conceive of the crippling effects of such accumulations without unfortunate practical experience. I am one of those who believe the compression of the lung, even by a sterile fluid, is not good for the patient or for the lung.

To recognize the local small collections of pus a careful study of the clinical course of the disease, which includes a careful history of the case, a consideration of the general and local symptoms, a study of the physical signs, the use of the *x*-ray, and, if necessary, the employment of exploratory operation, is essential.

The frequency of occurrence of empyema can not be accurately estimated. Reliable statistics exist as to the frequency after pneumonia. (Table 1.)

TABLE 1.—FREQUENCY OF EMPYEMA AFTER PNEUMONIA.

	Empyema.	Abscess of Lung	Gangrene of Lung.
Clinical Reports:			
University Hosp.	0 in 45	0 in 45	0 in 45
Presbyterian Hosp.	9 in 489, 1.8%	2 in 489, 0.4%	0 in 489
Collected from literature.	276 in 12,892, 2.1%	76 in 12,030, 0.63%	136 in 27,761, 0.49%
Autopsy Reports:			
Collected from literature.	50 in 973, 5.1%	28 in 1294, 2.1%	100 in 1914, 5.2%

There seems to be some well-founded evidence that many of the cases of so-called unresolved pneumonia are either cases of empyema, small and loculated, or cases of abscess of the lung. Jackson's recent paper points out the very great infrequency of unresolved pneumonia, and I am bound to admit that I have never seen a case to which I could apply this term.

#### CLINICAL COURSE.

The clinical course can be better appreciated when we recognize that empyema is local and secondary at first, and, even more broadly still, that infectious pleuritis, as peritonitis, is never primary. There is some focus of infection in relation to the pleura which is a starting point of the inflammation.

The history of the disease is of importance in the recognition of the infection. The usual antecedents that precede an empyema are: (a) Serous pleurisy; (b) pneumonia; (c) typhoid (from ribs); (d) scarlet fever; (e) local conditions (fractured rib, gullet, etc.). The history of the course of any one of these conditions in a patient in whom there is suspected infection within the thorax aids in the diagnosis.

#### SYMPTOMS.

The general symptoms are those of an infection occurring in the course of or after one of the primary antecedents named above. They may be of gradual onset, characterized by fever, sweats, the usual phenomena of infection with the occurrence of leucocytosis. In young individuals the symptoms are usually very frank. In older persons, and those suffering from primary disease elsewhere, as of the kidneys or the liver, the symptoms may be ill-defined and in large part in abeyance.

I was much interested in two cases recently under my care in old individuals in whom the primary infection

was not characterized by very marked symptoms. Both were the subject of pneumonia. In one patient, aged 78, the general symptoms were very mild. Notwithstanding well-marked signs of consolidation, the temperature never rose above 100.5 and 101 F. After the subsidence of the pneumonic symptoms with the gradual development of the secondary infection of the pleura, the febrile symptoms were more pronounced and typically hectic. The toxemia of the primary infection no doubt modified the clinical course in the beginning. As the toxemia disappeared the septic symptoms of the secondary infection became more pronounced so that an evening temperature of 102.5 or 103 F. was the rule.

In the second instance the general symptoms of the first period were very irregular, while the fever was not suggestive of a pneumococcus infection. In the second period, with the development of the empyema, the characteristic fever of this infection occurred. Reliance must be placed in these instances of the gradual onset of the general symptoms on the leucocytosis. This is undoubtedly a very important symptom. It is likewise notably present in the period of secondary infection, although it may be absent with the primary disease. In the empyema following typhoid fever I have usually found a leucocytosis, although not to the same degree as it occurs after pneumococcus infection. It may be said in passing that usually such infection, in my experience, was developed from a periostitis of one of the ribs.

In not a few instances the onset of the symptoms is sudden, especially if the infection is streptococcic. This is particularly true in cases following scarlet fever and in those which develop in the course of a serofibrinous pleurisy. A chill marks the onset, high temperature follows and persists, with the usual septic phenomena.

I must earnestly beg internists not to mask constitutional symptoms by drugs. Much has been written of the dangers of opium in abdominal diseases because it masks the signs. Just so antipyretics, even of the mildest form, mask the constitutional signs of an infection apart from the great danger to the heart and nervous system. I have seen large doses of quinin keep down the temperature to such a point that it was thought there was no abscess, but only delayed resolution.

*Local Symptoms.*—I shall not dwell on any local symptoms except the occurrence of pain and tenderness.

*Pain:* When pain occurs it is usually an indication of the site of the focus of infection, barring those instances in which it is transferred. Thus, when the infection begins in a diseased rib or following a fracture, the pain may not be complained of at the seat of the lesion, but on the anterior portion of the chest at the exit of the branches of the intercostal nerve. As in all instances of pain, our studies must be on the lines laid down by Hilton, Head and MacKenzie. It is well known that the pain of diaphragmatic pleurisy may be anterior while the disease is progressing. I have not been able to corroborate the statement that such pain may be felt in the neck at the point of origin of the phrenic nerve. It is very certain, however, that in the scapular region there may be pain because of diaphragmatic infection for the same reason that in certain forms of liver disease there is scapular pain.

*Tenderness:* Localized tenderness is a far more important symptom than pain. The toxic state of the patient may be such that he would make no complaint of ordinary pain. If, however, the chest is carefully examined with firm and deep pressure, following, especially

3. Published during the last two or three years in the Boston Medical and Surgical Journal.



in the interspaces, the septa which divide the lobes of the lung, one will almost surely detect a point of tenderness suggestive of the localization of the purulent collection. Deep pressure may be necessary to bring it out. Such exploration along the margin of the diaphragm or the upper borders of the liver may help also to localize the infection.<sup>4</sup>

In the case of a medical friend recently under my care, with others, the patient himself could circumscribe with his own finger the point of tenderness around the purulent collection. Dr. Fussell will recall the case which we aspirated without success at a certain point because the physical signs indicated the localization of the abscess in this region. When the needle was inserted in the upper axillary region over the septa and at a point where tenderness was elicited, pus was secured at once. I am so impressed with the importance of this sign that I would almost prefer to say nothing further in the paper in order that its value could be more strongly emphasized.

#### PHYSICAL SIGNS.

When the collections of pus are small and between the lobes, it can readily be surmised that the physical signs will be indefinite and perhaps, even, may be almost wanting. In a case with the history previously mentioned in which symptoms of infection arose, recognition must be taken of the slightest departure from the normal and stress laid on it. Of such signs the occurrence of impairment of movement or expansion will perhaps be one of the first detected. Such impairment may be limited to an apex when pus is developed between the lobes or to the base when the diaphragm is the site of infection. If the latter, the excursion to the diaphragm as indicated by the method of Litten will afford a valuable clue as to the possibility of pus in that neighborhood. Early in the disease the fremitus may or may not be modified. If careful comparisons are made, interspace by interspace, in the larger majority of instances it will be absent or deficient. One must remember, however, that consolidations in front of the abscess may conduct vibrations and may be somewhat confusing.

**Percussion Note:** The percussion note is of very great value and three points particularly are worthy of consideration:

1. The area of modified resonance or dullness is in the beginning fixed. The fluid is not in sufficient quantity to change position. Modification of the note on inspiration and expiration is of great value in determining the localization of the abscess. Change in the character of the note when the patient changes from the upright to the recumbent posture, when this is practical, is of as much importance as we know it to be in the determination of the presence of cavities.

2. The position of the area of dullness or modified resonance. When the abscess is between the lobes the area of percussion dullness will have direct relation to the septa. When the abscess is near the surface between the lobes the dullness may be at any point along the septa. When it is deep the area of dullness will be below the lines dividing the lungs. Thus, an abscess between

the upper and lower lobe of the left lung deeply situated will give signs posteriorly an inch or two below the margins of the lobes indicated, directly beneath the chest wall. The marginal line is along the fourth rib behind and the fifth in the axilla, and in front. The dullness would be below this point. If the abscess is on the dome of the diaphragm the first indications of impaired resonance will be not at the extreme bases, but from three to four inches above the base on the left side, and from one to two inches above on the right side. In general, it may be said that in localizing small abscesses one must confine oneself to an exploration of the mid-regions of the chest or of the diaphragm. Following the lines of the septa I have localized abscesses posteriorly behind the scapula (case of Dr. Nock), in the upper axillary region (case with Cheston), above the heart (case with Martin), in the second and third interspaces on the right side anteriorly (case with Allig), and in the fifth interspace in the same region (case with Deaver).

3. Skodiac resonance is a sign of the very greatest importance. Its occurrence anteriorly, latterly, and especially when in relation to the margins between the lobes, furnishes a valuable clue to the localization of a purulent collection. In not a few instances it may be elicited in very decided degree, when at the same time fremitus and the breath sounds over the hyper-resonant area may be entirely absent. I have never seen this combination of phenomena occur except in cases of localized purulent collections either between the lobes or at an opposite point from the resonant area. My attention has been directed to it a number of times, and in no instance was consolidation found.

The shape of the area of dullness is not of very great significance. I think I am warranted in saying that in those collections which begin over the diaphragm and come out underneath the lung we may find it gradually rising in a V shape with the base downward in the post-axillary or scapular line. This, of course, has in part physical reasons for its development. When large effusions are present, it is well known that the highest point of the effusion, as demonstrated by Gannett, is on this line.

**Auscultation.**—Small collections give very little change of auscultation phenomena, save, perhaps, the diminution in breath sounds corresponding to the diminution in expansion. Again, with general symptoms of infection, and a previous history of thoracic difficulty, if we auscultate along the margin of the lobes, the presence of pleural frictions will in all probability be detected. Such frictions must be noted, as they may be the earliest indication of the localization of the abscess. I have demonstrated this to my satisfaction, and have made it, with tenderness on pressure, a guide point for further exploration.

Nothing, of course, is to be said of enlargement of the affected side, of the dislocation of the organs, of interference, of movement, or the presence of flatness or of movable dullness, as these are the signs of large collections which are not considered in this paper. It is small collections that we want to recognize.

#### USE OF X-RAYS.

Studies have been made by Talley and Newcomet with the x-ray and the fluoroscope in my wards. Their conclusions are that the value of the Roentgen ray in detecting these conditions in the chest is variable. It is the common experience of a thickened pleura in this a previous consolidation without much thickening of the

4. Subsequent to the reading of the paper I wish to add a note to emphasize this very important symptom. In the discussion, one of the speakers stated that pain was not of common occurrence. With this I am in accord. Tenderness, however, is very common and is a very important indication of the position of the abscess. On the day of my return from this session I saw a case in consultation with Dr. Stahl, and we were able to localize the accumulation positively by the occurrence of this sign. An operation by Martin proved the truthfulness of the observation.



pleura, and the shadow is less uniformly dense than that of fluid in the pleura, so that under such circumstances a loculated empyema or a full abscess cavity is apt to stand out by its dense shadow in contrast to the less homogenous shadow of the resolving pneumonic consolidation. In similar circumstances, an empty cavity is even more evident, surrounded as it usually is by its wall. One case showed that an area of bronchiectasis with bronchial tubes filled with secretion, simulated an abscess. The mistake was all the more natural, as there existed above a well-defined cavity of an abscess that had discharged.

#### EXPLORATORY PUNCTURE.

I am not advocating exploratory puncture, notwithstanding the fact that in the body of the paper cases are referred to, in which I have resorted to exploratory puncture. No doubt there are instances in which it may be justifiable to do it as a means to localization. I believe the day is not far distant when we will be just as much in dread of introducing the needle into the thorax as we are of introducing it into the abdominal cavity. With the surgeon present and ready to operate at once, I am willing to admit that it may be employed. I feel, however, that it must not be relied on as a means of diagnosis. The failure to localize pus by means of such puncture occurs so often as to mislead and to allow dangerous dilly-dallying. Such failure arises in part from the small size of the abscess, although I believe that with attention to details in examination, at the present day, we can suspect its location with greater accuracy than formerly.

Another cause of failure lies in the instrument itself. I have repeatedly seen the day for further exploration put off because no pus was obtained, and this arose because of the imperfection in the instrument. There is no doubt that more can be accomplished with a large-sized instrument than with the small ones usually advised, and that the trochar and canula are probably preferable to the aspirator.

It may be said in passing that this needling to determine the localization of pus is just about as negatively dangerous when abscesses are present in other locations than the thorax. The danger arises for the reasons above mentioned. Within the year a much-beloved and most able member of the profession lost his life from a subpectoral abscess, the presence of which was overlooked, because on needling in the region no pus could be detected. Incision by Deaver later showed the presence of a large collection, but unfortunately general sepsis had gone too far to save the life of the patient. Recently I saw a case of abscess about the hip joint, missed by needling, which led to grave destruction of the ischium before the knife showed its precise location. I can not see why surgeons will not undertake a little dissection and direct exploration rather than trust to the uncertainty of needling in cases of undoubted infection, the localization of which in a general way is usually made manifest by symptoms such as pain and tenderness.

#### EXPLORATORY OPERATION.

Realizing the danger from infection of the lung or of the healthy pleura by exploratory puncture, or the failure in not localizing pus in such puncture, we feel bound, in a large majority of cases, to advise direct exploratory procedure. Of course, it must be borne in mind that no one but an educated and experienced surgeon should be allowed to resort to such operation. I sympathize very

much with the internist who has not at his right hand a competent surgeon to aid him in the management of cases of this character. It is far better, of course, to play a waiting game, and even to resort to exploratory puncture if one can not command the services of a trained surgeon. I realize that in urging exploratory operation the surgeon may have many problems to work out. I believe that the time is rapidly coming, however, when the technic of thoracic surgery will be as well worked out as that of abdominal surgery. If we do not have courage to go at it now and attempt to solve the problems they never will be solved.

So far as I can see, the mooted points are as to the choice of the anesthetic and the mode of procedure. It is for the surgeon to determine whether the operation should be done in two steps or not. From cases which I have had with Willard, notably the case of abscess of the liver, opened directly through the pleura, I take it that stitching the pleura together and making a definite field of operation is without danger. I have no doubt that the matter of packing, as in abdominal surgery, will be further developed with advantage to the operator. I am all the more urgent in insisting on exploratory operation, because in a considerable experience, in association with a number of operators, I have never seen any harm come from opening the thorax. It has not been my bad fortune to see a dangerous pneumothorax arise. Keen tells me that it has never occurred in his large and bold experience. The O'Dwyer-Fell apparatus for artificial respiration can generally overcome any untoward symptoms.

TABLE 2.

DEPTH OF THE BLOOD VESSELS AT ROOT OF THE LUNGS FROM THE SKIN SURFACE OF CHEST, DETERMINED BY MEASUREMENT ON TRANSVERSE SECTION OF FROZEN BODY OF AN AVERAGE ADULT MALE, BY DR. GEORGE MORRIS PIERSOL.<sup>5</sup>

Measurements at level of junction of third costal cartilage with sternum (6th dorsal vertebra):

Right Lung.		Inches.	Centimeters.
Two inches outward from spinous processes.....	3¾		9.5
Four inches outward from spinous processes....	4½		11.25
From posterior axillary fold.....	5		12.5
From mid-axillary line.....	3¾		9.5
From anterior axillary fold.....	3½		8.25
From mid-clavicular line.....	3½		8.25

Left Lung.		Inches.	Centimeters.
Two inches outward from spinous processes.....	3¾		9.5
Four inches outward from spinous processes....	4½		11.25
From posterior axillary fold.....	5		12.5
From mid-axillary line.....	3½		8.25
From anterior axillary fold.....	3½		8.25
Measurements at level of junction of fourth costal cartilage with sternum (seventh dorsal vertebra):			

Right Lung.		Inches.	Centimeters.
Two inches outward from spinous processes.....	3½		8.25
Four inches outward from spinous processes....	4¼		10.5
From posterior axillary fold.....	5¼		13
From mid-axillary line.....	4		10
From anterior axillary fold.....	3½		8.25
From mid-clavicular line.....	3¾		9.5

Left Lung.		Inches.	Centimeters.
Two inches outward from spinous processes.....	3¾		9.5
Four inches outward from spinous processes....	4		10
From posterior axillary fold.....	5		12
From mid-axillary line.....	2¾		7
From anterior axillary line and midclavicular line, the heart prevents introducing needle.			

Apart from the point that there is no harm, all arguments that may be employed for exploratory operation in diseases of the abdomen can be used to support the procedure in diseases of the thorax. The precision in diagnosis that follows, the prevention of sepsis and of the secondary effects thereof on the heart and kidneys, the prevention of lung destruction or such compression of the lung as to incapacitate it, the prevention of chest-wall destruction and deformities are accomplished by

5. My best thanks are due Dr. Piersol for the measurements made on several bodies with care and skill.



the early removal of the purulent accumulations. I might add that such exploratory operation admits of complete examination of the entire thoracic cavity.

Table 2, which shows the distance from the chest wall at various points of the vessels, indicates the ease with which all points may be reached by the finger or the trochar.

#### DIAGNOSIS.

I will not take up the time of the Section with a consideration of the differential diagnosis of the various forms of intrathoracic infection. We must realize that such infection may be due to tuberculosis on the one hand or to multiple abscess of the lung on the other, neither of which can readily be the subject of surgical management, and must, therefore, be differentiated from empyema, pulmonary abscess and gangrene. In a future communication I hope to take up in detail the diagnosis of these infections. I would point out here that pulmonary tuberculosis has a clinical course that differs from the one under consideration; that it is not attended by a leucocytosis; that the pulse rate is out of proportion to the local signs; that the respiration rate is greater than the physical signs; that the signs may be present in one or more localities, and that the enlargement of the glands above the clavicle and in the neck is of more common occurrence than we are led to believe. Of course, the finding of tubercle bacilli or securing of the tuberculin reaction renders the consideration of all other phenomena unnecessary. I must admit that the difficulties are very great. I feel that in these more acute tuberculous infections in which there are no sputa, we will be more likely to find bilateral lesions than in the infections of the pleura due to pus-producing microorganisms. The *x*-ray and fluoroscope will enable us to define the multiplicity of the lesions. Multiple abscess of the lung is also difficult of recognition. It usually follows a bronchopneumonia, either of streptococcic origin or due to influenza, and generally the sputa will suggest the nature of the lesion. The physical signs are those of small areas of consolidation and then of cavity formation rather than of pleural lesions. When cavity formation occurs the pus has the usual characteristics.

*Subpectoral Abscess.*—I have seen three cases of subpectoral abscess which had been considered of intrathoracic origin. The general phenomena are out of proportion to the pulmonary symptoms and even to the physical signs. Because of the location of the abscess, normal respiratory signs may be so modified as to suggest intrathoracic disease. The history of the case and the examination, as well as the results of exploratory operation, will be sufficient to localize the lesion.

#### TREATMENT.

What has been said anticipates my statement that empyema at this or any other period of its development is a surgical disease. My plea to the internist, therefore, is to attempt to make a diagnosis as early as possible, and in cases of doubt to have the advice of the surgeon at once. It is more than criminal to delay and almost as criminal to explore. Let us be willing to give up this last semblance of our fading surgical power, the exploratory needle, and early beseech the surgeon to open the chest for direct exploration and immediate treatment. My plea must extend also to the surgeon to the effect that he more closely study procedures for the relief of thoracic infections and not enter in a half-hearted way on this field that belongs to him. I speak very feelingly, for I have to lay up against the surgeon not a few instances of failure to relieve pulmonary abscesses when

they were present, or to secure pus when purulent accumulations were undoubtedly present. Let him not delay until pus is so obviously present that the merest tyro with a hypodermic needle can reach it or can demonstrate it by the physical signs of pleural effusion. It is too late then, as forcibly comes to me when I recall the case of one patient who was allowed to go on, and although a late operation relieved him of pus, death took place because he was worn out, a termination which could have been averted if an operation had been done two weeks before.

I can not let the occasion pass without expressing my conviction that not only will we consider purulent accumulations of the chest as a surgical disease, but also conditions of serous membranes of inflammatory origin. I feel with Delafield that the sooner we get rid of this accumulation the better, and that surgical measures alone can bring it about.

### THE TREATMENT OF PLEURISY WITH EFFUSION.\*

F. FORCHHEIMER, M.D.

CINCINNATI.

A number of explanations have been offered to show how a serous effusion is removed by Nature. It seems important to take these into consideration here, not because it is always best to imitate Nature in removing pathologic conditions, but in order that we may have a rational basis for our therapeutic methods. The oldest explanation is that of absorption of the fluid. It is evident that absorption may take place either by blood vessels or by lymphatics, but as a matter of fact absorption by blood vessels was usually referred to when the term absorption was used. Absorption by the blood vessels takes place through the veins; increased intrapleural pressure increases it, but when this pressure is too great the veins themselves become compressed and absorption ceases. S. West<sup>1</sup> claims that this method of absorption plays a very small part in the removal of fluid from the pleural cavity. He insists that absorption takes place through the lymphatics. He states that the pleural cavity is a lymph cavity, its lining is that of endothelial cells, between which there are somata which form the beginnings of lymph capillaries. These lymph vessels have valves directed away from the pleural cavity and they finally empty themselves into the thoracic duct. The mechanism for the removal of a serous effusion is that of a "lymphatic pump," which acts during respiration in increasing the flow of lymph. When there is a great effusion lymphatic absorption is entirely suspended, because expiration can not take place on the side affected and the pump is stopped.

It is more likely, however, that the compression of the lung by the pleuritic effusion is the predominating factor in the prevention of absorption, as by it the stomata and the lymph vessels, as well as the veins, are compressed which, in the latter, finally terminates in a paretic condition. This, moreover, would also explain the lack of absorption in a small effusion which, although to a less extent, produces the same effect on the lung surrounded by it, as a very large one. That this intrapleural pressure

\* Read in the joint session of the Sections on Practice of Medicine and on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. West, S.: "The Treatment of Pleuritic Effusion by Paracentesis," etc., *Lancet*, March 25, 1905.



is at times great is shown by Bard,<sup>2</sup> who has found it as high as 40 mm. of mercury. The removal of some fluid "might start the pump again," but it seems just as probable that this acts on a limited area of compressed blood vessels by relieving pressure and thus causing absorption to be begun. Aside from the action on "the lymphatic pump," the occlusion of stomata by inflammatory products and their closure by pressure must be looked on as an important factor in preventing absorption. But whether we consider absorption by lymphatics alone or by both blood vessels and lymphatics as the cause of spontaneous absorption, the fact remains that the larger the amount of fluid the less favorable the chance of absorption. For in a small effusion there is a large area of non-compressed blood vessels, and as the fluid must creep up by capillary attraction, this healthy pleura absorbs fluid and, under favorable circumstances, spontaneous absorption may take place.

If we accept, then, these explanations for the mechanism of natural absorption in the pleural cavity, we find that the following must be taken into consideration in order to facilitate it in the acute form. It is prevented by the results of inflammatory processes which are deposited on the endothelial layer. It is prevented by intrapleural pressure, and the greater this becomes the less the chance of spontaneous absorption. That this is the case has been proved by L. Gogitidse<sup>3</sup> with absorption experiments who shows that: (1) Absorption by the pleura is diminished in exudative processes, and that (2) the amount of absorption depends on the quantity and quality of the exudate; the larger the effusion, the less the absorption; it is most reduced in empyema; it is least reduced in a pure serous, more so in a fibrino serous exudate; the more fibrin the greater the reduction. To render less operative these causes which prevent absorption means to facilitate it, and our therapeutic measures must be directed to what might now be called two indications.

#### TREATMENT OF ACUTE SEROUS EFFUSIONS.

For the first indication we must attempt to reduce the inflammation of the pleura itself. Whether this can be done with any amount of certainty is an open question and one difficult of solution. Many things have been recommended here; all those belonging to the antiphlogistic measures of former days, blood letting, cold or hot applications externally, derivatives, mercurials. At present we use the ice bag, local hydrotherapy, rest in bed, strapping the affected side and counter irritation. Many of the German authors administer sodium salicylate—6-10 gm. a day—in all cases which are "rheumatic" or in which the etiology is not clear (Ortner). That it may be of benefit is not denied; that the therapeutic indication is very vague must, I believe, be accepted.

The first indication being one that can be but imperfectly fulfilled, although I should not like to be without the means employed in fulfilling it, there remains the second indication, the lessening of the intrapleural pressure by the removal of the fluid. It may be possible by doing this that the first indication is also met in that in certain ways, removal of the cause is effected. Doerfler<sup>4</sup> has called attention to the application of Bier's principle of treating inflammations by artificial hyperemia, in

diseases of the pleura. He applies this principle especially to tubercular pleurisies as will be seen further on.

The methods for withdrawing fluid from the pleural cavity can be classified as general and local. The principle on which the general treatment rests is that of modifying the blood structure in one way or another so that absorption takes place. It is a time honored principle, which has never been scientifically established, but which experience teaches us to be a valuable therapeutic measure. For the purpose of carrying it out the following procedures have been recommended: 1. The use of cathartics; calomel, the saline and the hydragogue cathartics. 2. Diuretics; theobromin-sodio-salicylate, digitalis, urea and a number of others, acting directly or indirectly. 3. Diaphoretics; pilocarpin, salicylic acid and the various hydrotherapeutic measures. 4. Diet. a. Superalimentation, to be used in reduced patients. b. The reduction of the fluid constituents of the blood by restriction of liquids, either by Tufnell's method, or its modification by Hay and the Schrott cure, which consists in giving only stale rolls without any fluid. 5. The milk cure, which has been successfully applied, but to which renewed attention has been attracted as the outcome of physical chemistry by Chauffard and Boidin.<sup>5</sup> These observers claim that in an acute effusion the retained NaCl disappears with the fluid in the form of a chlorid urinary crisis. They state that the effects of ingestion of NaCl are different when the effusion is being absorbed from those when elimination has been followed by retention. Their experience with solid food as a dechlorhydrating means is unsatisfactory, and they come to the conclusion that milk, which is hypochloric, is the food of choice.

If we exclude superalimentation, the diuretics and the milk cure, we have mentioned methods which will always have a more or less depressing physical effect on the patient, and for this reason alone it seems to me that all these methods should be restricted to the chronic serous effusions, and if there be added to this the fact that we have in the local treatment one that covers fully the second indication I believe that with very few exceptional cases all the general methods are unnecessary in acute cases. In the chronic cases we are met with a different problem, for here the removal of the fluid alone does not suffice, as the cause of the reaccumulation of fluid may not be removed by change in intrapleural pressure. Finally, the removal of the fluid, aside from its efficiency, is a much simpler and less troublesome procedure than any one of the general methods for the patient as well as for the physician.

We have two local methods: counter irritation and the emptying of the fluid by mechanical means. Of the first method little need be said; as compared with the second it is inaccurate, inefficient and harmful. A patient suffers much more from a blister or an iodine dermatitis than from the operation for removal of the fluid. We have all seen patients in whom this method was worse than the disease. If counter irritation is used at all in acute pleurisy with effusion, it should be used in the form of the Paquelin or galvanocautery; that it should be used for the removal of the fluid seems improper.

#### PARACENTESIS.

Much has been written and said as to the indications for the removal of the fluid from the chest in acute serous effusion. On the whole, the indications laid down

2. Bard, L.: "Pression des Epanchements Pleuraux," *Rev. de Médecine*, 1902, xxii, 253-278, 340-365.

3. Gogitidse, L.: "Wratschebuajn Gazeta." Translated in *Münch. med. Wochft.*, No. 36, 1904.

4. Doerfler, Hans: "Beitrag zur Behandlung der Pleuritis Exudativa im Verlaufe der Lungen-tuberculose," *Deuts. Archiv. für klinische Med.*, vol. lxxxiv, 251, 1905.

5. Chauffard, A., and Boidin, L.: "Dechlorurée comme mode de Traitement des Pleurésies à Epanchement," *Gaz. des Hôpitaux*, No. 51, 1904.



by Trousseau,<sup>6</sup> who practically re-established paracentesis, are those that are followed. Paracentesis should be done, according to him, (1) when there are symptoms which are dangerous to life, attacks of syncope, danger of suffocation, the *indicatio vitalis* of the German authors; (2) even without these symptoms, when there is present a large effusion (approximated at 2 liters); (3) if, notwithstanding general therapy, the fluid continues to increase, say after nine or ten days. It has seemed to me that there is no reason for waiting until dangerous symptoms arise before removing a pleuritic fluid; nor does it seem proper to allow the fluid to collect, with or without symptoms, before withdrawing it; first, because of the necessity of preventing adhesions, a point largely emphasized by Trousseau in his argument for the operation of paracentesis and their sequelæ, deformities of the chest, bronchiectasis, chronic pneumonias. The longer the fluid is allowed to remain in the pleural cavity the greater the danger of adhesions; while this may be a negligible quantity in small effusions, but one that has never been calculated with accuracy, in large effusions which have persisted for some time adhesions will be found that do more or less harm. Second, no human being can be considered in good condition who has a pleuritic effusion. It is a risk to permit him to go about his usual occupation; it is possible that dangerous symptoms may develop at any time, and the results to his general condition may be most unfavorable. Finally, whenever the fluid is withdrawn, the process may be terminated for the reasons already given. But even if this is not the case, and the fluid does accumulate again, it may again be withdrawn and in this way absorption may again be facilitated and permanent damage be prevented. Traube taught that the fluid should not be withdrawn as long as fever persists; this is no longer accepted. S. West says that early tapping, "within the first few days," does not shorten the attack. But, as Osler says, the results obtained by early aspiration, as recommended by Delafield, have never been equaled by any other method.

The preceding will show how views differ as to the indications of Trousseau; the correctness of one or the other can only be verified by the collection of a large material, and then one fact must always be kept in mind, that spontaneous absorption, again noted by Trousseau, frequently occurs in serous effusion.

One indication for early paracentesis, I believe, will be accepted by every one; when a large effusion develops rapidly, it should be withdrawn; the more rapidly it develops the greater the dyspnea, the greater the dyspnea the greater the danger to life.

As to particular indications for different etiologic factors, I wish to call attention to Doerfler's work in connection with tubercular effusion, already referred to. He says: The fluid produces an artificial anemia of the lungs and the pleura by pressure. When the fluid is removed an artificial hyperemia follows, as it does in other parts of the body with the good results claimed for it by Bier. The compression which has existed leads to vasomotor paralysis so that the hyperemia may last for days. In tubercular pleurisy every case should be treated by paracentesis, because the hyperemia produces leucocytosis, which is followed by marked development of connective tissue by means of which the tubercle is encapsulated. Paracentesis should be performed eight days after compression of the lung has existed and as much

fluid as possible should be withdrawn; the more fluid is withdrawn the greater the hyperemia.

#### TECHNIC OF OPERATION.

As for contraindications, I do not believe that any exist. The dangers of removing fluid from the chest are always insisted on; they certainly can be reduced to a minimum when the operation is performed with the necessary precautions. I have always used the aspirator, and in all my experience have never had a bad result. When the aspirator is properly used it is as safe as withdrawing the fluid with a trocar and syphon arrangement and much more convenient, as the flow of the fluid can be controlled and no air can enter the chest. In addition to complete asepsis, the following precautions are, to my mind, essential to safety: The pressure within the aspirator should be reduced to its minimum in the beginning; it is rarely necessary to increase it at any time. As the intrapleural pressure with effusion never exceeds 40 mm. of mercury (about two inches), anything below this will succeed in aspirating the fluid. So that at first the aspirator should contain air. If the negative pressure in the aspirator be too great the lung will be suddenly expanded, which may be followed by all those unpleasant consequences which are so thoroughly understood by all of us. Very little negative pressure is necessary in the aspirator, as it is more than likely that most fluids would flow from the pleural cavity without much suction, as when an opening is made the pressure of the fluid is the intrapleural pressure.

The next precaution to be taken, and just as important as the former, consists in not attempting to withdraw all the fluid at one sitting. Aside from the fact that this is impossible, it would be unnecessary if it were possible. Furthermore, the drawing off of these large quantities of fluid at one time leads to dangerous conditions: albuminous expectoration, cough, syncope, acute edema of the lungs, death. No rule can be laid down as to how much fluid should be removed at one time. In a number of cases I have found that the removal of a hypodermic syringeful of serum started absorption and the case then went on to complete recovery. Stintzing and v. Gerhardt have also had this same experience. But no one would think of withdrawing so small a quantity of fluid when there are serious symptoms which are due to compression or other causes; here the removal of a sufficient quantity of fluid to cause the symptoms to disappear is all that is called for. This may be 300 c.c.; it may be more, but under all circumstances not any more should be withdrawn than is necessary to remove all the symptoms; the absorption then will be started according to the principles stated in the beginning of this article, and if this should not be the case another paracentesis should be done at some future time. In most cases it will not be difficult to determine when the second aspiration should be performed; when dangerous symptoms reappear, or when absorption does not take place in a few days it is time to aspirate again. In following this method we do no harm and we imitate the process of Nature, as Alexander James<sup>7</sup> puts it. I may say that in neglecting this precaution the usual accidents have occurred with syphonage as well as the aspirator.

Another precaution to be taken is that the patient be in a position which approaches the recumbent as nearly as possible. When a large quantity of fluid exists in the

6. Trousseau: "Clinique Médicale," Translated by Culmann, vol. I, p. 645, et. seq.

7. James, Alexander: "Chronic and Tubercular Pleurisy," Edinburgh Med. Journal, 1895, vol. xli, p. 200.



pleural cavity there follows compression of the lungs, the heart and of the larger blood vessels. If this has existed for some time there has taken place a process that can be called compensatory. When the pressure is suddenly removed, the circulation is suddenly changed and serious conditions may arise, in part, also due to the opening of blood vessel areas that have been occluded. It is an established fact that in the recumbent position the human being can withstand changes in circulation better than in the upright. The reason for this is found in the fact that gravity has a decided effect on the circulation; if a patient has a quantity of blood withdrawn from his brain on account of a sudden determination to the central organs the effect will be less in a recumbent position than in an erect position.

Lastly, the patient should be carefully watched while the fluid is being withdrawn; if he coughs violently and spasmodically, if he has a feeling of constriction or feels faint or has great pain, the operation must be interrupted; after a little while, the symptoms having disappeared, another attempt may be made; if the symptoms again appear, the needle must be withdrawn and the patient put to bed.

After the fluid has been removed it is well to keep the patient in bed and under observation for a short time. Depending on the cause of the exudation he may, if no symptoms appear, be allowed to rise in a day or two. In all cases respiratory gymnastics should be advised. In tubercular cases the after-treatment should be that of tuberculosis.

#### CHRONIC SEROUS EFFUSION.

The principles that have been applied here for treatment are those discussed in connection with acute serous effusion. But the results are not the same, because, as a rule, we are dealing with a different condition. In the largest number of cases changes in the pleura and the lungs are responsible for the reappearance of the fluid, and here again our treatment as at present carried out can only rarely be of benefit. There remain a small number of cases in which the removal of the fluid every time it accumulates does not seem to result in final recovery. The methods at present in use are: 1. Repeated withdrawal of the fluid, with or without injections of irritating substances, such as iodine. In all cases repeated thoracocentesis will have been performed, as the method which most naturally suggests itself. Alexander James<sup>7</sup> suggests that from ten to thirty ounces be withdrawn every four to seven days. The injection of iodine has been given up; I have never seen any benefit follow from its use. 2. Thoracocentesis, with the injection of an equal or less quantity of a 0.60 per cent. NaCl solution, is also suggested. A. James was the first to use this method, which is based on the principle that the diluted serum is more easily absorbed than the undiluted. This method has again been taken up by Lewaschew.<sup>8</sup> Of it James himself says that no harm was done and he does not know that good followed. 3. West says that free incision and drainage is rarely required and that it must not be performed if the lung is bound down by adhesions, as a cavity filled with air is left. James says that it should be performed only in those cases in which there are found pleuritic adhesions. It should not be done as a routine method and only in those in which everything else has been tried. I have seen one case cured by this method, but I hasten to say that I believe it a very crude one, as it is simply a matter of

chance whether or not incision and drainage will correct the condition which produces the chronic pleurisy. But the future therapeutic development of this subject lies in the direction of surgery. With the advanced methods now employed in lung surgery, and I refer principally to the use of the Mikulicz-Sauerbruch method, many of these cases will be cured.

#### EMPHYEMA.

The principles of treatment differ from those for a serous effusion. While it can be confidently stated that in a number of cases the mere removal of the pus is sufficient for cure, yet this occurs only in a very small percentage of cases; in just as many cases as in abscesses in other parts of the body in which the pus is withdrawn by means of a hollow needle. Under ordinary circumstances this method of treating an abscess could not be looked on as being proper; for the pleural cavity it would be even more risky, as the chances of removing the pus so that the cavity closes up are even less than in other abscesses. Having used the term abscess, it immediately follows that the treatment of empyema is a purely surgical one. The one essential indication is the opening and drainage of this abscess. We are not particularly interested in the intrapleural pressure, as dangerous symptoms may exist even without the presence of large quantities of pus. The operation of thoracotomy should be done in every case. We have already admitted that a number of cases get well by aspiration; especially is this the case in children, but no one can state which case will get well in this way. It has been shown by Bouveret that the earlier the operation is done the shorter the duration of the disease. And it is equally true that the earlier the abscess is opened the less the mortality. The operation when done early is one devoid of danger. Under these circumstances the recommendation of some modern authors that empyema should be aspirated is one that should not be considered.

The question has been raised whether aspiration is ever permissible. If a patient is *in extremis*, should it be thoracotomy or aspiration? It seems to me there can be but one answer here; whether the immediate danger comes from the contents of the pleura or from remote causes, the operation of thoracotomy is the more efficacious of the two; it is easily done, no anesthesia being required, the opening should be made large and the fluid is emptied more quickly. If the patient survives, the proper thing has been done for the present as well as the future condition.

But, while the opening of an empyema is not a difficult matter, the question of drainage at times becomes a very serious one. It is for this purpose only that S. West recommends the resection of ribs. When drainage is complete and the walls of the abscess can come into apposition, a cure can be obtained in a comparatively short time. When this is not the case, a long time is required for *restitutio ad integrum* or the case develops into a chronic one. In order to insure the collapse of the abscess so that the walls can be approximated, resection of ribs was recommended (Estlander). At the present time this resection of ribs has almost become a routine method and it must be admitted that in this practice we are erring on the right side. When the thorax is very elastic this operation is not required, however, unless it is necessary for better drainage. It is certainly not required in children under 2 years of age, and some of the best results I have ever seen have been in young adults in the days before the resection of ribs was universally accepted. In cases in which the diag-

8. Lewaschew, L.: "Beitrag zur Behandlung der Pleuritis Exudativa," etc., Wien. med. Presse, 1904, vol. xlv pp. 1741-1797.



nosis is made early, I should except all such in which the thorax is sufficiently elastic to warrant the risk of its contracting sufficiently so that the abscess collapses. When the patient has been ill for some time, it may be taken for granted that fibrous tissue formation has advanced sufficiently to prevent the lung from expanding, so that approximation of the abscess wall can only be obtained by the change in the thoracic wall. In the chronic cases this was all that was attempted, and because it was considered impossible to cause a lung thus bound down to expand again nothing more was attempted and the results were not the most brilliant. In so extensive an operation as Schede's it was possible to cause approximation of the abscess walls, but at the cost of great deformity. Since 1893 the surgeons have taken cognizance of the fact that when the adhesions are removed, which cover the lung, it expands and thus, by means of rib resection and removal of the adhesions, even a rigid walled abscess can be made to heal up. In 1893 Fowler first did the operation of decortication, instead of this operation, as being safer and more easily carried out. Ransohoff<sup>9</sup> has devised and carried out the one of discission of the pleura which has given excellent results.

#### DISCUSSION.

ON PAPERS OF DRS. CAPPS, BONNEY,\* MUSSEY AND FORCHHEIMER.

DR. J. C. WILSON, Philadelphia, said he was glad that the papers constituted a plea for early removal of pleural effusions. A pleural effusion is a foreign body which mechanically interferes with the function of the thoracic organs, the circulation of the blood and the pumping function by which the lymph is distributed. It is capable not only of mechanical interference but also of becoming a focus for the production of toxins, thus establishing a liability to various infectious processes. This is true not only of purulent effusions but also of serofibrinous effusions. He has seen many cases which seemed to show this, cases in which the pleural effusion was small and easily removed, after which the fever disappeared. Two serious dangers of purulent effusions, as well as serofibrinous effusions, were well pointed out in the papers, the production of adhesions and atelectatic compression of the lung. The deposit on the pleural surfaces becomes organized. These processes do not take place at once. They take place little by little as the fluid remains. Dr. Wilson held that no sooner was a pleural effusion discovered than it should be aspirated. He believes this to be the only way to keep a patient from having permanent lesions.

DR. J. N. HALL, Denver, referring to Dr. Bonney's paper, said that some features relating to that subject are not dealt with in some of the text-books. He called particular attention to the fact that when people live from 2 to 2½ miles above the sea level they develop a greater heart weight in proportion to their body weight than elsewhere. Many miners live in camps one, two and three thousand feet below the mines, and, therefore, they must make the climb up the mountain in the morning. In addition to developing an increase in the size of his heart, a person in such circumstances also develops a greater lung power, which he must have, for he does much severe work which requires a large heart and breathing apparatus. These are all predisposing causes. Then the air is often vitiated and poisoned by particles of pulverized stone, also fumes from the powder. After 5 or 10 years the miner begins to fail. He has irritation of the bronchi, hypertrophy of the right heart, and eventually, a sufficient dilatation of the right heart to disable him so that he is no longer able to climb the mountain. The bronchial glands are often enlarged very greatly; Dr. Hall has seen them exceeding the size of pigeon's eggs. In a report issued by Dr. Betts, of Utah, it was shown that out of 200 men working in the Delamar mill, 35 had to give up the work on

this account, and eventually died. A fine dust containing sharp particles of silica was the cause of the great damage done to the respiratory apparatus.

DR. C. M. COOPER, San Francisco, said that not infrequently patients present signs of apical catarrh and the sputum shows the bacilli of influenza, but no tubercle bacilli. These patients are sometimes considered to have had tuberculosis and when they get well are looked on as having recovered from that ailment. Such mistakes, while perhaps of little importance from the standpoint of treatment, render statistics unreliable. If such patients have, in former years, suffered from apical tuberculosis, the mistake is even more likely to occur and a radiogram or tuberculous injection might even tend to increase the liability to error unless the greatest care be taken. Occasionally, patients are seen in whom a mixed infection is actively present; in such cases a failure to recognize both conditions might lead to unsuitable treatment and erroneous prognosis, since the clearing up of the condition due to the influenza bacillus might lead one to think that a rapid amelioration of the patient's tuberculous lesion was occurring.

He also drew attention to the fallaciousness of supposed pathognomonic signs in the diagnosis of borderline lung diseases. During the past year he has seen a patient who expectorated, without coughing, mouthfuls of purulent sputum, in a way stated to be characteristic of abscess of the lung, bronchicetasis or an empyema which has ruptured into the bronchi. Postmortem showed simply a purulent bronchitis. In another instance when the presence of lung tissue in the sputum seemed to favor the diagnosis of an intrapulmonic collection of pus, operation demonstrated that they were dealing with an empyema which led by a narrow sinus into a bronchus. In a symposium of this kind it seemed right that the statement should always be made that acute lung lesions may so exactly simulate acute abdominal lesions as to lead to useless and harmful operations. A little while before leaving San Francisco he was called to the hospital by an interne to advise concerning an operation for an attack of acute appendicitis. The patient really had an acute diaphragmatic pleurisy but the imitation was striking.

DR. J. A. CAPPS, Chicago, emphasized one point shown by the blood pressure experiments, namely, that early tapping of the chest causes less fall in the blood pressure than late tapping. In early cases there is less likelihood of firm adhesions and the expansile power of the lung is preserved. In longstanding effusions the withdrawal should be done slowly and with caution.

DR. S. G. BONNEY, Denver, said that his experience has been somewhat different from that of Dr. Mussey, with reference to the frequency of empyema complicating pneumonia. He was certain that he has observed this complication in a larger proportion of cases than were reported in the paper. He also called attention to the fact that not infrequently a purulent pleural effusion exists in the course of pneumonia without there being any rational symptoms suggestive of its presence. Its early recognition, therefore, necessitates frequent painstaking examinations of the chest at least as often as once a day throughout the course of the pneumonia.

Regarding the question which had been opened concerning the wisdom of early aspiration in pleural effusions, he would not attempt any discussion then. He wished to make exception, at least, to this invariable procedure in tuberculous cases, which, in his experience, should come under an entirely different category from non-tuberculous cases. He was satisfied that it was not good treatment to aspirate tuberculous cases, save in the presence of certain special indications. The mere existence of a moderate pleural effusion in a consumptive affords insufficient warrant for its immediate removal. If the effusion be sufficient in extent to occasion cardiac or respiratory embarrassment the indications for its immediate withdrawal are imperative and brook of no delay. He did not believe that even the character of the effusion constituted in itself a reliable guide in consumptives as to the method of procedure. It is a principle of surgery that pus wherever found should be evacuated. This should not always hold good with reference to purulent effusions in consumptives. In such cases the consideration is not so much the character of the effusion as its

9. Ransohoff, Joseph: "Discission of the Pleura in the Treatment of Chronic Empyema," *Annals of Surgery*, April, 1906.

\* The paper of Dr. Bonney on "Chronic Non-Tubercular Diseases of the Lung" appeared in *THE JOURNAL*, Aug. 4, 1906.



effect or the symptoms dependent on it. If there be evidences of sepsis, as chills, fever and sweating, the indications are toward immediate removal of the pus, just as with non-consumptives. Under such conditions, no matter how great the extremity, the consumptive is entitled to the same prompt and energetic measures toward relief as the non-tuberculous patient. When there is no chill, fever or sweating, and the empyema is not of large extent, there is no special reason for the performance of a radical operation, as the resection of rib. It is better, in such cases, either to permit it to remain for the time being or to temporize by removing it by aspiration from time to time, being, of course, prepared for rib resection and thorough continuous drainage if evidences of sepsis appear. In non-septic cases of empyema in consumptives the radical operation must inevitably be followed by either one of two conditions, first, that the lung does not expand sufficiently to aid materially in this obliteration of the cavity, in which event the patient is exposed through the prolonged process of suppuration to the dangers of amyloid unless subjected ultimately to the comparatively severe Aestlander or Schede operation; secondly, if the lung does expand sufficiently to take up the cavity within the thorax, the patient is usually exposed to the danger of increased activity of the tuberculous process with the frequent cavity formation in the previously compressed lung. It has been Dr. Bonney's experience that not infrequently diminution of fever, gain in weight, and lessening of cough and expectoration have resulted following the development of a pleural effusion, irrespective of its character, and on the other hand a retrogression in the general condition and special symptoms following its removal.

## TRAUMA OF THE HEAD AS A CAUSE OF INSANITY.\*

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There are two important questions in regard to the relation between injuries to the head and insanity. First, Is trauma a true cause of insanity, i. e., can an injury alone, acting on a normal man of healthy ancestry who is not suffering from cerebral arterial disease, syphilis, alcoholism or any other disease which affects the brain or who has not been broken down by the mere stress of life, cause insanity, or is the trauma a mere exciting cause, a provocative agent, which acting on a man already predisposed and ready to become insane gives him an opportunity so to do? Second, Does any characteristic type of insanity follow trauma? From the mental symptoms alone, while ignorant of the history of an injury, is it possible in any given case to know that a man is insane because he has received a trauma?

As to the first question no one doubts that trauma may be the only immediate exciting cause. There are numberless cases of men who before an accident showed absolutely no mental disease at all and who became insane immediately or very soon after. Whether, however, injury alone, acting on a man in no way predisposed to insanity, can cause it has been answered both affirmatively and negatively. My own opinion is that trauma must have a suitable soil, a man already predisposed, or insanity will not develop.

My reason for this belief is that the vast majority of men who suffer injury to the head do not become insane, no matter what the character and severity of the injury, unless there be such a great loss of brain substance as to produce dementia from the direct absence of brain matter, or unless there has been such injury to the sensory speech centers as to produce dementia from aboli-

tion of the tool of thought, internal speech. What tremendous injury may be done to the brain without causing insanity is shown by the modern operations on it. It is rare, for example, for insanity to follow operations for tumor, and yet the injury done is frequently far more than that caused by severe accidents. These facts certainly indicate that, in order to become insane, something more and other than mere injury is necessary, and that it is not enough to injure the brain cells, but that they must have something within them, some quality, which makes them react in an abnormal way to injury. They must in themselves inherently differ from the brain cells of normal men. If this were not so, similar injuries would produce similar results in all men, and such is surely not the case. We are compelled, therefore, to accept the belief in a congenital or ancestral predisposing cause which so influences the brain as to make it possible for its owner to become insane. That the inherent tendency to insanity, even when very strong, may be avoided by proper education and freedom from external stress goes without saying.

Insanity sometimes occurs years after an injury, and it is often hard to determine how much, if any, causative influence the wound had. The exact relation of early trauma to late insanity is difficult to discover, because there are no accurate statistics concerning the frequency of the association of the two, because the history of traumatism is usually vague and indefinite and because late in life it is often impossible to get any accurate account of the patient's family history. There seems no doubt, however, that concussion of the brain, depressed or even simple fracture of the skull may have a causative influence in producing insanity years after in persons congenitally predisposed. Injury, however, has never been the only apparent external predisposing cause in the patients whom I have seen. In every one alcoholism, syphilis, sunstroke, arterial disease, serious irregularities of life or some severe mental or emotional stress has been present. In other words, in all the cases I have seen, beginning years after injury to the head, other causes in addition to the trauma have existed. I must make one exception to this, namely, traumatic epilepsy and hemiplegia. In such cases insanity beginning years later may apparently be the direct consequence of disease resulting from the original trauma. But even in these cases the insanity, as a rule, comes on only after the establishment of general cerebral atheroma arising from causes entirely independent of the injury, or the patient has abused alcohol or been subject to some unusual stress. I know of no case in which injury to any part of the person other than the head received years before has had the slightest influence in causing subsequent mental disease.

In answering the second question we may surely say that there is no characteristic type of post-traumatic insanity. The usual conditions are confusion, delusion, simple dementia, postparalytic dementia and epileptic insanity. Two forms of insanity, true melancholia and paranoia, I have never seen follow an injury. As to paranoia this is not at all surprising because, using the word in its proper restricted sense, it is really developmental and arises independently of any external influence. The paranoiac is predestined to be such and will fulfil his destiny, no matter what the externals of his life may be. I am aware that the word has come to be used to include so many widely different conditions that many authors mean by it any type of mental disease in which the patient reasons about his delusions, but I use

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



it to include only patients who, after a more or less aberrant puberty and adolescence, begin to be extremely egotistic and suspicious and later develop persecutory, mystical or erotic delusions or delusions concerning science or politics which they reason about and group into a more or less complete system and assign as a cause of the persecution to which they believe they are subjected. Associated with the delusion are visual, auditory or other hallucinations. This slowly increasing, and at times more or less intermitting, disease runs over many years and finally if the patient lives long enough the order and system and pseudo-logic of the delusions disappear to be followed by confusion and finally more or less dementia and death. Paranoia in this restricted sense can not be caused by injury. I have never known a paranoiac who received a serious injury after his disease was established and, therefore, do not know whether trauma ever hastens its course or temporarily increases the severity of the symptoms. True melancholia, also, great emotional depression with or without marked loss of intellectual judgment and delusions of self-abnegation or self-accusation I have never seen follow an injury. I have, of course, seen melancholia follow an injury which prevented a man from earning his living and earning for his family, but in those cases the mental and emotional shock and not the physical hurt to the brain was the cause of the disease.

I exclude from this paper all cases in which the physical injury was so trifling or the mental shock so slight that the trauma was a mere coincidence. I have also excluded post-traumatic delirium, transitory or rapidly followed by death from exhaustion. It is frequently a result of alcoholism and possibly sometimes of ether poisoning. The cases studied here are those in which the relation in time between the injury and the onset of the insanity was so close as to make it reasonable to assume that there was something more than mere coincidence.

#### CASE SUMMARIES.

Three of my patients were alleged to have developed paresis six or eight weeks after injury to the skull. I give only the essential points of their cases.

CASE 1.—A woodworker, aged 35, had his left frontal bone fractured in a railway accident. He made a good and rapid surgical recovery but was never well mentally after the accident. In a few weeks he became grandiose, careless as to money, obscene in language and demented. Within eight weeks of the injury, it is alleged, he had already begun to show physical signs of paresis, absent knee jerks, alteration in the iris reflexes and slurring speech.

When I saw him first, many months later, he presented the classical picture of paresis. Though it was stated that he was entirely well before the injury, I find it impossible to believe that he was. I can not believe, on pathologic grounds, that paresis could have such a rapid course and think that the trauma only increased and hastened the progress of already existing disease.

CASE 2.—A man, aged 37, an ironworker and a hard drinker, while at work on a ship fell from the upper to the lower deck, striking his head. He was picked up unconscious and on being examined at the hospital was found to be suffering from sunstroke. There was a large bruise on the scalp but no fracture of the skull. Under treatment for sunstroke he soon regained consciousness and seemed to be well for five weeks. He then had an epileptiform convulsion after which, in a few weeks, he developed symptoms of paresis.

When I examined him some months later, he presented the typical signs and symptoms. I do not think that the injury to his head had any influence in producing the disease, but that the sunstroke was the provocative agent in causing a rapid increase of symptoms.

CASE 3.—A man, aged 45, was passing under a heavy ladder, when it fell, striking him and making him unconscious. After about a half hour he regained consciousness and walked home unaided. The next day he showed no signs of injury but complained of weakness and was very nervous. He was depressed and at the same time irritable. He soon became very melancholy and in three months his speech began to be inarticulate and he heard with difficulty, or rather it was hard to make him pay attention to anything said to him. At times he did not recognize his wife and threatened to kill people. He seemed to think in a vague way that people wished to harm him but he had no clear-cut and well-defined delusions.

*Examination.*—When I examined him a year later his gait was slow and hesitating. There was marked sway on standing with the eyes closed. He showed ataxia in both hands. The left knee-jerk was capricious, the right increased. The pupils were equal and reacted to light. The reaction with accommodation could not be determined on account of his mental state. Speech was very slow and drawling. He understood and obeyed simple commands, but could not follow conversation. His attention could be held only a minute or two. His manner and behavior were parietic. No delusions were discovered.

When the case came to court in a suit for damages many friends and business acquaintances swore that up to the time of the accident he had been an active, healthy and energetic man. Notwithstanding these lay opinions, I believe that the injury, which, after all, was only a very mild concussion of the brain with unconsciousness lasting only a half hour, was nothing more than a provocative agent in increasing a disease already existing.

Trauma not only of the head, but of any part of the body, is a very active agent in precipitating mental breakdown in old people. The fright and emotional shock is quite as potent as the physical injury, and sometimes more so. The aged do not bear shock well and I have seen many cases in which injury has been immediately followed by beginning senile insanity. Usually this is only simple senile dementia. Sometimes the dementia is associated with traumatic epilepsy.

CASE 4.—A hard-working man, aged 60, of good habits, was thrown from the platform of a rapidly-moving trolley car. He was picked up semi-conscious and taken to a hospital. Concussion of the brain was diagnosed. He remained in the hospital two months. He never worked after the accident and appeared silly and demented. When I examined him about eighteen months after the accident, he was very silly in talk and behavior, was childishly happy and very garrulous. He had vague delusions that his friends wanted to poison him. Sometimes he recognized his wife, at others he did not. He was always worse at night, sleeping badly, getting up and walking about the house and talking incoherently. He looked like an old man and the palpable arteries were hard.

CASE 5.—A man, aged 58, received a compound, depressed fracture in the left temporal region, for which his skull was trephined. Though the operation was surgically successful he never recovered his mental faculties. He was profane, obscene, garrulous and much confused. He slept badly. He had no recollection of either the accident or the operation, but talked vaguely of having been shot during the Civil War and thought it was still going on and that he was a soldier. The right arm was palsied. Later he became too demented to have any delusions.

CASE 6.—This was a case of presenile dementia, if we accept sixty years as the age of beginning senility. The patient, a man, aged 54, was treated at one of the city hospitals for fracture of the base of the skull. He never recognized his family after the accident, was noisy and garrulous, dirty in his habits, soiling his clothes and the bed, and much demented and confused. Though he has been in the insane department of the Philadelphia Hospital for two years he does not know where he is, how long he has been there nor that anything is the matter with him.

CASE 7.—A man, aged 53, after concussion of the brain, is talkative, rambling, confused and demented. He hears voices swearing at him. He has no distinct and clear delusions but is



hypochondriacal. He is noisy and restless at night and sometimes excited.

In two patients, though the injury was received years before marked mental symptoms appeared, yet the injuries seemed to stand in distinct causal relation to the insanity.

CASE 8.—A man, aged 70, was shot in the right eye in the Civil War, the right prefrontal lobe apparently having been injured. How extensively the brain was injured can not be determined. Soon after the injury he began to have general epileptiform convulsions which have continued at irregular and quite infrequent intervals ever since. He worked for years after receiving his wound, but though, at times violent, after the fits, presented no continuous symptoms of mental disturbance till about three months before being brought to the insane department of the Philadelphia Hospital. He then rapidly began to show marked symptoms. He had visual hallucinations, thinking people were pursuing him to hurt him. He also heard people swearing at him. In consequence of the hallucinations he often became violent and struck people. When I examined him he was able to give a fairly intelligible account of his earlier life, including his experiences during the war and the gunshot wound but was much confused concerning recent events. He was very silly and garrulous. Since he has been in the hospital he has been violent occasionally for a few hours after a fit. He is, however, always more or less excited at night and sleeps badly. Once, indeed, he suddenly jumped out of bed and, without a fit having occurred, assaulted an attendant. His act seems to have been the result of a dream. He has vague delusions of persecution, not concerning any one person, but people in general.

CASE 9.—A man, aged 80, suffered a simple fracture of the skull 8 years ago. After several weeks' treatment he was able to return to work but was never as active and energetic mentally as before the accident. No marked mental deterioration occurred, however, till six years after the injury when, apparently suddenly, he began to have visions of spirits and to talk to them.

When he was brought to the insane department of the Philadelphia Hospital, a few weeks later, he knew where he was and who he was, and gave a clear and apparently fairly accurate account of his early life. He claimed to see God and to talk with the Holy Ghost frequently. He attracted the attention of the Holy Ghost by tapping on the window sill, after which he would ask him if he was there, and would then begin a conversation with him. He had no doubt that he was especially chosen and favored by God. He had no realization of the fact that he was mentally ill and when told that he was he became very excited and disputatious. He argued a great deal about the correctness of his beliefs. Dementia was marked. He is best classified as a case of so-called senile paranoia. Now, two years after admission, his condition remains the same.

Both these men had all the physical signs of senility.

Injuries to parts other than the head are often active provocative agents in precipitating senile mental breakdown. Thus fracture of the leg or arm or sudden falls without any gross manifest injury, especially if the accident be accompanied by any sudden shock, as occurs in railway and trolley accidents, may be immediately followed by senile insanity. Most frequently there is simple senile dementia, but senile mania or delusional insanity may result. The mental breakdown is most likely to occur in people whose arteries are much thickened and who have already begun to show signs of what may be called normal mental senility.

In some of the patients the course of events was injury to the head, epileptiform convulsions and later insanity. Several of the patients were alcoholics in whom drinking always precipitated a fit and increased the mental symptoms. In one case I am quite sure the insanity was caused by the abuse of alcohol in a man who in early life had had a serious head injury rather than that the injury itself was in any sense the cause.

CASE 10.—Patient fractured his parietal bone when four years old and was immediately trephined. When 23 years old, some time after he had become a drunkard, he began to have general epileptiform convulsions, followed by mental confusion and silly behavior. Some time after he began to be violent after the fits which occurred in groups of 20 or 30, there being often an interval of four or six months between the groups. Later he began to be continuously surly and ugly and refused to work.

He was admitted to the insane department of the Philadelphia Hospital five years ago, when 28 years old, and was then and is now in a condition of epileptic mania.

CASE 11.—Patient, a man, aged 54, an alcoholic, had general epileptiform convulsions two months after concussion of the brain. When brought to the hospital, one year after the accident, he was confused, not only after the fits, but at all times. He had persecutory delusions that people were trying to poison him by blowing saltpeter in his mouth, and by filling his room with water. He heard people talking about him and said they were trying to make a fool of him. He did not know where he was. He had no realization of being mentally diseased but knew that he had fits and complained much of headache. He was discharged from the hospital several months later in the same condition.

CASE 12.—Patient, when 24 years old, suffered a depressed compound fracture behind the right ear for which he was operated on. At the time of the injury he was a hard drinker but his family denied he ever drank afterward. Following the injury he had a right hemiplegia but no mental symptoms till general epileptiform fits began to recur at irregular intervals when he was 29 years old. Some month later visual hallucination appeared and he became silly. At first the hallucinations were seen only after a fit.

At the age of 31 he was admitted to the insane department of the Philadelphia Hospital. He had slight palsy of the left arm, inability to tell the number of points in contact with the skin, though tactile sensibility itself was preserved, astereognosis in the left hand, and no palsy of the leg. The left knee-jerk was spastic and left ankle clonus was present. He is now, two years later, demented, quiet most of the time, but occasionally excited or even violent, especially after a fit.

One case seems to be best classified as alcoholic, traumatic confusional insanity.

CASE 13.—A brakeman, aged 39, was found unconscious on the railroad tracks with a fracture of the frontal bone just above the right eye. He remained stuporous for a week. During most of the time he could be roused enough to swallow liquids and to utter a few words. At the end of the week he began to talk a great deal but very incoherently.

When taken home, five weeks after the accident, he did not know where he was and did not recognize his family. He got up at night and walked aimlessly about the house, hunted for his clothes when he already had them on and frequently wandered away from home and got lost. He was brought to the hospital by the police and after treatment for several weeks (three and one-half months after the injury) was discharged apparently well.

Another case is best diagnosed as alcoholic, traumatic delusional insanity.

CASE 14.—Patient, aged 54, received a concussion of the brain by being struck by a locomotive. He had been a drunkard for years. He was never in good mental health after the accident, and never went back to work, but at first he seemed only a little silly and lazy. A year later he began to be delusional, thinking people were persecuting him. He would go over the house at night in search of enemies. He also doubted his wife's fidelity. Now, three years later, he has the same delusions and is demented.

One patient's case was very interesting on account of the presence of auditory hallucinations associated with injury to the left temporosphenoidal lobe.

CASE 15.—A negro, aged 30, sustained a depressed fracture behind the left ear from a blow from a baseball bat, for which he was trephined on account of pressure symptoms. What the



immediate result was I do not know, but a few months later he was partially word deaf and at the same time had auditory and visual hallucinations. He soon became unmanageable, and was violent and abusive. He had delusions of persecution. In the course of many months he became completely demented and died of erysipelas and uremia. The brain showed distinct injury to the auditory speech center.

Sometimes after an accident in which no or slight physical injury has been sustained, but in which the patient has been greatly frightened, distinct mental symptoms, temporary or permanent, follow, as in the following case:

CASE 16.—A man, aged 37, was only slightly hurt in the muscles of the back in a collision of two trolley cars. Several other people were severely injured and the circumstances of the accident were very horrifying. From the time of the accident until I saw him eighteen months later, he had been very stupid. If sent on an errand he would forget what he was sent for and would get lost in the street. He would give irrelevant answers to questions and from having been an industrious man had grown lazy. He not only took no interest in his family, but was entirely indifferent to them. He simply sat about, ate and slept. He had no hallucinations or delusions.

Unfortunately I could get no really accurate information of this patient's past life beyond the fact that, though industrious, a good workman and a man who took care of his family, he had been a steady but not excessive drinker for years. I am strongly inclined to believe that had his habits been better he would have escaped any permanent injurious results of the accident.

I have seen several cases of what for want of a better name I must call temporary weakmindedness following serious injury or shock with little or no injury. The severe cases all occurred in neurotic youths. Several had bad family histories. The following is a typical case:

CASE 17.—B. D., aged 18, had graduated from a high school with honor and had done well at his work in one of the large financial corporations. The officer of the corporation immediately above him spoke very highly of him to me, but said he was always sensitive, anemic, and worked beyond his strength. He was very neurotic and his family history was bad. He was in a railway car when a collision occurred and the car was thrown down an embankment. Several people were killed, but he received no physical injury. He went home and the next day tried to work, but could not do so on account of nervousness.

When I saw him first several weeks later he was listless, sluggish in thought, careless about his personal appearance, and altogether dull and stupid. His hands were bluish-red, mottled, cold and wet. The pupils were dilated and the pulse rapid. His gait was slouching and his attitude stooping, with one shoulder higher than the other. I feared he was in the beginning stages of adolescent dementia. I sent him to the country, compelled him to take a great deal of outdoor exercise, and to eat much plain food. After three months he began to improve, and at the end of a year was able to resume his former position, a fairly healthy young man.

Very frequently families claim that the imbecility of a son or daughter has been caused by some injury to the head received a short time before the symptoms were noticed. As a rule, questioning proves the injury to have been too slight to have had any effect whatever. In other cases observation of the father or mother shows plainly that the real cause has been a bad heredity. A very few of the patients have sufficient mental stamina to withstand the ordinary stress of life, but not enough to withstand a serious concussion or the shock of a great fright. On the other hand, I have seen several imbeciles made much worse by injuries to the head.

I wish to thank Dr. W. W. Hawke for his great assistance in studying the patients in the insane department of the Philadelphia Hospital.

## DISCUSSION.

DR. W. G. SPILLER, Philadelphia, said that the degree of injury should be borne in mind, and that he can not agree with Dr. Burr in saying that trauma is never an exciting cause of insanity. It depends on what is included under the term insanity. A patient, who was under Dr. Spiller's care for a long time, had an injury of the left side of his head with word-deafness; a few years after the injury he developed hallucinations of hearing and sight, with delusions of persecution, probably the result of a large lesion in the left first temporal convolution. Dr. Spiller said that he had under his care, at the University Hospital, a man in perfect physical health, with no history of insanity in the family. In January he fell and struck his head, and is now depressed, confused and delusional, and Dr. Spiller doubts whether he will entirely recover. Dr. Spiller thinks it would be assuming too much to say that trauma is merely the provoking cause of such states. Not infrequently, after injuries to the head, a very decided change is seen in the mental condition, which can not be understood from a pathologic standpoint. In at least some of the cases they are minute hemorrhages or minute areas of softening throughout the brain caused by trauma. Dr. Spiller has always been suspicious of so-called cases of paresis produced by trauma. In many instances the patient has had syphilis, perhaps ten years previously, and the trauma has been merely an exciting cause.

DR. F. X. DERCUM, Philadelphia, agreed fully with the position assumed by Dr. Burr in regard to trauma as a cause of insanity. Dr. Burr does not claim that trauma is a cause of manic-depressive insanity or of paranoia, but that it causes confused mental states; it is provocative of delirium, of confusion and of stupor. Dr. Dercum did not understand Dr. Burr to say that trauma causes paresis, but that trauma may be an exciting cause of paresis. In cases of old syphilitic infection, the patient may be on the verge of paresis and may be so depressed by shock or concussion as to lead to the speedy development of paresis.

DR. HERMAN H. HOPPE, Cincinnati, referred to a particular case that came under his observation. A man fell only a short distance from a ladder and had some very serious brain injury. He was delirious for a few weeks, and when Dr. Hoppe saw him he presented the typical picture of paresis; he had the Argyll-Robertson pupil; there was absence of patellar reflexes, and a most careful physical examination, together with the family history, failed to reveal any specific infection. The man was addicted only moderately to the use of alcohol. Dr. Hoppe said he mentioned this case to exemplify the fact that there may be exceptions to the rule.

DR. H. A. TOMLINSON, St. Peter, Minn., confirmed from his own experience the conclusions of Dr. Burr. So far as his experience goes, there is no relation between the nature and extent of the trauma, and the kind or degree of the mental disturbance. Indeed, the most serious mental aberration may be associated with the slightest degree of cranial trauma; while extensive injury to the brain and its coverings frequently occurs without resulting mental disturbance. These facts seem to him to be good evidence that there is no direct relation between the trauma and the insanity; and that these apparently exceptional cases may be explained after a more careful and detailed study of the personal history and heredity of the individual. So much depends on what is meant by instability and defect; and the absence of the history of mental alienation in the parents or near relatives does not preclude the possibility of the parents having bequeathed a faulty nervous organization to the child, as the result of some constitutional condition affecting the somatic welfare of one or both of them. It is because this possibility is so commonly overlooked that cranial trauma is so frequently heard of as being the direct cause of insanity. Several instances of developmental cases in which progressive dementia follows slight injury to the head have come under Dr. Tomlinson's observation. In the study of the brain in cases that have come to necropsy, and in three cases in which operative interference was undertaken, with the belief that the removal of some hypothetical cause of pressure would restore mental capacity, he has noted that the degenerative changes begin



In the convolutions surrounding the insula, without regard to the location of the cranial injury, on the left side in right-handed persons, and on the right side in left-handed persons. Another interesting fact in this connection is that extensive injury to the frontal lobes of the brain frequently occurs without mental aberration or reduction, but with serious sensory or motor involvement instead. It is true that very often there is more or less temporary loss of sensory capacity, which, after a time, gives rise to apparent mental reduction; because the individual is no longer able to adapt himself to the conditions in his environment, as he does not appreciate them. Dr. Tomlinson believes that the mental disturbance that follows cranial trauma is always the result of a pre-existing cause that the trauma has made active.

DR. P. C. KNAPP, Boston, took exception to Dr. Burr's statement that insanity is always due to the previous nature of the individual, and especially to Dr. Tomlinson's statement. Dr. Knapp thinks that there are numerous cases of serious mental impairment, which are due directly, and almost solely, to trauma, viz., cases in which there has been some severe injury to the head, which, as Dr. Spiller said, is subsequently followed by more or less minute hemorrhage and considerable injury to the cortex of the brain. Dr. Knapp is very skeptical of the cases of extensive injury to the cortex not attended with mental symptoms; they may not come under the classification of "insanity," but there is always considerable mental involvement. He has seen a number of such cases go on progressively to dementia, cases in which there has been nothing whatever in the previous history of the individual, or in the heredity to explain the process, except the direct injury to the brain itself. So far as general paresis is concerned, he has never seen a case in which he could consider that the trauma was the exciting cause, although he believes it possible that trauma may be the last straw which will produce paresis in the syphilitic, who, if he had not received the trauma, might have been exempt. It is, of course, a common experience, both in general paresis and any other chronic degenerative disease in the nervous system that a very marked exacerbation of the disease may follow very slight or very severe trauma. In cases of either shock or injury of slight character to the head, or injury to other parts of the body, his experience has been that the trauma of itself may be the exciting cause. It has usually produced a state of more or less amnesia, confusion and apathy, conditions which are rather apt to be curable. He does not believe that true paranoia can be produced by trauma. Paranoia is not so much a disease as it is the physical malformation of the individual. There are occasional conditions which follow trauma, especially in neurotic individuals, in which there is for a time acute hallucinosis, with some delusions, which are usually not very serious, and seldom become definitely systematized. The trouble is not usually of a prolonged character, but at first it may seem like simple paranoia. Dr. Knapp said that he has seen conditions which follow trauma, and which formerly would have been described as chronic mania; at present many speak of the condition as "manic-depressive insanity" (which term Dr. Knapp refuses to use). He recalled one patient in whom the injury was followed by apparently mild hysterical symptoms, which speedily developed into delusions and very marked and grave hallucinations. This patient finally became one of the most violent and excited patients the Boston Insane Hospital had had for several years. In cases of that sort other conditions come into play, although in this particular case there was no heredity, simply a mild neurotic family history and no toxic influence. Dr. Knapp thinks that trauma is only an incident in cases of paranoia.

DR. RICHARD DEWEY, Wauwatosa, Wis., spoke of a paper presented many years ago at the meeting of the American Medico-Psychological Association by one of the physicians at the Homeopathic State Hospital in New York, entitled "Traumatic Insanities and Traumatic Recoveries," in which the author cited two cases, in which recovery had followed injury to the head. From his experience with brain trauma, Dr. Dewey believes that unless there are some other contributing causes, it very rarely causes insanity. One is often impressed with the fact that the family and friends of patients exag-

gerate greatly the importance of injuries, being anxious to find a cause for insanity in some injury rather than in any inherent tendency. In some of these cases there is a "traum," in the German sense of the word, and "Traeumerei" rather than "traumatism" describes the case.

DR. W. ALEXANDER JONES, Minneapolis, agreed with Dr. Burr as to the etiologic value of trauma in insanity, and said that he had taken a practical view of the situation in not limiting himself to any definite trauma. Dr. Jones added that in psychopathic subjects any degree of injury may be associated with almost any form of insanity. It is the individual rather than the character of the injury that is most significant.

DR. JULIUS GRINKER, Chicago, agreed with those who claim that trauma may produce insanity directly, and said that he did not think so until two cases came under his observation, in which every other cause could be excluded. In the first case there was no history of syphilis, only a moderate degree of alcoholism, and the patient had been well until a bag of flour, weighing 150 pounds, fell on his head. This trauma caused loss of consciousness for about one hour and the patient gradually recovered. Three or four months later he developed all the signs of paralytic dementia. Dr. Grinker declared that he hesitated to call the case general paresis, because he was under the impression that trauma could not produce paresis, without syphilis, or other contributory causes, but he decided to call it traumatic dementia, and as such he presented the case to the Chicago Neurological Society, in which diagnosis the members acquiesced. The patient subsequently died of hemiplegia, and whether death was caused by the trauma, primarily or secondarily, is, of course, doubtful. Perhaps arteriosclerosis following the trauma acted as a connecting link to cause a fatal termination. Dr. Grinker has another patient under his care with a similar history. This patient had been perfectly well, working all his life, never missing a day, until the trauma occurred. He had never shown any of the mental and physical signs of a character that developed after the trauma. Since that time typical mental signs of general paresis have developed. In these two cases Dr. Grinker feels quite certain that trauma acted as the sole cause, or at least as the sole tangible cause, of the insanity.

DR. ALFRED GORDON, Philadelphia, spoke of the effect of trauma on the development of mental affections. His experience, which extends over a considerable number of cases, has taught him that there are cases of paresis which begin to develop their symptoms after mild or insignificant trauma. Recently he has had some very important and very instructive cases from this standpoint. A patient with paresis came to the Jefferson Hospital, Philadelphia. The patient's relatives denied any syphilitic history, and the diagnosis was put down as paresis, with trauma in parenthesis. About a week later the brother of the patient came to Dr. Gordon's office and told him that the patient had a syphilitic infection about ten years before. This is merely an illustration of the fact that proper histories of the patient, so far as syphilitic infection or hereditary influence is concerned, are not always obtained, and extreme care must be exercised in saying that there is no specific or other involvement, when all the history obtained is that from the direct examination of the patient. Dr. Gordon thinks Dr. Burr's remarks in connection with trauma perfectly proper, and agrees with him that trauma does not directly produce paresis or any other typical, classical psychosis, but may give an impetus to a previously existing mental affection. He remembers cases in which the symptoms of paresis began to develop after insignificant as well as marked traumata. It is difficult to understand how an insignificant trauma is liable to produce paresis. There is no question, in his judgment, that those cases which develop paresis, following trauma, undoubtedly presented symptoms of paresis prior to the trauma.

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Anilide.—Anilides are derivatives of anilin (benzene-amine, benzamine or phenamine,  $C_6H_5NH_2$ ) in which a hydrogen atom of the  $NH_2$  group has been replaced by an acetyl group, thus  $C_6H_5NH(CH_3CO)$  is acetanilid.—*Pharmaceutical Review*.



## MIGRAINIC PSYCHOSES.

## APROPOS OF TWELVE CASES.\*

ALFRED GORDON, M.D.

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PHILADELPHIA.

The most recent researches in the domain of physiologic chemistry lead to the view that migraine finds its logical explanation in a pathologic metabolism and that the immediate cause of a migrainic attack lies in auto-intoxication. Whether it is uric acid, as championed by Haig, or special ferment or ptomain, as advocated by Friesser, it is not completely elucidated. The fact is, that in the majority of cases, if not in all, there is an element of gastrointestinal disorder. *A priori* one can say that an attack of migraine suggests a cerebral poisoning. The headache and other cerebral symptoms observed in a migrainic attack are analogous to the same symptoms in diseases of the meninges and tumors of the brain. It is possible that in migraine the primary cause is of a cerebral nature and the digestive disturbances are brought on by the condition of the brain. Practically speaking, there is a vicious circle in regard to the relation of brain and gastrointestinal tract and migraine.

Abundant material concerning mental disturbances in endogenous and exogenous intoxications is now on record. The studies of indol, indoxyl, indican, skatol, acetone in their relation to certain psychoses are too well known to dwell on. Interesting and instructive are the studies of Richardson,<sup>1</sup> who made exact quantitative estimation of indol in various mental and nervous disorders. The conception of auto-intoxication is so far advanced that a number of diseases can be readily explained on this basis. Suffice it to mention, mental disturbances following infectious diseases or puerperal states, to see that a toxemia is the immediate causative factor of the cerebral derangement. In this connection it is interesting to call attention to the observations on variation of leucocytosis. When leucocytosis is artificially stimulated (which is Nature's method of combating toxins) there is an improvement in the patient's condition.

Among all the organs which are capable of becoming the seat of endogenous intoxication, the gastrointestinal tract is the most important. It is the *fons et origo* of various toxins.

Observation shows that there is a great analogy between the cerebral manifestations in intoxications of endogenous or exogenous sources. While in one group of cases there is depression, in another there is exaltation and restlessness. These two states may alternate, succeed each other rapidly, and may be accompanied by hallucinations. The multiple mental phenomena observable in such cases can be summarized in three forms: Confusion, delirium and stupor. The first two are associated very frequently to a various degree.

In migraine, which is so intimately associated with disordered metabolic changes, mental disorders are also observable sometimes. When the latter occur, they are undoubtedly occasioned by the same obnoxious metabolic product as the migraine itself. That this is mathematically correct can be seen from the fact that both morbid processes appear and cease almost simultaneously.

Association of migrainic and mental symptoms is not at all surprising. The same toxic product originated in

those arthritic, gouty, obese and constipated individuals, by circulating in the blood, will in certain cases produce meningeal and bulbar symptoms (headache and vomiting) plus mental disturbances. It is true that the mental symptoms are not frequent, but close observation will show that they are always present although in a mild form; in every case of typical migraine there is some degree of mental dulness, apathy and confusion and, not infrequently, mild delirium.

Within the last four years I have succeeded in collecting 12 personal cases of typical psychoses observed in migrainic attacks. They all fall in the above mentioned three groups. The mental phenomena observed are identical with those of infections or intoxications of any nature. They all presented pronounced confusional states with or without delirium, with or without delusions, with or without hallucinations. They were all types of the classical primary psychoses, the etiology of which frequently escapes our observation.

CASE 1.—M. S., married woman, aged 35, had had attacks of hemicrania for five years. At the beginning they were typical in character, viz., presented nausea, pain in the right temple, appearing in the morning and disappearing toward evening. Later these symptoms began to be accompanied by mental disturbances. About an hour after the headache made its appearance, the patient became restless, would move from one place to another, or would run on the street until some one would stop her, would talk loud in incoherent manner and make gestures. She evidently had visual hallucinations, as she was addressing some one. She was unable to recognize relatives and mistook relatives for strangers; she evidently presented illusions of identity. This condition gradually disappeared at the end of the day, when she vomited and went to sleep. On the following day the patient could not recall a single phase of her attack.

Attacks of this nature occurred five times within the last year. Otherwise, viz., between the attacks, the patient was entirely normal. There is nothing worth mentioning in her personal history prior to the onset of migraine. Patient was obese and each attack followed a period of obstinate constipation. There were no hysterical stigmata.

CASE 2.—L. B., woman, aged 48, suffered from migraine for 20 years. During the last 10 years mental symptoms accompanied each attack of headache. Visual and auditory hallucinations were marked; she would see flashes of green and bright lights and hear voices, which she was unable to distinguish. The latter were so annoying to her that in order to silence them she would scream at the top of her voice. As they lasted only two or three hours she would then enter into a state of mild stupor; would sit in a corner of a room, groan and moan, hold her head in her hands, vomit bilious fluid and was somewhat confused. At the end of the same day the condition would clear up and the patient would fall asleep. On the following day the hemicrania would continue, though to a less marked degree.

There is an interesting observation concerning the character of sleep. On several occasions it was noticed that she would talk considerably during her sleep, express at times joy and at others fear; she would struggle for breath. When awake she would continue to use the same expressions and present the same facial features as during her sleep. The personal history presents this interesting feature: that until the age of 18 she had epileptiform seizures and at 28 the migrainic attacks appeared. There was also migraine in several members of the family. There were no hysterical stigmata.

CASE 3.—L. L., girl, aged 17, had attacks of hemicrania with vertigo, nausea and ocular pain for 5 years. Occasionally an attack would be accompanied by mental phenomena. She would become delirious, restless, run out of the house, gesticulate, talk in incoherent manner and refuse to recognize her relatives. Visual hallucinations were also present, as she would look at objects and address them. The condition would last about four hours, after which she would be in a state of slight mental hebetude, complain of severe pain in the right temple,

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Bull. of Labor. of Mt. Hope Retreat, 1899.



of photophobia and pronounced nausea. Profound sleep would end the attack. There were no hysterical stigmata and nothing in the personal or family history.

CASE 4.—B. P., woman, aged 42, had had attacks of hemicrania for 15 years. During the attacks of last year mental symptoms developed. Shortly after the headache reached its climax, the patient became confused; feared the approach of people, and feared to look at the wall, as the pictures appeared in the shape of animals. She kept her hands on her eyes, as she dreaded to look up. She was very suspicious, refused to drink water when it was given her, saying, "perhaps there is poison." While in this condition she would occasionally grasp her head with her hands and scream from pain. The mental symptoms, as just described, lasted 8 hours, and then the head pain would become aggravated. The patient ended the attack with a vomiting spell. In the personal previous history only cholera at the age of 8 and 10 could be elicited. Many members of the family are migrainic. No hysterical stigmata were noted.

CASE 5.—S. Mc., woman, aged 54, had had migraine since she was 34. There had been two periods of mental disturbances during the attacks. First period was at the age of 40, five attacks in all; second period at the age of 48, twelve attacks, one every three weeks. The character of the mental phenomena was similar in both periods. Confusion predominated. Hallucinations concerned mainly the visual sphere and in one attack there was a gustatory hallucination, in which the patient felt the taste of salt in her mouth, when she did not eat or drink during the entire day.

The last attack is interesting. Patient developed delusions of persecution, believing that everybody disliked her, that she would soon be put to death. When questioned, she could not give any reason for it nor could she point out any special person. The persecutory state disappeared with the hemicrania which lasted sixteen hours. The same phenomena have been observed also during sleep; she talked, made motions with her hands, made occasionally unintelligible exclamations. Previous history of the patient was negative. In the family several members present migraine, also attacks of gout. There were no hysterical stigmata.

CASE 6.—P. L., girl, aged 24, had had attacks of essential epilepsy during 5 years since the age of 16. From the age of 21 she had had attacks of typical hemicrania with nausea and vomiting, lasting six hours and occurring once a month during menstrual periods. An hour after the onset of the pain in her head the patient would become violent, strike people around her, break dishes. When spoken to she appeared bewildered and unable to understand or to recognize her whereabouts. Then suddenly she would become calm, grasp her head and scream from pain. Nausea and vomiting followed. After a sleep of 9 hours the patient would awake without headache, but an asthenic state with marked confusion would last yet for two days. During her sleep she would keep up a conversation, struggle and make motions with her hands. The same attitude was noticed for a few hours after she awoke. Previous personal history showed chorea in childhood. A brother had epilepsy; the mother had migraine.

CASE 7.—C. K., woman, aged 38, had had typical hemicrania for the last three years, occurring at first every three months, but during the last year every five or six weeks. When the attacks became frequent, mental symptoms would occasionally follow an attack. They have not been all alike; at one time she would be delirious, at another would present only hallucinations or merely a confusional state.

In the last attack which I had the opportunity to witness and treat, I noticed a typical form of hemicrania limited to the left side of the head accompanied by severe pain in both eyes and nausea. At the end of 8 hours patient fell asleep. Four hours later she awoke astonished at her surroundings; fear and suspicion were on her face; she suspected everybody who addressed her or approached her. Suddenly she fell on her knees and began to pray aloud; this lasted 15 minutes. At the end of this time she began to laugh and for five minutes she could not be pacified. When the laughing subsided, she became morose, taciturn, sat in a corner of the room and remained immobile for 90 minutes. She went to sleep again and awoke at the end of 8 hours in perfect condition. There was an ab-

solute amnesia of the occurrence. The picture of the last attack was certainly of hysterical nature. Indeed, the patient presented a considerable number of hysterical stigmata; areas of anesthesia, of hyperesthesia, contraction of the visual field, and pharyngeal anesthesia. In the intervals between the attacks she frequently had hysterical paroxysms of crying and laughing. Family history was negative.

CASE 8.—O. G., woman, aged 44, had had hemicrania during 20 years occurring about every three to four months and lasting from 24 to 48 hours. For the last six months patient developed mental disturbances, some immediately preceding an attack, some during the attack and some following the attack of migraine. The nature of the mental phenomena was that observed in confusional insanity with the preponderance of illusion of identity. The duration of the mental symptoms was only from two to four hours. Between the episodes of the migrainic psychoses the patient also had attacks of hemicrania free from mental symptoms. Otherwise, the personal previous history, also family history, was negative.

CASE 9.—A. O'N., man, aged 45, gouty, had had hemicrania since the age of 25, occurring every four months after a period of obstinate constipation and lasting four days. There was a large number of attacks with mental symptoms, which have been conspicuous by their sudden onset and sudden termination and followed by a profound sleep. They usually occurred when the headache reached its climax and they were similar either to confusion or mild stupor. Hallucinations were always present, more visual than others. On several occasions hallucinations of smell predominated. On two occasions he attacked his people in the house, believing himself persecuted by an invisible agent. Patient's sleep was peculiar. He apparently suffered from terrible dreams, as he would fight, talk loud, express fear on his face and at times cry. The history of the patient showed that the attacks of migraine alternated with those of gout. Family history was negative. No hysterical stigmata were noted.

CASE 10.—J. K., man, aged 60, had had hemicrania for 35 years, occurring every three months when younger and later every six months. Patient remembers having only five attacks with mental disturbances. The latter were described by his wife. They would appear toward the end of the migrainic attack and consisted of a tendency to run away, fearing invisible agents (hallucinations); he would scream for help, strike against obstacles. This lasted about two hours, after which he became calm, but was confused for two days. A profound sleep would naturally follow and clear up the entire condition. Previous history showed chronic rheumatism and obesity. Family history was negative. There were no hysterical stigmata.

CASE 11.—M. Q., woman, aged 47, had had hemicrania since 36 years of age at the end of each menstrual period. There had been several attacks with mental disturbances, which consisted of a marked confusion with illusions of identity. Once I had the opportunity to witness this condition; the patient addressed me as her own brother and talked in incoherent manner for several minutes. The confusional state always followed the attack of hemicrania and lasted from five to six hours. Personal previous history showed marked obesity and attacks of lumbago. Several members of the family suffer from gout.

CASE 12.—J. S., girl, aged 28, had had hemicrania since the age of 23, occurring every five months. Each attack was accompanied by more or less marked mental disturbances. While the headache was severe, the patient showed pseudo-reminiscences; would speak of events which occurred in her childhood or youth but would present them in a false light, while she could recall them correctly in the intervals between the attacks. At the same time she would laugh like a child, be restless and see invisible things (hallucinations) which she would address in a familiar manner. At another time a confusional state with vague delusions of persecution would follow an attack of migraine. Once she presented only hallucinations of hearing and sight and conversed with invisible beings for 30 minutes in such a manner that delight and pleasure could be seen on her face. The mental phenomena in this case always terminated abruptly by a spell of crying. This patient had many hysterical stigmata, among which left hemianesthesia was the most prominent. Family history was negative.



## CONCLUSIONS.

The histories of the twelve cases present this remarkable similarity that in the majority, if not in all, there are three mental states that have been inevitably found, viz., confusion, mild stupor with hallucinations and sometimes vague unsystematized delusions and delirium. The hallucinations which are so frequent are mostly visual; some patients had auditory and some gustatory hallucinations. The confusional state predominated in all my patients. It was quite frequently accompanied by illusions of identity, incoherence of thoughts and language, disturbance of orientation. The delusions are all of a fleeting character and unsystematized.

Some of the cases suggest psychic forms of epilepsy, as, for example, when the patient runs on the street until stopped, or when the patient presenting a mild delirium with agitation ends his attack with a profound sleep. In a few cases the attack of migraine ended with a state analogous to a post-epileptic state, viz., mild confusion with a condition of profound exhaustion.

In cases 7 and 12 the mental disturbances presented a hysterical character; in one of them a typical attack of hemicrania of eight hours' duration ended in a four-hour sleep. When the patient awoke she began to show a mild delirium with hallucinations, talking aloud and laughing. In the second case the mental disturbances also consisted of a mild delirium with pseudo reminiscences and hallucinations. In another attack of migraine the same patient was in a state of confusion with vague delusions of persecution and hallucinations. Both patients had hysterical stigmata.

As to the time of appearance of the mental symptoms in relation to the migrainic attack, in the majority of my cases they developed during the attack when the headache reached its climax and disappeared with the headache. In some cases they continued for 24 hours after the subsidence of the migrainic. In a few cases the mental symptoms appeared at the end of the attack, in some only after the attack and in one case they preceded the migrainic paroxysm.

The question has often arisen whether the transitory psychic symptoms observed in migrainic paroxysms are the result of the migraine itself or are manifestations of other neuroses, as epilepsy and hysteria gravis. That migraine may, in a certain group of cases, be of epileptic nature, i. e., equivalent to epileptic seizures, is a well-known fact. In such cases we find the aura, which is usually ophthalmic and in both cases may be seen psychic complications. The same consideration can be applied to the relation of migraine to hysteria, in which the migrainic attack may become the exciting cause of a hysterical paroxysm. Cases 7 and 12, mentioned above, are suggestive in this respect.

If these remarks are applicable to some cases, by no means can they be considered in every case. Confining myself exclusively to the 12 personal cases, I am not at all justified in concluding that "epilepsy" or "hysteria" views are capable of explaining the observed psychic manifestations. On the contrary, in the majority of my cases the onset of mental symptoms coincided with the moment when the headache reached its climax and not at all suddenly. Their duration, onset and course do not suggest epilepsy. In the two hysterical cases, while the mental manifestations are analogous to hysterical psychic phenomena, the latter also made their appearance in the stage of full development of migrainic attacks.

Mingazzini and Pasetti,<sup>2</sup> who made special studies

of the subject, take the stand that the psychoses observed in migraine are independent and specific, and, so to speak, characteristic of migraine. This assertion of the Italian writers is not justifiable, at least from my present studies. The confusional, stuporous or delirious states, the hallucinations, the illusions, the unsystematized delusions, the amnesia—are not in the slightest degree clinically distinguishable from those observed in the same psychoses in other circumstances.

Confusion due to exogenous intoxications, like alcohol or others, is not unlike a confusion originated during puerperium in which autointoxication is a certainty. So is a delirious state or a stuporous state, so are delusions and hallucinations or amnesia. These psychoses are, therefore, not independent psychoses in the sense of Mingazzini. There is nothing especially characteristic in the migrainic psychoses that can differentiate them from the same insanities caused by other causes.

The point of importance concerning migrainic psychoses consists of their intimate association with the same causes that produced the migrainic attacks themselves, and this is autointoxication. The histories of migrainic patients are all identical: Constipation, obesity, hereditary predisposition, all figure in the life of such patients. Autointoxication, therefore, is to be expected and, indeed, it is frequent. Régis called attention in 1894, to a special form of delirium called delirium of dreams (*délire onirique*) which is frequently found in psychoses of toxic origin. It consists of hallucinatory images and of old events in various combinations, originating in dreams and continued after the patient awakes. If they disappear, they may be reconstructed during the day as soon as the patient closes his eyes. There is, so to speak, a "prolonged dream."

Originally Lasègue observed it in alcoholic delirium, but according to Régis it may be encountered in intoxications of any origin. In his opinion, it is characteristic of toxic psychoses. In my study I could observe this form of delirium only in three cases. These patients presented a sort of a second state, during which they spoke in the same manner and on the same subject as during their sleep.

The present study concerns a subject which is of some importance not only from a scientific, but also from a practical standpoint. The literature is not abundant with examples of migrainic psychoses. Suffice it to mention the names of Loewenfeld, Brackmann, Koppen, Féré, Agostini, Möbius and particularly of Mingazzini with Pasetti and Krafft-Ebing. The majority of these writers view the condition as a manifestation of hysteria and epilepsy. Mingazzini and Pasetti consider the mental disturbances as specific of migraine. In my personal opinion, based on the 12 cases, the psychoses may sometimes present features of hysteria and epilepsy, when there is an underlying basis of these two neuroses, but, on the other hand, they present nothing specific in the sense of Mingazzini. They are intimately connected with the original cause of the migraine itself, viz., toxic. As to the forms of the migraine insanities, they are confusion, stupor and delirium.

## DISCUSSION.

DR. S. WEIR MITCHELL, Philadelphia, said that the attacks which Dr. Gordon described are sometimes preceded as in epilepsy at times by a sense of physical comfort and ease and occasionally by a sense of unusual mental competence. He has seen this in a number of cases. He spoke of the frequent loss of power on one side of the body, usually on the right, that accompanies some form of migraine and referred to a family, consisting of a father, mother and six

2. Rivista Sperimentale di frenatria, xxv.



children all of whom have these migrainic attacks, and in all of whom the headache is preceded by a sense of great physical comfort, so that they know perfectly well when they are going to have an attack. When these attacks come on, there is some loss of power on the right side of the body, which usually passes away in about twenty-four hours, while in other cases there is more or less temporary aphasia. Dr. Mitchell could not agree with Dr. Gordon's frequent reference to casual toxic conditions. To Dr. Mitchell's mind there is not the slightest proof to-day, that either migraine or epilepsy is caused by a poison. He looks forward with hope to the time when poisons will be found which gather in the body and gradually accumulate until the patient develops migraine or epilepsy. One question must then be asked in every case in which a poison from any source within or without the body is claimed or proved to be the cause of occasional morbid manifestations. "What becomes of this poison, after it is developed?" Has it exhausted the power of further disordering or is there something in the condition of migraine, for example, which in some mysterious way rids the system of this poison?

DR. CHARLES K. MILLS, Philadelphia, said that what migraine really is must not be overlooked. The basic cause of the affection is heredity. All the treatments directed to the elimination of poisons from the system will never eradicate migraine from the life history of the individual. Dr. Mills has a close personal knowledge of two cases of migraine in two generations, and a historical knowledge of the existence of typical migraine in five generations in the same family. Doubtless the individual in each of these five generations has developed many poisons on different occasions. Migraine is a teratologic disease; it is interchangeable with epilepsy and grave hysteria and similar affections belonging to the same general class of constitutional affections. In cases of migraine, however, there are some individuals in whom the highest functions are not impaired throughout their lives, unlike epilepsy in which degeneration takes place sooner or later. If the disease is carefully studied and personal experience used the conclusion that migraine is a disease of the individual will be reached. It is all right to treat the symptoms of toxemia if they exist, but there is too much tendency to make toxins the basic causes.

DR. GEORGE L. WALTON, Boston, said that it is important to recognize the relation of these temporary psychic disturbances to migraine in order that the patient may be reassured regarding the onset of epilepsy or of grave mental defect. Aphasia and temporary confusion may certainly precede, and, in some cases, apparently replace an attack of migraine. Dr. Walton regards these conditions as analogous to the temporary blur of vision which precedes migraine. The sufferer from migraine may be assured that he is in no danger, on this account, of becoming an epileptic. Migraine lacks two essentials of epilepsy, namely unconsciousness and brief duration. It lacks also the diagnostic, though less constant, symptoms of biting the tongue, passing the water and injuring the face or other part of the body from falling. The coincidence of migraine and epilepsy in the same patient should be regarded merely as cumulative evidence of "deviation" the symptoms having no other relation. Dr. Walton thoroughly agrees with Dr. Mitchell and Dr. Mills regarding the non-toxic etiology of migraine. The condition is doubtless due primarily to constitutional make-up with, in Dr. Walton's opinion, eyestrain as a more common exciting cause than is generally conceded.

DR. C. EUGENE RIGGS, St. Paul, Minn., agreed fully with the experience of Dr. Walton in regard to there being no intimate relation between epilepsy and migraine. Dr. Riggs referred to Dr. Mitchell's statement concerning loss of power in migraine and mentioned a case of a medical man who was supposed to have had a stroke of apoplexy. A physician called to see him and told his wife that he could not live more than twenty-four hours. There was complete paralysis on one side and motor aphasia; the sensory disturbance was marked and the pain in the head intense, but in the course of twenty-four to thirty-six hours he had entirely recovered.

DR. W. G. SPILLER, Philadelphia, said that no mention had

been made of the vascular theory for certain cases of migraine. It is not new and there is something to be said in its favor. The symptom-complex sometimes seen is suggestive of vascular disturbance of one side of the brain. Possibly in some cases of migraine there is a condition similar to that of intermittent claudication of the limbs.

DR. L. H. METTLER, Chicago, said that the one argument that migraine is not due to toxemia is the fact of its more or less regularity in onset. Take a typical case of migraine, watch it over a considerable space of time, and it will be found that there is a kind of periodicity in its appearance, which could not be explained if it were caused by general toxicity. In other words, the burden of proof rests on those who assert it is due to toxicity to prove that it is due to this cause alone, and to show that this cause occurs at the same time with the same degree of periodicity. This is a very important argument. Dr. Mettler emphasized Dr. Mills' statement that this disease is essentially a neurotic condition.

DR. G. L. WALTON, Boston, said he has had two attacks of aphasia which lasted for a few moments only, preceding the headache, at the time the blur ordinarily comes on, and on two other occasions he has had temporary mental confusion, lasting for a few seconds. He agreed with all Dr. Fisher had said. Dr. Walton said that at any time he can start an attack of migraine by giving a little tilt to his spectacles, but he does not regard eyestrain as a material cause of the unfortunate psychic and physical make-up of "deviate" individuals. Concerning Dr. Mitchell's observation that the patient is often unusually well preceding the attacks, Dr. Walton gave the explanation that individuals with this make-up are peculiarly liable to various psychic peculiarities, among others a suggestion of manic depressive states.

DR. P. C. KNAPP, Boston, said that in regard to the toxic theory of migraine, there is one point, which bears on what Dr. Spiller said, namely, that in toxic conditions, as a rule, the symptoms are expected to be bilateral. In a certain percentage of the cases of migraine there are symptoms pointing certainly to localization in the brain, for example, of course, the symptoms of hemianopsia, aphasia or hemiplegia.

DR. F. X. DERCUM, Philadelphia, was glad that Dr. Gordon had placed these psychic equivalents of migraine in the group to which they really belong, namely the group of delirium, confusion and stupor. The pathology of migraine probably embraces facts both of neuropathy and intoxication. Dr. Dercum believes that there is first an unstable nervous system and, secondly, the cumulative action of a toxin or toxins. The unilateral character of migraine is no objection to the theory of a toxic cause. Toxins do not always produce bilateral symptoms; thus malarial neuralgia usually selects the supraorbital region of one side and again Dr. S. Weir Mitchell years ago, pointed out that in experimental bromid paralysis in dogs, one side always gives way first, the bromid produces first a hemiplegia and then later a generalized paralysis.

DR. ALFRED GORDON, Philadelphia, said that the histories of all migrainic patients leave no doubt that there is an underlying pathologic basis as Dr. Mills pointed out. Migraine is now considered a degenerative neurosis. The majority of migrainic cases present a special make up of the nervous system. What he wanted to point out was the psychoses which occur in migrainic attacks and the dependency of the psychoses on the cases of migraine. Taking up Dr. Mitchell's remarks in regard to the poisons, Dr. Gordon said that there is absolutely no proof at the present time that there is a specific poison which produces an attack, but taking into consideration the chemical and physiologic investigations, which are abundant, it is known that all migrainic patients about the time that they develop migrainic paroxysms, present abnormal elements in their feces and urine, as indol, indoxyl, skatol, or other elements normally present in increased or diminished quantities. Consequently, while it can not be said that a certain given poison will produce an attack of migraine in a certain case, there is abundant proof for logical inference. Dr. Gordon said that while it is not right to say absolutely, in a sweeping manner, that every attack of migraine is an attack of epilepsy, yet whenever an



attack of migraine comes on suddenly, preceded by a sudden, blurring sensation, or a tingling sensation, followed immediately by a severe headache, with complete exhaustion; in these cases, what can be said, but that it is suggestive of epilepsy? That is all he desired to imply. In his paper he wanted to present a view that has arisen in his mind. He had had an opportunity of observing twelve cases of mental disturbance, occurring exclusively about the time of migrainic attacks, and when delirium, stupor or confusion develops, with delusional symptoms, or hallucinations, he asked if it is not the proper logical conclusion that one is dependent on the other, that the psychosis is dependent on the cause of the migrainic attack? These twelve cases give evidence of the fact that the psychosis is dependent on the migrainic attacks, especially when the psychosis didn't continue and didn't occur between the attacks, but only about the time of the attacks. Modern physiologic investigations have shown toxemia to be the cause of the migraine. These mental disturbances come on at about the same time. The psychosis begins when migraine reaches its climax and disappears with the disappearance of the migraine. What else is the cause?

DR. S. WEIR MITCHELL, Philadelphia, said there were two things in Dr. Gordon's interesting paper not alluded to. Some twenty-five years ago or more Dr. Mitchell had showed that although a large number of headaches are caused by ineffective eyes that the peculiar type of head pain in megrim is not caused by eyestrain. Again, it is quite sure that in some persons who are below the general par of health these headaches disappear when they regain their normal condition. He, himself, had personal experience of this when, exhausted by service in army hospitals at the close of the Civil war, he had a succession of attacks of megrim, which he lost after a few months in Switzerland. He has seen a number of cases, notably one which he reported to the College of Physicians, in which these headaches were increased during the months of storm and as he had shown long ago that traumatic neuralgias are almost entirely a product of conditions of the weather, it is a fair subject of inquiry as to how many of the headaches now in question may have a similar parentage. The immediate primary symptoms connected with the eyes are very interesting. In his own case the phosphene lines, so well known, were present and he still has these occasionally with headaches, but as his son, Dr. John Mitchell, has shown, as well as himself, there are remarkable cases in which these phosphenes are replaced by distinct visions of animals or people and sometimes by prolonged visual illusions.

## ATROPHIC RHINITIS: A REPROACH TO RHINOLOGY.\*

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Of late years atrophic rhinitis seems to have been very much neglected by the writers of the literature of American rhinology, not because of the lack of prevalence of the disease, which is probably as prevalent as ever, but doubtless because of the unsatisfactory results which the average rhinologist obtains.

In looking over the programs of society meetings I find that, relative to the number of cases which probably occur in every man's practice, as a subject for papers it has not been deemed attractive.

The literature touching the tonsil, the turbinate and the accessory sinuses is so voluminous that to consult it in any but a very superficial manner is a great deal of work, whereas I find in looking over the programs of this section for a number of years that only three or four papers have been devoted to this subject. I do not find any reference to it in the published Transactions of the

American Laryngological, Rhinological and Otological Society for the past ten years, although there is at present a prize offer of \$100 by one of the members for the best essay on the subject, as yet unawarded. The American Laryngological Association in its earlier Transactions, contained a number of papers touching the subject, but of late it has been silent.

Yet atrophic rhinitis is probably as often found in our patients and in our clinics as any other form of nasal disease, is more annoying to its owner and to those with whom he comes in contact than enlarged turbinates, enlarged tonsils or even sinus disease, and is less often treated with satisfactory results than any of those. Why is this? Is the disease inherently incurable or have we failed to give it the attention which it deserves? What is it pathologically and what is its etiology, and is it always going to be as much of a reproach to rhinology as it seems to me it is at present? I take up this subject for the purpose of bringing the subject before you for discussion, in the hope not only of learning something from the experience of this Section, but of stimulating you to a more thorough study of the disease.

### DEFINITION.

By the term atrophic rhinitis I understand a chronic inflammation of the mucous membrane of the nasal tract, accompanied by an atrophy which extends to the underlying structures, that is, the basement membrane, and sooner or later involving the bone itself. The term *ozena* refers to an aggravated condition of the same disease, in which there is a very foul odor accompanying the secretion. A peculiar characteristic of the disease consists in the production of an altered secretion, much thicker than normal, drying quickly, forming crusts difficult of removal, and if it has lasted for any length of time, these crusts are very foul smelling. The circulatory and glandular elements both atrophy, fibroid degeneration occurs, and in the inferior turbinate there may be complete destruction of all the erectile tissues.

### ETIOLOGY.

Dr. Goodale<sup>1</sup> has discussed the etiology of atrophic rhinitis and pharyngitis, based on 200 cases. He found that the fetid and non-fetid atrophies are more than twice as common in females as in males, while pure pharyngeal atrophy occurs with nearly equal frequency in both sexes. The fetid and non-fetid atrophies begin between the ages of 5 and 15 for the most part, whereas the pharyngeal form is unusual before 20. In females the condition seemed to be worse during the catamenia. Three-fourths of the cases showed good health and nutrition. From these studies he regarded the process as primarily an atrophic one, and not as a sequel to any hypertrophic process.

As is well-known, Grünwald, of Munich, has persistently advocated the theory that atrophic rhinitis was secondary to suppuration in some one of the accessory cavities, a view which the majority of rhinologists, I think, have not accepted, and which Jonathan Wright (perhaps our foremost nasal pathologist) regards as entirely untenable and having no parallel in pathologic processes in any other part of the body. In my own cases I have not been able to demonstrate that any one of them had its origin in suppuration of an accessory sinus, although I have repeatedly made exploratory punctures in the maxillary sinus in the endeavor to determine this point. As a rule, most accessory sinus

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Transactions of the Section of Laryngology and Otology, A. M. A., 1897, p. 46, *et seq.*



troubles, even those of long standing, are accompanied by swollen and edematous mucous membranes, and fluid pus, and not by the wide-open, crust-covered nares of atrophic rhinitis.

Bacteriologists have studied the disease with considerable care, and various bacilli have been found, the pneumococcus, the *Bacillus mucosus*, or the bacillus of Abel, the so-called ozena bacillus, and the *Coccobacillus fatidus* of Pertz. It has apparently not been proved in any case that these bacilli are the origin of anything but the odor. Their study, however, has given us considerable information with reference to the treatment, or rather the unfavorable results of treatment of the disease, since these bacilli are all capsulated bacilli and resist all antiseptic fluids in doses which would be borne by any organism, even formalin being bactericidal only in strength insupportable by any mucous membrane, namely, 66 drops to 1,000 of water.

In an elaborate article on its bacteriology and histology, Cozzolini<sup>2</sup> divides it into three stages, the first, or slightly advanced; the second, or advanced period; and the third, or very advanced stage. In the first two stages the bone becomes thin and sensibly eroded by the process of resorption, while the mucous membrane is but slightly changed. In the third stage the whole osseous structure almost completely disappears. His studies in the pathology and histology of the disease show first dilated glands and their gradual filling up with proliferated epithelial glandular cells, the venous sinuses becoming obstructed, then partly filled with proliferating endothelium, then the formation of osteoblasts, then of a thickened periosteum, and accompanied with a change in the character of the cells of the surface mucous membrane which become more squamous celled.

As a result of his researches he came to the belief that the process of ozena had its beginning in the bone, that is, that every case of ozena is the result of a case of individual predisposition, and with an absence of a favorable substratum, the process beginning as an atrophy of the medullary blood vessels, and especially of the arterial capillaries of the periosteal zone, then becoming a periosteitis or a rarefying osteitis. He regarded the micro-organisms as a secondary and not a primary event in the etiology, the bacillus not being found on the outer surface of the crusts, where are the common saprophytes, but only on the inner surface next its point of attachment to the nasal mucous membrane, and in the submucosa after detachment of the crusts. This theory seems to me the most reasonable of all which have been advanced.

E. Döbelle<sup>3</sup> gives the results of a careful clinical and microscopic study of a large number of cases. He carefully cleansed the nostrils, then made bacteriological examinations of the secretions from hour to hour as they re-formed, and also from the surface of the cleaned mucous membrane. He found the leucocytes to form quicker and in greater masses than in normal mucous membrane, but did not find a support for any special theory. The Löwenberg bacillus theory was neither proved nor disproved by his researches. He watched the re-formation of the crusts, but did not find that the crusts re-formed first in the natural drainage place from the antrum and frontal sinus, but on the convexities of the turbinates, and did not find anything to support the Grünwaldschen theory.

The theories which have been offered that atrophic rhinitis had its origin in variations of form and development of the skull seem to me also untenable, since the disease is found in narrow noses and in wide noses, with perhaps equal frequency, and is certainly an absolute perquisite of no one class in society, as it can be found among the so-called higher classes as well as the lower, though perhaps more often among those who live in more or less unhygienic conditions. Yet, from a practical standpoint, I have found some of the most intractable cases among those who were subject to it by neither heredity nor manner of living.

In an article published in 1903, Freudenthal offered the theory that the disease was due to a deficiency in the humidity of the air we breathe, and stated as a result of his own large experience that with reference to the Grünwald theory he had never found any cases secondary to accessory sinus disease, but did not deny that the two might occur as a coincidence. As a result of deficient humidity he thinks the secretion becomes thickened, less easily removed in a normal way, becomes attached to the mucous membrane, clogs the gland opening, and the process then goes on with a deficiency of humidity the primary cause, the odor being due to the secretion from a portion of the crust lying directly in contact with the mucous membrane. As opposed to that theory, it has in no wise been proven that dwellers in dry climates are any more subject to atrophic rhinitis than those in moist ones. It is very prevalent in New England, which would be classed as a moist climate. I find it prevalent among workers in cotton mills, where a fixed humidity is one of the requisites for properly working the yarn, and where the only time when the individual would be in contact with a relatively dry atmosphere would be during the night. As people of that class are inclined to sleep in ill-ventilated, over-dry rooms, it is possible, of course, that for one-half of each day they may breathe an exceptionally dry atmosphere, especially in the winter months. This theory, however, seems hardly sufficient to properly explain the disease.

Some years ago Bosworth gave as his explanation of the origin that it was subsequent to the purulent rhinitis of children. From my own observations I should say that in most instances the purulent rhinitis of children was subsequent to adenoids and did not stand in any special causative relation to atrophic rhinitis.

The etiology then would seem to be an undetermined one, and a subject for further study. In some persons there seems to be a certain predisposition, at times apparently hereditary, at times not, and the phenomena of the disease seem to be due to some unknown, as yet, predisposition. It is found among all social classes—it is very prevalent, as workers in dispensaries very well know, and I am also sure that the average rhinologist, if he counts up his cases, finds that he has large numbers of atrophic cases among his private patients as well. It is intensely annoying, especially if it has reached the ozena stage where the odor, which is seldom recognized by the patient, but is quickly recognized by others, is one of the phenomena of the disease. I know of nothing more annoying in the field of nasal pathology than for a well-bred society young woman to be afflicted with atrophic rhinitis of the odor type, and to be unable to know at all times whether there is or is not odor present. I have had a number of such patients. They are discouraging to me and discouraging to themselves. They are, as a rule, faithful to every method of treatment which you try, and yet withal the treatment is most unsatisfactory both to the physician and to the

2. Annals of Otology, Rhinology and Laryngology. July, 1899.

3. "Origin of Secretion in Ozena," Arch. f. Laryng., xv, pp. 142 to 158.



patient. After 12 years' experience with this disease I do not find that my results are materially better than at the beginning, being limited practically to cleanliness and some form of nasal stimulation in the endeavor to make the atrophic glands do more and better work.

#### TREATMENT.

When one turns to the special therapeutic measures which are in use, they are found to consist in the main of thorough cleaning of the nasal passages from the attached crusts, and the local application for the most part of some form of stimulating applications. Cozzolini preferred curetting on the ground that the new stimulated tissue which might form would be less annoying than the old mucous membrane. When the pseudodiphtheria bacillus or the pneumobacillus of Friedlander was thought to be the cause, many observers began using antitoxin, and with alleged good results. These good results were probably, however, entirely due to the fact that the antitoxins increased the glandular activity, thereby lessening the fetor, and had the drawback that so far as any real cure was concerned, they were useless, very expensive, the dosage being enormously large, and probably harmful, and I think that method of treatment has fallen into disuse.

In the years 1886, 1887 and 1888 there was considerable discussion in the American Laryngological Association with reference to the use of four or five milliamperes of the negative galvanic current applied for five to fifteen minutes directly to the nasal mucous membrane by means of a copper wire and cotton saturated with normal salt solution, and many observers, such as Delavan, Hartman and others, reported cases as greatly benefited or cured. Time, however, has not proven the value of this remedy, and in a private letter just received from Dr. Hartman he states that he gave up the use of the galvanic current some years ago. Whereas, the results in the first instance seemed to be encouraging, in the long run he found it no better than other methods resorted to, most of which, he says, have been disappointing.

In the discussion<sup>4</sup> on the treatment before the American Laryngological Association, Rice thinks as good results are obtained by endeavoring to improve the hygienic conditions as from any other particular thing, and advocates the use of local stimulants and bactericides. He mentions a long list of local applications, such as bichlorid of mercury 1-4000 or 1-2000, diphtheria antitoxin, galvanism, the Gottstein tampon,<sup>5</sup> iodoform, iodol, aristol (thymol iodid), salicylic acid, camphor, iodine, perchlorid of iron, tannin, alum, rhatany, opium, medicated bougies, stimulating volatile substances, essential oils, cubebs, tar, eucalyptus, thymol, auto-insufflators for carbolic acid, menthol, oil of pine, 20 per cent. pyoktannin in wool fat, electin vibration, borax in glycerin, chlorid of ammonium in glycerin, chlorid of potassium and phosphate sodium, ammonium phosphate, honey and terebene, creosote ointment, cubeb cigarettes, creolin bougies, resorcinol 0.5 per cent. in vaselin, have all had their advocates. Destructive agents, such as the galvanocautery, were used at one time, and I mention them here only as a matter of history, as I presume no one uses anything of the kind at present.

Hydrogen peroxid and preparations containing it, seem useful as cleansing agents, but in the long run they leave the mucous membrane as dry as ever. Oily substances, as menstrea for other things, have been very much used, but so far as these are concerned, although they have their advocates, I feel with Dr. T. R. French that in the treatment of these conditions they are to be avoided, as the oils have no therapeutic value in the nasal mucous membrane, tend to block the orifices of the glands, and although for the time being they contribute to the comfort of the patient, are in reality of very little use. Some years ago I first brought the use of formalin to the attention of the profession as a remedy in the treatment of atrophic rhinitis as a deodorant and stimulant, and at first got good results, but have now discontinued its use for several years as it was very annoying to the patient, and although productive of some influence in regard to the fetor, did not seem to materially influence the progress of the disease.

Somers has advocated citric acid as a deodorant, but states that it is of no value otherwise; Ingals reported in 1897 that a quarter of 1 per cent. of yellow oxid of mercury is a good remedy; J. H. Nichols reported 10 per cent. orthochlorphenol; John O. Roe advocated a mild solution of nitrate of silver. I have used nearly all of the proprietary silver salts. Dr. Leland<sup>6</sup> advocated the use of 10 to 20 per cent. cocain on cotton for 20 minutes, then 1-5000-2000 corrosive for the same length of time to get general congestion. I have no doubt, however, that he has long since abandoned this. Hubbard used cotton tampons put in alcoholic solution of acetanilid. Porcher advocated the use of potassium iodine on cotton tampons. This preparation, known as Lugol's iodine, I used for many years, and still use more or less, and find it one of the most efficient measures. I have used ichthyol in its many combinations, with and without glycerin, and have found this one of the many valuable methods of local application. When all is said and done, the local therapeutics seems to reduce itself to a thorough cleansing of the nasal mucous membrane, and the use of any application which produces a mild stimulation is probably as effective as anything. The severer remedies do not seem to have any material advantage over the milder ones. I am afraid that we have no specific, but I hope that one may yet be found, and that the future will not, as in the past, seem to show more failures than successes.

A word as to my experience with reference to cures. While pessimistic as a whole, I invariably tell individual patients that they will be improved, which is true, and that with careful treatment by themselves, they may be able to keep the nose free from crusts and have a reasonable degree of comfort with it. In a few instances in young people, in whom I have been able to control the treatment for a sufficient length of time, it has seemed to me that I have produced an absolute cure. In one case in particular, a girl of 14 to 16 years of age, whom I had under observation for several years, there was apparently a perfect cure, and the last time I saw her, some four years after the beginning of the treatment, and two and one-half years after entire cessation, the nose seemed apparently a normal one. I have, however, had other cases under observation the same length of time in which the conditions were fairly well controllable but the present state of affairs is, or would be if the treatment were omitted for any length of time, practically unchanged from the beginning. I have not per-

4. Transactions, 1897, p. 102.

5. A wad of cotton or wool to pack the nasal cavities and then remove after a certain length of time, so as to render the cavity less dry and stimulate secretion. It may have some value as an aid in the removal of secretion, but as a therapeutic agent is practically worthless, as it can not be introduced and removed by the patient alone, and seems to have no permanent therapeutic value.

6. Transactions of the American Laryngological Association.



sonally made any bacteriologic studies, but have accepted the results of others on that score.

I end as I began with the statement that atrophic rhinitis is the most discouraging chapter in rhinology. I have brought nothing new, the facts which I have presented are known to all, yet as human knowledge represents the sum of our individual experience, I can not but feel that the discussion of this subject is always timely. Every physician has had large experience with this disease, and I hope the discussion will bring out suggestions of value.

#### DISCUSSION.

DR. W. E. CASSELBERRY, Chicago, said that the question of climate in dry or atrophic rhinitis is a practical one. The deduction that because of comparative atmospheric dryness a climate is necessarily inimical to atrophic rhinitis is scarcely warranted. For years Dr. Casselberry had under treatment an intelligent dentist who suffered severely from this disease in its characteristic form. For a long time Dr. Casselberry discouraged him from moving to Denver from Chicago because of the natural assumption that the dry climate would not benefit the atrophic rhinitis. The man did go to Denver, however, for business reasons and still lives there. During the first two years of his residence there he wrote Dr. Casselberry twice that his disease had been vastly improved by the change of climate. Dr. Casselberry thinks that benefit may be anticipated independently of the single climatic factor of relative humidity by a mere change of environment, whether from a dry to a moist or from a moist to a dry climate, by stimulating the general health of the individual, and thus indirectly ameliorating the discomforts of this disease.

DR. G. P. POND, San Francisco, thinks that attention should be called to the probability of syphilis, inherited or acquired, in nearly all these cases. He also thinks that there never was a case of ozena without trouble in one or more of the accessory sinuses, usually the sphenoidal; and that the only hope of relief is in radical operative interference, such as will give clear healthy sinuses.

DR. R. C. MYLES, New York City, has been making observations on atrophic rhinitis for fifteen years, and would like to ascertain whether in the past others have found the same conditions that he has. Every case of atrophic rhinitis which he has been able to collect was essentially a child's disease. Every patient with atrophic rhinitis had pus in the nose 365 days in the year, and usually dating back to the eighth year of age or even before. He found that these patients did not have atrophy of the bone so much as of the mucosa. The bone condition seems to be a case of arrested development. The mucosa becomes atrophied; bathed in the mucoid substance night and day, year in and year out, it loses its vitality. The accessory sinuses are more or less involved. The condition after puberty is something that is inherited from childhood. If the source of the pus could be found and the sinus tapped, these patients might often be relieved. After thirty years they seem naturally improved. In cases of atrophy in which the affection begins at from 10 to 12 years of age, there is a mixed atrophy, and the germ, or whatever the infection is, is then not so serious. Dr. Myles has seen children from 3 to 8 years old, healthy looking, with the decided atrophied condition, the mother at the same time presenting similar conditions; whether the condition was inherited or contagious he could not say.

DR. CULLEN F. WELTY, San Francisco, believes that atrophy of the nose is due to empyema of the accessory sinuses in about 50 per cent. of the cases. He has cured patients by getting rid of the pus. In some of the cases he has not eliminated the pus entirely and the patients are not cured. When it has entirely disappeared the characteristic crust formation seems to disappear with it. He has also had benefit from the paraffin injections when not accompanied by crust formations, but he has seen paraffin do harm when there was a crust formation. The caliber of the nasal chamber is made smaller and the crusts are much harder to eliminate entirely. Dr. Welty also believes that hypertrophy precedes the atrophy

in cases that are not due to empyema, and that it is simply a part of the same disease. In many instances hypertrophied tissue and atrophic tissue may be demonstrated in the same turbinate. It has been clearly demonstrated that some cases of atrophy are due to the ozena coccus. He also believes that some cases of atrophy are due to hereditary taints and malformation. Treatment should be surgical; cleansing applications should also be used.

DR. F. S. SNOW, Syracuse, N. Y., said that he had hoped to hear something on the etiology of this disease. About 75 per cent. of his patients will tolerate large doses of iodid of potash. He does not dare to say that all his cases of atrophic rhinitis are of a specific character, but iodid of potash helps to get good results. His observation coincides with that of Dr. Myles, that these cases largely occur in children. He believes that a great deal hinges on thorough cleansing. In his practice he uses a 40 gr. to the ounce solution of nitrate of silver applied to the spots that are rough and ulcerated. Making this application twice a week, and having the patient keep the nose very clean with an alkaline solution, gives satisfactory results.

DR. A. H. ANDREWS, Chicago, in regard to inherited syphilis as an etiologic factor, said that he knows of one family one member of which has atrophic rhinitis; none of the others has it. It is hardly likely that one member of a family would inherit syphilis without some of the others inheriting it also. With regard to humidity, the members of this family have all lived in rooms with the same surroundings. One has atrophic rhinitis, none of the rest has it, so it is not a question of humidity alone nor the great changes to which people are subjected. He is inclined to agree with Dr. Myles that in all these cases in which the history can be traced it will be found that in early life the patients have suffered from occlusion of the nasal cavities.

DR. C. H. COBB, Boston, said that several years ago he presented a paper on "The Treatment of Atrophic Rhinitis by Electrolysis." It seemed to him then that it was easier to control the odor in a case of ozena, by electrolysis, than in any other way, and he thinks so still. He was criticised somewhat in giving details. These were simply experiments which tend to prove that copper had no influence in the treatment, and the steel needle or platinum needle would do as much good. The steel needle is easily corroded and is not practicable. The copper needle is easy to make; a piece of copper wire can be filed down to a point. It is necessary to have an emery cloth to polish the needle whenever it is used, as it gets chlorid of copper on it. A platinum needle has as much influence, is easy to use and does not corrode. The probable reason that this does some good is that it liberates nascent oxygen or, rather, oxygen in a subdivided state in the tissues themselves, and that oxygen with its tendency to unite with the tissues does unite with those offering the least resistance. It is used in the arts and science to purify glycerin so that nitroglycerin may be made with little risk. The thorough cleansing should be done in such a way as to increase the exosmosis. The tissue of the atrophic nose is apparently not permeable to water; water does not exude through it. It secretes mucus but not water. The best of all things is common salt and the sulphate of soda and sulphate of potash, which dissolve the mucus. Bichlorid of mercury, peroxid of hydrogen, alcohol and boracic acid to a limited extent are precipitants. They can not be washed off with water before they precipitate the mucus into a sticky mass.

DR. J. L. GOODALE, Boston, said that he does not feel that since the paper he read ten years ago, much has been learned with regard to the etiology and the nature of atrophic rhinitis. The condition which is seen in the nose characterized by atrophy of the membrane in association with crusts more or less fetid is a condition arising from a variety of causes. He thinks the matter is too large and too interesting to be discussed in five minutes.

DR. D. J. McDONALD, New York City, said that in the New York Polyclinic a number of these cases are classified as the Russian disease. Many patients from the lower East Side are poor and deprived of the ordinary conditions of life in regard to hygiene. He thinks that humidity has very little to do with



this disease. In most of the cases the history shows pus in the nose. A number of men who have been in Vienna have told him that over there it is called the Vienna disease.

DR. OTTO FREER, Chicago, said that his experience in the treatment of atrophic rhinitis has been satisfactory to him rather than discouraging. He thinks that the undue prominence given in the last decade to the etiologic importance of chronic sinus suppuration in ozena has discouraged symptomatic treatment and has led to a pessimistic view of the affection which he does not share. Although there are doubtless cases in which most of the discharge comes from the accessory sinuses and in which it is necessary to open these sinuses to help the patient, these instances, in his experience, are exceptional, and he regards atrophic rhinitis, as a rule, as representing merely a chronic suppurative catarrh confined mainly to the mucous lining of the nasal fossæ at their meatuses, with consequent atrophy of the turbinated bodies of varying degree, according to the intensity and duration of the process. The change in the disease from the normal ciliated mucosa of the nasal passages to a cutis-like nasal lining resembling the integument has suggested to Dr. Freer the ointment feature of his treatment, the scabbing and crusting on the cutaneously changed mucosa resembling much similar conditions in chronic scaly eczema of the skin. The mucous membrane of the nose and nasopharynx in atrophic rhinitis is really half skin and half mucosa in its histologic makeup.

Dr. Freer explained his treatment of the average case of atrophic rhinitis (ozena) as follows: The most important thing for the control of the disease is complete and persistent cleansing of the nares of secretions. The hard, adherent crusts and scabs can not be washed away until they are softened, and to accomplish this the most useful appliance is the Gottstein plug. The patient is directed to make it of absorbent cotton by rotating the end of an applicator or wooden toothpick on its axis with the fingers of the right hand in a pledget of the cotton held between the thumb and index finger of the left one until an even cylinder of cotton about three inches long is formed. This cotton plug is gently screwed into the nostril as far as it will go and is then wet with a saturated solution of boric acid, which soaks into it when it is in place. The nostrils are thus alternately closed with the Gottstein plug until the next day, when the patient makes his second visit. On inspection at this time the nasal fossæ will usually be found free from dried secretion, the crusts having softened to mucopurulent masses. Dr. Freer then clears the nares of these with his hard rubber nasal irrigating tube, which is sold under his name, already manufactured, but may be readily made from a hard rubber Eustachian catheter by straightening it by heat, closing the distal end with sealing-wax and melting two or three minute holes through its wall with a fine, hot sewing needle. The tube is then connected to a white rubber bulb syringe or Politzer bag and the irrigator is complete. The irrigating tube is passed back and forth in the nares and nasopharynx and rotated while the washing fluid, under pressure from the syringe, escapes in three minute but forcible jets which cleanse the nares and pharynx of secretions. The fluid employed is a solution of sodium bicarbonate, one teaspoonful to a glass of water. The patient readily learns to use the tube himself, and it is part of the treatment for him to wash out his nose and nasopharynx with it as often as needed. The advantage of the tube over the nasal douche is that it cleanses the vault of the nasal fossæ and pharynx and that the little jets have undermining force enough to float off adherent masses of secretion, while not enough water is used to endanger the middle ear.

After cleansing the nares and nasopharynx in this manner these parts are massaged under illumination with the head mirror by means of a frequently changed cotton swab on a light flexible wire nasal applicator, the swab being dipped in a freshly prepared paste of argyrol dissolved with a few drops of water in a little dish. The solution must be fresh. As much as possible the swab must be passed into the olfactory fissure and under the turbinated bodies so that every cranny of the nasal fossæ is reached. The nasopharynx is also massaged through the nose in the same way. The patient is directed to return at first every second day and then at increas-

ing intervals, according to the effect of the treatment. He is instructed to irrigate the nasal fossæ at first twice a day, then less and less often as he improves, and he is directed to introduce an ointment twice a day into the nares by means of a Gottstein plug, the ointment consisting of pure lanolin, one ounce to 10 grains of salicylic acid. This ointment prevents adhesion of crusts and stays in contact with mucosa much longer than do the thinner oils. The most difficult time for successful treatment is in winter, when the dry air of artificially heated rooms makes the tendency to drying of secretions especially great. At this time the patient is directed to place a tub on the floor of his room and to fill it with water. A number of towels or sheets are then hung into the water in such a manner that the moisture ascends in them and creates a large evaporating surface. In this way the air of the room is kept moist at all times, while dishes on stoves or radiators are only effective when these appliances are hot. The laryngotracheitis sicca and tracheal ozena often accompanying atrophic rhinitis Dr. Freer treats with his long intratracheal spray tubes introduced below the cords after cocaineization of the larynx. The solutions employed here are nitrate of silver, from 15 to 30 grains to the ounce of distilled water, and potassium permanganate, from 1 to 8 grains to the ounce of water. Dr. Freer has found the treatment outlined above most efficient for both the nasal ozena and the tracheal and laryngeal extensions.

DR. G. L. RICHARDS, Fall River, Mass., said that as a routine measure he uses iodid of potassium. It has not seemed to him that syphilis is a factor in this disease. In reference to children, he thinks the majority of cases begin in children, but whether the disease starts in the accessory sinuses in children seems to him doubtful. He has washed out the antrum, but so far without special influence on the disease. Men who work in pathologic laboratories should study this matter, he said. Here is a particular problem unsolved to the satisfaction of the profession, and there ought to be a paper on it every year. Dr. Richards has used the Gottstein tampon a great deal, but the crusts form just the same. Perhaps the advantage Dr. Freer gets is in the Gottstein tampon.

## Clinical Notes

### USE OF SUPRARENAL EXTRACT TO FACILITATE CATHETERIZATION IN PATIENTS WITH HYPERTROPHIED PROSTATE.

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Although not engaged in general practice, it has fallen to my lot to use adrenalin three times with the most gratifying result in cases of retention of urine associated with prostatic enlargement.

In commenting on my experience, I have come to believe that the knowledge of this use of the remedy is not general. This is my excuse for offering the following brief notes, which are intended simply to call attention to the matter:

CASE 1.—The patient was an old man who had been operated on. I was called up in the night by the nurse, who had failed to relieve the distress occasioned by retention of urine. I found the patient in agony, and my efforts were not more successful than those of the nurse.

Formerly, I had frequently resorted to suprapubic aspiration, and I had almost made up my mind that this would be the wisest course in this instance, when I thought of trying adrenalin.

I prepared a solution by adding a small quantity of 0.1 per cent. solution of adrenalin to an equal amount of 4 per cent. cocain solution. With this I filled an ordinary pipette, and injected it into the catheter, allowing it to gravitate to the tip. I then inserted the end of the pipette into the upper end of the catheter, closing it and thus preventing the solution from



escaping. The catheter was then introduced as far as possible without discomfort, and the solution injected from the catheter by pressing on the bulb of the pipette. After waiting a short time the catheter passed into the bladder, to the great relief of the sufferer.

CASE 2.—Three years later I made a social call on an old medical friend whom I found in great distress. He had not been able to evacuate the bladder for three days, and it was distended to the umbilicus. The attending physician had made repeated efforts to use the catheter, but the pain it occasioned and the failure of results had made the old doctor rebel against further effort. After explaining my previous experience to him, he consented to allow me to try.

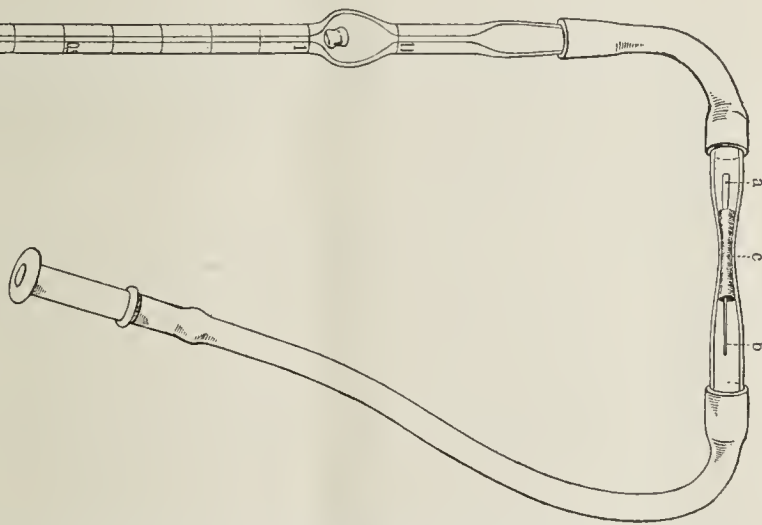
The procedure as related above was carried out, with the identical result. The patient passed a large quantity of urine, and was able to use an ordinary soft catheter thereafter himself. However, he never recovered, but died within a month. I am convinced that his last days were made comfortable by my accidental call.

CASE 3.—In September, 1905, I operated on an old man, and at 11:30 p. m. he began to complain of his bladder. The assistant surgeon was called and used hot applications and catheter, but failed to start the urine. The distress increased, and at 4 a. m. I was called by telephone, and suggested that adrenergic and cocaine be used. At 5 a. m. I was called again as the attempt to relieve the patient had failed. On arriving at the hospital I found that an effort had been made to introduce the fluid after the catheter was introduced. A long column of air prevented the admission of the astringent to the parts. I prepared a fresh solution, and within ten minutes the patient was relieved and was resting comfortably. He had no more trouble, and made a good recovery.

### WRIGHT'S "THROTTLED CAPILLARY" ADAPTED TO THE CONTROL OF BLOOD-COUNTING PIPETTES.\*

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Having repeatedly observed the difficulty many students and physicians experience in acquiring an accurate technic with the coarse capillary pipettes such as are in constant use for leucocyte counting and hemoglobin estimation, it occurred to me that Wright's "throttled capillary" might be adapted to the control of these instruments.

After some experiments, the device illustrated in the accompanying drawing was found to give very satisfactory results.

*Description.*—It consists of a capillary tube "throttled" in the manner described by Wright, that is, heated in a very small flame and then quickly drawn out into a fine thread.

The caliber of this tip must be so fine that when gentle suction is made the air comes through very slowly.

The outer protecting tube is from 5 to 7 mm. in diameter and drawn out to an hour-glass shape. The large part of the capillary (a) is marked with a file so that it may be conveniently broken off after cementing in the holder. This latter is easily accomplished by molding a little sealing wax near the throttled end, passing the larger free end of the capillary first through the holder, and, after warming gently at the constricted part, drawing the waxed end down into the narrow waist of the tube. The wax softens and fills the constriction (c), and on cooling leaves the capillary firmly cemented in place. The ends should be about 5 mm. short of the open ends of the container. It is easy to break off this larger end of the capillary at the point marked, by using a fine forceps passed into the larger tube.

With a little patience any one can make the apparatus. A few trials may be necessary in order to determine the fineness of the "throttle." This should be so arranged that, with gentle suction, the filling of the pipette is slow, while with stronger pressure one may rapidly draw in the mixing fluid.

The device should be connected to the pipette with the fine point (b) toward the mouth end as indicated in the drawing.

In the subsequent washing of the pipette with water, alcohol and ether it is advisable to remove the controlling device, as a drop of fluid drawn into the "throttled" end will occlude it and render it useless.

With this controller it is easy to draw the column of blood steadily and slowly to the point desired, and it also keeps the blood from falling from the pipette in transferring the tip to the bottle of diluting fluid.

The controller is found to give very satisfactory results in the hands of beginners using leucocyte counters and hemoglobinometer pipettes. It may also be used with a large rubber teat instead of the mouth piece and suction tube. In this event, the teat must have a small round hole punched in its upper end so that the negative pressure may be instantly relieved by the admission of air. The teat, however, does not give, in my hands, as satisfactory results as the ordinary suction tube.

### DIGITALIS HEART BLOCK.

ALBION WALTER HEWLETT, M.D.

Assistant Professor of Medicine, Cooper Medical College.  
SAN FRANCISCO.

The digitalis arrhythmias have been so thoroughly described by Mackenzie<sup>1</sup> that it would seem hardly possible to add to his description. Yet the subject is one of considerable interest, and, since the case here reported presented some peculiarities, I shall briefly relate the patient's history and the observations made on him.

*Patient.*—J. E., laborer, aged 44, was admitted to the wards of Dr. J. O. Hirschfelder at the City and County Hospital, San Francisco, on April 17, complaining of pain in the left side, the back, and the legs. Family history was negative.

*History.*—The man has had typhoid fever, pneumonia and malaria; he has used alcohol to excess and tobacco moderately. He has never had acute articular rheumatism, and denies venereal disease. For some time he has been short of breath on the least exertion and has had slight cough and expectoration. One year ago his chest was tapped for a pleuritic effusion. Appetite and digestion are poor. He has frequent vomiting spells, especially in the morning, and often has pain in the region of the stomach. He has vomited small amounts of blood at times and has had tarry stools.

*Examination.*—Physical examination showed a well-nourished and fairly well-developed man with signs of pleuritic adhesions at the base of the left lung, and a few râles at the

\* From the Clinical Laboratory of Johns Hopkins Hospital and University.

1. Mackenzie, J.: "New Methods of Studying the Heart," Brit. Med. Jour., 1905, pp. 519, 587, 702, 759, 812; Deut. med. Wochschr., 1904, p. 875.



right apex. The point of maximum cardiac impulse was visible in the fifth intercostal space in the mammary line, 10 cm. from the median line. The area of cardiac dullness extended from the lower border of the third rib above, to 11 cm. to the left and 3 cm. to the right of the median line. A systolic murmur was faintly heard at the apex, but was much louder over the aortic area. The second pulmonic sound was accentuated. Heart rate was 96 a minute and regular. The radial arteries were moderately thickened. Liver was palpable 2 cm. below the costal margin. The spleen was large, hard and smooth and palpable 5 cm. below costal margin.

Urine: Acid, sp. gr. 1.019, no albumin, no sugar, few granular casts.

*Clinical Diagnosis.*—Left-sided pleuritic adhesions, chronic alcoholism, cirrhosis of the liver, arteriosclerosis.

*History in Hospital.*—While in bed the pulse rate varied be-

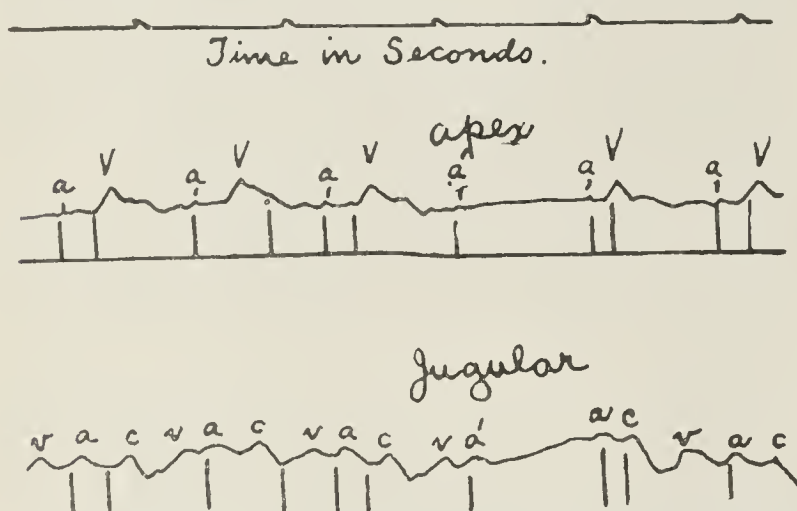


Fig. 1.—V, elevations produced by contractions of ventricles; a, smaller elevations produced by contractions of auricles. Lower tracing is from veins of neck.

tween 82 and 90 a minute. On account of his dyspnea, he began on May 8 to take normal solution of digitalis (P., D. & Co.) (15 drops three times a day). His pulse rate was not affected by this until May 18, when it fell rather suddenly to from 46 to 60 a minute, at the same time becoming irregular. The digitalis was stopped on this date and four days later the pulse became normal again. This same experience was repeated on two subsequent occasions; i. e., the use of digitalis was followed by a slow and irregular pulse. This irregularity consisted in a dropping of beats. Auscultation showed that this dropping was not due to the occurrence of extrasystoles but that during the period of intermission there was either

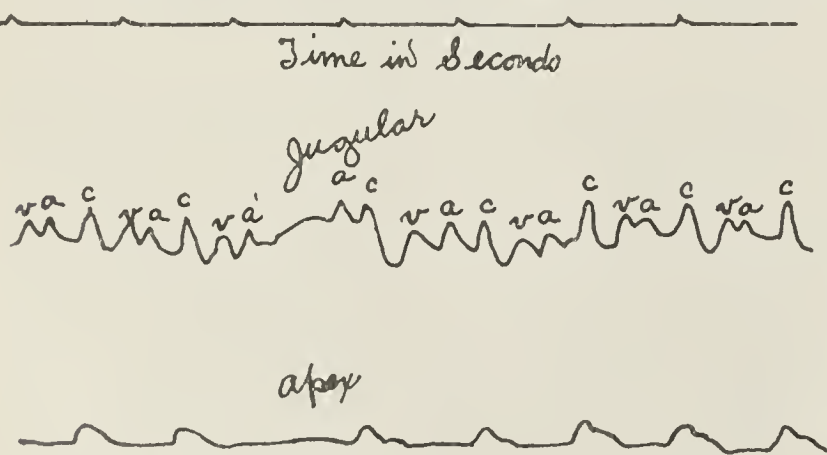


Fig. 2.—Tracings from jugular vein and from apex.

absolute silence over the heart or at most only a faint and indefinite soft sound over the base (auricular contraction?). The patient complained of precordial distress during the irregular heart action.

#### CHARACTER OF PULSE.

Simultaneous tracings taken from the veins of the neck and from the apical region showed that the irregularity present could be divided into two forms. The first of these was due to a blocking of the cardiac contraction wave on its passage from the auricles to the ventricles. The upper tracing on Figure 1 shows a series of larger elevations, V, produced by the contrac-

tions of the ventricles and a series of smaller elevations, a, produced by the contractions of the auricles. The lower tracing, from the veins of the neck, shows three principal elevations: c the transmitted carotid pulse, a a wave due to the contraction of the auricle, and v a wave that depends in some manner on the contraction of the ventricle. The distance from the beginning of a to to the beginning of c has been termed the a-c interval. Assuming that the carotid and jugular pulses take approximately equal periods of time in traveling from the heart to the neck, then the a-c interval represents the time taken by (1) the auricular systole, (2) the passage of the contraction wave from the auricles to the ventricles, and (3) that portion of the ventricular contraction which occurs before the opening of the semi-lunar valves (period of tension). Of these factors the second seems to be the most variable and consequently the duration of the a-c period has been used to estimate the time taken in the passage of the cardiac impulse from the auricles to the ventricles. According to Mackenzie, this period normally does not exceed 0.2 seconds. In this patient, when not under the influence of digitalis, the duration varied from 0.20 to 0.25 seconds, i. e., there was in him a very slight retardation in the passage of the cardiac impulse from the auricles to the ventricles. When he took digitalis, the conductivity of the auriculo-ventricular fibers was still further diminished, the a-c period varying from 0.25 to 0.40 seconds. This injury to the conductivity then became such that certain waves failed entirely to cross the auriculoventricular junction; a' is such a wave (Figs. 1 and 2). We see from the jugular tracings that it is followed by no carotid pulse and from the apex tracings that this is due to an absence of the ventricular systole. The auricles contract

	.95	.93	.84	.99	.95	.95	.96	
.35	.33	.26	.35	.39	.37	.40		
	.93	1.10	1.08	.99	.93	.99		

Fig. 3.—Diagrammatic representation of Fig. 2. The lower verticals represent the ventricular systoles, the upper the auricular systoles, and the oblique lines the duration of the a-c periods. Notice that these latter cause the ventricular intermission to be relatively shortened and the first subsequent ventricular period to be relatively lengthened.

as usual, but the contraction wave does not reach the ventricles. It is blocked at the auriculoventricular junction. The conducting fibers are not even called into activity apparently, for the next auricular wave that reaches them regularly crosses with unwonted rapidity. Thus, in Figure 2, the a-c period before the intermission is 0.33 to 0.37 seconds and immediately after the intermission it is 0.26 seconds. This shortening of the a-c period after the intermission produces a characteristic change in the rhythm of the ventricles, causing the intermission there to be less than twice the interval of a normal beat and the first normal beats succeeding to be correspondingly lengthened. These relations are made clear by referring to Figure 3, which has been constructed according to the plan devised by Wenckebach and Mackenzie. The vertical lines above represent the auricular contractions; those below, the ventricular contractions, and the connecting oblique lines, the transmission of impulses across the auriculoventricular junction. The duration of this transmission (a-c) is represented by the obliquity of the line. A glance at this diagram makes clear the relative shortening of the ventricular intermission and the relative lengthening of the subsequent beat or beats.



Similar observations on the block action of digitalis have been made by Mackenzie,<sup>1</sup> by Riehl<sup>2</sup> and by Joachim.<sup>3</sup> Mackenzie states that digitalis will produce this block between auricles and ventricles only when the conduction of impulses across the auriculoventricular fibers is already impaired. If the *a-c* period is 0.2 seconds or less, then digitalis had no blocking effect. If the *a-c* period exceeds 0.2 seconds, then digitalis should be used carefully, for a block at the auriculoventricular junction is liable to occur. If this view proves to be correct, it is a matter of considerable practical importance, for we shall be able to segregate a certain class of cardiac patients who may be presupposed to take digitalis badly. The digitalis block frequently, as in the case here reported, causes distressing cardiac symptoms and impairs the capabilities of the heart.

This peculiar block effect of digitalis is believed by

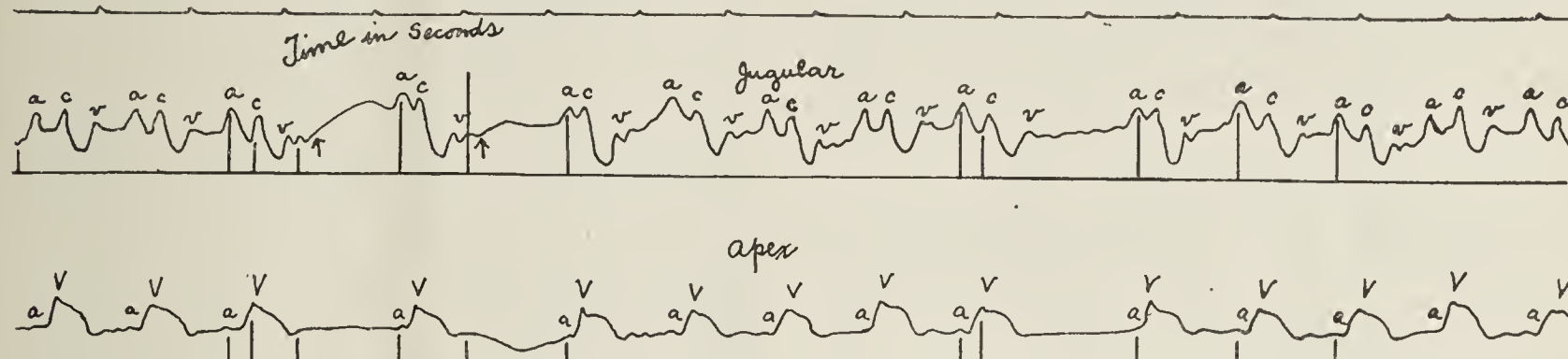


Fig. 4.—The intermissions in this tracing show an absence of auricular contractions. The location of the apices of such contractions if they had been present is indicated by arrows.

Hering<sup>4</sup> to be due to a stimulation of the vagus nerve. Since atropin paralyzes the vagus terminations in the heart, I have tested the effects of this drug on the *a-c* interval in three patients. A fiftieth of a grain of atropin was twice given hypodermically to the patient whose history has just been reported—once when he was under the influence of digitalis and once when he was not. In both cases, the effect was practically identical. The pulse rate was slightly accelerated. One would suppose that this acceleration, by lessening the period of rest for the already impaired auriculoventricular fibers would lead to a lengthening of the *a-c* period. Such was not the case, however, as the accompanying chart shows.

In these observations, the time was marked off by a tuning fork that was vibrating hundredths of a second.

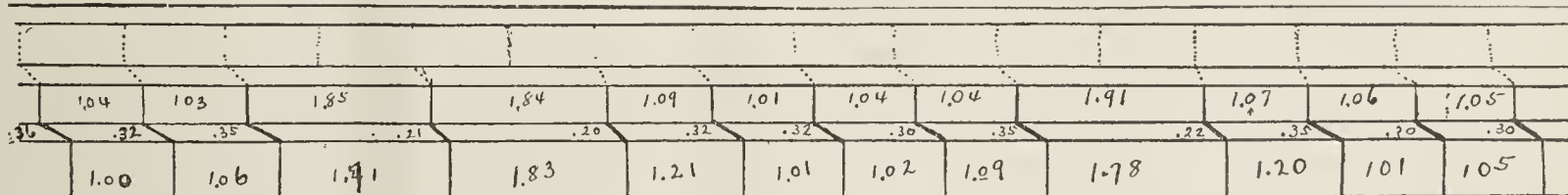


Fig. 5.—Diagrammatic representation of Fig. 4. The lower verticals represent the ventricular systoles, the middle verticals the auricular systoles, and the uppermost verticals the rate of stimulation at the venous sinus. The lower oblique lines represent the time taken in the passage of the contraction waves from the auricles to the ventricles. The upper oblique lines represent the time taken in passage from the great veins to the auricles. This latter is purely hypothetical.

It will be seen from the chart that the *a-c* interval was reduced from an average of 0.23 seconds to an average of 0.17 seconds, and that this reduction was proportionately greater than the reduction in the length of the total wave. This shortening must be due to the atropin, and, since atropin paralyzes the vagus terminations in the heart, it supports the view that the vagus nerve influences the transmission of impulses from the auricles to the ventricles.

	Before Atropin.	Before Atropin.	30 Min. After.	35 Min. After.
Average length of the <i>a-c</i> period...	0.23	0.23	0.17	0.17
Average length of the total pulse period...	0.75	0.69	0.59	0.62

Atropin was also given to two other patients who showed well-marked auricular pulses. In one of these, a neurasthenic with subacid gastritis, the effect was similar to that just described, the average length of the total systole being shortened from 0.79 to 0.60 seconds and the average length of the *a-c* period being shortened from 0.17 to 0.14 seconds. In the third patient, a convalescent typhoid, a contrary effect was produced, the duration of the total beat being decidedly shortened (from 0.87 to 0.65), whereas the duration of the *a-c*

interval was slightly lengthened (from 0.20 to 0.25). The question of the effect of atropin on the transmission of impulses across the auriculoventricular bundle may prove of some practical importance, for by its use we may be able to correct the slighter irregularities that arise from a vagus block at the auriculoventricular junction. I regret that I was unable to test the combination of atropin and digitalis on my patient.

Earlier in the paper it was stated that at least two forms of arrhythmia were produced by the use of digitalis on my patient. The second form bore a superficial resemblance to the first, for here also a beat was apparently dropped out, leaving a long intermission. This form differed from the first, however, in the important fact that no auricular pulsation occurred during the

pause in the ventricular rhythm. Figure 4 shows three such long beats interposed in an otherwise regular rhythm. Similar beats occurred throughout the tracings taken at this time; sometimes singly, sometimes in series, so that two distinct rhythms appeared to be present. In Figure 4 the auricular waves *a* are well marked on the jugular tracing and are indicated on the apex tracing; yet, during the intermission, they are entirely absent on both. The duration of the intermission between auricular beats is nearly equal to twice the duration of the normal beats; while the duration of the auricular periods next succeeding the intermissions exceeds slightly that of the subsequent periods (Fig. 5).

2. "Analyse von fünf Fällen von Ueberleitungsstörungen." *Ztschr., f. exp. Path. u. Therapie*, vol. II, p. 74.

3. "Vier Fälle von Störungen der Reizleitung im Herzmuskel," *Deuts. Arch. f. klin. Med.*, vol. lxxxv, p. 373.

4. Hering: *Cong. f. in. Med.*, 1906.



How are we to account for these intermissions? From the fact that the long waves are approximately twice the length of the short waves it seems most probable that the rate of stimulation has remained approximately constant, but that the auricles have failed for some reason to respond to certain of the stimuli. Such a failure to respond might be due to (1) weakness of the muscle, (2) an inadequate stimulus (weakness of the stimulus or refractory condition of the auricle), or (3) a block of the impulse before it reached the auricles. Against the first supposition we have the facts that the auricular contractions as shown on the tracings are well marked and that there is no sign of an alternation in the size of these contractions (a sign of weakness). Against the second and in favor of the third supposition is the fact that the intervals between the auricular beats immediately following the intermission are somewhat greater than the intervals between subsequent beats. This, as we have seen, is characteristic of the ventricular beats when the block occurs above the ventricles, e. g., at the auriculoventricular junction. As has been explained it is then due to the more rapid transmission of stimuli across this junction after a period of rest (Fig. 3). Similarly we may assume in the present instance that a block has occurred above the auricles, between these and the mouths of the great veins whence the contraction waves originate. Such a block can be produced experimentally in the turtle's heart by vagus stimulation, and venous tracings that were believed to indicate such a block in man have been published by Joachim<sup>3</sup> and by Wenkebach.<sup>5</sup> Joachim's tracings, however, are poor and unconvincing as to the absence of the auricular wave. Wenkebach's, on the other hand, are quite typical and hardly to be interpreted in any other way.

I have said that the duration of the intermissions in these cases was approximately twice that of the smaller beats. This relation is approximate only, however, for throughout my tracings the long beats, as in Figure 5, are always less than twice the length of the short beats. In some instances this may be explained entirely on the assumption of a block above the auricle. In other instances, however, this discrepancy is very marked; so that the average length of a series of long beats is but slightly in excess of half again the length of the short beats. I would explain these discrepancies by assuming that the rate of stimulation is quickened during the intermissions. When one remembers that the supposed block must be located near the point of origin of the stimuli, such a secondary involvement of the rate of stimulation is neither surprising nor improbable. This assumption is furthermore supported by the fact that a few portions of my tracings show an arrhythmia that can only be interpreted by assuming a variable rate of stimulation above the auricles.

### A UNIQUE CASE OF EYESTRAIN.

PERCY R. WOOD, M.D.

MARSHALLTOWN, IOWA.

The eye may be designated as an end organ of the brain through which the latter discharges its visual function, thus explaining the disturbance of cerebral reflex centers by slight errors of refraction and consequent interference with various functional activities.

Twenty-five per cent. of all civilized people suffer

from conditions dependent on ocular malfunction and clinically described as eyestrain. A large proportion of these cases is not reached because few physicians correctly diagnose the condition, the profession, as a whole, being poorly informed on this subject. If insomnia, nervousness, headache, indigestion and constipation may result from ocular defects, the physician should know this and so be able to prescribe the proper remedy.

Whenever our text-books emphasize more clearly, and our medical schools teach more explicitly, the pathogenesis of eyestrain, we may have recognized colleges for postgraduate work along these lines and laws confining the practice of ophthalmology and refraction therapy to those especially qualified and licensed. This would protect the public from embryo specialists and opticians who do harm. If headaches and systemic disturbances of a digestional or psychic character, which are unrelieved by drugs, were referred to the ophthalmic surgeon, more satisfactory results would obtain.

Conditions predisposing to eyestrain often date from birth and attract attention only after serious consequences have accrued. A law requiring the examination of children's eyes and the correction of refractive errors before they are permitted to enter school would mean much in health and happiness.

As demonstrating that eyestrain leads to ignorance, invalidism, pauperism and crime, we find in statistics taken of the school children of Berlin that over 40 per cent have refractive errors. The number of children thus affected shows a decreased ratio from the lower to the higher grades, indicating that ocular defects are factors in reducing school attendance. Eighty per cent. of the patients at the National Hospital for Epileptics in London have serious ocular lesions.

The same deficiency appears to play a rôle in nervous diseases. The bulletin of Iowa institutions for 1903, by Dr. Applegate, indicates that nearly 50 per cent. of inebriates have ocular defects. Statistics also show that nearly 50 per cent. of the young criminals at the Elmira Reformatory have defective vision, which has been held responsible, in part at least, for their downfall.

The case given below is unusual. It demonstrates the depth and range of ocular reflexes, as well as the necessity of never overlooking the eye in making a diagnosis.

CASE 1.—Miss M. of Marshalltown, aged 10, first seen last June, was suffering from a group of symptoms easily recognized as being of ocular origin, viz., nervousness bordering on hysteria, melancholia, indigestion, headache, etc., but standing out from this striking clinical picture was one symptom, unknown in my experience, enuresis, occurring mostly at night. She had suffered from this distressing symptom for two years and had consulted many physicians and obtained no permanent relief. She had taken treatment for neurasthenia, indigestion, liver and kidney troubles.

Under a cycloplegic I found the following errors:

R. Sph. plus 1.50, Cyl. plus 0.87, axis 180.

L. Sph. plus 2.50, Cyl. plus 1.00, axis 175.

Notice the astigmatism against the rule. I prescribed:

R. Sph. plus 1.00, Cyl. plus 0.50, axis 180.

L. Sph. plus 2.00, Cyl. plus 0.87, axis 175.

The more aggravated symptoms gradually lessened in severity and now six months later she has entirely recovered.

The result in this instance goes to show that no obscure case of a functional, organic or psychic nature has received proper consideration until the eyes have been skilfully examined under a mydriatic and every phase of the case gone thoroughly into from an ophthalmologic standpoint.

5. Beiträge zur Kenntnis der menschlichen Herztätigkeit," Arch. f. Anat. u. Physiol., Abteil, 1906, p. 297.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from vol. xlvii, page 2093).

### THIOSINAMINE.

ALLYL SULPHOCARBAMIDE. ALLYL THIOUREA.  
RHODALLINE.

Thiosinamine,  $(\text{NH}_2).\text{CS}.\text{NHCH}_2.\text{CH}:\text{CH}_2 = \text{C}_4\text{H}_5\text{N}_2\text{S}$ , is a condensation product of allyl thiocyanate and ammonia.

It is prepared by warming together volatile oil of mustard (chiefly allyl thiocyanate) and alcoholic solution of ammonia, collecting the crystalline product of condensation, and recrystallizing from alcohol.

It forms colorless crystals, having a slight alliaceous odor and bitter taste and melting at  $74^\circ \text{C}$ . ( $165.2^\circ \text{F}$ ). It is moderately soluble in water, but is decomposed by this solvent. It is soluble in about 3 parts of alcohol and readily soluble in ether.

It is incompatible with water, which decomposes it, but this change is to a limited extent prevented by the presence of glycerin.

**Actions and Uses.**—Thiosinamine appears to cause or quicken the absorption of exudates, lymphatic swellings, scar tissue, etc., the action being unexplained. The opinions as to its value are contradictory.

It is recommended for use by hypodermic injection in lupus, chronic glandular tumors, cicatrices, etc. By the mouth in stricture, corneal opacity, chronic deafness.

**Dosage.**—0.03 to 0.1 Gm. ( $\frac{1}{2}$  to  $1\frac{1}{2}$  grains) in capsules or tablet triturates; in subcutaneous injections, 0.05 to 0.2 Gm. (1 to 5 grains) in 15 per cent. alcoholic or 10 per cent. glycerinated water solution.

### TRIFERRIN.

Triferrin is ferric paranucleinate; a compound of caseinparanucleinic acid with iron, containing 22 per cent. of iron, 9 per cent. of nitrogen and 2.5 per cent. of phosphorus in natural (organic) combination.

It is prepared by digesting cow's milk-casein with pepsin and precipitating the solution with a ferric salt.

It is a tasteless powder. It is soluble in weak solution of sodium hydroxide, but insoluble in weak hydrochloric acid (0.1 to 0.3 per cent.).

**Actions and Uses.**—In addition to its hematinic action derived from the iron, it is claimed to act like lecithin by reason of the phosphorus in organic combination which it contains. It is said to agree with the most sensitive stomach, since it passes the stomach unchanged, but is freely absorbed in the intestines.

It is recommended in anemia, chlorosis, neurasthenia, rhachitis and general debility.

**Dosage.**—0.3 Gm. (5 grains) in powder, taken during meals.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. German patent No. 114,273. U. S. trademark No. 36,747.

### TRIFERROL.

LIQUOR TRIFERRINI, KNOLL.

Triferrol is an elixir of triferrin, containing 0.06 Gm. (1 grain) triferrin and about 1 Cc. (15 minims) of alcohol in 4 Cc. (1 fluidram).

A soluble form of triferrin (soluble triferrin Knoll), is dissolved in a vehicle consisting of water, alcohol, tincture of orange, tinct. cardamom, co. and vanilla.

**Actions and Uses.**—It is introduced as a convenient substitute for triferrin.

**Dosage.**—16 Cc. (4 fluidrams) corresponding to 0.24 Gm. (4 grains) of the powder.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. U. S. trademark No. 43,203.

### TRIKRESOL.

A liquid said to consist of 35 per cent. orthocresol, 40 per cent. metacresol and 25 per cent. paracresol. It closely corresponds to Cresol, U. S. P.

Manufactured by the Chemische Fabrik auf Actien, vorm. El. Schering, Berlin (Schering & Glatz, New York). U. S. trademark No. 24,188.

### TRIONAL.

A name applied to Sulphonethylmethanum, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 396,526. (Expired).

### TRIOXYMETHYLENE.

PARAFORMALDEHYDE.

Trioxymethylene,  $(\text{CH}_2\text{O})_x$ , is a polymeric condensation of formaldehyde.

It is prepared by concentrating an aqueous solution (40 per cent.) of formaldehyde by evaporation.

It is a white, crystalline powder, melting at  $171^\circ \text{C}$ . ( $339.8^\circ \text{F}$ ). It is insoluble in alcohol or ether, but slowly soluble in water at ordinary temperature, more rapidly when heated, formaldehyde being regenerated as indicated by the vapors given off.

It responds to the tests for formaldehyde.

It has the same incompatibilities as formaldehyde: Bases, oxidizing agents, gelatin, tannin, etc.

**Actions and Uses.**—Antiseptic and escharotic. It is recommended internally for diarrhea. Externally it is used chiefly to generate formaldehyde by heating, for disinfection, for inhalations in phthisis and coryza. It is also recommended for warts.

**Dosage.**—Internally, 0.3 to 1 Gm. (5 to 15 grains); externally (for warts), in 10% suspension in collodion.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). It is not patented or trademarked.

### TRITIPALM.

FLUIDEXTRACTUM SABALI ET TRITICI COMPOSITUM,  
STEARNS.

A fluidextract, each 4 Cc. (one fluidram) of which is said to represent: Fresh saw palmetto 2 Gm. (30 grains) and triticum repens 4 Gm. (60 grains) in a menstruum containing 20 per cent. of alcohol.

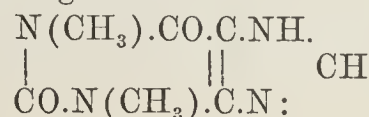
**Dosage.**—4 to 8 Cc. (1 to 2 fluidrams) four times a day, preferably with water.

Prepared by F. Stearns & Co., Detroit, Mich.

(To be continued.)

[List of all approved articles, advertising page 28.]

Theophyllin.—A correction: In THE JOURNAL, Dec. 22, 1906, page 2093, the chemical formula for Theophyllin should have been given as





# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, JANUARY 5, 1907.

## DEATHS OF THE YEAR.

During 1906, THE JOURNAL noted the deaths of 2,150 physicians in the United States and Canada, a death rate of 17.2 per thousand. This death rate does not differ materially from the estimated death rates of former years. The ages of the decedents varied from 22 to 103, the average being 58 years and 4 months, and the extremes of duration of practice were from 3 days after graduation to 71 years, the average being 22 years and 10 months. The American Medical Association lost 232 members during the year, or 10.8 per cent. of the total mortality. Heart diseases, cerebral hemorrhage, violence, nephritis and pneumonia, in the order named, headed the list of death causes.

In 15.35 per cent. of the deaths, the age could not be ascertained; in 35.95 per cent. the cause of death was not given or was not clear, and in 4.75 per cent. the duration of practice was not obtainable.

*Death Causes.*—On account of lay report and lack of detail, the verification of causes of death is difficult. Heart diseases, which include not only valvular lesions, but angina pectoris, endocarditis, myocarditis, dilatation and an uncertain proportion of sudden deaths set down as "heart failure," caused 262 deaths. Cerebral hemorrhage, which also includes certain sudden deaths and "paralysis," has a record of 182 deaths. Nephritis, which includes "kidney disease" and uremia, is said to have caused 135 deaths. Pneumonia caused 121 deaths; tuberculosis, 99; senile debility, 59; cancer, 48; typhoid fever, 38; septicemia, 29; appendicitis, 26; operations, nature not stated, 20; gastritis and meningitis, each, 19, and diabetes, 16.

*Violence.*—The deaths from violence numbered 150. Of these 103 were due to accidents, distributed as follows: Falls, 22; railway and street railway, 22; poison, 19; runaway, 11; drowning, 7; gunshot wounds, 4; ptomain, crushing, earthquake (California) and asphyxiation, each, 3; automobile and burns, each, 2, and throat cut and concussion of brain, each, 1. The suicides were 34 in number by the following routes: Gunshot wound, 16; poison, 9; cut throat, 4; starvation and drowning, each, 2, and strangulation, 1. Homicide is assigned as the cause of 13 deaths; one physician was killed in battle in the Philippine Islands, and one while assisting an officer in preservation of the peace.

*Ages.*—Sixty-two died below the age of 30; 464 above

the age of 70; 204 were 80 years or over, and 18 attained the age of 90 or more years. The maximum of deaths occurred at the ages of 60, 63, 70 and 72 in each of which 49 deaths were reported.

*Years of Practice.*—In decades of practice 1,766 had passed one; 1,428, two; 989, three; 579, four; 247, five; 44, six, and one had passed 70 years in practice.

*Military Medicine.*—Of those who served their country in war, 217 veterans of the Civil War died, who followed the Federal fortunes, and 103 who served under the Stars and Bars; 5 had served in the Mexican War; 1 in the Indian War; 24 in the Spanish-American War, and 15 had seen foreign service. The Medical Department of the Army lost 54 members, the Navy 24, and the Public Health and Marine-Hospital Service 9 during the year. The National Guard lost 27 members, 3 of whom had been surgeons general of their respective states.

*Civil Office.*—One of the dead of the year had been governor of Maine; 12 state senators; 47 members of the legislature; 6 United States consuls; 19 had held state offices; 113 municipal offices; 34 had been mayors of cities or presidents of towns or villages, and 46 had been coroners. One hundred and nineteen had held professorships or taught in medical colleges, 60 had been members or chairmen of boards of education, and 28 had been members of state boards of health or of medical examination and regulation. Hospital appointments were held by 211; 141 were health officers; 18 were editors, lay and medical, and 66 were railway surgeons.

Among the dead of the year may be mentioned:

Dr. George Ryerson Fowler, Brooklyn, surgeon and writer.

Dr. Elisha Hall Gregory, St. Louis, president of the American Medical Association in 1886, surgeon and teacher.

Dr. De Saussure Ford, Augusta, Ga., Nestor of medical profession of state.

Dr. Charles Augustus Lindsley, New Haven, Conn., secretary and executive officer of State Board of Health, writer on public health and sanitation.

Dr. Charles Henry Alden, U. S. Army, brigadier-general, retired.

Dr. Mary Putnam Jacobi, New York, distinguished woman practitioner.

Dr. James Brown McCaw, Richmond, Va., in charge of Chimborazo Hospital, Richmond, during Civil War.

Dr. Philip Skinner Wales, surgeon general, U. S. Navy, retired.

Dr. S. Edwin Solly, Colorado Springs, specialist on tuberculosis.

Dr. Alonzo Gareelon, Lewiston, Maine, once governor of the state, stalwart member of Board of Trustees and supporter of the American Medical Association.

Dr. Fernand Henrotin, Chicago, gynecologist and surgeon.

Dr. William James Herdman, Ann Arbor, Mich., neurologist and pioneer in electro-therapeutics.



## THE TYPHOID SPINE.

Many seemingly uncommon conditions as they are segregated by the pioneer clinician and attain prominence in medical journals become relatively common. This has been the history of many diseases, and this, we think, is what will happen with regard to the so-called "typhoid spine." Described first, we believe, by Gibney of New York in the late eighties of the last century and later emphasized by Osler, the literature on the subject increased to such an extent that last year Fluss was able to collect nearly fifty cases. This number is, of course, small, but no one who has worked with typhoid cases, and what general practitioner has not, will believe that it accurately represents the frequency of the condition. Doubtless many instances are still overlooked or misinterpreted, and many of the recognized examples do not get into the journals.

The most prominent features of the disease are the spinal pain with its accompanying disability, and the intensely neurotic condition into which most of the patients fall. The pain is a varying quantity, but is practically always present at some time or other during the course of the disease. In some patients it is intense, and it is frequently accompanied by spinal or nerve disturbances, paresthesia or anesthesia, weakness, spasm or atrophy of the muscles and a radiating distribution, all of which suggest a nerve root origin. The neurotic features of these cases are frequently marked and are usually extremely distressing, not only to the patient, who is often in a pitiful condition, but also to the physician and the family. In some of the cases the condition, which usually appears during convalescence, is accompanied by fever and leucocytosis, though pyrexia is lacking in a fair percentage of patients. The spine itself may show little definite change beyond stiffness and sensitiveness, but there may be actual deformity and some recent patients examined by the *x*-ray have shown actual bony deposit.<sup>1</sup>

There has been a good deal of dispute as to the nature of the process. Gibney favored the view that it is due to organic changes, probably in the form of a periostitis; Osler inclined to the belief that in most instances it is a neurosis. Of late years there has been a strong tendency to regard Gibney's original views as the more probable, and the case reports of McCrae certainly favor the idea that an actual organic lesion is often present. There is every reason why such organic changes should occur, if we judge by the behavior of the typhoid bacillus in bony structures elsewhere. Since Quinke first pointed out the frequency with which the causal agent in typhoid is to be found in the bone marrow, increasing attention has been paid to the osseous complications of the disease. Aside from actual osteomyelitis, periostitis is far from uncommon in typhoid fever, and even when actual osteomyelitis occurs it differs from the ordinary forms in its curious chronicity and tendency to spontaneous disap-

pearance without suppuration. In view of McCrae's findings and other similar ones, it is reasonable to suppose that in most instances the typhoid spine, or better, typhoid spondylitis, is an organic lesion of an inflammatory nature associated with the presence of the typhoid bacillus in the periosteum or bony structure of the spinal column. The failure to find definite organic changes in patients with this condition is doubtless due to the difficulty of detecting changes in the spinal column when these are of a localized character and do not impair the integrity of the structure as a whole. That actual deformity may rarely occur is certain, but it seems to be uncommon.

It is to be hoped that the condition will receive the wider recognition to which its not infrequent occurrence entitles it. When recognized we believe that the practitioner should regard the condition as organic and regulate his treatment accordingly, unless the evidence of the neurotic nature of a given case is overwhelming.

## OSTEOPATHY IN CONGRESS.

At the last session of Congress the Senate passed a bill (S. 5521) to regulate the practice of osteopathy, to license osteopathic physicians and to punish persons violating the provisions in the District of Columbia. The measure calls for a board "to be composed of five physicians in good standing—adherents of the osteopathic system of practice." This board is to be appointed by the commissioners of the district and should have the usual number of officers.

The bill provides: "From and after the passage of this act all persons desiring to practice osteopathy in the District of Columbia shall apply to said board for a license to do so. Applicants shall submit to examination on the following named branches, to wit: anatomy, physiology, chemistry, pathology, principles and practice of osteopathy, hygiene, histology, surgery, obstetrics and gynecology, medical jurisprudence and such other branches as said board shall deem advisable; but said board shall not examine any applicant until satisfactory proof is furnished that he or she is of good moral character and over twenty-one years of age, nor until he or she has presented a diploma issued to him or her by a reputable college of osteopathy, which, at the time said diploma was issued, required personal attendance on a course of instruction of not less than twenty-seven months. All examinations shall be both theoretical and practical and of sufficient severity to test the candidate's fitness to practice osteopathy. All questions propounded for the examination of applicants, except such as relate specifically to the treatment of disease, shall be the same as the questions to applicants for licenses to practice medicine under the provisions of an act entitled 'An act to regulate the practice of medicine and surgery, to license physicians and surgeons, and to punish persons violating the provisions thereof in the District of Columbia,' ap-

1. McCrae: Amer. Jour. of Med. Sci., December, 1906.



proved June 3, 1896, and the answers submitted by applicants for licenses to practice osteopathy shall be marked on a scale of severity equivalent to that adopted for the marking of the answers submitted by applicants for licenses to practice medicine. To the end aforesaid the president of the board of osteopathic examiners, in so far as relates to the selection of questions to be used in examinations and in so far as relates to the rating of the answers to said questions, whether questions propounded to or answers submitted by applicants for licenses to practice osteopathy or for licenses to practice medicine, shall be entitled to all the rights and privileges of the presidents of the several boards of medical examiners of said district."

This bill is remarkable in several particulars: In the first place it is a recession from the position declared by the promoters of this cult that osteopathy *per se* is a sufficient remedy with which successfully to treat all the ills to which flesh is heir. It now becomes apparent that these practitioners are to be licensed in surgery, obstetrics, gynecology, which, according to the phraseology of the measure, are separate and distinct from the principles and practice of osteopathy. This contradiction does away with the subterfuge under which osteopathy gained a footing in the various states, namely, that they were not physicians within the meaning of the law; that they did not treat disease in such a way or by such methods as to bring them properly within the purview of the law. This forfeiture of their claims is not, however, associated with a forfeiture of their demands for special privileges. The special privilege asked for and granted, so far as the U. S. Senate is concerned, to the representatives of this cult in Washington, consists of an evasion of an examination of fundamental branches under conditions imposed on all other applicants to practice the healing art. The provision that the questions shall be identical and that the grading shall be done on a scale of "equivalent severity" has again made surrender of the entire contention so far as the osteopaths are concerned. For, if the questions are identical and the grading is to be done on a scale of "equivalent severity," why should there be another set of persons designated to ask questions and to do the grading?

The whole thing, considered as judiciously as it may be, can only be construed as an effort on the part of persons deficient in fundamental qualifications to acquire the right to treat disease and thus assume responsibilities for which they are not qualified.

But the most pernicious feature of the whole measure is the effort on the part of the promoters of this measure to maintain and perpetuate the spirit of sectarianism in the profession in which a fundamental science is to be recognized as a unity. The advanced steps taken by the American Medical Association have gone far toward putting an end to this sort of thing by obliterating, in large measure, the lines of demarcation that define sectarianism in medicine. The promoters of this measure

have sought to negative this, so far as the District of Columbia is concerned and so far as the influence of the bill passed by the National Congress is calculated to establish a precedent.

#### THE MOVING PHYSICIAN.

There is no royal road to professional success in medicine. Building a practice is proverbially slow work, but the man who, choosing his location with greater or less wisdom, burns his bridges behind him and doggedly waits, is he to whom success eventually comes.

One is struck, therefore, with the number of physicians who, having passed the "starvation period" of practice and commanding a certain degree at least of recognition, are unwilling to remain where they are, but seek what they believe to be fields with larger opportunities.

This thought is suggested by a terse little article<sup>1</sup> by one who is alive to the best interests of the profession, Dr. James F. Percy, president of the Illinois State Medical Society. As he well puts it: "I believe that in the majority of instances, this moving is a mistake. The time lost in obtaining a new foothold in a perhaps more desirable and larger community, the money spent in answering the greater demands usually necessary when taking up one's work in a new field, the wear and tear on the nervous system of the man who has been used to being busy and forced again to sit and wait as in the beginning of his career, all of these things beat back rather than push forward the physician who attempts it. They could be more profitably exercised in re-developing the opportunities in the field already occupied."

Not only do such changes operate to the detriment of the physician, but the community also suffers. A high-minded, alert and public-spirited medical man is a power making for civic health and cleanliness. He is, by training and education, the man best able to guide and counsel the public in the numerous emergencies that arise in all localities: the control and prevention of epidemics; the healthfulness of the water or milk supply, or the disposal of sewage. No man who has uppermost in his mind the idea of getting away from a given locality at the earliest available opportunity, can take the same interest in its people as one whose life is indissolubly a part of theirs. Superficial observers may assert that such ideal considerations weigh as nothing, but we believe the time will come when physicians will feel toward the communities in which they live the same responsibility they now admit toward their individual patient.

From a purely selfish standpoint, however, it is to the interest of the physician to remain where he has attained a measurable amount of success. The busy village practitioner is one of its influential citizens; his children,

1. "A Little Preachment," Ill. State Med. Jour., December, 1906, p. 609.



instinctively knowing this, develop that fine spirit of *noblesse oblige* which makes for all that is best, his family has the *entrée* into the best society the town affords—in other words, he is more than a mere “doctor.”

As to the amount of pleasure to be derived from such a life, that depends on the man. Each individual must get the pleasure of life out of his life-work, for he whose only recreation is found in his few weeks' stereotyped annual vacation leads a dreary existence indeed.

Whether this desire to move is but another phase of the social and business unrest of the day or a result of the all-pervading “get-rich-quick” spirit, we cannot say, but the tendency which is certainly more noticeable than in years gone by is—in our profession at least—to be greatly deplored.

#### GUARANTEE UNDER THE PURE FOOD ACT.

The pure food act properly places the responsibility for infractions of the law on the manufacturer and not on the retail dealer. Section 9 specifies that “no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer or other party residing in the United States from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this act designating it.” To facilitate the guaranteeing of products by the manufacturer the commission which was appointed to formulate the rules and regulations for the enforcement of the act directs that “a general guaranty may be filed with the Secretary of Agriculture by the manufacturer or dealer and be given a serial number, which number shall appear on each and every package of goods sold under such guaranty, with the words: ‘Guaranteed under the Food and Drugs Act, June 30, 1906.’” With such a guarantee the dealer is relieved of responsibility; it is assumed by the one who gives the guarantee. Manufacturers of pharmaceutical products have hastened to file such guaranty with the Secretary of Agriculture so as to protect those who deal in their products. It is but natural that some manufacturers should seize on this as a means of impressing on us that their products are in strict compliance with the act itself. This, of course, is entirely erroneous. The guaranty filed is only an agreement by the manufacturer to be responsible for any infraction of the law, but it in no way guarantees that the provisions of the law are complied with. It is not alone on the public, but on the medical profession, that this deception is practiced. A certain French firm, for instance, is publishing in full-page advertisements its guaranty filed with the Secretary of Agriculture. It is evidently intended to mislead physicians into believing that the Government has examined and passed on the product, approved the labels, etc. It means nothing of the kind. The government officials may never have seen either the articles guaranteed or the labels they now or may in the future use. Physicians, above all others, should be conversant with the workings of this act, for they will be consulted more than any others. At the present juncture it is important that they should know that

the fact that a guaranty has been issued does not in any way mean that the material conforms to the law, the object of the guaranty being, as is well set forth in the paragraph quoted, to protect the retail dealers from damages if prosecutions should result, and to throw the responsibility on the manufacturers.

#### HONORS FOR AN AMERICAN PHYSICIAN.

Dr. Thomas Addis Emmet of New York has been invested with the insignia of Knight Commander of the Order of St. Gregory the Great. This was recently conferred on him by the Pope for the success of his labors during a long life in saving women from suffering and in making life happier for a class of patients whose existence had become a continued discomfort. It is not often that foreign recognition comes to members of the American medical profession, though in Dr. Emmet's case interest in his work has always been more acute in Europe than in America. Dr. Emmet's first professional recognition, received nearly forty years ago, was an honorary membership in the Berlin Obstetric Society, conferred just after the publication of his work in 1868 on “Vesicovaginal Fistula from Parturition and Other Causes.” This was followed very shortly by his election to membership in the Medical Society of Norway. It seems eminently fitting that Dr. Emmet, who has spent the working part of his eighty years mainly in the most active practice of his profession, should still experience the pleasure of knowing that his life-work is not unappreciated and that the honor thus conferred on him should call attention once more while he is still with us to all that he accomplished. One of the defects of our social and political system would seem to be that there is no formal method of conferring honors of this kind. Such honors must prove a precious consolation to the veteran member of the profession, who, while feeling that life is approaching its end, and hoping that it has not been lived in vain, yet has no visible symbol to tell him of others' appreciation. The French system which provides for such honors and decorations for work well done would seem to be worthy of our imitation.

#### FORESTRY AND TUBERCULOSIS.

A sanatorium for consumptives is being established in the forest reserves of Pennsylvania.<sup>1</sup> This state has at present the unique position of having large state forestry reservations, a state school of forestry devoted exclusively to the training of young men for its forest service and liberal forest laws. Some time ago the State Forestry Commissioner announced that citizens of Pennsylvania are entitled to the privilege of using the forestry reservation of the state under proper restrictions as a residence while regaining health, and recommended it especially to those in need of the fresh-air treatment for tuberculosis. This privilege has been utilized, with the aid of the state, in the establishment of the South Mountain Camp Sanatorium. In the spring of 1903 Dr. J. T. Rothrock, who was at that time commissioner of forestry, started the construction of a few small

1. *Charities and the Commons*, Dec. 1, 1906.



cabins for the use of such patients. At first the patients were obliged to provide and to prepare their own food, but the legislature has since appropriated enough to enable the management to furnish food, and the results have been better than before. Only patients in the incipient stages are admitted, and of the 141 so cared for about 75 per cent. have been either much improved or cured. The charge to the patients is one dollar a week for all supplies and services, except washing and the care of their cabins and their persons. The large forestry reserve allows of an indefinite extension of this method of dealing with the disease, and the small expense seems to point to it as a way to provide for the large class of patients who must be cared for in the incipient stages if the disease is to be checked and its victims restored to society as safe and potent factors in industrial progress. Dr. Rothrock believes that the forestry reservations furnish an answer to the further problem of how to care for the consumptive whose disease is arrested, but whose financial condition demands that he must still be cared for until able to return to his home. Pennsylvania has nearly a million acres of forest reservation, much of which needs replanting with young trees. To do this requires a large number of men, and the task of raising and transplanting trees is mostly light outdoor labor, well suited to the convalescent consumptive. In addition, there are various forms of woodcraft, such as basket making and the manufacture of small rustic articles that could easily be carried on under healthful conditions in the forests. The example of Pennsylvania suggests the propriety of other states taking similar steps and providing for the large number of consumptives who need care in an inexpensive and at the same time effective manner.

#### BONE METASTASES FROM HYPERNEPHROMA.

The work of a quarter of a century ago on the lodgment of emboli would have led one to expect that bone metastases should be common in any form of tumor whose cells escaped into the blood current. Experience has shown that something more than a mechanical factor is at work in these cases, and that the types of tumor which give rise to bone metastases are not very frequent. The not infrequent bone metastases with tumors of the breast, prostate, stomach and thyroid are well recognized, but it is only of late that we are beginning to realize that hypernephromata frequently cause secondary growths in the bones. Scudder's<sup>1</sup> recent study brings out some interesting facts. The most important one refers to the frequency with which these peculiar tumors are latent. Here, as is often the case with the metastasizing thyroid tumors, the original growth may remain so small as to be clinically inappreciable, while the metastasis is large and causes the patient to consult his physician. The bone metastasis, too, may be the only metastasis, a hopeful point from the surgeon's viewpoint. Another diagnostic aphorism is added by the paper, viz.: to examine the kidney region carefully in every individual past middle life with an apparently primary bone tumor.

#### AMYL NITRITE IN HEMOPTYSIS.

Inasmuch as the nitrites are classified with the cardiac stimulants the average practitioner is apt to overlook the fact that their effect on the heart is only a secondary one, or, at any rate, mainly so. At first sight it would seem homicidal to order a cardiac stimulant to a patient with pulmonary hemorrhage, and this indeed would be the case if amyl nitrite were a direct cardiac stimulant. We know, however, that the action of most importance is the dilatation of the superficial capillaries, and that the effect on the heart is mainly due to the fact that this capillary dilatation reduces the work of the ventricles by decreasing the peripheral resistance. Even if this be the case, the action of the drug in controlling pulmonary hemorrhage is not explained, for it has generally been assumed that the pulmonary capillaries also are dilated. The recent researches of Pic and Pettijean and clinical substantiation of his views as to the use of amyl nitrite in hemoptysis have led Hare,<sup>1</sup> who first introduced this treatment, again to direct attention to it. The French observers have shown by experiments on dogs that amyl nitrite strongly contracts the pulmonary vessels, and that the contraction persists for about ten minutes. On the clinical side Hare reports some 34 cases of his own and others, in all but one of which amyl nitrite in doses of from three to nine minims promptly controlled the bleeding.

### Medical News

#### ALABAMA.

**Licenses Revoked.**—At a recent meeting of the Mobile County Society the permits of two dairymen of the city were revoked because they refused to allow the milk inspectors to make the tuberculin test on cows in their dairies.

**To Prohibit Cocain Selling.**—It is announced that a bill will be introduced by a medical member of the next state legislature to prohibit the sale of cocain within the state and to prevent, as far as possible, the manufacture of "patent medicines" in Alabama.

**Hospital Notes.**—A contract has recently been closed which provides for the location of a modern hospital and sanitarium at Anniston.—The City Hospital, Bessemer, is now completed and ready to receive patients.—The Robinson Hospital, Bessemer, was opened December 1 for the treatment of medical and surgical cases. It has 17 rooms and accommodations for 22 patients.

**Society Meeting.**—At the annual meeting of the Jefferson County Medical Society, held in Birmingham, December 17, Dr. Benjamin L. Wyman, Birmingham, was elected president; Dr. George A. Hogan, Bessemer, vice-president; Dr. James M. Mason, Birmingham, county health officer; Dr. Robert B. Harkness, health officer of Birmingham; Dr. Arthur F. Toole, Birmingham, secretary and treasurer, and Dr. Joseph D. Heacock, censor.

**Personal.**—Dr. Shirley Bragg, Montgomery, president of the State Convict Board, was knocked down by a buggy and injured while crossing a street, December 6.—Dr. Rhett Goode, Mobile, has been appointed chief surgeon of the Southern Railway, with headquarters at Mobile, and with jurisdiction over the lines of the company between and including the Columbus and Greenville, Miss., branches.—Dr. Charles T. Pollard, Montgomery, has been re-elected physician of Montgomery County.—Dr. William M. Cunningham, Corona, was robbed of \$200 in a sleeping car recently.—Dr. Seale Harris, Union

1. Ann. of Surg., December, 1906.

1. Lancet, 1906, II, 1435.



Springs, has been made professor of medicine in the Medical College of Alabama, Mobile, vice Dr. George A. Ketchum, deceased.

#### CALIFORNIA.

**Northern California Physicians Meet.**—The sixteenth annual meeting of the California Northern District Medical Society was held in Sacramento November 13, and the following officers were elected: President, Dr. Elmer E. Stone, Napa; vice-presidents, Drs. Barton J. Powell, Stockton; Henry E. Sanderson, Stockton, and Trusten P. Peery, Yuba City; secretary, Dr. Joseph W. James, Sacramento; treasurer, Dr. Oscar Stansbury, Chico and censors, Drs. William E. Briggs, Andrew M. Henderson and Edward W. Twitchell, Sacramento, Dr. Walter E. Bates, Davisville and Dr. John Fife, Red Bluff. In the evening the society was entertained at a banquet by the Sacramento Society for Medical Improvement and Dr. Frederick W. Hatch officiated as toastmaster.

#### CONNECTICUT.

**Higher Requirements at Yale.**—Beginning in September, 1909, the requirements for admission to Yale Medical School will be at least two years of collegiate work, covering at least 15 hours per week, and must include inorganic chemistry, physics and general biology. By a proper choice of subjects the student may in six years secure both the bachelor of arts and doctor of medicine degrees. The school believes the preparation involved in the college entrance requirements and two years of collegiate work is an adequate preparation for professional study and the obtaining of the B.A. degree will not be required as essential for securing the M.D.

#### GEORGIA.

**District Society Meeting.**—The first annual convention of the physicians of the Sixth Congressional District was held in Macon November 8, at the call of Dr. M. Allie A. Clark, Macon, the district councilor. The following officers were elected: Dr. John R. Shannon, Cabaniss, president; Dr. J. A. Combs, Locust Grove, vice-president, and Dr. Eugene B. Elder, Macon, secretary and treasurer.

#### IDAHO.

**Personal.**—Dr. John E. Hoyt, formerly assistant physician at the Minnesota State Hospital, St. Peter, is now located at Moscow as assistant to Dr. Charles L. Gutman in his private hospital.

**Communicable Diseases.**—Fourteen cases of smallpox are reported at Emmett.—An epidemic of smallpox is reported in the logging camps of Grimes and Doggett Creeks.—Smallpox is reported to have made its appearance in Hailey.—Diphtheria is reported to be epidemic in the Catholic schools of DeSmet, where 16 cases are reported.—The public schools of Stites have been temporarily closed on account of the prevalence of diphtheria.

#### ILLINOIS.

**Hospital Notes.**—The Sycamore City Council passed an ordinance December 14, to lease a building owned by Dr. Letitia A. Westgate, known as the Hospital Building, to be used as a city hospital.

**Unlicensed Practitioner Fined.**—In the case of O. B. Weeks, Springfield, charged by the State Board of Health with practicing medicine without a license, the defendant is reported to have pleaded guilty, December 8, and to have been fined \$100.

**Physician Freed.**—Dr. John Cole, Williamsfield, charged with the death of Lena Ramp, in August, 1894, as a result of a criminal operation, has been released.

**Opposes Publicity.**—The Livingston County Medical Society, at its semi-annual meeting, adopted resolutions requesting the newspapers of Livingston County to refrain from publishing the name of any physician in connection with "operations, births, injuries or other medical matter."

**To Ask Sanitarium for Insane Hospital.**—A modern sanitarium, to cost \$100,000, and to be devoted to the care of the aged insane patients of the Illinois Western Hospital for the Insane, Watertown, is an improvement which the superintendent and trustees will ask of the new legislature.

**Communicable Diseases.**—An epidemic of scarlet fever is said to be raging at Aledo.—Monmouth is suffering from an epidemic of typhoid fever, from which several deaths have already occurred.—Middletown is experiencing an epidemic of diphtheria.—The State Board of Health has decided that the disease believed to be smallpox at Benton and Bradford is varicella and not variola.

**Personal.**—Fire destroyed the offices of Drs. Adam A. and William E. Franke, at Newton, December 6.—Dr. Emmett A. Garrett, Peoria, has been appointed assistant physician to Peoria County.—Dr. Theodore C. Hays, Canton, was injured in a wreck near Chicago, December 11, breaking his leg and sustaining severe contusions of the body.—Dr. Amos S. Bickel, North Chillicothe, is still seriously ill at the St. Francis Hospital, Peoria.—Dr. George W. Parker has been appointed supreme medical examiner for the Peoria Life Insurance company.

**Society Election.**—At the thirty-third annual meeting of the Northern Central Illinois Medical Association the following officers were elected: President, Dr. Edgar P. Cook, Mendota; vice-presidents, Drs. Edward S. Murphy, Dixon and Dr. David W. Jump, Plainfield; secretary-treasurer, Dr. George A. Dicus, Streator, and censors, Dr. Franklin A. Turner, Sandwich, John C. White, Seatonville, Joseph I. Knoblauch, Metamora, James J. Pearson, Pontiac, Roy Sexton, Streator, and Stephen O. Hendrick, Henry. A dinner was tendered the members of the association by the Ottawa Tent Colony for Tuberculosis in the evening.

#### Chicago.

**Warned Against Impostor.**—The medical profession is warned against an impostor named Goodman, a man about 5 feet 9 inches in height, 145 pounds in weight, and 55 years old, with brown hair, small sandy mustache, and blue eyes, who has represented himself to be a graduate of the University of Michigan, class of 1871, and of Jefferson Medical College, Philadelphia, who tells a pathetic story which he ends by attempting to sell an automatic gas burner, said to have been invented by himself, at an exorbitant price.

**Hospital Notes.**—A final order has been made by Judge Cutting for the payment of \$50,000 from the estate of the late Marshall Field to the Presbyterian Hospital.—Plans are being prepared for a five-story addition to the Hospital of St. Anthony of Padua, to cost about \$100,000.—The Chicago Methodist Social Union has planned for a grand meeting to be held in the interest of Wesley Hospital for the purpose of raising the endowment fund of \$100,000.—All but 10 per cent. of the \$700,000 necessary to build the new home for the Michael Reese Hospital has been subscribed. At a dinner held at the Standard Club, December 27, pledges were received amounting to \$230,000.

**Personal.**—Dr. John H. Chew has been elected president of the Chicago Polyclinic, vice Dr. Fernand Henrotin, deceased.—Dr. Marcus Reichmann has been appointed lecturer on radiology at the Chicago Polyclinic.—Dr. Simon Brownstein has been placed in charge of the newly organized medical department of the Hebrew Protective Association.—Dr. D'Orsay Hecht has been appointed attending neurologist to the St. Elizabeth's Hospital.—Dr. William L. Secor has opened a private sanitarium to be known as Thornton Villa, at La Grange, Ill., especially for physiologic therapeutics.—Dr. Wilhelmina H. Jacobs has been appointed assistant physician at the Illinois Southern Hospital for the Insane, Anna.

#### INDIANA.

**Medical Association Meeting.**—The Fort Wayne Medical Society at its recent annual meeting elected the following officers: President, Dr. James B. McEvoy; vice-president, Dr. Calvin H. English; treasurer, Dr. William P. Whery; secretary, J. Clifford Wallace, and Dr. Edward J. McOscar, censor.

**Epileptic Village Report.**—In the first annual report of the State Epileptic Village in Henry County, the superintendent, Dr. Walter C. Van Nuys, asked an appropriation of \$525,000 for the erection of the necessary buildings and also stated that \$120,000 more will be necessary if quarters are provided for helpless epileptics at the village. The institution will be ready to receive 50 patients early this month.

**Mistake in Death Certificate.**—Dr. Elbert W. McAllister, South Bend, who is reported to have been arrested on complaint of the secretary of the city board of health for failure to report a case of contagious disease, stated that in filling out the death certificate, he gave the cause of death as membranous croup, when it should have been croupous pneumonia. The case against Dr. McAllister was dismissed.

**Pension Board Fined.**—The members of the Elkhart County Pension Examining Board, Drs. Irvin J. Becknell, Goshen; W. A. Price, Nappanee, and William F. Hani, Middlebury, are said to have been fined \$100 and costs each in the federal court at Indianapolis recently on account of having made improper charges for pension examinations. The three physicians,



while admitting the charges, declared that they were innocent of any intentional wrongdoing.

**Communicable Diseases.**—Bluffton reports 28 cases of diphtheria.—Smallpox has again broken out in Mishawaka.—The city council of Marion has appropriated \$400 for the health department, to be used in fighting diphtheria and smallpox.—Measles are reported to be epidemic all over Wayne County. Several schools in the county have been ordered closed on account of the prevalence of the disease.—During November 12 cases of typhoid fever were reported to the health officer of Upland.—During November 64 cases of smallpox were reported in Miami County, more than 50 of which were in the City of Peru.—The first case of smallpox in Fort Wayne for many months was reported December 16.

**Personal.**—Dr. Jacob B. Casebeer, Auburn, has been elected secretary of the Whitley County Board of Health, vice Dr. Irvn O. Buchtel.—Dr. William S. Campbell, Lafayette, has been made secretary of the Tippecanoe County Board of Health, vice Dr. Frederick T. Hiner, West Lafayette.—Drs. H. Clay Meek and Jesse L. McElroy have been appointed by the board of health of Indianapolis as externes at the city dispensary.—Dr. James W. Squires, Fort Wayne, who has been critically ill for several days with septicemia and pneumonia, is reported to be improving.—Dr. Richard J. Wilson and daughter, Salem, have gone to Southern California for the winter.—Dr. Charles W. Shill, Lafayette, has been appointed physician for the Tippecanoe County Farm.—Dr. William D. Milroy, Logansport, who has been seriously ill with typhoid fever, is reported to be improving.—Dr. George H. Grant, Richmond, has gone to California for the winter.

**Commemorative Banquet.**—On Saturday evening, December 29, the alumni of the old Medical College of Indiana, the Central College of Physicians and Surgeons, and the Fort Wayne College of Medicine, united in a banquet at Indianapolis to commemorate the combining of these three schools into one to form the Medical Department of Purdue University. There were nearly five hundred present at the banquet. Prof. Stanley Coulter of Purdue acted as toastmaster. The principal speaker was Dr. Frank Billings, Chicago, who delivered an address on "Medical Education." Dr. George H. Simmons, Chicago, spoke on the preliminary requirements for entrance to medical colleges, and urged that these be controlled by the state. Among the other speakers were Winthrop Ellsworth Stone, Ph.D., president of Purdue; Mr. James Whitcomb Riley, Mr. Williams, editor of the *Indianapolis News*; Dr. Frank B. Wynn, Indianapolis, and others. Mr. George Ade, who was to have spoken, sent a telegram saying that he was detained on account of the serious illness of his mother. Letters expressing regret at not being able to be present were read from Dr. H. W. Wiley, of Washington, D. C., a graduate of the Medical College of Indiana, and at one time professor of chemistry in Purdue University; Dr. Lewellys F. Barker, Dr. Stemen, and others. Senator Beveridge, who was to have been one of the principal speakers, was unable to get nearer than Chicago, owing to missing railroad connections. From Chicago he telephoned a ten minutes talk, which was read by Dr. A. E. Sterne.

#### MARYLAND.

**Diphtheria Closes School.**—The Pikesville public school was ordered closed December 17, on account of the prevalence of diphtheria.

**Dormitory to Be Erected.**—A large dormitory is to be erected at the University of Maryland, Baltimore, for the use of the students of the medical school. It is to be located on the corner opposite the university, and it is hoped that it will be ready for occupancy by the time of the centennial.

**Alumni Meeting.**—A mass meeting of all departments of the University of Maryland, Baltimore, will be held January 24, to stir up interest in the growth and development of the University and especially in the approaching centennial. Dr. Hampson H. Biedler is chairman of the committee having the matter in charge.

#### MASSACHUSETTS.

**Emergency Room at Factory.**—Ex-Governor Douglas, Brockton, has announced the installation of an emergency room in his factory, with a physician and nurse in regular attendance, for the free treatment of employes. The plan went into operation January 1.

**Bequests.**—A bequest of \$50,000 has been received by the Harvard Medical School, from Charles J. Jackson, in memory of Prof. John Homans, to be used for the needs of the new medical school.—The Harvard Medical Alumni Association has given \$3,000 toward raising the salaries of some of the younger instructors.

**Eye, Ear, Nose and Throat Men Meet.**—A majority of the specialists on eye, ear, nose and throat of western Massachusetts met in Springfield, December 4, and formed the Western Massachusetts Ophthalmological and Otological Society. A constitution and by-laws were adopted and the following officers were elected: President, Dr. Clarence R. Gardner, North Hampton; vice-president, Dr. Charles R. Chapman, Springfield; secretary and treasurer, Dr. Vincent J. Irwin, Springfield, and censors, Drs. William G. Craig, Springfield, Benjamin P. Croft, Greenfield, and Frederick T. Clark, Westfield. The society will hold bimonthly meetings and at the next meeting, January 8, the president will entertain the society at dinner.

#### MINNESOTA.

**Valley Physicians Meet.**—The twenty-seventh meeting of the Minnesota Valley Medical Association was held in Mankato, December 7, under the presidency of Dr. Michael Sullivan, Adrian. The following officers were elected: Dr. Adolph O. Bjelland, Mankato, president; Drs. Louis A. Fritzsche, New Ulm, and Henry B. Grimes, Lake Crystal, vice-presidents; Dr. Adolph G. Liedloff, Mankato, secretary, and Dr. George F. Merritt, St. Peter, treasurer.

**Union Meeting.**—The physicians of Blue Earth County entertained the members of the Brown and Redwood County Medical Society in Mankato, December 3, and afterward a joint meeting of the societies was held. Dr. Harry A. Tomlinson, superintendent of the State Hospital, St. Peter, was the guest of honor. A resolution was adopted at the joint session asking the legislature to make a suitable and liberal appropriation for the maintenance and improvement of the Walker Sanatorium for Tuberculosis.

#### MISSOURI.

**Tri-County Meeting.**—At the recent meeting of the Gasconade-Maries-Osage Counties Medical Society, held in Meta, Dr. W. R. Ferrell, Bland, was elected president; Dr. Marion E. Spurgeon, Red Bird, vice-president; Dr. Julius W. Nieweg, Lois, secretary-treasurer; Dr. John J. Ferrell, Owensville, delegate to the state association, and Dr. Samuel J. Terrill, Meta, censor.

**Iowa and Missouri Physicians Meet.**—The third annual meeting of the N. S. Davis District Medical Society was held in Kahoka, November 13, and the following officers were elected: President, Dr. Frank B. Dorsey, Keokuk, Iowa; vice-presidents, Drs. W. H. Martin, Kahoka, Mo., and Dr. Downing, Milton, Iowa, and secretary and treasurer, Dr. Oscar F. Pile, Memphis, Mo. The next meeting will be held in Keokuk, Iowa.

**Licenses Revoked.**—At the meeting of the State Board of Health, November 28, it is reported that the licenses of Dr. A. M. Goldstadt, St. Louis, and A. M. Disbro, Denver, charged with unprofessional conduct, were revoked. In the first instance, it is said that the accused fraudulently advertised himself as a representative of the State Board of Health, and in the second it was alleged that the license had been obtained by a fraudulent affidavit.

#### NORTH CAROLINA.

**Medicolegal Society Elects Officers.**—At the last meeting of the Society of Medical Jurisprudence Mortimer C. Addoms was elected president. Wilbur Larremore read a paper on "Criminal Responsibility," treating of the causes of crime and the best means of restraining and preventing it by scientific punishment.

**Society Election.**—At the annual meeting of the Mecklenburg County Society, Dr. John R. Irwin was elected president, Dr. Thomas F. Costner, vice-president and Dr. William D. Witherbee, secretary and treasurer, all of Charlotte.—The Wake County Medical Society at its recent meeting elected Dr. James M. Templeton, Carey, president; William H. Boone, Morrisville, vice-president; Dr. William C. Horton, Raleigh, secretary; Dr. Kemp P. Battle, Jr., Raleigh, treasurer, and Dr. Wisconsin I. Royster, Raleigh, censor.—The Lenoir County Medical Society at its annual meeting elected Dr. James M. Hodges, La Grange, president; Dr. R. W. Wooten, Kinston, vice-president; Dr. Claude L. Pridgen, Kinston, secretary, and Dr. R. A. Whitaker, Kinston, delegates to the state society. A resolution was unanimously adopted declaring that members of the society should not make old insurance examinations for less than \$5, regardless of the question of urinalysis. This resolution applied to all, except fraternal or benevolent societies. A resolution was also adopted that no member should treat a case of sickness which had been under the care of a physician, except as consultant, unless the said physician had



given up the case voluntarily, or unless satisfactory arrangements had been made with him concerning his bill; this resolution not to apply to emergency calls.

#### NEW YORK.

**Gift to Troy Hospital.**—Peter McCarthy has given \$100,000 to be divided among the charitable institutions of Troy. The Troy Hospital is one of the chief beneficiaries.

**Gives Site for Hospital.**—O. E. Jones of Jamestown has given a deed for twenty-seven acres of land near the center of the city, valued at \$50,000, as a site for a non-sectarian hospital.

#### New York City.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended December 22, 320 cases of tuberculosis, with 171 deaths; 280 cases of diphtheria, with 36 deaths; 184 cases of scarlet fever, with 13 deaths; 154 cases of measles, with 6 deaths; 101 cases of whooping-cough, with 11 deaths; 62 cases of typhoid fever, with 10 deaths; 6 cases of cerebro-spinal meningitis, with 10 deaths; 110 cases of varicella and 6 cases of smallpox, a total of 1,223 cases and 257 deaths.

**Hospital Acquires Land.**—The German Hospital and Dispensary has acquired a piece of property, valued at \$400,000, for the nominal sum of \$5,000, in accordance with a law passed by the Legislature in 1903 providing for the sale of this piece of land to the hospital for a nominal sum. This law makes it possible for the city to make such gifts to charitable institutions. The German Hospital is now erecting a new dispensary on this property, which will be open in a short time. The money for the erection and maintenance has been provided by Mrs. Anna Woerishoffer and the late Edward Uhl.

**Beth-Israel Hospital.**—At the seventeenth annual meeting of the Beth-Israel Hospital Association six checks were handed in aggregating \$27,500. Five of these were for \$5,000 each, and were from Jacob H. Schiff, Adolph Lewisohn, U. Herrmann, S. Bachrach, and S. J. Silberman, and one check for \$2,500 was from Mortimer L. Schiff. During the past year there were 1,535 free patients treated out of a total of 2,377, and more than a thousand applicants were turned away for lack of facilities. It has been planned to build an addition to the hospital on an adjoining site, which has already been acquired with the money just donated.

#### OHIO.

**Hospital Association Formed.**—The Oberlin Hospital Association has been organized by eight physicians and eight laymen. The following officers have been elected: Dr. Fred E. Leonard, president; Dr. William C. Bunce, vice-president; Dr. Charles H. Browning, secretary, and Mr. Frank Dick, treasurer. The object of the association is the establishment of a hospital.

**Ohio Association of Medical Teachers.**—The second annual meeting of this association was held at Columbus, Dec. 26, 1906. Between ninety and one hundred delegates were present and the meeting was considered a great success. Among the subjects under discussion were the medical college curriculum, subjects of the medical college curriculum which may be taken in a college of liberal arts, the state board of examination, and reciprocity. The officers elected for the next year are as follows: President, J. C. Oliver, Cincinnati; first vice-president, W. A. Dickey, Toledo; second vice-president, C. E. Walton, Cincinnati; secretary, F. C. Waite, Cleveland; treasurer, J. G. Spenser, Cleveland; executive committee, J. K. Scudder, Cincinnati; A. V. Phelps, Cincinnati; C. S. Hamilton, Columbus; F. D. Simons, Cleveland; and W. J. Means, Columbus.

#### PENNSYLVANIA.

**Insane Hospital Investigation.**—The legislative investigation into the state asylums was resumed this week. The committee visited the Norristown Hospital, which has been reported to be sadly in need of money. The trustees of the hospital have asked the state for \$417,000.

**The Scranton Epidemic.**—The 700-mark in the typhoid fever cases was passed this week when 60 new cases were reported, making a total of 75 so far reported for the month. Three additional deaths were reported. Mayor Limmick, Dr. Kellar and other members of the bureau of health visited the typhoid-infected foreign colony in West Scranton. It is believed that many cases are not reported.

#### Philadelphia.

**Correspondent Married.**—In the issue of December 29 was noted the marriage of Dr. P. Brooke Bland, correspondent of THE JOURNAL in Philadelphia, to Miss Susan L. Montgomery, daughter of Dr. Edward E. Montgomery, vice-chairman of the Board of Trustees of the American Medical Association.

**Officers Elected.**—At the annual meeting of the Aid Association of the Philadelphia County Medical Society the following officers were elected: President, Dr. George B. Woodward; vice-president, Dr. Charles K. Mills; treasurer, Dr. John B. Turner; secretary, Dr. Lewis H. Adler, Jr., and directors, Drs. Charles A. Oliver, Roland G. Curtin and Samuel W. Morton.

**Health Report.**—The deaths from all causes for the week ended December 29 was 532, an increase of 32 over the number reported the previous week, and an increase of 41 over the corresponding week of last year. The increase in deaths and in contagious diseases is attributed by the health authorities to the cold, damp weather. The principal causes of death were: Typhoid fever, 22; diphtheria, 9; tuberculosis, 59; cancer, 18; apoplexy, 21; heart disease, 48; pneumonia, 37, and Bright's disease, 45.

#### SOUTH DAKOTA.

**National Sanatorium.**—The National Sanatorium at Hot Springs, with accommodations for 200 or 300 patients, will be ready for occupancy early in April. Dr. Rudolphus D. Jennings has been appointed governor.

**Personal.**—Dr. Hamilton H. Wilcox, formerly of Albert Lea, Minn., has been appointed surgeon-in-chief of the National Soldiers' Home, Hot Springs.—Dr. John E. Corrigan, Canton, has moved to Sioux Falls, where he will take charge of the Dunham Hospital.

**Medical Society Meetings.**—At the annual meeting of the Watertown District Medical Society, December 11, Dr. Franklin H. Staley, Clear Lake, was elected president.—At the annual meeting of the Fourth District Medical Society at Huron, December 17, Dr. Oscar R. Wright, Huron, was elected president; Dr. Port McWhorter, Miller, vice-president; Dr. Charles J. Lavery, Fort Pierre, secretary and treasurer, and Dr. J. C. Waslesh, Pierre, censor.—At the meeting of the Mitchell District Medical Society, held at Mount Vernon, December 5, Dr. Thomas B. Smiley, Mount Vernon, was elected president; Dr. Rodell C. Warne, Mitchell, vice-president; Dr. E. Frank Reamer, Mitchell, secretary, and Dr. Frederick W. Freyberg, Mitchell, treasurer.

#### TEXAS.

**Society Meetings.**—The El Paso-Big Springs Medical Association held a business session November 21, at which Dr. John B. Thomas, Midland, was elected president; Dr. Jim Camp, Pecos, vice-president and Dr. Newton J. Phenix, Colorado City, secretary and treasurer. The society adopted a resolution objecting to the disposition of life insurance companies to reduce the examination fee below \$5.00. The next meeting will be held in May, 1907, at Midland.—The Northeast Texas Medical Association met in Marshall, November 15. The State Medical Association was asked to grant a charter to the society as the official district society for the northeast district and Dr. Holman Taylor, Marshall, councilor for the district, announced the approval of the state society and formally declared the transfer made. A committee consisting of Dr. Preston Hunt, Texarkana, William H. Blythe, Mount Pleasant and W. L. Baber, Winnsboro, was appointed to make recommendations looking into the rearrangement of the district in the northeastern portion of the state. The society adopted a resolution that nothing less than a \$5.00 fee is adequate for life insurance examination. The following officers were elected: President, Dr. Preston Hunt, Texarkana; vice-president, Dr. W. L. Baber, Winnsboro; secretary, Dr. Robert H. T. Mann, Texarkana; treasurer, Dr. Charles A. Smith, Texarkana; councilors, Drs. Oscar Dowling, Shreveport, La.; Dr. Oliver M. Heartsill, Marshall, William H. Blythe, Mount Pleasant and Dr. Thomas S. Ragland, Gilmer. Texarkana was selected for the next meeting, which occurs in April, 1907.

#### WEST VIRGINIA.

**Personal.**—Dr. Lonzo O. Rose, Parkersburg, while experimenting with chemicals, was overcome by the fumes and rendered unconscious. He was later found by one of his assistants and resuscitated.—Dr. Clifford Sperow, Martinsburg, has been appointed parish physician for the Martinsburg district, vice Dr. Theodore R. Oates.—Dr. W. F. Leech, Riversville, has been appointed physician in the Canal Zone.

**County Society Election.**—At the meeting of the Cabell County Medical Society, held in Huntington December 13, Dr. C. C. Hogg was elected president; Dr. C. M. Hawse, vice-president; Dr. James R. Bloss, Huntington, secretary; Dr. I. R. LeShe, treasurer, and Dr. Oscar Kent, censor. The questions of insurance fees and the "patent-medicine" evil were discussed, and the stand taken by the American Medical Association was endorsed.



## WISCONSIN.

**Medical Society Meeting.**—At the annual meeting of the Kenosha Medical Society Dr. William H. Saunders was elected president; Dr. Henry J. Stalker, vice-president; Dr. J. Russell Eastman, secretary and treasurer, and Dr. Frank E. Steven, Bristol, censor.

**Milwaukee Medical College Joins Marquette College.**—Word has been received from Dr. W. H. Earles that the Milwaukee Medical College has become the medical department of Marquette College. It is said that the college will occupy the new building at Grand Avenue and Twelfth Street. The academic department will use the present college building at State and Tenth Streets, and the medical department will continue to use the medical college at Ninth and Wells Streets.

**Medical Department for the University of Wisconsin.**—The committee on legislation of the University Board of Regents, at its annual meeting in Madison, November 27, considered the establishment of a medical college at the University of Wisconsin. A bill will be introduced in the next Legislature asking for an appropriation of \$50,000 to start the new department. The plan is to give the students the first two years of their medical course at Madison. The college is to be known as the Medical School of the University of Wisconsin.

## GENERAL.

**Wabash Surgeons Meet.**—The twenty-fifth annual meeting of the Wabash Railway Surgeons' Association was held in St. Louis, November 8, under the presidency of Dr. Burke Powell of Albia, Iowa. The following officers were elected: President, Dr. Clifford Kirkpatrick, Adrian, Mich.; vice-president, Dr. Walter M. Pritchett, Glasgow, Mo., and Dr. Christian B. Stemen, Kansas City, Mo. (re-elected), secretary. At the banquet which closed the session the secretary, Dr. Christian B. Stemen, who has served in that position for more than a quarter of a century, was presented with a silver loving-cup.

**Urologists Regret Death of Otis.**—At the regular meeting of the second section of the American Urological Association, held in New York, October 24, the report of a committee was adopted stating that in the death of Dr. William K. Otis of New York City, the association had "lost one of its founders, one of its most active coadjutors, one of its truest adherents," and that the association "shares with the family of William K. Otis, with the profession at large, and with that world in which true manhood is understood and appreciated, that deep grief which the death of so noble a character inspires."

**The Military Surgeon.**—Beginning with the issue for January, 1907, the *Journal of the Association of Military Surgeons*, the pioneer military medical journal in the English language, which has attained deserved success in its work in a new and hitherto unoccupied field, and has been instrumental in creating a reliable and remarkable line of medico-military literature, assumed the new name authorized at the meeting of the Association of Military Surgeons of the United States last year, and will henceforth be known as the *Military Surgeon*. It will remain, as before, under the competent editorial management of Major James Evelyn Pilcher, U. S. Army, retired.

**Cholera in the Philippines.**—Dr. Victor Heiser, chief quarantine officer for the Philippines, reports that cholera has practically disappeared from the Island of Luzon, which includes Manila. The outlook for the province of Iloilo is grave, principally on account of the attitude of the people toward the outbreak. In spite of the fact that 630 cases with 446 deaths were reported for the week ended October 27, they refuse to believe that true cholera is present, and they are entirely indifferent to the recommendations of the health authorities. The disease, so far, has been confined entirely to the province of Iloilo, thus showing that the outgoing quarantine imposed on vessels has been effective.

**Annual Report of the Surgeon-General of the Navy.**—Dr. P. M. Rixey, Surgeon-General of the Navy, in his report for the year ended June, 1906, declares that the establishment of the United States Naval Hospital Corps has been a great advance toward providing for the Navy a body of trained nurses and hospital stewards. A constant effort has been made to secure and to retain men of sobriety, intelligence, aptitude and fair education. Dr. Rixey calls attention, however, to the fact that few of these men re-enlist, and that thus the Navy loses the services of men who have had four years' training. As present conditions do not attract men of the corps to re-enlist, and as the supply of recruits is not sufficient, it is evident, he states, that without offering additional inducements in pay and in prospects of promotion, it will be impossible to obtain the requisite number of recruits and to retain experienced men.

The term of instruction in the Hospital Corps Training School has been extended to four months, and it is intended to inaugurate a course of instruction following a service at sea. Dr. Rixey also calls attention to the special aptitude of women for the care of the sick, and says that the bureau is desirous of obtaining for duty at naval hospitals and on ambulance and training ships a corps of trained women nurses. The bureau, he states, recommends that legislation authorizing the employment of women nurses be requested of Congress. Attention is also directed to the need for dentists, and a hope is expressed that before long steps may be taken to provide for the Navy what the Army has long enjoyed—a corps of dental surgeons. The report includes summaries of the conditions at the various naval stations in the United States and its island possessions. During the year there were 268 deaths in the Navy and Marine Corps, a ratio of 6.48, which is slightly greater than that of the previous year. The diseases causing the greatest number of admissions to the sick list were: Tonsillitis, 2,397; gonorrhea, 2,085; wounds, 1,308; bronchial affections, 1,032; malaria, 1,024; syphilis, 981; epidemic catarrh, 926; rheumatic affections, 924. Admissions for tuberculosis, typhoid fever and pneumonia were 243, 172 and 145, respectively, a slight decrease over the previous year. In comparing these returns with those of the previous years, Dr. Rixey states that it is noteworthy that though the ratio of admissions to the sick list per 1,000 is less, the mortality is greater. Among the causes which increased the latter was the disaster to the U.S.S. *Bennington*, which resulted in 66 deaths.

## FOREIGN.

**Cancer Hospital in Scotland.**—The Cancer Hospital at Dundee Royal Infirmary is now open for inspection. The hospital was given to the infirmary by Mr. J. H. Caird who has offered \$5,000 annually for five years for research work in connection with cancer.

**South African Medical Congress.**—The South African Medical Congress was held at Bloemfontein, Orange River Colony, during the first week in October. About 70 physicians were present. The congress was opened by the Hon. F. Wilson, C.M.G., acting lieutenant-governor of the colony, who discussed the various laws affecting medical men and the public health. Dr. A. E. W. Ramshotom, president of the congress, strongly advocated unity among the medical men in South Africa.

**French Society of Military Surgeons.**—The Société de Médecine Militaire Française has recently been organized and held its first meeting at Paris in November. The society is to publish an organ of its own, and numbers of civilian physicians have joined the society as associate members. Delorme is president, and in his address emphasized the great differences existing between the medical and surgical pathology of the soldier, even in times of peace, and that of other adults. This is owing to the difference in the mode of life and the environment, the large numbers collected under one roof or in camp and other varying conditions which require special prophylactic and curative measures. His address is reproduced in full in the *Progrès Méd.* for December 1.

**Banquet Tendered the Press by Spanish Physicians.**—The country doctors in Spain who have charge of the vaccinating and certain other official duties have long been protesting against the unjust remuneration allowed them. They have been organizing of late years, and now issue a publication of their own, the *Boletín de la Asociación de Médicos Titulares*, and have recently been holding a general assembly at Madrid. One of the features of the meeting was a banquet tendered by the médicos titulares, as they are called, to representatives of the political and medical press. The assembly also discussed a number of questions affecting legislation on sanitary matters and their duties and remuneration, and also the proposed homage to Cajal on his return from his trip to Stockholm to receive the Nobel prize. The organization already effected has produced a number of tangible results. Among the resolutions adopted in the assembly was a vote of thanks to the railroads for the unexpectedly favorable terms allowed the delegates.

## LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Dec. 8, 1906.

## Action Against Surgeons for Negligence.

An action for negligence brought by a mining engineer against Mr. Lynn Thomas, consulting surgeon Mr. H. E. Skryme, general practitioner of Cardiff, has attracted considerable attention. A large number of the most eminent surgeons of London appeared as witnesses on one side or the other. The plaintiff, while riding a bicycle, was knocked



down and dragged by a trap. He summoned his regular attendant, Mr. Skryme, and said to him, "I think my arm is broken." He alleged that the physician diagnosed dislocation of the humerus, and attempted reduction by the heel-in-the-axilla method and put the arm in a sling. The plaintiff being anxious about his condition, Mr. Lynn Thomas, the leading surgeon in South Wales, was summoned. On moving the arm Mr. Thomas found crepitus, but he recommended that the treatment adopted by Mr. Skryme should be continued. Subsequently a skiagram was taken and showed a transverse fracture of the surgical neck of the humerus, with displacement outward of the upper fragment and displacement inward of the lower fragment. Union took place in this position and the use of the arm was almost completely lost. Mr. Pepper of St. Mary's Hospital deposed that the recognized treatment for fracture had not been adopted. A dislocation might have been reduced by Mr. Skryme, but the procedure would have been exceedingly dangerous. His opinion was that there was no dislocation. Mr. Rose of King's College Hospital and Mr. Battle of St. Thomas Hospital gave similar evidence. Mr. Skryme in his evidence said that he found both a fracture and a dislocation of the humerus and that he reduced the latter. It was impossible to put a pad in the arm pit to bring the bones into apposition because it would interfere with the circulation, and gangrene was threatened, as shown by a large hematoma. Mr. Lynn Thomas said that he found a fracture of the humerus and one-half inch of shortening. Mr. Skryme told him that he proposed to put the arm in a sling and to bandage the elbow to the side and put a pad in the armpit. With this treatment he agreed. He did not think that splints should have been used, and said that in a similar case he had seen the use of splints followed by amputation and death. He had no doubt from Mr. Skryme's description, he said, that there had been a dislocation. Mr. Bowlby of St. Bartholomew's Hospital deposed that the proper treatment had been adopted. He recognized three forms of fracture of the surgical neck of the humerus—impacted fracture with displacement of the shaft upward and outward, and fracture with, in addition to displacement of the shaft, displacement of the upper fragment outward. In the second form there is no difficulty in obtaining apposition and fair use of the arm is recovered. In the third form there is never complete recovery and the defendant's case, he declared, is an example of this form. Sir Frederick Treves also approved of the treatment. He said that in the Museum of the Royal College of Surgeons there are ten specimens of fracture of the surgical neck of the humerus with perfect union in only one; in five the union is fair, and the displacement moderate; in the other four the displacement is gross. In two of the cases the displacement, he said, is about the same as in the plaintiff's arm. Sir Frederick Treves agreed with Mr. Bowlby's classification. A poroplastic splint would not have been beneficial. With such displacement of the upper fragment as existed no control could have been obtained in any way. In cross examination he was asked should the patient have been kept in bed and said, "No." Then counsel read a passage from the "System of Surgery," edited by Sir Frederick Treves: "During the period of early swelling of injuries of the shoulder the patient should be kept in bed with the limb comfortably placed on a pillow." Asked did he agree with it, Sir Frederick Treves said that he did not write it, and that it was written twelve years ago and represented the teaching of the time. The introduction of the x-rays altered his views on the matter. Mr. Page of St. Mary's Hospital, Mr. Mansell Moullin of the London Hospital, Sir William Bennett, Mr. Edmund Owen, Mr. Arbuthnot Lane, and Mr. Edmund Owen also gave evidence approving of the treatment adopted. The judge, in summing up, threw doubt on Mr. Skryme's statement that he had diagnosed a fracture and did not think his explanation that he did not tell the patient there was a fracture because the latter was nervous was satisfactory. He thought that the most important point was that the defendants did not attempt to secure apposition of the bones and did not resort to an anesthetic for the purpose of facilitating reduction. Referring to the evidence given by the eminent surgeons for the defendants he said that they were perhaps unconsciously, and certainly honestly, influenced in favor of their professional brethren. The jury at first failed to come to an agreement; then they found a verdict for the plaintiff with \$500 damages. The low amount of damages was evidently the result of the fact that the verdict was a compromise between the divergent views of the jurymen. Notice of appeal was given.

#### Regulation of the Use of Food Preservatives.

A conference on this subject was held at the Incorporated Institute of Hygiene. Professor Tunnicliffe, who presided, said

that hygienists must not formulate ideal laws applicable to a utopia, but practical precepts suitable to society as it is. It is necessary that food should be delivered to the consumer in such a state that it will keep for a reasonable time. Of chemical preservatives alcohol and sugar, which are also foods, probably do not effect a chemical change in the food to be preserved. Whether common salt can be regarded as innocuous in quantity may be questioned. Saltpeter is not a normal constituent of the animal body, but is an active preservative, and he said that he dreaded to think what would happen in pickled and preserved foods of all kinds if its use were prohibited. Boracic acid, salicylic acid, sulphurous acid, formic aldehyd, and the fluorids have been in use about ten years, and the profession is thoroughly alive to them as a probable source of illness. Dr. Otto Helmer moved a resolution that definite regulations should be made as to the conditions under which the use of preservatives should be permitted, such regulations to enumerate all articles in which preservatives may or may not be used, the nature and quantity of the preservatives, and the conditions under which preserved articles should be sold. The resolution was carried and it was decided to send a copy to the president of the local government board.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

#### The Fight Against Venereal Diseases.

VIENNA, Nov. 27, 1906.

The fight against venereal diseases has now entered on a more public and less hypocritical stage, as is shown by the fact that daily papers and medical corporations have now taken the matter into their hands, while hitherto it has been, more or less, a private philanthropic matter. Thus the Vienna "Gesellschaft der Aerzte" at its last meeting, November 16, with Professor Chrobak in the chair, discussed the subject. A committee consisting of the most prominent dermatologists and several other influential professors, has been selected in order to induce high standing men of public influence to coöperate with the profession in checking the progress of these diseases. In close relation to the question of the spreading of syphilis and gonorrhea, is the question of the unprotected woman, who is always exposed to the danger. The president remarked that legislation should take charge of these conditions; wilful sexual infection by man or woman should be made a punishable act. The two chief ways of restricting the constant spread of venereal diseases are by instructing the public and by warning the youth of both sexes. The young are especially prone to infection as they are ignorant of the danger. A very effective step has been taken by the senate of the Vienna University. Every student matriculating at the university is handed a leaflet, containing in short, clear sentences the necessary information as to the nature of the venereal diseases, the chief symptoms, the course of the illness, its immediate and remote dangers and sequelæ, and the urgent admonition to restrict illegitimate sexual intercourse, and in case of disease to seek immediately competent medical help. The ethical responsibility of the man who knowingly infects his wife and endangers his children is set forth in well meant and well chosen words. Furthermore, clubs and friendly societies and also insurance companies no longer make venereal diseases a pretext for not paying the sick insurance money, so that patients affected with this disease are not prompted to hide their misfortune for fear of material loss. In the classes in the schools of technology qualified men and teachers have every week an opportunity to enlighten their hearers on the facts of the propagation of disease, especially the result of gonorrhea in the female which is responsible for so much misery among the poorer classes.

#### First Woman Physician Appointed to an Austrian Hospital.

Hitherto no woman could be appointed to hold the post of a junior or senior surgeon in the Austrian hospitals. Altogether there are less than eighty fully qualified medical women in the empire, and the majority are occupied in the southern provinces, in Bosnia and the other formerly Turkish parts, where a large proportion of the population is still Mohammedan, or of Turkish descent. In Vienna itself, Mrs. Eva Weiss, M.D., is the first woman to reach the title of secundararzt or junior physician in the well-known Children's Hospital. The working men's club has now arranged for the wives of its members and for other women members, that two medical women are to look after the health of these people. The formal recognition of women's diplomas is regarded as a very important change in this rather conservative country and will undoubtedly open up a good field for the numerous hard working woman students.



## Correspondence

### Interstate Reciprocity and Frauds in Medical Schools.

SAN FRANCISCO, Nov. 19, 1906.

*To the Editor:*—In THE JOURNAL, Oct. 13, 1906, under the above heading, Dr. Dudley Tait makes reply to my former communication on that subject. Dr. Tait alleges that my communication contained "many grave inaccuracies." I wish to show that Dr. Tait is seriously mistaken concerning those "inaccuracies." I also wish to acknowledge my thanks to Dr. Dudley Tait for some of the information he has given concerning the matter under discussion.

1. I am happy to learn that "the requirements in California" are determined by the Association of American Medical Colleges. I, myself, had believed, and the belief is common among the profession of California, that such has not been the case, but that each meeting of the board brought out a crop of new "determinations." In the future the rulings of the board ought to be quite simple and plain.

2. The records of the College of Physicians and Surgeons show that H. R. Painton was entitled to credit for work done previous to his entrance in that school.

3. Mr. Painton did *not* teach school "during the two years preceding his graduation," but during the two years which correspond to the freshman and sophomore years of his course. During the two years preceding his graduation he was in constant attendance at the college, throughout the college year. To be explicit, he attended regularly and continuously the full junior and the full senior courses.

4. The work which Mr. Painton had done before entering medical school, together with the work of the summer courses and that which he did in the department of pharmacy, which course was given in part during the evening hours, enabled Mr. Painton to fulfill the requirements of the first two years. He passed all the regular examinations with the rest of his class. It certainly can not matter whether a man gets his education in the summer rather than in the winter, or whether he studies after 4 o'clock p. m., provided he attends bona fide instruction and masters his work. Dr. Dudley Tait's apparent stand in the matter would put a damper on all poor men who have to work their way through college. Dr. Painton did much of his first two years' work between 4 p. m. and 10 p. m. during the entire year, much of the pharmacy course being given during those hours. This will add a great deal to the time of Mr. Painton and will conflict in no way with his school teaching.

5. Dr. Tait may have consulted the college records last April, prior to the earthquake, as he has never been denied the privilege of consulting the records whenever he desired. He did not at any time say to Dr. Hodghead or to Dr. Anderson for what purpose he examined the records.

6. Careful inquiry at the district attorney's office fails to elicit the fact that Mr. Painton's case has been submitted to that office for opinion at all. The case could not be tried in the columns of THE JOURNAL anyway. I must request Dr. Dudley Tait to instruct the district attorney to proceed in the matter, or else to hold his peace.

7. I must also request Dr. Dudley Tait to do his duty as a member of the State Board and clear the "archives of the California board" of those "numerous similar instances of fraud on the part of the College of Physicians and Surgeons of San Francisco." It would be manifestly wrong to hoard up such information to bequeath to some future board. It would look worse for the board than for any one else. The college is ready at any time to meet any charges Dr. Tait wishes to make.

8. I am happy to know that "the records and minutes of the California board" are "open for public inspection." Before the records were burned I had been many times informed that they were very difficult records to inspect. At least the matter of obtaining the privilege of inspecting those records was a very difficult job. I am glad to know that they may be freely inspected. I am fairly familiar with the constitution of the Association of American Medical Colleges.

ETHAN H. SMITH.

The above letter was submitted to Dr. Tait, who replies as follows:

SAN FRANCISCO, Dec. 1, 1906.

*To the Editor:*—Convinced that the incident referred to by Dr. Ethan H. Smith of the College of Physicians and Surgeons, San Francisco, is of more than local interest, I beg to submit the following evidence:

Section 5 of the law regulating the practice of medicine in California contains the following: "In order to procure such certificate, he must produce satisfactory testimonials of good moral character and a diploma issued by some legally chartered medical school, the requirements of which medical school shall have been at the time of granting such diploma, in no particular less than those prescribed by the Association of American Medical Colleges for that year." Since 1896 the College of Physicians and Surgeons, San Francisco, has stated in its annual announcements that in granting advanced standing the requirements of the Association of American Colleges would be "strictly adhered" to.

#### EXTRACTS FROM PAINTON'S AFFIDAVIT.

I studied medicine for four calendar years, and was in actual attendance on lectures in the following named school, or schools, as follows:

First year at Col. of Phys. and Surg., Med. Dept., from September, 1902, to May, 1903.

Second year at Col. of Phys. and Surg., Med. Dept., from September, 1903, to May, 1904.

Third year at Col. of Phys. and Surg., Med. Dept., from September, 1904, to May, 1905.

Fourth year at Col. of Phys. and Surg., Med. Dept., from September, 1905, to May, 1906.

I was allowed the following credits on my medical course.....  
..... and the said credits were granted upon the following credentials.....  
.....

It will be noted that in the above affidavit Painton makes no reference to or claim for credit for previous work.

#### CERTIFICATE OF THE SAN MATEO COUNTY SUPERINTENDENT OF SCHOOLS.

REDWOOD CITY, Cal., Oct. 9, 1906.

*Dr. Dudley Tait, San Francisco:*

*Dear Sir:*—The following is the information asked by you in reference to the terms taught by H. R. Painton in this county:

July 1, 1900-June 30, 1901, Pescadero District, 9 months, 18 days.

July 1, 1901-June 30, 1902, San Bruno District, 9 months, 8 days.

July 1, 1902-June 30, 1903, San Bruno District, 10 months,

July 1, 1903-June 30, 1904, San Bruno District, 10 months, 10 days.

E. M. TILTON,  
County Supt. Schools.

On cross-examination by the chairman of the credential committee, Painton confessed having taught school during the two years of alleged attendance at the College of Physicians and Surgeons.

In the course of a recent interview between the credential committee of the Board of Examiners and a delegation from the College of Physicians and Surgeons, three professors of said college (Drs. F. W. Lux, J. M. Stowell and Francis Williams) stated positively that Painton had attended every part of the college course during June, July and August. On being shown the above certificate, the delegation made no response.

Pages 13 to 23 of the college announcements for 1902-3-4 specify in detail the work, lectures, recitations, quizzes, etc., covered by the autumn, winter and spring courses, and show that the only work done during the "summer quarter" related to practical and clinical courses. The College of Physicians and Surgeons is a day school.

One week after the rejection of Painton's diploma by the credential committee of the California board, Painton secured a license in the state of Nevada. This license was recently revoked by a unanimous vote of the Nevada board.

It is thus apparent that Dr. Ethan Smith was in total ignorance of both the state law and the college rules when he believed that "the requirements in California were determined by the Board of Examiners" and sought to justify the dean of the College of Physicians and Surgeons for having granted Painton "credit for work done previous to his entrance in that school."

It is true that no complaint has yet been filed against Pain-



ton with the district attorney of San Francisco, who, nevertheless, expressed the opinion to the board's attorney that Painton's act constitutes perjury, as defined in paragraph 118 of the Penal Code.

The office of the Board of Examiners being a state office, its records are necessarily public. In these records may be found official documentary evidence showing that the College of Physicians and Surgeons, San Francisco, graduated the holder of the degree of A.M., after little more than one complete, regular course (J. M. Stowell); granted one and even two years' credit to osteopathic licentiates (C. W. R. Radesky, Hilda Simons, E. B. Northey); admitted to the junior class students who had but recently failed in seven sophomore subjects at Cooper Medical College and graduated them two years later (C. S. Harris and Frederick Leach).

Is it necessary to delve deeper into the records of the California board in order to substantiate our assertions as to "the numerous similar instances" of fraudulent acts on the part of the College of Physicians and Surgeons, San Francisco? Can a college be classified among the reputable institutions when it wilfully and repeatedly violates its own published rules?

DUDLEY TAIT,

#### The One-Year Clause in Reciprocity.

CAMDEN, N. J., Dec. 21, 1906.

*To the Editor:*—The communication in THE JOURNAL, December 15, from Dr. George W. Webster, president of the Illinois State Board of Health, concerning the requirement that an applicant for the endorsement of a state medical license should have held the same for at least one year prior to its indorsement by a reciprocity state, is worthy of notice, both because Dr. Webster requests the *pros* and *cons* of the question and because of its interest to the profession. Dr. Webster states that after Jan. 1, 1907, the Illinois State Board of Health will not reciprocate with any state exacting this requirement. In this respect the Illinois State Board of Health has taken a proper stand.

When a medical licentiate of a state presents his original state license, earned on examination, with due certification thereto, and can substantially meet in all other respects the statutory requirements of the state to which he applies for endorsement, it is an illogical demand, a hardship to the applicant, and disrespectful, if not insulting to the state for a reciprocating state to insist on a year of practice by the applicant following licensure before endorsement will be granted, on the plea that immediate endorsement gives opportunity for charlatanism and quackery.

The one-year requirement in reciprocity is believed by its supporters to prevent the passing of charlatans from one state to another; but the requirement will not prevent this, because no time limit can be set for the making of a "roving charlatan" in the medical practice. Charlatanism is either innate or acquired; the latter usually through failure to succeed in the legitimate practice of medicine. It can best be prevented by rigorously exacting high moral and educational requirements for licensure, either through examination or endorsement, and this should not be overlooked, since all state medical examining boards must admit that the "roving charlatan" is frequently in evidence.

Interstate endorsement of medical license is an outgrowth of state medical examinations, and is largely a legal question in which the members of the profession have a personal interest. It should be placed on as high a plane as state medical examinations, and on as broad a basis as the educational standards of these examinations will permit, since all licentiates should stand on the same legal footing. When a state license is once earned through examination, it should be endorsed at any time without further examination by states of equal or lower requirements, on presentation of the proper credentials. To refuse to endorse the medical license of any state under such circumstances, or to refuse to endorse the license of a state of higher educational and examining requirements, as is the case with one of the eastern and one of the middle states, is an absurdity in these days of enlightened medicine.

In the reciprocal relations existing between New York, Illinois, New Jersey, and certain other states, an indorsement may be granted at any time after the applicant has received the degree of Doctor of Medicine and has presented acceptable educational credentials (both academic and medical) and certified evidence of moral character and of a state medical license issued after examination by a state requiring substantially the same standard of licensure.

The conditions of endorsement in New Jersey practically shut out the "roving charlatan" from licensure. Because of this, it seems proper to name the requirements of New Jersey for endorsement. Each applicant is required to furnish (a) a certificate of preliminary education approved by the State Superintendent of Public Instruction; (b) certification of his diploma from the medical school from which he was graduated, under the seal of the school; (c) a certified copy of his original state license under the seal of the examining board issuing the same; (d) a certificate of moral character duly signed by two physicians, or a medical society, of the locality in which the applicant resides; (e) a letter of recommendation from a physician in good standing in New Jersey; and (f) an affidavit from the applicant covering the above requirements. Only an original license earned through examination, from an approved state examining board, can be endorsed.

While New Jersey probably has its share of applicants from the "roving charlatan" class, its requirements for license reduce to a minimum the likelihood of their being permitted to practice.

E. L. B. GODFREY, M.D.,

Member State Board of Medical Examiners of New Jersey.

In a recent letter to THE JOURNAL anent the above subject, Dr. B. D. Harison, Detroit, secretary of the Michigan State Board of Registration in Medicine, advances further arguments in favor of the abolition of the one-year clause in reciprocity. Agreeing that Dr. Webster gives several good and sufficient reasons why the requirement of a year's reputable practice subsequent to licensing is unnecessary, he goes on to say: "The majority of students at graduation have not definitely settled on a location. They may go to this state or that state or remain in the state where they have completed their course, but one object they all have in view, the completion as soon as possible after receiving their medical degree, of the examination for license. The most convenient, the most practical and the least expensive place is in the state in which their college of graduation is located. The state board examinations are always arranged, covering time and place, to suit the convenience of the local colleges.

Subsequent to the obtaining of a state license, physicians are in a far better position to select a location and with very much less trouble, less time and expense. One trip only is necessary, in place of two or three trips to an outside state, and the usual delay attendant on an examination in another state is avoided. In comparison the double fee is the cheaper method. Then, again, where states, notably New York and Michigan, provide for a "primary" examination at the end of the second year, the requirement of a year's reputable practice subsequent to license, in the event of the graduate being obliged to go directly to another state, results in the applicant losing his credit and fee for work already completed and credited to him. In Michigan a very large percentage of students take the "primary," and are, therefore, especially affected by the one year requirement, and as it is more than probable that other states will, in the near future, adopt the method of dividing the examination, this one-year practice requirement, from this point of view, is a serious one.

At the meeting of the American Confederation of Reciprocating, Examining and Licensing Medical Boards held at Columbus, Ohio, April 25, 1906, the one year practice requirement was eliminated from Qualification 1, and the requirement of evidence of membership in a county, state or national medical organization was modified to "such evidence of good moral and professional character as may be demanded by state boards, and such evidence, at the discretion of either board, may include proof of membership in a recognized medical society, and such evidence may be considered in connection with the other evidence of character presented."



## Medical News in the Daily Press.

CHICAGO, Dec. 24, 1906.

*To the Editor:*—In the foreign departments of the *Tribune* and the *Record-Herald*, Chicago, Sunday, December 23, appears a generous extract from the *Practitioner* of London, cabled to this country.

After reciting the threatened epidemic of influenza a number of medical authorities are quoted on the subject, several of whom refer to the death of the victim through heart failure, without any reference whatever to the most probable cause of this heart failure, namely, the promiscuous taking of acetanilid and other preparations.

Among other authorities quoted, Sir William Broadbent is reported as having found quinin to be the best remedy. His usual prescription is "one drachm of ammoniated quinin and two drachms of liquor ammonia acetatis every hour for three hours, and then every four hours" (sic). Many readers of the papers are already curious to know about ammoniated quinin and are making inquiries in the pharmacies. Of course there is no such thing, but some one will probably be taking quinin sulphate in one drachm doses every hour with serious results.

It seems that when the metropolitan newspapers can afford to have half column articles on such a subject by cable, they should at least be able to submit the same to some local medical authority in order that such "valuable" contributions may at least not do untold harm.

"Ammoniated quinin" should be the ammoniated tincture of quinin, which contains one grain of quinin sulphate to the fluidrachm in diluted alcohol with a little ammonia water, a preparation of the British Pharmacopeia. C. S. N. HALLBERG.

## Dr. Taylor's Dressing After Hare-Lip Operation.

PORT HURON, MICH., Dec. 22, 1906.

*To the Editor:*—Under the above heading Dr. Alfred S. Taylor of New York City calls attention<sup>1</sup> to the use of strips of adhesive plaster crossed at a point above the nose, first used by him at the Vanderbilt clinic in 1901. He makes the statement: "So far as I know, it was an original idea."

Dr. William H. DeCamp of Grand Rapids, Mich., was the originator, I think, of this idea, and described the method in a paper read before the Michigan State Medical Society in 1886.<sup>2</sup>

I saw the method used two years later in one of the London, England, hospitals by one who had heard of Dr. DeCamp's method.

Dr. Taylor, nevertheless, should have the gratitude of the medical profession for again bringing this method to its attention, and especially for illustrating it, which is the most efficient way to cause its adoption.

It is an excellent device which should not be overlooked or forgotten. I can vouch for it by my own experience.

C. B. STOCKWELL.

## The Venereal Peril.

DAVENPORT, IOWA, Dec. 24, 1906.

*To the Editor:* In referring favorably to the "Circular of Warning" recently issued by the Scott County, Iowa, Medical Society, you say: "It would be better if the German plan, to which we referred some time ago, were adopted and leaflets prepared separately for circulation among the two sexes."

Can this view be rationally sustained? As a graduate of a coeducational college I am firmly convinced of the underlying truth that each sex is greatly benefited by sharing the viewpoint of the other; and this, I believe, is especially true as to education in sexual matters. Each needs to know the dangers of license, not only to his own sex but to the other as well; and all the better if each knows that the other is informed. This is not to say, however, that the one circular, one book or one lecture should come to each in the presence of the other.

In other ways our circular might be greatly improved, no doubt. Indeed it has already been slightly revised in view of its possible adoption elsewhere. As to the advisability of separate leaflets we are open to conviction. C. H. PRESTON.

## Pharmacology

## Relations Between Druggists and Physicians in Baltimore.

The druggists of Baltimore have addressed a circular letter to the physicians of that city, calling attention to the promising signs of an increase of friendly relations between the two professions and emphasizing the need of coöperation. With the letter is enclosed a sample of an official douche powder, Pulv. antisepticus (N. F.), intended to be used in cases in which boric acid alone will not serve the purpose. It is inexpensive and can be obtained from any druggist in quantities to suit. In subsequent letters attention will be called to ungt. resorcini comp. (N. F.), elixir gentian. glycerinati (N. F.), and other preparations of the National Formulary and the United States Pharmacopeia, usually the ones selected being those that are offered to take the place of certain advertised proprietaries. Such movements as this promise much for the advance of pharmacy and the establishment of cordial relations between physicians and druggists. It is well recognized that pharmacy as a special branch of medicine has made great advances and the physician need not be ashamed to admit his ignorance of many things about drugs which he can profitably learn from the educated pharmacist.

## Method of Introducing New Preparations.

The report of a case of poisoning by purgen (phenolphthalein) is the occasion for some pertinent observations by Dr. G. Brasch as to the proper introduction of such remedies to the medical profession (*Zeitschrift für Medizinalbeamte*, Abst. in *Apotheker-Zeitung*, No. 59, 1906). He agrees with Best that all such remedies should first receive a thorough trial in an institution subject to state supervision, before they are advertised to the medical profession, so that their harmlessness in appropriate doses may be ascertained by a method free from liability to error. The manner in which the manufacturers introduced purgen to the profession and to the laity is to be condemned, and probably led to the symptoms of poisoning exhibited in the case of Dr. Best and tends to discredit a remedy which is harmless and efficient if used in proper doses. The manufacturer of such a preparation is inclined, for obvious reasons, to put the dose of his preparation much too high. The most important point, however, is the objectionable character of the names given to such articles. The organic compound phenolphthalein has been known for a long time and has been widely used as an indicator. Accidentally it was discovered that phenolphthalein possessed laxative properties and thereon it was proposed (1901) as a medicine under the name "purgen." It is sold in tablets containing 0.05, 0.1 and 0.5 grain phenolphthalein mixed with sugar and flavored with vanilla. The author says: "But it is very desirable—and I regard this as the most important part of my communication—that phenolphthalein should be received into the *materia medica* under its own name. The addition of vanilla and sugar and the designation as "purgen" by the manufacturers is to the highest degree superfluous and the arbitrary dosage in three strengths with the ridiculous designations 'baby,' 'for adults,' 'for patients confined to bed,' are merely calculated to prejudice the physician who is accustomed to individualize in his prescriptions, against a remedy which is in itself an excellent one." (See also *Queries and Minor Notes*, page 70.)

## New Belgian Pharmacopeia.

Some of the peculiarities of the new edition of this work are described by Fl. Vecray, in the *Gazette med. Belge*, Oct. 25, 1906. Granules of active principles each containing 1 mgr. must be white and sugar coated. Granules may be prepared under another title and coated with silver. The pharmacopeia recognizes the chlorhydrate of morphin as the official salt of this alkaloid and directs that it shall be dispensed whenever the sulphate or acetate is prescribed. Similarly the nitrate of strychnin must be dispensed in place of the sulphate because the former is stable while the latter loses five molecules of water of crystallization on exposure to the air.

A formula is given for artificial Carlsbad salt which is identical with that given in the National Formulary under the

1. THE JOURNAL A. M. A., vol. xlvii, 1906, p. 2091.  
2. Trans. Mich. State M. S., 1886, p. 186.



title "Sal Carolinum Factitum (1) N. F." Six grams of this powder dissolved in a liter of water give a mineral water similar to that of Carlsbad. It should be dissolved in warm water.

A formula for a purgative water similar to some of the popular aperient waters is given as follows:

Sulphate of magnesium.....	20 parts
Sulphate of sodium.....	20 parts
Chlorid of sodium.....	1 part
Bicarbonate of sodium.....	1 part
Boiled water .....	958 parts

#### The National Formulary.

The "Value of the National Formulary to the Retail Druggist" is the title of an article by C. S. N. Hallberg, in the Bulletin of the American Pharmaceutical Association, November, 1906. The origin of the National Formulary is briefly related and the fact is pointed out that its formulas are not primarily intended as substitutes for the various proprietary preparations, but are the outgrowth of medical necessities, and the result of pharmaceutical research. Reference to the history of any of the largely used proprietary remedies advertised to the physician at the present time will show that they were originated by pharmacists or physicians, and that the formulas have simply been appropriated by the makers of nostrums who, in many cases, have amassed fortunes from simple formulas which the pharmacist could have prepared equally well. Hallberg says:

Thus, for instance, the antiseptic solution of coal tar came into use over half a century ago, at the time when a certain French pharmacist prepared the water solution of coal tar for surgical use. This preparation became known to Pasteur, the great French pharmacist, who was experimenting on how to prevent the phylloxera from destroying the grape vines which threatened the great wine-producing districts of France at that time. This preparation crossed the English channel under the name of liquor carbonis detergens, the coal tar being suspended in the watery mixture by means of the emulsifying properties of quillaja tincture.

The preparation is now included in the National Formulary under the title "Liquor picis alkalinus." Hallberg continues:

Contemporaneously with this appeared the antiseptic solution extensively employed in England as Dobell's solution, which has also been contained in the National Formulary from the beginning under the name of liquor sodii boratis. From these were derived, respectively, the two great proprietary antiseptic solutions of the present day. Recognizing the disadvantages of phenol and mercuric chlorid, a gentleman engaged in the sundry-goods department of a wholesale drug house in St. Louis, had a formula constructed for him for an antiseptic solution which contained all the known antiseptics except the two "objectionable" ones just mentioned, and contained in addition, "the crystallized principles of mentha arvensis and thymus vulgaris," and, to make it somewhat mysterious, baptisia tinctoria. It was named after a great surgeon, Sir Joseph Lister, and it is said that the versatile namer of it stipulated that he received 10 per cent. royalty on the sale of the medicine. The preparation had an enormous sale, until two bright gentlemen in New York heard that an alkaline antiseptic solution would be preferred in minor surgical operations, especially involving mucus discharges, and therefore formulated a preparation similar to the well-known Dobell's solution by substituting for the phenol the more aromatic essential oils and in order to insure a generous salicylic content included all the three official methyl salicylates. That it should be no common solution that could be prepared by the ordinary pharmacist, it was given a characteristic distinct color through the use of the old time persicinis. It is safe to say that several million dollars worth of these two solutions have been sold, affording equally enormous profits to the alleged discoverers, which were simple enough to prepare to be the work of pharmacists. It is equally safe to assert that all this profit has been taken out of the hands and pockets of the pharmacists, who, if they are not permitted to compound such simple solutions, have certainly lost both their art and their calling. Since in the course of events, these two preparations are now represented by liquor antisepticus of the U. S. P. and the liquor antisepticus alkalinus, N. F., respectively, it is hoped that there will be no excuse longer to patronize the proprietary medicines which have become well known as cure-alls for all the ills that affect man and beast, internally as well as externally.

Another feature of the secret proprietary is the fact that the formula can be changed without the knowledge of the physician and this has been done in a number of instances. A noted remedy advertised for the cure of rheumatism purports to contain a drug from the Fiji Islands which has not appeared in the territory of the United States for several years and is said to be omitted from the preparation according to the admissions of the manufacturer. But the name and the formula have not been changed. Too often the proprietaries are owned by laymen having no knowledge of medicine or pharmacy, and who have their preparations made for them.

The author notes that the American Medical Association will issue an epitome of the important preparations of the Pharmacopoeia and of the National Formulary, and expresses the hope that this book will be in the hands of every physician.

## Miscellany

The Anglo-American Medical Association in Berlin.—This association, which has been previously referred to,<sup>1</sup> issues as an annual report a small booklet setting forth the scope of the organization. As might be surmised the association exists in the interests of the many American and British physicians who go to Berlin to study. It gives advice and assistance regarding the postgraduate work, the clinics and the hospitals and also in the finding of comfortable quarters. Aside from its utilitarian value it becomes a bond of union and good fellowship between men speaking a common language and engaged in a common pursuit. Its headquarters are the Heidelberg Restaurant, Central Hotel Building, corner of Freidrich and Dorotheen Streets, at which place a number of American and British medical journals (including THE JOURNAL of the American Medical Association) are on file and where the association meets every Saturday evening. From the nature of the association its membership is transitory only and its permanent and efficient organization has been largely due to the interest manifested by its president, Dr. Honan. He was father of the association and has been its president since its inception. Residing permanently in Berlin he is peculiarly fitted to be of benefit to the members and he places his experience at the service of all. At each weekly meeting a lecture is given, the names of such men as Ewald, Hirschberg, Senator, Max Joseph and Hoffa being among those given in the program printed in the report. While it would be impracticable to give a complete list of all the medical courses given in Berlin, the following from the annual report may be of value:

#### UNIVERSITY COURSES.

These are the regular student courses at the Berlin University, but while a great many are very good, they are designed more for students than for postgraduate work. An occasional visit to these courses is usually welcomed without formality. To attend regularly one must matriculate at the university. (Fee 18 marks.) The university work is divided into a winter and a summer semester. The winter semester lasting from October 15 to March 15, and the summer semester from April 15 to August 15. The time for matriculation is comprised in the two weeks preceding the opening of the semester and the first two weeks of the semester. It may be mentioned here that credentials (diploma and passport) must be shown in order to matriculate.

#### FERIEN COURSES.

These are given twice a year (March and October) during the university holidays. These courses are for graduates in medicine and can be very highly recommended.

#### PRIVATE COURSES.

These comprise all the remaining courses given in Berlin. A certain limited number of courses are under the control of the Anglo-American Medical Association of Berlin, all applications for which should be made to the secretary of the association. When writing to the secretary a great deal of time and trouble will be saved by mentioning exactly the kind of work desired. With regard to the best time to come to Berlin the following information may be useful: In gynecology and obstetrics the best facilities for postgraduate work are to be had during the vacation periods, some courses being given only at these times. In all other branches, both clinical and laboratory, good work may be had all the year round.

#### PENSIONS.

Board with full pension (including light, heat, etc.), can be had from 100 to 200 marks (about \$25 to \$50) a month and single rooms with breakfast from 30 to 80 marks (about \$7.50 to \$20.). A list of well recommended pensions is to be found in the reference book of the association at the Heidelberg Restaurant.

#### GERMAN INSTRUCTION.

German lessons are to be had for from 1 to 3 three marks an hour. Among the list of instructors, also to be found in the reference book, are the names of medical men who make a specialty of teaching medical journal.

Any further information will be furnished by President J. H. Honan, Lutzow Strasse 78, Berlin W. The list of members includes 252 from the United States and Canada.

The Mosetig Filling to Prevent "Dead Spaces" After Operations.—Mosetig-Moorhof reports that his method of filling large bone cavities with a rapidly hardening mass containing iodoform has been proving satisfactory beyond all expectations in the experience of many surgeons. In a communication to the *Wien. klin. Wochschr.* for November 1, No. 44, he advocates

1. THE JOURNAL A. M. A., 1904, vol. xlil, pp. 320, 545.



the application of the same technic to fill up any nooks or crevices liable to remain as "dead spaces" after an operation. It fills the space air-tight while the action of the iodoform in the filling ensures continuous antisepsis. The space or cavity must be absolutely dry and aseptic. The filling used is a soft mass formed by mixing equal parts of spermaceti and oil of sesame, filtering and sterilizing in a water bath, and then pouring 60 gm. of the hot mixture into a large vial containing 40 gm. of finely pulverized iodoform, shaking constantly until the mass hardens. He applies to the mixture the term *Plombe*, which is the German word for filling for a tooth, and the term *Plombierung* has been generally accepted by American and English writers as the special descriptive term for the Mosetig process. Before using, the filling is heated to 50 C. and is then poured into the cavity to be filled, where it rapidly hardens. It becomes gradually absorbed and supplanted by granulations, but this occurs too slowly for iodoform intoxication to occur. The process of absorption can be watched with the x-rays. He has been using the method for more than five years and in more than a thousand cases, and the results have always been primary healing when the above conditions are fulfilled, while there is no sinking in of the parts from cicatricial retraction, so that the outcome from every point of view, he says, even the cosmetic, was the best conceivable. He gives a number of minor technical points that facilitate rapid work, such as hastening the drying of the cavity with compressed air, and filling one side of the space with the *Plombe*, allowing it to harden, and then filling the other side, utilizing the force of gravity. The filling promptly arrests any oozing of blood, as it is heavier than blood and forces itself into and plugs the crevices from which the blood is oozing. His previous communications have been duly summarized in THE JOURNAL as they appeared.

**Lombroso's Criminal Museum.**—Cesare Lombroso contributes an article on his museum to the *Archivos de Psiquiatria y Criminologia* of Buenos Ayres, June, 1906. He describes his first collection, made during his student days and kept in his room to the horror of his landlady, and later in a barn until finally installed in the biologic laboratory of the Turin university. He added materially to the collection during his term of military service and later by visits to abandoned tombs in different provinces, where the bag full of skulls on his shoulder was taken for a load of gourds. Friends contributed skulls from all parts of the globe, and he was especially fortunate in obtaining skulls of criminals and of the insane. In examining, in 1870, the head of a bandit sent from the Pavia prison he found the cerebellum and occipital fossa as excessively developed as those of the rodents, and this finding was the dawn of criminal anthropology. It suggested that all the phenomena of the congenital criminal, both somatic and psychic, correspond to the phenomena normal in inferior animals or peoples. Microscopic examination of the cortex of epileptics and criminals, he says, revealed a structure similar to that encountered in the inferior vertebrates and birds of prey. His assumption that criminality might be an equivalent of epilepsy was confirmed by his study of the skulls of epileptics. His collection includes many articles made and decorated by convicts in the penitentiary, reproducing in pottery, etc., their crimes with appropriate designs or remarks, the criminal tendency marked in all, and similar collections from the insane asylums. Some articles obtained from the heirs of a man who claimed the papal chair and was treated by the authorities as a dangerous conspirator, established his mental derangement beyond a doubt after a costly trial and his execution. Lombroso lingers over the various articles in his collection with affectionate detail, especially a model of the Philadelphia penitentiary with small wax figures to represent the inmates.

#### Doctors in Police Courts.

The *Record-Herald* (Chicago, Dec. 31, 1906) has this to say: "The busy doctor, when called on to give testimony in the courts, and especially in the police courts, has a hard time of it everywhere. Judges are, however, usually cognizant of

the sacrifices he must make, and do their best to make the performance of the important public duty of testifying as easy as possible. Here is an item from a London newspaper telling of an occurrence in a police court there a week or two ago, which is in point:

"At North London, during the hearing of a case of alleged attempted suicide, a doctor was called as a witness. Mr. Fordham said he had noticed this gentleman in court all the morning, but was unaware of the fact that he was a doctor or he would have had the case called on early so as to have released him. He entertained a very strong opinion that doctors should not be kept from their practices longer than was absolutely necessary, and he had on previous occasions given directions that doctors in remand cases should not be asked to attend before 11:30 a. m. After inquiries as to who had in this case warned the doctor to attend earlier, the magistrate said he would write to the commissioner requesting him to issue an order that doctors should not be called on to give evidence—in his district—before 11:30 a. m."

"In Chicago the courts are accustomed out of regard for the doctors to omit formal subpoenas summoning them to appear at the hour of opening court, and instead to telephone them just long enough in advance to enable them to attend, give their testimony and get away with the minimum time lost. The London doctor was patient and long-suffering. He did not defy the court because service was inconvenient to him. And what is also significant, he did not lose anything in the end because of his regard for his public duty. It is worth noting that a fit of hysterics is not a necessary incident to the adjustment of an evil."

## Insurance Fees and Lodge Practice

### THE INSURANCE FEE QUESTION IN KENTUCKY.

By A. T. McCormack, M.D.

Secretary of the Kentucky State Medical Association.  
BOWLING GREEN, KY.

#### THE BEGINNING OF THE EXAMINER'S FEE QUESTION IN KENTUCKY.

The fight to prevent the lowering of the already moderate fees for making examinations for life-insurance companies was begun—in Kentucky, at least—by the Muldraugh's Hill Life Insurance Examiners' Association at about the same time—probably as a result—of the outrageous reduction of fees by the New York Life in about 1896. This association was entirely independent of any other medical organization, but held its meetings on the same day with the session of the Muldraugh's Hill Medical Society. It included in its membership every doctor in the territory who was eligible to become a life-insurance examiner. Together they studied how to become better and more thorough examiners, and every member voluntarily pledged himself that under no circumstances would he accept a less fee for any complete examination than \$5. Every reputable doctor in these five or six counties was soon a member of the new organization.

Now for results. The New York Life agents for the past ten years have written more insurance than those of any other company in Kentucky, but they have not written a policy nor had an examination made in the Muldraugh's Hill district. Other companies have written many thousands of dollars' worth of policies there. The Northwestern of Milwaukee and the Mutual Benefit of Newark, both always \$5 companies, have two of their best producing agents there.

If this could be done by an active band of earnest men in five counties in Kentucky, why can it not be extended to every county in the United States? Let our 2,500 county societies act as a unit, and the insurance men who have been coining millions out of the common people largely through the labors of our profession will be brought to a realization of our value. Safeguards have been thrown about other departments by law. If we are protected we must protect ourselves. "United we stand, divided we fall."

#### THE PRESENT STATUS IN KENTUCKY.

On October 10, last, strong resolutions declaring that the minimum fee for life-insurance examinations in Kentucky on and after Jan. 1, 1907, should be \$5, and explaining why, were passed unanimously by the State Medical Association. Within ten days this resolution was mailed to every practicing physician in the state, enclosed with a letter asking for his support, and an addressed postal for his reply. Up to this time 3,662 of the 4,126 legally registered physicians of the state have personally replied that they would make no insurance examinations for any company which en-



employs incompetent examiners or which pays less than \$5 for each complete examination. Of the less than 500 who have not replied directly, half at least have signed local agreements to the same effect in their own county. In 53 of our 119 counties every doctor in the county has signed a similar resolution at a formal meeting of the profession of his county; and in at least 30 other counties every doctor has signed the state agreement. Owing to the bad roads and winter weather it has been impossible as yet to get formal meetings within the few remaining counties, but we feel sure that within six weeks every doctor in Kentucky, not receiving a salary from an insurance company, will refuse to make examinations for less than the minimum fee of \$5 established by the State Association.

The officers and members of our State Association are acting under the injunction of the preamble of our constitution, "to guard and foster the material interests of the physicians of the state." The House of Delegates, in considering the insurance fee resolutions, acted under the express provision of Chapter IV, Section 5, of the by-laws, which says: "It (the House of Delegates) shall consider and advise as to the material interests of the profession, and of the public, in these important matters wherein it is dependent on the profession." Our resolutions and the report of the national committee all expressly recommend that acceptance of them shall not be made a test of membership. Many county societies, and some state associations, have declared that any doctor continuing to examine for the companies which pay less than the established fee is guilty of dishonorable conduct. This is clearly within their rights, and surely the officers of the great insurance companies which have reduced the fee, who have been shown recreant to their trusts, are estopped from quoting our own rules to prevent us from protecting ourselves and our profession from their ravages.

Our State Association was familiar with the efforts of our national committee to effect a compromise on terms which were most favorable to the insurance companies, and it was their natural indignation at the rejection of a compromise, which many of them disapproved, by the great insurance trust, that caused their action and that has caused its unanimous endorsement. It was explained to our House of Delegates as, at this time, we were engaged in active warfare with the nostrum interests, and in perfecting our organization along other lines, and, at the same time, knowing that the insurance magnates and their employes were, or ought to be, busy correcting the abuses Mr. Hughes and his committee had discovered, our national committee felt that it was wise and would be acceptable to both interests to offer a compromise, probably exactly acceptable to neither, but which might afford a common ground for a present agreement, and which hereafter might be modified if necessary. The following was the original offer of our committee:

#### PROPOSITIONS OF INSURANCE COMPANIES.

1. If desired, through its councilor system, reaching every district in the United States, and embracing the leading members of the profession in 2,400 of the more important and populous of the 2,830 counties, the American Medical Association will assist the insurance companies in selecting only competent and morally responsible men as medical examiners.

2. County and other societies and postgraduate and other schools will be utilized for special courses in life-insurance work, involving both scientific and moral responsibility in medical examinations.

3. Fees for examinations will be restored to former standards after Jan. 1, 1907 (and that after that date medical examiners assume the duties and responsibilities, in so far as may be possible, heretofore performed by inspectors, without further compensation).

As every insurance company in existence now requires a report on the moral hazard of the risk, it was felt that the third clause added no duties to the examiners, but that it would relieve the insurance companies of a great and useless expense, *which is charged in their annual reports to "medical examinations."*

At the fall conference, mentioned in the committee's report, it went even further and offered to accept a fee of \$3 for examinations of \$1,000 or less, with a graded fee of \$5 and upward for all examinations involving over \$1,000. This was proposed by Dr. J. N. McCormack to meet and to test the insistent plea of the companies, which he did not believe was warranted, that the cut in fees for the examinations for small policies was an absolute necessity under the recent New York laws, as well as to ascertain their willingness to make any concession in the interest of peace. This offer was rejected just as was the former one, these companies evidently acting in concert themselves, but without even the pretense of consistency, demanding that they should be left to deal only with the helpless individual examiner. The action of the Manhattan Insurance Company, also of New York (and of many other great companies of other states doing business there), in de-

clining to reduce its fees, and announcing that it was not made necessary by the recent legislation in that state, only confirms the impression held by those best informed that this law was only taken advantage of to carry out a long concerted plan to do this injustice to our profession, heretofore defenseless because unorganized, and fully justifies our committee in smoking them out by the offer of a compromise more than fair to them.

All of these facts were presented to our state medical association, at the Owensboro meeting, and it was largely the rejection of the more than fair compromise offer by the insurance trust that caused so much righteous indignation among our members, and made it easy for us to secure the unanimous and enthusiastic support of the profession in almost every county in Kentucky.

#### Medical Societies and the Insurance Examination Fee Question.

The Las Vegas (N. M.) Medical Society unanimously adopted the following resolutions:

##### ANNUAL CONTRACT.

*Resolved*, That the Las Vegas Medical Society condemns as unprofessional the attendance on families, individuals or societies by annual contract.

##### LIFE INSURANCE.

*Resolved*, That after this date the fee charged by members of the Las Vegas Medical Society for medical examination of applicants for life insurance with old-line companies, shall be uniform and in no case less than \$5.

The Clarksdale and Six Counties (Miss.) Medical Society took action December 5 and a strong effort was made by the secretary, Dr. James W. Gray, Jr., to have all reputable physicians within the jurisdiction of this society, sign them.

The Randolph County (Ark.) Medical Society adopted resolutions similar to those adopted by the Kentucky State Medical Association. Under date of December 22, Dr. H. L. Throgmorton writes:

We think the late ruling of the old-line companies is unjust to the profession, as well as to the policy holders.

The Lenoir County (N. C.) Medical Society took action at its last meeting, held at Kinston, December 7. Secretary Dr. W. F. Hargrove writes that the following resolution was passed:

No examination for old-line life insurance companies shall be made for less than five dollars, this sum to be paid by the insurance company regardless of urinalysis or of the amount of the policy.

At the regular meeting of the Mitchell District (S. Dak.) Medical Society, held September 4, similar action was taken and resolutions passed.

## Book Notices

AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors, J. D. Bryant, M.D., and A. H. Buck, M.D., New York City. Complete in Eight Volumes. Illustrated. Vol. 1. Cloth. Pp. 818. Price, \$7.00. New York: William Wood & Co., 1906.

The first volume of this system is introduced with a chapter on "The Evolution of American Surgery." This contains a brief but interesting history of the lives, and numerous good likenesses, of the early surgeons of this country, who helped to make American surgery what it is to-day. The volume is subdivided into five parts: "Surgical Pathology," "Complications and Sequelæ," "General Surgical Diagnosis," "General Surgical Treatment," and "General Surgical Prognosis." Nothing shows so well the change in thought which modern methods of scientific research have brought about, than the present conception of the import of inflammation. From the old idea of its being a definite disease to the present idea as expressed on page 109, that "Inflammation is an exaggeration of normal body functions—a struggle for protection and self-preservation"—and that it is "essentially adaptive, protective and reparative"—is a great step forward. The chapter on "Disturbances of Nutrition" includes hypertrophy, atrophy, the various degenerations, infiltrations, necrobiosis and necrosis, ulceration and caries, hyperemia, congestion, altera-



tions of the blood and suppuration. Most of the topics are sufficiently well covered, others find but brief mention, for instance: "The Nature and Origin of Pus." "The Varieties of Pus." "The Forms of Suppuration" and "The Results of Suppuration" are all included in three pages of text.

In the chapter on "Tumors and Tumor Formations," we find the elaborate classification of Adami adopted. One is rather startled at first to read of "epihylomata," "mesolepidomata," etc., but when one learns that they are the same old tumors with but a new name, confidence is soon restored. The general characteristics and clinical features of the various tumors are well depicted and most of the illustrations are new and taken from the author's own collection. Separate chapters are devoted to the "Theories of Tumor Formation" and to the "Parasitical Relations of Cancer." The latter is an interesting exposition of the facts thus far brought to light, but nothing positive can yet be claimed by the exponents of this theory.

Part II on "Complications and Sequelæ," treats of wound infections, septicemia, pyemia, erysipelas and tetanus. Concerning the latter infection, the author, with wisdom, strongly recommends the prophylactic use of an approved antitetanic serum in all cases which experience has shown are particularly liable to inoculation with the tetanus germ. In the excellent chapter on "Surgical Shock," the very valuable experimental work of Crile is freely drawn on.

Part III on "General Surgical Diagnosis," takes up the subject of surgical diagnosis, including the examination of the body fluids and the use of the x-ray in a comprehensive and practical manner, such as has not heretofore been done in a work of this kind, while part IV takes up "General Surgical Treatment" in the same practical manner, and part V "General Surgical Prognosis."

The volume is well gotten up; the paper firm and heavy; the type large and readable, and the illustrations clear and well selected. If the other seven volumes follow in the footsteps of the present one, the whole work can not help but be a most valuable one to all who are in any way concerned with the practice of surgery.

A TEXT-BOOK OF ELEMENTARY ANALYTICAL CHEMISTRY, Qualitative and Volumetric. By J. H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Third edition, revised and enlarged. Cloth. Pp. 299. Price, \$1.25 net. Philadelphia: P. Blakiston's Son & Co., 1906.

The author's long experience as a teacher and his reputation as a chemist are sufficient evidence that the contents of this book are well chosen to lay a broad foundation for the study of analytical chemistry. Of new matter contained in this third edition, the chapter on "Generalities on Reactions in Solution" is especially interesting. Here the author discusses in a clear, concise and non-technical way the influences which chemical equilibrium, solubility products, hydrolysis, etc., have on reactions. A short chapter on the theory of indicators has also been added. Here the modern theories for indicators are outlined, phenolphthalein and methyl-orange being used as illustrations.

In this connection, it should be stated that, although Professor Long teaches chemistry to students of medicine, the book is not written especially for medical students. Professor Long takes the ground that the elementary courses of chemistry given to medical students should not differ from those given in colleges, generally.

His textbooks of "Elementary Analytical Chemistry" and "Elements of General Chemistry" are not intended, therefore, for medical students as a class, but for students in general. The criticisms contained in the review of the latter book (THE JOURNAL A. M. A., Oct. 13, 1906, page 214), therefore, are not pertinent since they were based on the assumption that the book was written especially for medical students.

GREEN'S ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY. Vols. I and II. AAC-BRA, BRE-EAR. Cloth. Pp. 538 and 528. Price, \$5.00 per volume. London, England: William Green & Sons.

This work is at once a dictionary of medical terms and an encyclopedia of medical science. The encyclopedic articles are those of the "Encyclopedia Medica" brought down to date by

the addition of bracketed paragraphs where recent advances in medical knowledge have rendered it necessary. These articles are written by some of the leaders of British medicine and must be accorded authoritative rank. The dictionary articles are mainly the work of the editor, J. W. Ballantyne, and consist of definitions of medical terms, cross references to the more extensive articles where the subject is treated in detail, or, in short articles descriptive of medicines, etc. Proprietary remedies are described briefly without reference to their manufacturers. The information thus given will be useful. If the other volumes maintain the grade set by these two the work will prove a useful addition to encyclopedias of medicine. The work is well printed and illustrated.

THIRTEENTH ANNUAL REPORT OF THE CRAIG COLONY FOR EPILEPTICS at Sonyea, N. Y. Adopted by the managers, Oct. 9, 1906. Paper. Pp. 106. 25 Illustrations.

This report is a well printed booklet of over 100 pages and is profusely illustrated, showing all sides of colony life. A special section is devoted to scientific papers and reports made up of articles contributed by members of the medical staff. The amount of surgical work done at Sonyea is evidently considerable as anesthetics were given 172 times during the year. The book describes also a modern hydrotherapeutic plant that has been installed and is proving a valuable feature in the treatment of certain types of epilepsy. Much information of a general character is given. The fact that the colony embraces 1,895 acres of land, with 76 houses and a population of about 1,300; the net per capita cost of keeping patients and a general description of life in the colony, all go to make instructive and interesting reading.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A new and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the Kindred Branches, with their Pronunciation, Derivation, and Definition, including much collateral information of an Encyclopedic Character. By W. A. N. Dorland, A.M., M.D. Fourth edition, revised and enlarged. Flexible Morocco. Pp. 836. Price, \$4.50 net. Philadelphia: W. B. Saunders Company, 1906.

In this edition over 2,000 new words have been added and nearly all the tables have been amplified. Among the added illustrations are six colored plates showing appendicitis in various form; the Leishman-Donovan bodies; diphtheria of the lips and of the pharynx; Koplik's spots in measles and the appearance of the throat in that disease; and the kidney in various forms of nephritis.

STUDENT AIDS SERIES. Consisting of: Aids to Physiology. By P. T. B. Beale, F.R.C.S. Cloth. Pp. 239. Price, \$1.25 net. Aids to Surgical Diagnosis, by H. W. Carson, F.R.C.S. Cloth. Pp. 140. Price, \$1.00 net. Aids to Surgery. By J. Cuning, M.B., B.S., F.R.C.S. Cloth. Pp. 394. Price, \$1.25 net. Aids to Chemistry. By T. A. Henry, D.Sc. Cloth. Pp. 316. Price, \$1.25 net. Aids to Gynecology. By A. S. Gubb, M.D., M.R.C.S. Cloth. Pp. 136. Price, \$1.00 net. Aids to Obstetrics. By S. Nall, B.A., M.B., D.P.H. Cloth. Pp. 145. Price, \$1.00 net. New York: William Wood & Co.

This is not a new series, although new volumes have been added to it, such as those on surgery, physiology, surgical diagnosis and chemistry. The general value of the works previously issued has been maintained in the additions so that the series is valuable to those who are preparing for examinations.

## Association News

### Transactions of the Section on Pharmacology and Therapeutics

CHICAGO, DEC. 24, 1906.

To the Editor:—The publication of the papers presented to the Section at the last annual session is now nearly completed. Since the transactions are of unusual interest, comprising largely subjects pertaining to the investigation and reformation of the materia medica, the complete transactions will be found in a volume and offered to the members of the Association at \$1.00 a copy, which is less than cost. Since it is necessary to know how many copies to print as soon as possible, every one desiring a copy is requested to advise the secretary and to remit at once.

C. S. N. HALLBERG, Secretary.



## Marriages

JOHN R. HUDSON, M.D., to Miss Annie E. Slack, both of St. Louis, December 12.

JOHN T. RIESS, M.D., to Miss Mary T. Spitz, both of Baldwin, Ill., December 22.

DELL B. ALLEN, M.D., to Miss May A. Dixon, both of New York City, December 16.

R. RUTLEDGE COPELAND, M.D., to Miss Anabel Lee Jackson, at Baltimore, December 18.

JOHN F. MORSE, M.D., to JEAN WHITNEY, M.D., both of Battle Creek, Mich., December 19.

LEO E. SCHNEIDER, M.D., to Miss Lenore Hartnett, both of Oregon, Ill., in Chicago, December 2.

ARTHUR F. GODIN, M.D., Los Angeles, Cal., to Miss Blanche Kimball of Patton, Cal., December 12.

EDWARD CHRISTIAN WRIGHTSMAN, M.D., to Miss Anna Sand, both of South Chicago, Ill., December 25.

LOUIS P. RICH, M.D., Frederika, Iowa, to Miss Mildred Kempendorf, at Chicago, December 15.

ARTHUR BIRCH LOCKRIDGE, M.D., Montezuma, Ind., to Miss Edna Ames, at Greencastle, Ind., December 10.

WILLIAM W. VAN SCOYOC, M.D., Manchester, Kan., to Miss Geneva Hamilton of Clifton, Kan., December 12.

JAMES A. GENTRY, M.D., Narrows, Ala., to Miss Mary Jeanette Wyman, at Bridgeport, Ala., December 16.

WILLIAM BENNETT PALAMOUNTAIN, M.D., Colfax, Wash., to Miss Dorothea Dekan of San Francisco, December 12.

GEORGE W. TAPE, M.D., Arrowhead, Cal., to Miss Emma Langenhagen of Chicago, at Los Angeles, December 18.

EUGENE HOLT EASTMAN, M.D., Hot Springs, Ark., to Miss Leona Anderson Snyder of Dayton, Ohio, December 25.

JOHN NATHAN SIMPSON, M.D., Morgantown, W. Va., to Miss Grace Emily Donley of Waynesburg, Pa., December 20.

RUSSELL G. GORDANIER, M.D., Muir, Mich., to Miss Ivahletta Burnes of Wacousta, Mich., at St. John's Mich., December 12.

## Deaths

E. Oliver Belt, M.D. University of Maryland School of Medicine, Baltimore, 1886; of Washington, D. C., a member of the American Medical Association, and Washington Society of Ophthalmologists and Otologists; professor of ophthalmology and otology in Howard University Medical Department and director of the eye and ear clinic in that institution; eye and ear surgeon of the Baltimore and Ohio railroad; surgeon to the Freedman's Hospital and secretary and surgeon to the Episcopal Eye, Ear and Throat Hospital, Washington; and consulting ophthalmologist and otologist to the Emergency Hospital, Frederick, Md., and to the Frederick City Hospital; one of the prominent specialists in his line, was instantly killed in a collision on the Baltimore & Ohio Railroad at Terra Cotta, D. C., three miles from Washington, December 30, aged 45.

William Harleston Huger, M.D. Medical College of the State of South Carolina, Charleston, 1849; who completed half a century of service as physician to the Orphan House, Charleston, in 1904; in charge of hospitals at James Island and in Charleston during the Civil War; for more than 25 years a member of the local board of health; one of the most esteemed practitioners of Charleston; died at his home in that city, December 17, after a prolonged illness, aged 80.

John C. Sanders, M.D. Western Reserve University, Medical Department, Cleveland, Ohio, 1847; of Cleveland, Ohio, formerly president of the national and state homeopathic medical societies; emeritus professor of obstetrics in the Cleveland University of Medicine and Surgery; died at Huron Road Hospital, Cleveland, December 22, two hours after a fall on an icy pavement, aged 81.

William Herbst, M.D. Jefferson Medical College, Philadelphia, 1855; eminent as a botanist; professor of botany in Muhlenburg College from 1874 to 1881; a member of the Royal Botanic Society of Germany; said to have been the oldest practicing physician in Lehigh County, Pa., died at his home in Trexlertown, December 22, aged 73.

Clark Leavitt, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1864; pension examiner at Newport, Ind., for more than thirty years; a member of the

Vermilion County Medical Society since its organization; died at his home in Danville, Ill., December 19, after an illness of about six months, aged 73.

Walter Judson, M.D. College of Physicians and Surgeons in the City of New York, 1870; a member of the American Medical Association, and one of the most prominent practitioners of New Haven, Conn., died suddenly, December 24, in that city, from cerebral hemorrhage, while making a professional call, aged 87.

James Franklin Nolan, M.D. Kentucky School of Medicine, Louisville, 1886; local surgeon for the Erie Railroad, Huntington Division, at North Judson, while returning from a professional call and walking on the track near North Judson, December 21, was struck by a train and instantly killed, aged 50.

James Carson, M.D. Medical Department of the University of Iowa, at Keokuk, 1864; of Mount Vernon, Iowa, a member of the American Medical Association and a prominent practitioner of Linn County, died at St. Luke's Hospital, Cedar Rapids, from septicemia, December 18, aged 76.

Jeremiah R. Levan, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861; medical director of the Fidelity Life Insurance Co., and a member of the Philadelphia County Medical Society, died suddenly at his home in Philadelphia, December 16, aged 70.

Mark M. Thompson, M.D. Chicago Homeopathic Medical College, 1886; a member of the American Institute of Homeopathy and a professor in a local college, was struck by a train, December 27, at Austin, Ill., and died a short time later, aged 51.

Thomas S. Mims, M.D. Medical College of the State of South Carolina, Charleston, 1840; one of the oldest practitioners of Screven County, Ga., died at his home in Mobley Pond, December 17, after an illness of several weeks, aged 86.

Berthold Trautman, M.D. University of Georgetown, Medical Department, Washington, D. C., 1874; of Germantown, Philadelphia, died at the Majestic Hotel, Philadelphia, where he was spending the winter, December 19, aged 62.

Samantha S. Nivison, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1866; for many years in charge of sanitarium at Dryden, N. Y., and Hammonton, N. J., died at her home in Hammonton, December 19, aged 73.

Herman Stein, M.D. University of Jena, Germany, 1849; a veteran of the Civil War; formerly of Deadwood, S. Dak., but for the last twelve years a resident of Chicago, died at his home, December 23, aged 80.

Barnet L. Bonar, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1880; for many years a practitioner of Washington, Pa., died at his home in Streator, Ill., December 22, aged 54.

James E. Wiley, M.D. Medical College of Alabama, Mobile, 1898; formerly assistant in the State Insane Hospital, Tuscaloosa, Ala., died suddenly at his home in Tusculumbia, Ala., December 19, aged 32.

Peter J. Doran, M.D. Baltimore University School of Medicine, 1891; of Baltimore, died from heart disease at St. Agnes Sanitarium in that city, December 21, after an illness of three years, aged 63.

Frank B. Robinson, M.D. Cooper Medical College, San Francisco, 1895; surgeon during the Spanish-American War, died at his home in San Francisco, December 19, from heart disease, aged 36.

Leverette W. Babcock, M.D. University of Vermont, Medical Department, 1869; speaker of the Minnesota House of Representatives in 1903, died at his home in Wadena, Minn., December 25.

Edward L. Strode, M.D. University of Maryland School of Medicine, Baltimore, 1889; died suddenly at his home in Swan Pond, Martinsburg, W. Va., December 19, from heart disease, aged 46.

W. T. Stovall, M.D. University of Louisville, Medical Department, 1852; one of the oldest and most esteemed practitioners of Mississippi, died at his home in Leland, December 5, aged 78.

Delavan W. Longstreet, M.D. Baltimore University School of Medicine, 1889; a practitioner of Lackawaxen, Pa., and Narrowsburg, N. Y., died at the latter place, December 12.

John Alexander (Examination, Ohio), a practitioner for fifty-seven years, died at his home in McConnellsville, Ohio, December 16, after an illness of several months, aged 87.

Francis E. Doughty, M.D. College of Physicians and Surgeons in the City of New York, 1869; died from pneumonia at his home in New York City, December 28, aged 59.



Alston Fuller, M.D. Jefferson Medical College, Philadelphia, 1866; a prominent physician of Randolph County, N. C., died at his home in Jones Mine, December 15, aged 75.

Abel C. Bingham (Years of Practice, Illinois) a practitioner of Harvard, Ill., for thirty years, died in Hahnemann Hospital, Chicago, December 6, from paralysis.

William Voorheis, M.D. Memphis Hospital (Tenn.) Medical College, 1882, died at his home in Memphis, December 22, from pneumonia, after a short illness, aged 57.

Frank B. Ryan, M.D. New York University, New York City, 1874, died at his home in Moravia, N. Y., December 18, a few days after an operation for appendicitis.

Karl G. Hebel, M.D. University of Marburg, Germany, 1855; died at his home in Pittsburg, Pa., from pneumonia, December 23, after an illness of three weeks, aged 72.

James W. Mount, M.D. Penn Medical University, Philadelphia, 1880; died at his home in Kansas City, Mo., December 18, aged 68.

J. L. Pratt (Examination, Illinois) of Blue Mound, Ill., died recently at San Bernardino, Cal., aged 74.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### GERMAN MEDICAL DICTIONARIES.

BATH, NEW YORK, Dec. 15, 1906.

To the Editor:—Please recommend some good German-English, English-German medical dictionary. Did you publish something regarding this? If so, what date was it? C. HAASE, M.D.

ANSWER.—We referred to this subject at considerable length July 22, 1905, p. 253, and Dec. 16, 1905, p. 1896. Lang & Abraham's new German-English medical dictionary, published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, 1905, for \$4.00 is proving satisfactory, but in purchasing a medical dictionary for foreign terms John S. Billings' dictionary, which contains the medical terms in five languages in a single alphabetical sequence, will be found invaluable. Current medical literature contains so many French and Italian, as well as English, German and Latin, terms, that a dictionary with these five languages is none too compendious, and a reading knowledge of French is readily acquired. Billings' dictionary, the "National," is published by Lea Brothers & Co., 706 Sansom St., Philadelphia, for \$12.

### COMMISSIONS EIGHTY YEARS AGO.

Human nature seems to be the same in all ages, and there is nothing new under the sun. Some of us think that the division of the fee question is of recent origin; probably it is. The same may think also that receiving commissions from druggists is of recent origin, but in this they are mistaken. Under the heading, "Looking Backward," the London *Lancet* publishes a letter "To the Editor" which appeared in that paper Nov. 29, 1828. It is as follows:

#### "PERCENTAGE SYSTEM.

"To the Editor of the *Lancet*: Sir—An invalid suffering from the pernicious effects of adulterated drugs and ill-compounded medicines, for which the French pharmacists are notorious, and feeling deeply for the interest and health of my fellow countrymen, I can not forbear directing your and their attention to a system of combination between certain British physicians and French pharmacists in Paris, which is now carried to such a scandalous and mischievous pitch, that it has drawn on the offenders the ironical and unadvised of the *Parisian Press*.

"The following is copied from the *Corsaire*: 'A Medical paper called the *Hygie*, recently gave a letter from the pharmacien Beral, Rue de la Paix, to Dr. Ch-s-de, who had just arrived from London, for the purpose of initiating him into certain customs which he calls French and which consist of the pharmacien engaging the doctor to send all his prescriptions to him; the pharmacien consenting to pay the officious doctor a reasonable sum. All this may be true, but it is long since the English physicians, Morg-Tup, and Mac-g-lin, bargained with the pharmacien Beral; and the *Hygie* is wrong in saying that these lucrative arrangements began with the French, for everybody knows that in commercial affairs the English always take the lead.'

"An English journal, published in Paris, contains the following: 'The English nobility and gentry are most respectfully informed that a Pharmacy will shortly be opened, quite in the English manner; physicians supporting this establishment will receive as liberal a percentage as at any other Pharmacy. N. B. Each prescription will be numbered, and the doctors paid at the end of every month.'

"'Tis true, 'tis pity;

And pity 'tis 'tis true.'

"AN ENEMY TO THE PERCENTAGE SYSTEM."

### PHYSIOLOGIC ACTION OF PHENOLPHTHALEIN.

Dr. C. H. Wood, Vallejo, Cal., writes: Kindly inform me where I can obtain information (in English) regarding the precise physiologic action of phenolphthalein.

ANSWER.—The literature on the physiologic action of phenolphthalein is scanty. By referring to THE JOURNAL'S Guide to Current Medical Literature we find one article on this subject by F. W. Tunnicliffe in the *British Medical Journal*, Oct. 18, 1902. The conclusions reached by the author of this article are that the drug is a useful aperient, without irritating action on the kidneys and capable of acting in jaundice; its depressant action on the circulation is less than that of magnesium sulphate. The dose for children is from  $\frac{3}{4}$  to  $2\frac{1}{4}$  grains, for adults from  $1\frac{1}{2}$  to  $4\frac{1}{2}$  grains, increased to 15 grains in cases of obstinate constipation. It may be given either in capsule or pill form. The drug seems to have no other action. The British Extra Pharmacopoeia give substantially the same facts. Phenolphthalein is a crystalline substance produced by the interaction of phenol and phthalic anhydride, being soluble in alcohol in the proportion 1:10, and in water, 1:600. The substance is also on the market under the name of "purgin," and a recent report of a case of poisoning by this preparation is noted in the Pharmacology Department under the caption "Method of Introducing New Preparations."

### CANCER HELD TO BE NON-PARASITIC.

McKEESPORT, PA.,

To the Editor:—In THE JOURNAL of April 28, 1906, p. 1255, Professor Nicholas Senn states that carcinoma is non-parasitic in origin and proves it by inoculating his own forearm with a malignant graft taken from an advanced carcinoma from the lip of a patient. An article recently appeared in numerous papers in the country, emanating from Chicago, under date of December 6, purporting to be from a lecture by Dr. Senn before the students at the University of Chicago in which he presented a series of conclusions, among which is this statement: "Cancer is a parasitic disease." Presuming this newspaper article to be correct, how can Professor Senn reconcile these two statements made within the year 1906?

D. C. HUFFMAN.

ANSWER.—This query was referred to Dr. Nicholas Senn, who replies as follows: "In my lectures and in all my writings I have always maintained that cancer is a non-parasitic disease and you may so state in THE JOURNAL in reply to the enclosure. The error lies in the failure of the report in the daily press to be correct."

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Dec. 29, 1906:

Billingslea, C. C., asst.-surgeon, left Fort Meyer, Va., on 7 days' leave of absence.

Hall, James F., asst.-surgeon, granted leave of absence for one month.

Heard, George P., asst.-surg., granted leave of absence for one month, with permission to apply for an extension of three months.

Newgarden, George J., surgeon, order for duty at Fort D. A. Russell, Wyo., suspended, ordered to Army General Hospital, Washington Barracks, D. C., for observation and treatment.

Havard, Valery, asst.-surgeon-general, relieved from duty as chief surgeon, Army of Cuban Pacification, and ordered to return to his duties in the office of the surgeon-general of the Army.

Taylor, Blair D., deputy surgeon-general, now at Havana, Cuba, ordered to duty as chief surgeon, Army of Cuban Pacification.

McCulloch, Champe C., Jr., surgeon, relieved from duty at Fort Meade, S. Dak., and ordered to Washington, D. C., to report to the Isthmian Canal Commission for duty on the Isthmus of Panama.

Carter, William F., surgeon, returned to Fort Monroe, Va., from leave of absence.

Whitmore, Eugene R., asst.-surgeon, returned to Fort Jay, N. Y., from temporary duty at Fort Slocum, N. Y.

Holmes, Thomas G., contract surgeon, left Fort Wayne, Mich., on leave of absence.

Van Kirk, Harry H., contract surgeon, left Fort Logan, Colo., for temporary duty at Fort Wingate, N. M.

Wall, Francis M., contract surgeon, returned to Fort Oglethorpe, Ga., from leave of absence for two months.

Brooks, John D., contract surgeon, left Fort Meade, S. Dak., on leave of absence for one month.

Johnson, Charles W., contract surgeon, left Fort Des Moines, Iowa, on leave of absence for three months.

Burkart, John L., contract surgeon, arrived at Fort Wayne, Mich., from leave of absence.

Tasker, Arthur N., contract surgeon, granted leave of absence for nine days.

Cullen, Charles W., contract surgeon, granted leave of absence for nine days.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Dec. 29, 1906:

Lumsden, G. P., medical inspector, commissioned medical inspector, with rank of commander from Sept. 6, 1906.

Pugh, W. S., P. A. surgeon, Jr., commissioned P. A. surgeon, with rank of lieutenant, from Sept. 23, 1906.



Taylor, E. C., Campbell, F. E., Gill, J. E., Reeves, I. S. K., Jr., P. A. surgeons, commissioned P. A. surgeons, with rank of lieutenant, from Oct. 12, 1906.

Means, C. V. B., surgeon, detached from the Navy Yard, Mare Island, Cal., and discharged from treatment at the Naval Hospital at that yard, and ordered to the Army and Navy General Hospital, Hot Springs, Ark., for treatment.

Moore, J. M., surgeon, detached from the *Indiana* and ordered home.

Bertolette, D. N., medical director, detached from duty in command of the Naval Medical Supply Depot, Navy Yard, New York, N. Y., January 8, discharged from treatment at the Naval Hospital at that place, and ordered home to wait orders.

Fitzsimons, P., medical director, detached from the Navy Yard, Washington, D. C., and ordered to command in the Naval Medical Supply Depot, Navy Yard, N. Y., January 8.

Percy, H. T., surgeon, ordered to the Navy Yard, Washington, D. C., January 3.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Dec. 26, 1906:

Pettus, W. J., asst.-surgeon-general, granted leave of absence for one day, December 26.

Wertebaker, C. P., surgeon, relieved from duty at St. John, N. B., effective December 31, and directed to assume command of the service at Norfolk, Va. Leave of absence for three months from Dec. 1, 1906, amended to read for one month.

Blue, Rupert, P. A. surgeon, relieved from duty at Norfolk, Va., to take effect Dec. 31, 1906.

Billings, W. C., P. A. surgeon, granted leave of absence for two days, December 28 and 29.

Earle, B. H., P. A. surgeon, granted leave of absence for ten days from December 24.

Lloyd, B. J., P. A. surgeon, granted leave of absence for ten days.

Bogges, J. S., asst.-surgeon, granted leave of absence for three days from Dec. 21, 1906, under Paragraph 191 of the Regulations.

Ashford, F. A., asst.-surgeon, directed to rejoin his station at Ellis Island, N. Y., Dec. 21, 1906.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for thirty days on account of sickness, beginning Nov. 19, 1906.

Schwartz, L., acting asst.-surgeon, granted leave of absence for seven days from Dec. 17, 1906, under Paragraph 210 of the Regulations.

Hall, L. P., pharmacist, granted leave of absence for seven days from Dec. 24, 1906, under Paragraph 210 of the Regulations.

### APPOINTMENTS.

Dr. M. Claude Terry was transferred from the Insular Service and appointed an acting assistant surgeon in the Public Health and Marine-Hospital Service for duty at San Francisco Quarantine Station, Dec. 26, 1906.

Dr. John O. Rush was appointed a temporary acting asst.-surgeon in the Public Health and Marine Hospital Service for duty at Mobile, Ala., Dec. 26, 1906.

### BOARD CONVENED.

A board of officers was convened to meet at Portland, Me., on Dec. 20, 1906, for the purpose of examining Pharmacist C. H. Bierman to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the Board: Surgeon W. P. McIntosh, chairman; Acting Asst.-Surgeon A. F. Stuart, recorder.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended December 21, 1906:

#### SMALLPOX—UNITED STATES.

Georgia: Augusta, Nov. 27-Dec. 10, 16 cases.

Illinois: Chicago, Dec. 9-15, 1 case; Galesburg, Dec. 2-8, 13 cases.

Indiana: Indianapolis, Dec. 3-9, 1 case; South Bend, Dec. 2-8, 3 cases.

Kansas: Topeka, Dec. 2-8, 1 case.

Louisiana: New Orleans, Dec. 2-8, 1 case.

Minnesota: Fourteen counties, Nov. 12-Dec. 10, 56 cases.

Montana: Two counties, Nov. 1-30, 2 cases.

Missouri: St. Joseph, Oct. 26-Dec. 8, 3 cases; St. Louis, Dec. 1-8, 1 case.

Nebraska: Omaha, Nov. 15-21, 1 case.

New York: New York, Nov. 2-Dec. 15, 18 cases.

North Carolina: Three counties, Oct. 1-31, 29 cases.

Ohio: Toledo, Dec. 2-8, 3 cases.

Washington: Spokane, Dec. 4-10, 2 cases.

Wisconsin: Milwaukee, Oct. 2-8, 63 cases.

#### SMALLPOX—FOREIGN.

Africa: Cape Town, Oct. 27-Nov. 3, 5 cases.

Brazil: Bahia, Oct. 28-Nov. 10, 15 cases; Pernambuco, Oct. 16-30, 15 deaths; Rio de Janeiro, Nov. 6-10, 3 cases.

Chile: Iquique, Nov. 6-10, present.

Great Britain: Hull, Nov. 18-24, 3 cases; Manchester, Nov. 18-24, 1 case.

India: Calcutta, Oct. 28-Nov. 3, 1 case.

Russia: Odessa, Nov. 18-24, 2 cases, 1 death; St. Petersburg, Nov. 17-23, 20 cases, 1 death.

Turkey: Beirut, Nov. 24, present.

#### CHOLERA—INSULAR.

Philippine Islands: Manila, Oct. 13-Nov. 17, 349 cases, 145 deaths; Provinces, 1,037 cases, 730 deaths.

#### CHOLERA—FOREIGN.

India: Bombay, Nov. 14-20, 17 deaths; Calcutta, Oct. 28-Nov. 10, 104 deaths.

#### YELLOW FEVER.

Cuba: Marlanao, Dec. 15, 1 case.

Mexico: Vera Cruz, Nov. 17-Dec. 1, 3 cases, 2 deaths.

#### PLAGUE.

Brazil: Bahia, Oct. 28-Nov. 10, 5 cases, 1 death; Pernambuco, Oct. 16-31, 4 deaths; Rio de Janeiro, Nov. 4-10, 34 cases, 12 deaths.

Peru: Catacaos, Nov. 3, 1 case; Mollendo, 1 case; Trujillo, Nov. 1-6, 1 case.

Week Ended Dec. 28, 1906.

#### SMALLPOX—UNITED STATES.

District of Columbia: Washington, Dec. 9-15, 1 case, 1 death.

Georgia: Augusta, Dec. 11-17, 1 case.

Illinois: Galesburg, Dec. 9-15, 7 cases.

Indiana: Indianapolis, Dec. 10-16, 3 cases.

Minnesota: Fourteen counties, Nov. 12-Dec. 10, 56 cases.

Missouri: St. Joseph, Dec. 9-15, 3 cases.

New York: New York, Dec. 9-15, 5 cases.

North Carolina: Greensborough, Dec. 9-15, 7 cases.

Oregon: Umatilla County, Nov. 1-30, 1 case.

Virginia: Norfolk, Dec. 17, 2 cases, in Craney Island Hospital; Richmond, Dec. 11-17, present.

Washington: Spokane, Dec. 9-15, 3 cases.

Wisconsin: La Crosse, Dec. 9-15, 1 case; Appleton, 2 cases; Milwaukee, 29 cases.

#### SMALLPOX—FOREIGN.

Africa: Cape Town, Nov. 18-24, 6 cases.

Brazil: Bahia, Nov. 18-24, 11 cases.

China: Chefoo, Nov. 4-10, 1 case, on S. S. *Raleigh*.

France: Marseilles, Nov. 1-30, 50 deaths; Paris, Nov. 25-Dec. 1, 12 cases.

Gibraltar: Dec. 3-9, 3 cases.

Greece: Athens, Nov. 18-24, 1 death.

Malta: Valetta, Nov. 18-24, 1 case.

Russia: Odessa, Nov. 25-Dec. 1, 7 cases; St. Petersburg, Nov. 18-24, 4 cases, 2 deaths.

#### CHOLERA—FOREIGN.

India: Bombay, Nov. 14-27, 17 deaths; Calcutta, Nov. 3-10, 66 deaths; Rangoon, Nov. 11-17, 6 deaths.

#### YELLOW FEVER—FOREIGN.

Cuba: Cardenas, Dec. 22, 1 case; Habana, Dec. 22-27, 1 case, on German S. S. *Kronprinzessin Cecil*, from Vera Cruz.

Mexico: Vera Cruz, Dec. 2-8, 1 case, 1 death.

#### PLAGUE FOREIGN.

Brazil: Bahia, Nov. 11-24, 8 cases, 4 deaths.

India: Bombay, Dec. 14-20, 12 deaths.

Japan: Osaka, Nov. 14-20, 2 cases; Matsuyama, 1 case.

Russia: Transbaikial Province, Nov. 4-10, 1 case, 1 death.

## Society Proceedings

### COMING MEETING.

Med. Society of State of New York, Albany, Jan. 29, 1907.

### SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Nineteenth Annual Meeting, held at Baltimore, Dec. 11-13, 1906.*

The President, DR. GEORGE H. NOBLE, Atlanta, Ga., in the Chair.

After the transaction of some routine business, the reading of papers was begun.

#### Sulphate of Spartein in Surgical Practice.

DR. STUART MCGUIRE, Richmond Va., said that he believes he has accidentally discovered in sulphate of spartein a valuable remedy for the prevention and treatment of postoperative suppression of urine. In the last five years he has lost many patients from this cause, despite the almost routine use of chloroform as an anesthetic. The cases have usually been those with pre-existing nephritis from sepsis or cholemia. Shock has not apparently been a factor, as the condition would not develop for twenty-four or thirty-six hours. A patient operated on for retention of urine or for jaundice due to obstruction of the common duct would do well for one or two days, and then would become restless, listless, would develop a stupor which would rapidly deepen into coma, and die with all the symptoms characteristic of uremia. In the treatment of this condition, Dr. McGuire has tried giving water by mouth, under the skin, and in the rectum; hot packs and vapor baths; cups and counter-irritants; strychnia, digitalis and nitroglycerin; calomel and saline purgatives; and in one case stripping the kidney capsules, with uniformly bad results. Two years ago he began empirically the use of sulphate of spartein, and now has a record of six cases in which he is sure the drug was the means of saving the patient's life. Its therapeutic effect is to increase the blood



pressure, make the pulse slower and stronger, and act as a powerful diuretic. Its action is manifest in thirty minutes after administration, and lasts for from four to six hours. To get results it must be given hypodermically in from one to two grains, repeated every three to six hours. Its use should not be delayed until suppression of urine exists; it should be prescribed as a prophylactic as well as a curative agent. Dr. McGuire does not claim that it is a specific, or that it should be employed to the exclusion of other measures, such as purgatives, transfusions, and hot packs. He does believe, however, from actual experience, that it is preferable to the drugs of the digitalis type in rapidity of action, ease of administration, and efficiency of results.

#### DISCUSSION.

DR. WILLIAM PERRIN NICOLSON, Atlanta, Ga., has used sulphate of spartein in a similar way as a heart tonic. He prefers it to digitalis. Therapeutically it combines the virtues of being a powerful heart tonic and of dilating the capillaries. An important point is to give it in large doses—say two grains. He mentioned one case in which suppression of urine lasted for forty-seven hours, but the patient finally recovered.

#### Comparative Advantages and Disadvantages of Hysterectomy and Removal of the Body of the Uterus.

DR. J. WESLEY BOVÉE, Washington, D. C., said that an important proportion of cases of tumors thought to be simple fibromata or myomata have in reality taken on malignant degeneration or are complicated by malignant degeneration of the corporeal endometrium. Carcinoma of the cervix has been detected within a few days after removal of the body of the uterus, showing clearly that it existed at the time of the supravaginal amputation. In some cases fibromata have existed for years, the patients declining operation, and cancer of the cervix developed subsequently, with fatal result. Bovée has seen two such cases. It has not been proved, he said, that cancer of the cervix occurs more frequently with uterine fibroids than without them. On the other hand statistical tables on the complications of fibroids demonstrate the remarkable increase in the frequency of cancer of the body of the uterus accompanying these growths. Even by the abdominal route complete extirpation of the uterus is not an operation that necessarily taxes the patient's vitality to an extent appreciably greater than removal of the body alone. Objections to the removal of the cervix with the body because of weakening of the vaginal roof and shortening the vagina are practically nullified by suturing the round and broad ligaments to the vaginal walls. The comparative ease of the amputation is of moment only in critical cases. The cosmetic effect to young women deserves more consideration. Often retention of the portio vaginalis is deemed by them to be of great value. In a young woman without a family history of malignant disease and in the absence of uterine growths the cervix should not be removed if the body is to be removed by the abdominal route. In very critical cases in which the body of the uterus is to be removed, even in the presence of tumors, it will occasionally be advisable not to remove the cervix. In practically all other cases the cervix should not be saved, especially in old women, particularly if evidence of uterine growths be present.

#### DISCUSSION.

DR. I. S. STONE, Washington, D. C., declared that he has never regretted having left the cervix. So far as malignant disease is concerned, it has been his good fortune by subsequent operations to save two patients who had what is called subtotal hysterectomy done, the stump was subsequently found to be malignant and operation was done. One of these cases was sarcoma. He believes that a large number of surgeons are well satisfied with the mortality of the Baer operation, of leaving the stump.

DR. HENRY T. BYFORD, Chicago, said that no cut and dried rule could be laid down to take out the cervix in this class of cases. One would not think of taking out the cervix in a young woman unless there is malignant disease. Even in an old woman it is a dangerous procedure, and one attended with great difficulty. The cervix, he declared, should not be removed unless there are good reasons for so doing.

DR. MAURICE H. RICHARDSON, Boston, recalled but one instance in which cancer of the cervix developed after supravaginal amputation for fibroids. While he has not looked up his records, he should say that cancer of the cervix is very rare after such operations.

DR. HERMAN J. BOLDT, New York, said that malignant disease in the cervix after supravaginal hysterectomy does occur. He does not believe, however, that if the cervix is left it is a causal factor in the production of malignant disease. He does not consider that the relative risk between supravaginal amputation and panhysterectomy is of importance. One who is accustomed to doing pelvic surgery can do one operation as quickly as the other. The subsequent condition of the vaginal vault is the principal point. In the majority of instances, it makes no difference whether there is a good vaginal vault following supravaginal amputation, or whether there is a vaginal vault with more or less cicatricial tissue in it, but occasionally it does make a difference. Dr. Boldt has seen patients become markedly neurasthenic as the result of scar tissue in the vaginal vault, and he does not consider it desirable to do a panhysterectomy when the cervix is in a fairly normal position. When the vaginal portion of the cervix is diseased, the vagina torn and the cervix eroded, he believes the cervix ought to be removed, but otherwise he thinks that it is just as well to leave it because it makes a better pelvic floor.

DR. ROBERT S. HILL, Montgomery, Alabama, said that there are as potent reasons for leaving the cervix in some cases as there are in others for removing it. Removal of the cervix weakens the pelvic diaphragm, and therefore postoperative vaginal hernia is more likely to occur. The verdict of the majority of the profession is that panhysterectomy is an operation of greater magnitude than supravaginal amputation of the uterus, when we consider the increased traumatism of the parts, the increased liability to injury of the rectum and bladder, and the increased chance of interfering with the ureters through cicatricial tissue, as well as the increased chance of infection by entering the vagina. He did not agree with the statement that panhysterectomy as an operation is of no greater magnitude than is supravaginal amputation of the uterus. This may be true in the hands of the most expert hysterectomists, but we must consider the ability of the average surgeon, and not of the men of superior skill in the performance of hysterectomy. From this standpoint, Dr. Hill thinks that supravaginal amputation of the uterus still has a place among legitimate surgical procedures.

#### Election of Officers.

The following officers were elected for the ensuing year: President, Dr. Howard A. Kelly, Baltimore; vice-presidents, Drs. R. E. Fort, Nashville, Tenn., and Hubert A. Royster, Raleigh, N. C.; secretary, Dr. W. D. Haggard, Nashville, Tenn., (re-elected); treasurer, Dr. Charles M. Rosser, Dallas, Tex., (re-elected).

New Orleans was selected as the place for holding the next meeting, Nov. 12-14, 1907.

(To be continued.)

#### NORFOLK DISTRICT MEDICAL SOCIETY.

*Regular Meeting, held at Roxbury, Mass., Nov. 27, 1906.*

The President, DR. SAMUEL CROWELL, in the Chair.  
Dispensary and Outpatient Work Among the Tuberculous Poor.

DR. H. F. R. WATTS said that special clinics for ambulatory cases are now maintained in most large cities. The one at the Boston Dispensary was started in 1899. Here the patient is a unit in the social system, and his life, habits and environment must be studied. His physical, moral and financial assets must be noted by the physician at the clinic and by the nurse who visits his home. Thus a much more intimate relation between doctor and patient is established than is usual in any other class of cases. The average patient appreciates this and cooperates cordially. He is given special directions as to personal hygiene, and his manner of life, the whole being embodied in a sheet of printed directions. He takes with him a supply of paper napkins to receive his sputum, and impervi-



ous bags in which the contaminated napkins can be put and the whole burned. Most important of all, he is visited in his home by the nurse. She watches the patient, gets him to return to the physician regularly, supplies him with food, etc. Most of these cases are in the thickly settled tenement districts of Boston, the South Cove, West End and lower South Boston. Almost none are reported from the Back Bay.

Other charitable organizations help, notably the Associated Charities, in securing the funds needed to board such patients at Rutland. Diet kitchens furnish food for many of them. Success, however, depends in a large degree on the intelligence of the patient.

#### District Nursing of Tuberculosis Patients.

MISS M. A. GALLAGHER stated that four years ago this work was begun by the Instructive District Nursing Association, coöperating with the Boston Dispensary and the out-patient departments of the Boston City Hospital and the Massachusetts General Hospital. Last March it was made a separate department of the work. Since that time Miss Gallagher has looked after 60 to 75 patients all the time, receiving 20 to 50 new cases each month. These are all within the city limits of Boston. Help in regular nursing is given by the district nurse. Often she assists in placing a patient in a hospital, only to have him returned later to even worse surroundings than those from which he was rescued. She is not allowed, however, to follow up cases not connected with one of these three clinics. At her house visits she notes carefully the personal hygiene and habits of the patient, especially what he does with his sputum, his general appearance and all the details of his surroundings. These, with many other facts, are recorded in duplicate records, one of which she keeps and files while the other aids the doctor at the clinic. Moreover, she keeps the patient supplied with paper napkins and bags—10,000 of which are given out every month—or, if he is intelligent enough, she supplies paper sputum boxes. She is now assisted in this work in Boston by a nun of the Social Service Association, who looks after most of the cases of the Massachusetts General out-patient department, by an agent of the Association for the Relief and Control of Tuberculosis, and by the health inspector. These last vary greatly in their skill in dealing with such cases. Often it is difficult to locate a case; false addresses are given, because tuberculous patients are not welcome as lodgers or neighbors. The same difficulty is encountered when they move from one place to another, as they are often compelled to do. If the nurse tries to find a room for one who is so obliged to move on, she, too, meets opposition everywhere.

She also advises and often secures the examination of other members of the family. This might be done by the school medical inspectors and would be in the case of other infectious diseases. It is especially difficult in Boston to place patients under 14 years of age. Rarely do tuberculous patients of any age seek hospital care, but the public should demand and supply it. Since March 12 she has looked after 242 patients from the Boston Dispensary, 89 from the Boston City Hospital, 114 from the Massachusetts General Hospital, and 19 from other institutions, a total of 464. Of these 273 were men; 42 have died; 35 were placed in hospitals; 33 were sent to Rutland, and 23 boarded out in other places. In spite of all possible care 40 have been lost track of in this short period of time.

#### Sanatorium Treatment of Pulmonary Tuberculosis.

DR. BRADFORD KENT spoke chiefly of the admissions to Rutland, with which work he is actively connected. Applicants for admission to the state sanatorium in Rutland must apply at the examiner's office in the out-patient department of the Massachusetts General Hospital between 1 and 3 p. m., on Wednesdays and Saturdays. Regular physicians are in attendance on Wednesdays and homeopathic representatives on Saturdays. There are 350 beds at Rutland. Of the 1,751 patients who applied this past year, 1,013 or 58 per cent., were refused. The refusals included patients who were helpless or bedridden, who had high temperatures, laryngeal tuberculosis, complications of asthma, chronic bronchitis, nephritis, etc. Pregnant patients are cared for till time for the confinement,

and often are taken back after parturition. Patients under 14 or over 50 are not accepted. They must be residents of Massachusetts, though not necessarily legal residents, and must pay \$4 per week for board. Often there is a waiting list of 20 to 25, and since an average of one case is discharged daily, a delay of about three weeks is usual before admission after they are pronounced acceptable. Cases refused are by no means hopeless.

There are available for these 58 per cent. of rejected cases only 139 beds in other institutions—not including the Boston chronic hospitals on Long Island and the State chronic hospitals at Tewksbury. These are good hospitals, especially for men, but the objection to pauperization is often insuperable. The sanatorium treatment is fresh air, food, baths, exercise, two hours' work daily, and a cheerful environment.

#### Municipal Sanitation and Control of Tuberculosis.

DR. H. LINCOLN CHASE presented the report prepared by Dr. Griffin and himself as Norfolk District members of the associated committees of the Massachusetts Medical Society for the Prevention and Control of Tuberculosis. Of the 25 towns and villages in the district, 6 of which are a part of Boston, 15 require registration of tuberculosis, but in only 8 are the physicians careful to do so. The physicians of Foxboro, however, report their cases to the town board of health though not required to do so. Thirteen towns have disinfection by the board of health, but no town has a penalty for leasing infected premises. Dorchester, Jamaica Plain, Mattapan and Roxbury, all parts of Boston, have inspection of tenements and schools. There are no public hospital provisions in the district for tuberculous patients, except that citizens of Boston may enter the Long Island Chronic Hospital. In Brookline male citizens may enter the Board of Health Hospital, but unlike other patients there, the consumptive, if unable to pay, must be classified as a pauper. A few patients from the district enter the Free Hospital for Consumptives, the Cullis Consumptives' Home, and the House of the Good Samaritan.

Brookline and Milton each have a district nurse who visits tuberculous patients. In no town is there inspection of employes or shops. The Plant Shoe Company, at Jamaica Plain, has its own physician, and the Holtzer-Cabot Electric Company, at Brookline, has posted notices forbidding spitting on the floors. In nine towns the cattle inspection is fairly thorough. Roxbury and Dorchester have had lectures and have formed classes for instruction. The Brookline Educational Society and the Woman's Club of Norwood have each had one lecture. In Dorchester alone have the churches taken any active measures for instruction and relief. In eight towns only of the 25 are the physicians even actively interested.

#### Home Treatment and Camp Life for Tuberculosis Patients.

DR. JOSEPH H. SAUNDERS stated that these methods are best adapted to patients who have sufficient strength of character to carry out instructions faithfully or to those who get so homesick in a sanatorium as to interfere with the success of that method. Most any house will do, but preferably it should be framed, and with ground about or behind it. A tenement with a veranda or a convenient roof may be made to serve if the rooms are sunny. In the vacant land or on the roof is the tent or shelter where the patient is to spend his time. Or a part of the veranda may be screened off. Herein is a cot bed, a reclining chair and extra blankets. A sleeping bag is a good thing, but the blankets may be folded under so as to answer much the same purpose. Hot-water bags are valuable to warm the bed before the patient gets in, in cold weather.

A day's routine, then, will be: After rising, a sponge bath, brisk rubdown, little food, some exercise, breakfast, rest in reclining chair, lunch, rest in chair, dinner, rest in chair, exercise, lunch, rest in chair, exercise, supper, evening with family, warm milk, warm bed at 9 p. m. Watch the weight; note the manner of eating. Let patient have thermometer and keep accurate four-hour records of temperature, pulse and respirations, and be guided by these as to the amounts of exercise to be prescribed. Note the mental condition. Give drugs symptomatically. See the patient weekly.



## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

UTAH State Board of Medical Examiners, Salt Lake City, January 7. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, January 7-8. Secretary, Dr. Anell Martin, Phoenix.

ARKANSAS State Medical Board, State Capitol Bldg., Little Rock, January 8. Secretary, Dr. F. T. Murphy, Brinkley.

NEW HAMPSHIRE State Board of Medical Examiners, Concord, January 8-9. Regent, Dr. H. C. Morrison, Concord.

VERMONT State Board of Medical Registration, Montpelier, January 8-10. Secretary, Dr. W. Scott Nay, Underhill.

WISCONSIN State Board of Medical Examiners, Plankinton Hotel, Milwaukee, January 8-10. Secretary, Dr. J. V. Stevens, Jefferson.

SOUTH DAKOTA State Board of Medical Examiners, Sioux Falls, January 9-10. Secretary, Dr. H. E. McNutt, Aberdeen, S. D.

DISTRICT OF COLUMBIA Board of Supervisors in Medicine, Washington, January 10. Secretary, Dr. Geo. C. Ober, Washington.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, January 16-18. No applications received after January 5. Secretary, Dr. J. A. Egan, Springfield.

NEW YORK State Boards of Medical Examiners, Albany, January 29-February 1. Chief of Examining Division, Charles F. Wheelock, Albany.

**Texas June Report.**—Dr. T. T. Jackson, secretary of the Texas State Board of Medical Examiners, reports the written examination, held at Dallas, June 12-14, 1906. The total number of subjects examined in was 12; total number of questions asked, 146; percentage required to pass, 75. The total number of candidates examined was 144, of whom 103 passed, including 33 non-graduates, and 41 failed, including 15 non-graduates. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Colorado School of Med. ....	(1904)		79.9
College of P. and S., Chicago ....	(1906)		87.7
Rush Med. Coll. ....	(1902)	80.6; (1903)	79
Louisville Med. Coll. ....	(1904)		75
University of Louisville ....	(1905)*	(1891)	81
Tulane University, (1905) 84.3; (1906) 75, 75.3, 77, 77.3, 77.4, 78.6, 79, 86.1, 91.5.			
Johns Hopkins Med. School ....	(1906)		87.4
Maryland Med. Coll. ....	(1905)	76.4, 82.1	
Baltimore Med. Coll. ....	(1905)		84.6
Harvard Med. School. ....	(1903)		78.3
Grand Rapids Med. Coll. ....	(1903)		81.1
Washington University ....	(1906)		93.4
College of P. and S., St. Louis ....	(1906)		81.5
Starling Med. Coll. ....	(1896)		81.5
Western Reserve University ....	(1900)		75.4
Woman's Med. Coll., Philadelphia ....	(1906)		88.1
Meharry Med. Coll. ....	(1905) 75.3; (1906) 75,		76.3
Memphis Hosp. Med. Coll. ....	(1906) 80.3, 81,		84.5
University of Tennessee ....	(1905) 77.8; (1906) 77, 77, 79.3,		86.6
Vanderbilt University ....	(1905) 81.4; (1906) 83.8,		85.4
Southwestern Univ. Med. Coll. ....	(1904) 78.3; (1906)		86
Dallas Med. Coll. ....	(1904)		75
University of Texas, (1906) 80.3, 82.3, 82.6, 83.1, 83.6, 84, 84, 85.3, 87.4, 87.7, 89.5, 90.5, 90.8.			
Baylor University ...	(1905) 75, 77.8; (1906) 76.1, 80.1, 80.8,		83.5
Fort Worth University ....	(1906) 75.1, 80.1, 80.2, 80.3,		83
University of Virginia ....	(1904)		87.8

#### FAILED.

University of Arkansas ....	(1901)	64.5
College of P. and S., Chicago ....	(1905)	71.7
Indiana Med. Coll. ....	(1904)	72.4
Kentucky School of Medicine ....	(1895)	65.5
St. Louis University (Marion-Sims-Beaumont Med. Coll.)	(1906)	67.6, 73.
College of P. and S., St. Louis ....	(1898)	68.1
Leonard School of Med. ....	(1906)	67.3
Western Reserve University ....	(1900)	69.9
Chattanooga Med. Coll. ....	(1901)	61.9
Memphis Hosp. Med. Coll. ....	(1905) 59.7; (1906) 68,	70.6
Meharry Med. Coll. ....	(1905) 61.3, 72.5; (1906) 62.5,	63.3
University of Nashville ....	(1900)	69.4
University of Tennessee ....	(1904)	65.3
Vanderbilt University ....	(1889) 61.5; (1906)	67.2
College of P. and S., Dallas ....	(1906) 50.1,	56.9
Bell Med. Coll.† ....	(1904)	26.6
Gonzales Med. Coll., Mexico City ....	(1892)	48.4
San Luis Potosi Med. Coll., Mexico ....	(1904)	64.9

\* Percentage not given.

† Now the College of P. and S., Dallas, Tex.

The following questions were asked:

#### ANATOMY.\*

1. Describe the humerus. 2. Describe the quadriceps extensor muscle. 3. Name the branches and give the relations of the external carotid artery. 4. Describe the median nerve. 5. Describe the gross anatomy of the liver. 6. Name the ducts of the salivary glands and write how you would outline the duct of the parotid gland. 7. What abdominal organs are partly covered by peritoneum? 8. Describe the left ventricle of the heart. 9. Describe the appendix vermiformis. 10. Describe the male urethra. 11. Name and illustrate the different varieties of movable joints. 12. Describe the points of special interest concerning Scarpa's triangle.

#### CHEMISTRY.\*

1. Give two tests for albumin in the urine. 2. Give two tests for sugar in the urine. 3. Give Marsh's test for arsenic. 4. What are the chemical and physical properties of mercury? 5. Give valence and solubility of arsenic, iodine, lead, silver, potassium and sulphur. 6. Complete and describe the following:  $3Ag_2 + 8HNO_3 =$ . 7. What are alcohols? How classified? 8. What are acids? What are salts? How is each produced? 9. Distinguish between synthetic and analytical reactions? 10. What is the formula of milk sugar, and in what respect does it differ from other sugar? 11. What is the difference between density and specific gravity? 12. What is the chemical antidote for phosphorus poisoning?

#### GYNECOLOGY.\*

1. What are the causes of erosion of the cervix uteri? 2. What are the causes of true ulceration of the cervix uteri? 3. What complications might be present to contraindicate hysterectomy in a case of cancer of the uterus? 4. Describe steps of a vaginal hysterectomy. 5. What reaction have the secretions from a normal uterine cavity and normal vagina, and what effect have they on pathogenic organisms? 6. What are the most common causes of sterility? 7. Define submucous, interstitial, and subserous fibromyomata. 8. Which of the fibromyomata have the greatest tendency to undergo degenerative changes and to slough? 9. What is pan-hysterectomy? 10. In a case of hysterectomy, what advantages, if any, are gained by leaving intact one healthy ovary? 11. What are the contraindications to Alexander's operation for the shortening of the round ligaments? 12. When Alexander's operation is contraindicated, describe any operation which will be a good substitute for it.

#### HYGIENE.\*

1. Describe the best method of handling and transporting milk for city distribution. 2. What diseases are not infrequently attributable to infected milk? 3. What disease is attributable to improperly cooked pork? 4. At what times should a school room not be swept. Give your reasons. 5. What instructions should be given to the public in a place threatened with an epidemic of yellow fever? 6. What precautions are necessary to prevent the spread of typhoid fever in a community. 7. Name and differentiate the malarial and yellow fever mosquitoes. 8. Give in detail the preparation of a private room for the treatment of scarlet fever patient. 9. How would you determine when to permit a scarlet fever patient to return to school? 10. What are the disadvantages of a stone or brick building in a damp climate? 11. Describe the preparation of a filter bed for a city of 100,000 inhabitants. 12. What is the best method of disposing of sewerage in an inland town of 10,000 inhabitants?

#### HISTOLOGY.\*

1. Of how many coats is the stomach composed? 2. What is the character of the outer coat? 3. What kind of membrane lines the stomach? 4. Mention the important glands found in this membrane. 5. Define the liver. 6. Of what structure is the substance of the liver composed? 7. What character of membrane invests the liver? 8. Describe in a brief way the blood-supply of the liver. 9. Mention the structures of the spleen. 10. Explain the reason for that peculiar elasticity which the spleen possesses. 11. What vessels carry the blood to and from the spleen? 12. Describe briefly the substance of the spleen or spleen pulp.

#### MEDICAL JURISPRUDENCE.\*

1. What do you understand by the terms civil malpractice and criminal malpractice? 2. What do you understand by the term expert witness in a medicolegal sense and how does he differ from an ordinary witness? 3. If called as an expert witness in a case where a child was found dead, what manifestations would you consider necessary to establish the fact that it was a live birth? 4. Mention the usual motives that underlie malingering, and mention what observations would assist you in differentiating between a feigned and a real condition of a suspect. 5. Give the general characteristics of a gunshot wound. 6. If a criminal is on trial for murder and a charge of insanity is sworn out against him, and you are called as a medical expert to make an examination to ascertain whether said person is insane or feigning insanity, mention briefly the examination you would make before testifying in the case. 7. If you reach the bedside of a patient about the time he dies from supposed poisoning, what would you do as the physician under such circumstances? 8. Mention what you understand by a dying declaration, its value as evidence and what rules should be observed in obtaining it. 9. If called to view the body of a man found dead from a gunshot wound, mention briefly what evidences would lead you to suspect suicide and what to make you suspect murder? 10. What is the value of a coroner's inquest, what care should be observed in taking testimony? 11. Give general directions for holding a postmortem and the recording of findings. 12. Differentiate the symptoms between acute alcohol poisoning, apoplexy and opium poisoning.

#### OBSTETRICS.\*

1. Describe in brief the physiologic changes of the various organs and system generally of the female in pregnancy. 2. Outline the hygienic treatment of the pregnant female. 3. What are the principal neuroses to which the pregnant woman is sometimes liable and the treatment? 4. What are the causes and treatment of leucorrhea during pregnancy? 5. How would you make a diagnosis of pelvic deformities? 6. At what period of pregnancy does the placenta as a separate organ date from and what is its function? 7. Give the measurements (a) of the circumference of the pelvis, (b) of the diameters of the inlet and (c) the diameters of the outlet. 8. (a) Give the circumference of the fetal head and (b) the diameters of the same. 9. Give the differential diagnosis between fibroid tumors and pregnancy. 10. Name the most frequent complications of labor and the causes. 11. (a) How is delivery managed when the bones of the fetal head are prematurely ossified? (b) How in excessive development of the trunk? 12. Describe the method of caring for the infant from the end of the second stage of labor until it is ready to be applied to the breast.

#### PATHOLOGY.\*

1. What is the morbid anatomy of simple plastic pleurisy? 2. What is the pathologic condition in pleurisy with effusion? 3.



What morbid condition is found in respiratory organs in la grippe? 4. What is the pathology of hay fever? 5. Pathologic appearance in tubercular laryngitis? 6. Morbid anatomy of syphilitic (tertiary) laryngitis? 7. Where would you suspect pathologic lesion and what would it likely be with these symptoms present: With falling health the patient becomes pale with puffiness of eye-lids or swollen feet in the morning, scanty urine loaded with albumin, tube casts, some red-blood corpuscles with generally low specific gravity and general anasarca later with disturbance of the digestive system? 8. Outline morbid anatomy of chronic interstitial nephritis. 9. With put in urine which is alkaline and bad smelling, coming with last portion of urine passed, what morbid condition would you suspect? 10. Mention morbidities of the kidney liable to result from urethral stricture. 11. What is your opinion as to the pathology of malarial hematuria or "black jaundice?" 12. In what part of the human system, in your opinion, is the morbidity which is responsible for all symptoms in malarial subjects?

## PHYSIOLOGY.\*

1. What is the source of potential energy which is contained in food? 2. Name the waste products contained in the blood plasma. 3. What are the effects of removing all the inorganic salts from the blood? 4. Is lymph a product of the lymphatic glands? 5. What determines the moment at which a cardiac valve opens and closes? 6. How does severe hemorrhage cause dilution of the blood? 7. What are the principal branches and their functions given off from the trunk of the pneumogastric nerve? 8. Describe the structure and function of the iris. 9. What is meant by the refracting apparatus of the eye? 10. What is the function of the tensor tympani muscle? 11. What is meant by the vital capacity of the lungs? 12. By what means is the caliber of the blood vessels regulated?

## PRACTICE.\*

1. What do you understand by the terms: Symptoms, signs and period of incubation? 2. Describe the different valvular diseases of the heart, and treatment? 3. Give cause, symptoms and treatment of uremia. 4. How would you diagnose and treat a case of croupous pneumonia? 5. Name the different forms of malarial fever, cause and treatment for same. 6. What are the symptoms and treatment of congestion of the brain? 7. What is cholera infantum, cause and treatment? 8. What is facial paralysis, causes, symptoms and treatment? 9. What are the symptoms, diagnosis and treatment of acute and chronic mania? 10. What is neurasthenia, its causes, symptoms and treatment? 11. What is the prognosis and treatment of aphasia? 12. What are the symptoms of acute myelitis and treatment?

## SURGERY.\*

1. What are the symptoms of non-impacted fracture of the neck of the femur? (a) What are the symptoms of fracture of the olecranon process? 2. Give in detail one method of reduction of a subglenoid dislocation of the shoulder joint. 3. What are the dangers of gunshot wounds through the lung? (a) What complications may arise and how would you prevent them? 4. Give differential diagnosis of chancre, herpes genitalis, and chancreoid. 5. What are the first important symptoms of secondary syphilis? (a) What symptoms characterize the tertiary stage? 6. What is a "stitch abscess?" (a) What causes them, and how would you prevent them? 7. What should be the condition of a wound when skin-grafting is done? (a) What method of skin-grafting would you adopt? 8. What is meant by "surgical shock?" (a) How would you prevent it? (b) How treat it? 9. Explain how you would amputate an appendix, and how you would treat the stump. 10. Explain in detail how you would dress and treat a dirty, lacerated wound of the scalp extending through the periosteum. 11. What general rule would follow in amputation of parts of the hand? 12. What are the causes of delayed union in fractured bones and what is the treatment?

## EYE, EAR, NOSE AND THROAT.\*\*

1. Give the gross anatomy of the eyelids. (a) Of the eyeball. 2. What are the symptoms of iritis? (a) Of conjunctivitis? (b) Give treatment for each. 3. How would you treat specific infection of the eye? 4. What are adenoids? Give diagnosis and treatment. 5. What diseases are most often followed by ear and throat complications? 6. Give gross anatomy of the ear.

## MATERIA MEDICA AND THERAPEUTICS.†

1. How does morphin, when taken internally, affect the respiration, the heart action and the pupil of the eye; and how does it affect the pupil when applied locally? 2. In prescribing syrup of squill as a cough syrup with ammonium, which would be better, the carbonate or the chlorid? Give your reason for the answer. 3. Would you combine silver nitrate and creosote in the same prescription? Give your reason for the answer. 4. Write a prescription illustrating physiologic incompatibility. 5. Give the strength of the following tinctures according to both the old and the new (1905) Pharmacopelas. Tincture of aconite, tincture of strophanthus, and tincture of cantharides. 6. How many grains of hydrochlorate of cocaine are contained in one ounce of a 4 per cent. solution? 7. What is the difference in the effect of nitroglycerin and suprarenal extract on the blood vessels. 8. Name the uses and dose of urotropin. 9. How would you order chicken or mutton broth made as food for a patient? 10. What is white precipitate, and how made? 11. What is the alkaloid of pomegranate and for what is it used? 12. What is the dose of the infusion of digitalis, ammonium iodid, hyoscyne hydrobromate and the tincture of veratrum viride; this last one as given by both the old and new Pharmacopelas? 13. State the composition and dose of pulvis jalapae compositus. 14. What effect has pilocarpus on the heart, on the skin and on the salivary glands? 15. Mention a remedy that will arrest the secretion of milk and state how it should be employed. 16. How many grains of mercuric bichlorid in a pint of a one to one thousand solution? How did you reach your conclusion? 17. State the name and the dose of a drug belonging to each of the following classes: (a) emetics, (b) diuretics, (c) diaphoretics, (d) cathartics. 18. What is the dose of (a) tinct. opii camph., (b) tinct. opii deod., (c) morphin sulphate, (d) codein phosphate?

\* The applicant will select and answer ten questions and strike out those not answered.

\*\* The applicant will select and answer five of the questions on eye, ear, nose and throat, and strike out the one not answered.

† The applicant will select and answer fifteen questions, and strike out those not answered.

Iowa September Report.—Dr. J. F. Kennedy, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 11-13, 1906. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 21, of whom 11 passed and 10 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
College of P. and S., Chicago.....	(1906)		75, 82
Sioux City Coll. of Med. ....	(1906)		77
Harvard University .....	(1898)		80
College of P. and S., St. Louis.....	(1905)		80
Washington University, St. Louis.....	(1906)		81
Creighton Med. Coll. ....	(1906)		78
Jefferson Med. Coll. ....	(1906)		83
Queen's University, Canada.....	(1906)		82
Trinity University, Canada.....	(1904)		86
King Frederick's University, Christiania, Norway..	(1902)		78

College.	FAILED.	Year Grad.	Per Cent.
Sioux City Coll. of Med. ....	(1906)		65
Keokuk Med. Coll. ....	(1904) 63, 65; (1906) 57, 65, 72, 73, 74, ..*		60
College of P. and S., St. Louis .....	(1906)		60

\* Percentage not given.

Arkansas October Report.—Dr. J. P. Runyan, former secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, Oct. 9, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 26, of whom 18 passed, including 5 non-graduates, and 8 failed, including 4 non-graduates. At this examination there were also licensed four old practitioners, two of whom were non-graduates, one a graduate of the Kentucky University in 1901, and one a graduate of the Beaumont Hospital Medical College in 1896. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
College of P. and S., Atlanta .....	(1905) 88; (1906)		80
College of P. and S., Keokuk .....	(1872)		75
University of Kentucky .....	(1906)		75
University of Maryland .....	(1906)		87
Missouri Med. Coll., St. Louis .....	(1886) 87; (1896)		82
Washington University, St. Louis .....	(1872) 75; (1905)		84
Leonard School of Med. ....	(1906)		79
Med. Coll. of Ohio .....	(1887)		88
Meharry Med. Coll. ....	(1905)		78, 78

College.	FAILED.	Year Grad.	Per Cent.
Hospital Coll. of Med., Louisville .....	(1890)		71.8
Lincoln Med. Coll. ....	(1898)		65
Meharry Med. Coll. ....	(1906)		66
Southwestern University Med. Coll., Dallas.....			*64

\* Year of graduation not given.

Nebraska November Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Nov. 7-8, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 12, of whom 10 passed and 2 failed. Twenty reciprocal licenses were granted. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
American Med. Miss. Coll. ....	(1903)		90.1
University of Kansas .....	(1906)		78.3
University of Michigan .....	(1906)		90.2
Creighton Med. Coll. ....	(1906)		75, 75.1, 78.1
Lincoln Med. Coll. ....	(1906)		75, 86.1, 82.3
Western University, London, Ontario.....	(1904)		75.2

College.	FAILED.	Year Grad.	Per Cent.
Barnes Med. Coll. ....	(1906)		67.8
St. Louis University (Marion-Sims-Beaumont Med. Coll.) .....	(1904)		69.6

College.	LICENSED THROUGH RECIPROCITY.	Year Grad.	Reciprocity with.
Rush Med. Coll. ....	(1902)		Wisconsin
Rush Med. Coll. ....	(1903) (1904)		Illinois
Illinois Med. Coll. ....	(1906)		Illinois
American Med. Miss. Coll. ....	(1904)		Illinois
Northwestern University .....	(2, 1904)		Illinois
University of Iowa .....	(1897) (1904)		Iowa
College of P. and S., Chicago .....	(1901)		Iowa
College of P. and S., Keokuk .....	(1895) (1888)		Kansas
Sioux City Coll. of Med. ....	(1901)		Iowa
Medical College of Indiana .....	(1901)		Indiana
St. Louis University (Marion-Sims-Beaumont Med. Coll.) .....	(1902)		Illinois
Kansas City Med. Coll. ....	(1898)		Iowa
University of Buffalo .....	(1883)		New York
Pulte Med. Coll. ....	(1901)		Ohio
Ohio Med. University .....	(1903)		Ohio
University of Prague, Austria .....	(1890)		Illinois



*Therapeutics*

## Creosote.

Skinner, in an abstract in the *Miss. Med. Record*, states that creosote should always be given in rather minute quantities, well covered and administered after meals, because of the unpleasant taste of the preparation and its tendency to produce gastric irritation, when given in large doses. There are several unofficial compounds, according to Skinner, which are practically tasteless and non-irritating to the gastric mucosa. He mentions among these the following:

1. Guaiacol: Dose—minims 1 to V (.06 to .30).
2. Guaiacol carbonate: Dose—grains 1 to V (.06 to .30).
3. Creosote carbonate: Dose—minims III to V (.20 to .30).

As an intestinal antiseptic he recommends the following combination:

R. Creosti .....	m. iii	20
Tinct. capsici.....	m. v	30
Tinct. nucis vom.....	m. vii	45
Elix. calisayæ q. s. ad.....	f3i	4

M. Sig.: To be taken at one dose.

In the acute diarrheas of infancy and childhood the conditions and symptoms are much improved by the use of creosote in doses of from one-tenth to one minim (.006 to .06).

## Intratracheal and Intralaryngeal Injections.

W. B. Harland in *International Clinics*, states that the reason that such injections are not used more extensively, is that the treatment must be made daily or every other day and also because the technic is not acquired without some care and patience. These injections may be given either as a sedative, expectorant, or as a germicide. He recommends this method of medication in cases of chronic catarrhal cough; chronic tracheitis; chronic bronchitis; bronchiectasis; bronchorrhea; abscess of the lung; gangrene of the lung; in some cases of hemoptysis; tuberculosis of the lungs; and in simple tuberculosis, or syphilitic laryngitis. He speaks against their use in the acute hyperemic stage of any inflammation. Hemoptysis is, as a rule, a contraindication and as complications reflex spasm of the glottis, pneumonia and pulmonary hemorrhage may arise.

As sedatives to the mucous membrane he advises one of the following dissolved in a vehicle such as olive oil: Menthol, 1 to 10 per cent.; heroin, grain 1/24 (.0025); morphin, grain 1/8 (.008); chloroform, 5 minims (.30); compound tincture of benzoin, M. V. (.30); chloretone, 1 per cent.; camphor, 0.5 to 2 per cent.

As expectorants one of the following may be used: Creosote, 1 to 2 per cent.; guaiacol, 1 to 2 per cent.; iodine, a sufficient amount to make a pink solution.

As antiseptics he recommends one of the following: Oil of thyme, 2 per cent.; oil of eucalyptus, 2 per cent.; oil of cinnamon, 2 per cent.; oil of gaultheria, 2 per cent.; salol, 3 per cent.; ichthyol, 2 per cent.; iodoform, grain 1/8 (.008); potassium permanganate, grain 1/8 (.008).

As a good combination he recommends the following:

R. Creosoti		
Menthol, āā.....	gr. v-xv	30-65
Olei olivæ .....	f3i	30

M. Sig.: Two drams to be injected at one dose daily, every other day or twice a week.

To each dose of the foregoing he states that heroin grain 1/24 (.0025), or morphin, grain 1/8 (.008) may be added if the cough is a prominent symptom. If the expectoration is fetid or contains tubercle bacilli, iodoform grain 1/2 (.03) may be added.

The following formula, after Mendel, may be of service:

R. Iodoformi		
Guaiacol		
Essentiæ thymi		
Essentiæ cinnamomi		
Esseniæ eucalypti, āā.....	3i	4
Olei olivæ.....	f3iii	90

M. Sig.: One dram as an injection once daily.

Or, according to Campbell, the following combination may be used:

R. Thymol		
Menthol, āā .....	3i	4
Salol .....	3ii	8
Olei olivæ .....	f3v	150

M. Dissolve on a water bath. Sig.: Two drams to be injected once a day.

For tuberculous ulceration of the larynx accompanied by painful deglutition the following combination is advised:

R. Heroin hydrochloratis .....	gr. iii	20
Aquæ .....	f3i	30

M. Sig.: A few drops of a warmed solution to be applied by means of a syringe to the ulcer before taking food.

Freudenthal recommends that in the beginning a 1 per cent. solution of menthol be used, gradually increased to 10 per cent. A combination as follows is also recommended:

R. Menthol .....	gr. xx	130
Pulv. acaciæ		
Olei amygdalæ		
Aquæ dest., āā.....	f3iiss	10
M. Ft. emulsio et adde		
Spiritus frumenti .....	f3iv	15
Aquæ dest. ....	f3ii	60

M. Sig.: Inject one to two teaspoonsful into the larynx.

The author states that as a rule a local anesthetic is not necessary, but if it is required, he advises a 4 per cent. solution of cocaine applied on a cotton-tipped laryngeal applicator.

## Pharmacopeia for Infants.

## UNGUENTA (Continued).

*Unguentum hydrargyri nitratis:*

R. Ung. hydrarg. nitratis.....	3i	4
Lanolini .....	3vii	28

M. Ft. unguentum. Sig.: Apply locally.

*Unguentum oxidi avi:*

R. Hydrarg. oxidi flavi.....	gr. viii	50
Paraffin mollis .....	3i	30

M. Ft. unguentum. Sig.: Apply locally.

*Unguentum oxidi rubri dilutum:*

R. Hydrarg. oxidi rubri.....	3ss	2
Paraffin mollis .....	3i	30

M. Ft. unguentum. Sig.: Apply locally.

*Unguentum hydrargyri subchloridi cum zinco:*

R. Zinci oxidi .....	3ss	15
Hydrarg. chloridi mitis.....	3ss	2
Olei amygdalæ dulcis.....	3ss	15
Lanolini .....	3i	4
Misce et adde		
Aquæ calcis .....	f3iii	12

M. Sig.: Apply locally.

*Unguentum plumbi oleatis:*

R. Plumbi oleatis		
Paraffin mollis, āā.....	3i	30

M. Ft. unguentum. Sig.: Apply locally.

*Unguentum simplex:*

R. Ceri flavi .....	3ii	8
Olei olivæ .....	3ss	15
Adipis .....	3vi	24

M. Ft. unguentum. Sig.: Apply locally.

*Unguentum sulphuris compositum:*

R. Sulphuris .....	3iii	12
Hydrarg. ammoniati		
Hydrarg. sulphid, āā.....	gr. xii	75
Olei olivæ .....	3iss	6
Creosoti .....	m. i	06
Adipis .....	3vi	24

M. Ft. unguentum. Sig.: Apply locally.

*Unguenti zinci oleatis:*

R. Zinci oxidi .....	3i	4
Acidi oleici .....	3i	30

Mix and allow to stand for two hours; then heat sufficiently to complete solution and add:

Lanolini .....	3i	30
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M. Ft. unguentum. Sig.: Apply locally.

## GUTTÆ.

*Guttæ atropinæ et cocainæ:*

R. Atropinæ sulphatis.....	gr. ii	12
Cocainæ hydrochlor.....	gr. x	65
Aquæ dest. ....	3i	30

M. Sig.: To be used under the physician's directions.



*Guttæ atropinæ sulphatis:*

R. Atropinæ sulphatis .....gr. i |06  
Aque dest. ....f3i 30|

M. Sig.: To be used under the physician's directions.

*Guttæ argenti nitratis:*

R. Argenti nitratis.....gr. iii |20  
Aque dest. ....3i 30|

M. Sig.: To be used under the physician's directions.

*Guttæ cocainæ hydrochloratis:*

R. Cocainæ hydrochloratis.....gr. x |65  
Aque dest. ....3i 30|

M. Sig.: To be used under the physician's directions.

*Guttæ homatropinæ:*

R. Homatropinæ hydrobromidi.....gr. iv |25  
Aque dest. ....3i 30|

M. Sig.: To be used under the physician's directions.

INJECTIONS.

*Injectio morphinæ hypodermica:*

R. Morphinæ .....gr. 1/600 |0001  
Aque dest.....m. v |30

M. Sig.: To be used under the physician's directions.

*Injectio strychninæ:*

R. Strych. hydrochloridi.....gr. 1/1000 |00001  
Aque dest. ....m. v |30

M. Sig.: Use as an injection hypodermically under the physician's directions.

ELECTUARIES.

*Linctus infantilis:*

R. Tinct. camphoræ comp. (B. P.)  
Vini ipecacuanhæ, āā.....m. i |06  
Glycerini .....m. x |65  
Aque menth. pip. q. s. ad.....f3i 4|

M. Sig.: Give as directed.

*Linctus pectoralis:*

R. Oxymel scillæ.....m. ii |12  
Vini ipecacuanhæ  
Tinct. camph. co. (B. P.)  
Spts. etheris nitrosi, āā.....m. i |06  
Aque q. s. ad.....f3i 4|

M. Sig.: Give as directed by the physician.

*Linctus acidus:*

R. Acidi sulphurici dil.  
Spts. chloroformi, āā.....m. i |06  
Oxymel .....m. x |65  
Treacle q. s. ad.....f3i 4|

M. Sig.: Give as directed.

LINIMENT.

*Linimentum terebinthinum dilutum:*

R. Linimenti terebinthinæ  
Olei olivæ, āā.....f3ii 60|

M. Ft. linimentum. Sig.: Apply locally.

ENEMATA.

*Enema astringens:*

R. Argenti nitratis.....gr. 1/4 |015  
Aque .....f3i 30|

M. Sig.: Use as an enema.

*Enema olei:*

R. Olei olivæ .....f3i 30|

Sig.: Give at one enema.

*Enema sedans:*

R. Chloralis hydratis.....gr. i-iii |06-20  
Aque .....f3ii 8|

M. Sig.: Give at one enema.

**Medicolegal**

Death from Septicemia, Sunstroke, Anesthetic, Etc.

The United States Circuit Court, in Pennsylvania, holds, in the case of Herdic vs. the Maryland Casualty Co., that death from septicemia, after an operation for appendicitis, was not covered by an accident policy which contained the clause: "This policy does not cover death or disability resulting from mineral, vegetable, gaseous, or any other kind of poisoning.

except as hereinafter stated, but, subject to its conditions, covers death or disability resulting from septicemia, freezing, sunstroke, drowning, hydrophobia, choking in swallowing, and death only, as the result of an anesthetic, while actually undergoing a surgical operation at the hands of a duly qualified regular physician." The court says that septicemia, as is well known, is brought about by the absorption into the blood of putrescent or poisonous matter, and, under the designation of "blood-poisoning," might possibly be regarded as excluded, although it has been held to the contrary. But when proceeding from external and violent sources, septicemia is a well-recognized ground of liability in accident insurance. Acceding to this, and in order to remove all question, by this provision septicemia is declared to be covered by the policy, relieving it from the possible effect of that which had gone before. There is no intent manifested in this to depart from the general scheme of the policy, limiting liability to where death is the result of external, violent, and accidental means.

Again, the court says that no doubt the causes of death spoken of go together, and the construction to be adopted must be good as to all or none. But, so far as regards the possibility of accidental death from septicemia, freezing, drowning, and choking in swallowing, there can be no dispute. Neither, as it seems to the court, can there be with regard to an anesthetic, as to which common experience shows that there may be an unintentional and adventitious overadministration of it, within the meaning of the policy, even at the hands of a careful and experienced physician or surgeon of the strictest school. This leaves only hydrophobia and sunstroke to be accounted for, which it must be confessed are diseases pure and simple, and as to which the point may therefore seem to be well made. But the popular idea is not so, and sunstroke, at least has been the subject of considerable litigation, as the decided case shows. As a concession to this view, and in order to remove all controversy (the same as in the case of septicemia) sunstroke and hydrophobia are put in with the rest, the company declaring that, as to them, just as the others, the policy holds good. This is the natural and logical construction to be given to this provision of the policy, and the one therefore which must prevail.

Health Officer Entitled to Appeal in Salary Case.

The Court of Appeals of Kentucky says, in Butler County vs. Gardner, that the latter party was appointed health officer for the county on November 14, 1904, and on April 5, 1905, he went before the fiscal court of the county and asked for an allowance of \$500 per year for his services as such health officer. The fiscal court, however, having considered the matter, entered an order fixing his salary at \$100 per year, commencing with the date of his appointment. From that order he appealed to the circuit court of the county, where, on a trial before a jury, he was given a verdict for \$300. Did the circuit court have jurisdiction of the appeal to it? Chapter 35 of the Acts of the Legislature of 1904 provides that the local board of health shall appoint a competent practicing physician, who shall be the health officer of the county and secretary of the board. His duty shall be to see that the rules and regulations provided for in this act and the rules and regulations of the state board of health are enforced. He shall hold his office at the pleasure of said board. He shall receive a salary, the amount of which is to be fixed by the fiscal court at the time or immediately after his election and in no state of case shall he claim or receive from the county any compensation other than the salary fixed by the fiscal court. The county contended that the order of the fiscal court is final, and that no appeal lies therefrom. But the Court of Appeals holds that this case was clearly one in which the party feeling himself aggrieved had the right to an appeal, section 978 of the Kentucky Statutes of 1903, which regulates appeals, providing that appeals may be taken to a circuit court from all orders and judgments of the fiscal courts in civil cases where the value in controversy, exclusive of interest and costs, is over \$25. The court says, too, that it was clearly the intention of the law makers in the draft of chapter 35 of the Acts of 1904 that the fiscal court, in fixing the salary of the health officer, should fix it at a "reasonable amount"—an amount



commensurate with the services, estimated from past experience and present conditions, which he would be required to perform during the year.

#### Will Not Split Physician's Interview Into Parts.

The St. Louis Court of Appeals says, in the personal injury case of Obermeyer vs. F. H. Logeman Chair Manufacturing Co., that error was assigned in a refusal of the court to permit a physician to testify to a conversation had with the plaintiff in regard to his injury and how he happened to be injured. Section 4659 of the Revised Statutes of Missouri of 1899 provides: "The following persons shall be competent to testify: \* \* \* fifth, a physician or surgeon, concerning any information which he may have acquired from any patient while attending him in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or do any act for him as a surgeon." The plaintiff, nearly 15 years of age, was in the employ of the defendant when injured. The evidence of the physician referred to showed that when the plaintiff was injured the defendant sent him to the physician's office for treatment and the interview in question was had while the plaintiff was in his care. In answer to the following questions: "The subject of your interview and conversation with him was to ascertain his condition for the purpose of treating him?" the physician said, "Yes, sir. And there were other motives there." He further testified that he was acting as physician and surgeon for the defendant, and that the remarks made by the plaintiff were not made in answer to any questions asked in order to treat him properly. But, the court goes on to say, the fact that the physician examined the plaintiff at the instance and request of the defendant for the purpose of treating him did not remove his incompetency. The physician's testimony showed that he had a double purpose in holding the interview with the plaintiff: First, to ascertain his condition for the purpose of treating him professionally; second, to ply the boy with questions, while he was suffering from shock and severe pain as a result of the recent injury, for the purpose of getting some statement or admission from him that would be advantageous to his (the physician's) employer, the defendant, in case the boy should sue to recover compensation for his injury. In these circumstances the court is not inclined to split the interview into parts and determine what parts were and were not necessary to enable the physician to prescribe for the plaintiff, but to hold him incompetent to testify to any part of the interview.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

December 15.

- 1 \*Leprosy as Seen in the Philippines. C. B. Ewing, U. S. Army.
- 2 \*Scope and Value of the Sanatorium in the Antituberculosis Movement. H. M. King, Liberty, N. Y.
- 3 \*Prostatectomy in Diabetes. J. Wiener, New York.
- 4 \*Rôle of Suggestion in Therapeutics. W. B. Cornell, Baltimore.
- 5 \*Gastroptosis in Relation to Hyperchlorhydria. E. Reissman, Newark, N. J.

1. Leprosy in Philippines.—Ewing found that aside from racial characteristics, the general features of leprosy in the Philippines are the same as those found in the disease occurring elsewhere. He has studied 36 cases, and of this number he has obtained 26 outline figure cards. Of these 26 patients 14 were males and 12 females. Of the 14 males 4 had anesthetic, 8 tubercular, and 2 mixed leprosy. Ewing doubts whether or not a cure will ever be found for leprosy. Segregation of lepers and isolation of children of leprous parents are the preventive measures that will give the best results.

2. Value of Sanatorium in Antituberculosis Movement.—King sums up his paper as follows: The sanatorium offers the tuberculous invalid the most practical, indeed the only systematic, method of fighting his disease and acquiring hygienic education in its prevention. It is a most valuable educational

factor, not only in the immediate community in which it is located, but to a very great extent in the community at large, and it has a definite and important place, which can scarcely otherwise be filled in the study and investigation of the disease and its complications. In these three relationships the sanatorium possesses a scope and value of vital importance in the present great antituberculosis movement, and King believes that whatever the future may have in store for it, the sanatorium must always hold a place, and a vitally important one, in this great movement.

3. Prostatectomy in Diabetes.—Wiener says that the diabetic patient facing a prostatectomy is exposed to three dangers, namely, the anesthetic, hemorrhage, and shock. The dangers peculiar to the diabetic are coma and wound infection. Wiener advises the removal of the prostate under laughing gas, and suggests dividing the operation into two stages. At the preliminary operation the bladder is opened under local anesthesia, and after a few days the prostate can be removed through this incision, under gas, in a very few minutes. Under such conditions there need be no fear of coma. The danger of wound infection can be reduced to a minimum by the preliminary incision and drainage of the bladder. Urinary antiseptics may be given both before and after operation, and daily bladder irrigations. Wiener has had excellent success in his treatment of these cases.

4. Rôle of Suggestions in Therapeutics.—Cornell believes that psychotherapy is of great value to the general practitioner. The ability to minister to the mind as well as to the body is possessed by those physicians who possess the highest qualities to be found in their profession. Psychology and psychiatry should receive their proper attention in the years of medical training, and then, in due order, would follow instruction in therapeutic psychology.

5. Gastroptosis in Relation to Hyperchlorhydria.—Reissman states that relaxation of the abdominal muscles is the essential feature in gastroptosis. All forms of anomalous gastric secretion, hyperchlorhydria, hypochlorhydria, and achylia, may be due to gastric atony. All forms of secretory disorders in the stomach may be connected with gastroptosis. Plaster strapping is advised to relieve abdominal relaxation.

#### New York Medical Journal.

December 15.

- 6 \*Fat Content of the Tonsils and Its Relation to the Processes of Metabolism and Infection. J. Wright, New York.
- 7 New Building of the Woman's Hospital of the State of New York; Some Special Features of Its Construction. L. Broun.
- 8 \*Aortic Aneurism Treated by Introduction of Fifteen Feet of Silver Wire. Death After Four Months. J. R. Eastman, Indianapolis.
- 9 \*Rôle of the Blood in Nutrition and Repair. J. P. Arnold, Philadelphia.
- 10 Stereoradiography. F. A. Faught, Philadelphia.
- 11 \*Acute Primary Dilatation of the Heart. J. S. Wight, Brooklyn, N. Y.
- 12 Medical Climatology of Southern California. H. F. L. Ziegel, New York.
- 13 Abdominal Pregnancy. J. E. Cannaday, Hansford, W. Va.
- 14 \*An Unusual Case of Suppression of Urine. H. D. Howe, Hampton, Va.

6. Tonsils and Infection.—For many years, from time to time, Wright noted in the microscopic sections of lymphoid tissue removed from the nasopharynx and oropharynx spaces which he formerly regarded as ectasia of the lymph channels and reported them as cysts of the lymphoid tissue. A recent observation led him to conjecture that some, at least, of the spaces in the lymphoid tissue are due to fatty degeneration, and that this is one of the processes of tonsillar regression. This involved the supposition that the lymphoid cells undergo to some extent a fatty metamorphosis or a fatty infiltration during the shrinking of the tonsils in adolescence. In a series of cases in which excised tonsils were examined for their fat contents, no selection of cases was resorted to. Ten or twelve cases were taken as they came in the routine of the clinic, and the excised tonsils (both sides) were immediately put in osmic acid solutions or subjected to the process necessary for staining with Sudan III and scharlach red, viz.: Short preliminary hardening in formalin and subsequent freezing for sectioning. The latter process was unsatisfactory, and for the most part the observations were made on the osmic acid specimens.



After becoming familiar with the appearance of fat in the tonsils under ordinary conditions, ten or more cases were taken as before, without selection, from the routine of the clinic. In these one or both tonsils were smeared with butter ten or fifteen minutes before a tonsillotomy. In these cases the distribution of the fat was relatively exactly the same as in the other cases, but the increase in amount was everywhere very decided. It was especially more abundant in the granular protoplasm of cells that were disintegrating. No doubt could be left in the mind of the observer that fat in the form of droplets may migrate into degenerating as well as into normal cells. It is natural to conclude, therefore, that some at least of the intracellular fat is normally derived from the passing food, but he is unable to assert that it all comes from this source. While perhaps it might be thought that there was a larger amount of extracellular droplets in the buttered tonsils, there was the same tendency to grouping around the nuclei of degenerated cells. There was no greater amount of fat in or just beneath the surface epithelium, but on the surface such fat as existed was invariably in the form of minute droplets. It had been immediately saponified or emulsified, and this was a preliminary to absorption. Wright says that evidently the rapidity of the absorption of fat by the tonsillar epithelium is greater even than that of dust.

**8. Aortic Aneurism.**—In Eastman's case fifteen feet of No. 28 silver wire were injected into the cavity of the aneurism through a fine trocar. The trocar was entered over the area of expansile pulsation and passed directly backward into the chest for a distance of two and one-half inches. The proximal end of the wire was anchored to the skin of the chest wall with adhesive plaster. No anesthetic was used. At this time 300 c.c. of sterile 2 per cent. gelatin were injected into the subcutaneous tissues of the thighs (after Lancereaux). After the introduction of the wire the pain became worse, and three weeks later five feet of wire were removed. Orthopnea developed and gradually became worse, being extreme at the time of the death of the patient. The left chest became filled with serosanguinous fluid which was drawn off one month after the operation. The condition of the patient seemed somewhat improved following the withdrawal of this fluid, but the cavity gradually refilled. The patient died at stool. Death was accompanied by profuse hemorrhage at the mouth.

**9. Blood in Nutrition and Repair.**—According to Arnold, except as the result of direct injury, no cell in the body can be sick or diseased if it is supplied with the proper quality and quantity of lymph, and has its waste products properly removed. As the proper quality and quantity of lymph depend on the quality and quantity of blood the conclusion may be stated as follows: No cell can be sick or diseased, except as the result of direct injury, if it be supplied with the proper quality and quantity of blood and have its waste products properly removed. Even the result of direct injury may be brought within this conclusion, for an injury immediately alters the quality and quantity of blood in the injured part.

**11. Primary Dilatation of Heart.**—Wright summarizes his paper as follows: 1. Acute primary dilatation of the right heart occurs immediately after the strain. 2. Acute primary dilatation of the right heart occurs after some days or weeks. 3. Predisposing causes must be looked for among those factors that prevent the changes resulting from the heart's activity from being compensated for in its metabolism. 4. Acute heart strain can occur and go unrecognized. 5. Acute primary dilatation of the right heart does not necessarily seriously prostrate or prevent the victim from going about. 6. Acute primary dilatation of the right heart may initiate organic heart disease. 7. Acute primary dilatation of the right heart may initiate organic disease of the kidneys. 8. The right ventricle dilates more readily under strain, as its walls are less than half as thick as the left.

**14. Suppression of Urine.**—In the case reported by Howe, the patient did not pass any urine for 25 days. The autopsy showed the left kidney to be a mere thin-walled cyst, containing about ten ounces of clear fluid. There was no macroscopic evidence of kidney structure. The ureter was obliterated at the pelvic brim by a carcinomatous mass, originating from

the stump of the broad ligament and involving the sigmoid and rectum. The right kidney showed true hypertrophy of the kidney structure, as well as great dilatation of the pelvis. As on the left the ureter was entirely obliterated by a carcinomatous mass arising from the stump of the right broad ligament.

#### Boston Medical and Surgical Journal.

December 13.

- 15 Experience in the Treatment of Tabes by Coördinative Exercises. E. W. Taylor, and E. A. Lindström, Boston.
- 16 Physical Training of Girls in the Brookline High Schools. W. Channing, Brookline.
- 17 \*Examination of the Teeth of Children in the Public Schools. W. H. Potter, Boston.
- 18 \*Examination of the Eyes of 420 School Children. R. G. Loring, Boston.
- 19 Aural and Nasal Examinations of School Children. D. H. Walker, Boston.

December 20.

- 20 \*Death and Sudden Death. L. M. Palmer, South Framingham, Mass.
- 21 Criminal Abortion, Perforation of the Uterus with Passage of the Fetus into the Abdominal Cavity and Prolapse of the Intestine. F. A. Harris and W. P. Whitney.
- 22 Case of Death from the Electric Current While Handling the Telephone and an Electric Light Fixture. A. E. Paine, Brockton, Mass.
- 23 Grover Shoe Factory Disaster with Reference to Identification of Burned Bodies. A. E. Paine, Brockton, Mass.
- 24 An Obscure Case. S. F. Quimby, Gloucester, Mass.
- 25 \*Death from Air Embolism of the Uterine Sinuses. F. Holyoke, Mass.
- 26 Death by Violence, Manner Unknown. R. B. Root, Georgetown, Mass.

**17. Examination of Teeth of Children in Public Schools.**—Potter believes it is very desirable that once a year the teeth of all children in grammar schools be examined and their condition reported to parents with appropriate advice. This examination should, preferably, be made in the fall of the year, soon after the opening of school. Short, practical talks to school children would help much to increase their intelligence as to the value of good teeth in promoting nutrition and general health, and would interest them in the condition of their own mouths.

**18. Examination of Eyes of School Children.**—Among 420 children, 167 were classed by Loring as normal, having perfect vision, no ocular symptoms, and no perceptible refractive errors; 155 had little refractive error, good vision, and slight symptoms not sufficient to need treatment; 98 had either less than half vision, troublesome symptoms or marked refractive errors, and were mostly referred for further examination. He found an increasing number of defective eyes in the higher grades, and a majority of normal eyes among the good students, and a majority of defective eyes among the poor students.

**20. Death and Sudden Death.**—Palmer arrives at the following conclusions: 1. We can not say absolutely when the exact time of death occurs. 2. There is such a thing as apparent death. 3. There is a possibility, remote though it may be, of a person being buried alive, who has not been embalmed or seen by a medical inspector. 4. It is the duty of every physician to inspect every patient reported as dead, and to satisfy himself of the fact by careful examination. 5. It would be in the interest of science and humanity that no body should ever be buried without a medical examination. 6. Every case of sudden death, as well as those of violence, should be reported to the medical examiners in this state. 7. We should use our influence as physicians to educate the public to a greater willingness to allow more autopsies.

**25. Death from Air Embolism of Uterine Sinuses.**—Holyoke's reasons for believing this to be a case of death from air embolism, introduced through the uterine sinuses, and not due to gas-forming bacteria, are: First, the very sudden death which occurred in a woman previously in perfect health; second, the use of a syringe containing air and water under pressure, the nozzle closely fitting the os; third, the presence of such a large quantity of air in the dilated uterus and Fallopian tube; fourth, the black fluid blood everywhere filling the venous system, the arteries being comparatively empty; fifth, the flaccid heart containing blood admixed with air, which was also found in other organs of the body; and sixth, the fact that no air was found in the placental tissue nor in the cord, nor in the fetus.



## Lancet Clinic, Cincinnati.

December 15.

- 27 Diagnosis and Treatment of Chronic Ulcer of the Stomach. J. H. Schroeder, Cincinnati.  
28 \*Percussion-Tenderness—A Symptom of Value in the Diagnosis of Pulmonary Tuberculosis. S. Iglaue, Cincinnati.

28. Percussion Tenderness in Tuberculosis.—For the past several years Iglaue has made it a regular custom to look for this symptom, and has found it in the vast majority of consumptives examined. It is constantly present, even where the other physical signs are well marked, but in early cases, when the signs are indefinite, tenderness is often of more value than dulness itself. Occasionally a tender area will disclose a tubercular focus which otherwise would have been entirely overlooked. In some cases with well-marked signs at one apex a beginning lesion was found in the other apex, as confirmed by tenderness. Iglaue noted this symptom in at least eight incipient cases. In many of the cases the diagnosis was made before the bacillus could be found in the sputum. In a series of twenty-three hospital cases thus systematically examined, the symptom was present in fifteen, doubtful in one, and absent in seven.

## St. Louis Medical Review.

December 15.

- 29 Influence of the Ductless Glands on Diseases of the Metabolism, Diabetes, Obesity and Gout. A. Lorand, Carlsbad, Austria.  
30 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued). M. G. Seelig, St. Louis.

## West Virginia Medical Journal, Wheeling.

December.

- 31 Prejudice. C. H. Maxwell, Morgantown.  
32 Acute Appendicitis, Etiology, Symptomatology, Diagnosis and Treatment. J. E. Rader, Huntington, W. Va.  
33 Puerperal Fever, History, Etiology, Diagnosis and Treatment. O. L. Perry, Elkins, W. Va.  
34 A Review of Pneumonia. R. H. Edmonson, Morgantown.  
35 Indications for Premature Delivery. C. L. Holland, Fairmont, W. Va.  
36 Cataractous Families. J. L. Dickey, Wheeling.  
37 \*Medical Legislation in West Virginia. G. D. Lind, New Richmond.

37. Medical Legislation in West Virginia.—Lind reviews the legislation in force and urges on the profession the absolute necessity of further legislation. He discusses the personnel and functions of examining boards in general and the scope of the state medical journal. He says that one reason for patronizing state journals instead of private ones is the fact that much of the matter in private journals is copied from other journals and abstracts of the same appear in THE JOURNAL A. M. A. His idea of a medical journal to be of real value to the physician is that it should contain nothing that is in THE JOURNAL A. M. A., for every physician should take that, and everything of value that the state can produce in the way of medical knowledge. Such a journal could wield an immense influence on legislation and its enforcement.

## Annals of Surgery, Philadelphia.

December.

- 38 \*Early Operation in Cases of Intracranial Injury. C. Phelps, New York.  
39 \*Fracture of Base of Skull. L. R. G. Crandon and L. T. Wilson, Boston, Mass.  
40 Technic of Operations on the Head and Neck. G. Crille, Cleveland, Ohio.  
41 Bone Metastases of Hypernephroma. C. L. Scudder, Boston, Mass.  
42 Cancer of the Gall Bladder and Ducts. J. G. Sherrill, Louisville.  
43 Tumors of the Mesentery. L. G. Bowers, Dayton, Ohio.  
44 Why Gastroenterostomy is Not a Harmless Operation. M. M. Portis, Chicago.  
45 Surgical Treatment of Perforating Gastric Ulcer. R. G. Le Conte, Philadelphia.  
46 Acute General Peritonitis Without Demonstrable Lesion. E. Martin, Philadelphia.  
47 Aneurismal Varix. J. C. Stewart, Minneapolis.  
48 Coxa Vara. R. J. Behan, Pittsburg, Pa.

38. Early Operation in Intracranial Injury.—According to Phelps epidural hemorrhage demands operation in such cases as do not obviously tend to spontaneous recovery, or in which a fatal issue is so imminent as to permit no question. Phelps says that meningeal contusion, when productive of symptoms, either can not be diagnosed from an epidural hemorrhage, or is indistinguishable from the diffuse cerebral edema with which it is always associated. A recognized intracranial hemorrhage may be expected to be of pial origin when associated

with cerebral lesions, and will indicate operation when the cerebral lesion is regarded as of minor importance. Cerebral contusions may be of two kinds: (a) Limited—no tendency to a fatal termination, and never suggests operation. (b) Diffuse—two classes of cases; in one, a vascular disturbance incapable of self limitation, not markedly involving the integrity of the cerebral cells, but tending to mechanically destroy their function; in the other, a progressive disintegration of cellular structure, an active process due to chemical changes, which natural forces prove insufficient to restrain. In the first, operation is theoretically indicated; in the second, in view of the origin and nature of the pathic changes, there is no reason to suppose a simple relief of pressure will stay their progress. In neither is it possible to fix the time when operation may so supplement natural forces and simpler remedial measures as to increase the patient's chances of recovery. In mixed cases—cerebral contusion complicated with pial or epidural hemorrhage—operation should depend on the estimated relative importance of the lesions; and the correctness of this estimate must depend on the acumen and experience of the surgeon.

39. Fracture of Base of Skull.—Crandon and Wilson studied the records of 530 cases of fracture of the skull treated in the Boston City Hospital from June, 1864, to September, 1906, a period of 42 years. As the result of this study they contend that fracture of the base should at least be treated with the conservatism which goes with the care of other fractures. Although these fractures are not open to the eye or the finger, they are even more liable to mobility and consequent injury of delicate adjacent parts than are fractures of the skeletal bones. Although fixation of basal fractures is not possible by any accurate application, because in the first place the line of fracture is not known, and in the second place may extend in several directions, it is nevertheless presumptive that a patient in bed would be less liable to jar or other kinds of force which might stir up the fracture or dislocate clots. Crandon and Wilson urge as routine treatment in all cases of even suspected fracture of the base of the skull, rest in bed for full three weeks. Such a patient ought to be in a separate or small, dimly-lighted room, where little can attract his attention. He should have a single low pillow, or none, as he prefers. He should have as few visitors as possible, should take nourishment still lying down, and have practically nothing to attract his attention or to cause any excitement. Food should be easy to digest, cathartics should be used freely to prevent the least strain at stool, which causes cerebral congestion. Headache should be controlled by whatever sedative seems to work best in the given case, and used even to an extent to keep the patient more or less somnolent.

## American Journal of Obstetrics, New York.

December.

- 49 \*Five Cases of Acute Pancreatitis. J. F. Erdmann, New York.  
50 \*Peritoneal Adhesions. R. T. Morris, New York.  
51 Pubiotomy and Its Relative Indications. E. B. Montgomery, Quincy.  
52 \*Utilization of the Broad and Round Uterine Ligaments in Supravaginal Hysterectomy. W. B. Dorsett, St. Louis, Mo.  
53 Contraction and Shortening of the Uterosacral Ligaments. D. H. Craig, Boston.  
54 Differential Diagnosis of Splenic and Renal Tumors. C. G. Cumston, Boston.  
55 \*Prolapsed Ovaries. W. S. Gardner, Baltimore.  
56 Abnormality in Amniotic Secretion in Its Relation to Fetal Malformation. J. B. Cooke, New York.  
57 Induced Labor as a Conservative Operation in Contracted Pelvis. E. E. Morse, Washington, D. C.  
58 \*Systematic Weighing of Infants a Guide to Normal Growth. S. S. Adams, Washington, D. C.  
59 \*Use of an Intercutaneous Stitch in Plastic Operations on the Perineum. B. M. Anspach, Philadelphia.  
60 Two Cases of Intestinal Diverticula. C. F. Kivlin, Troy, N. Y.

49. Five Cases of Acute Pancreatitis.—None of the five cases reported by Erdmann had at any time any evidence of sugar in the urine, frequent analyses being made in four of the cases. He calls attention to some of the pronounced symptoms; the marked pain at the onset; sharp intoxication of some of these cases; dyspnea and lividity seen in many; constant splitting backache.

50.—See THE JOURNAL, Oct. 6, 1906, page 1126.

51.—Id., Dec. 1, 1906, page 1850.

52.—Id. Oct. 13, 1906, page 1219.



**55. Prolapsed Ovaries.**—The operation that Gardner has been doing for more than a year in cases of prolapsed ovary consists of shortening the elongated ovarian ligament by a couple of fine silk stitches. The first one takes a light, but firm, hold in the uterus, near the lower border of the ovarian ligament; it is then continued through a portion of the ligament and inserted firmly into the ligament near the ovary. The second stitch is placed in the same way, but near the upper border of the ligament. When these stitches are tied the ovary is brought close up to the uterus, but still remains a limited mobility independent of the uterus, and a complete mobility with the uterus.

**58. Systematic Weighing of Infants.**—Adams emphasizes the importance of noting the daily or weekly gain or loss in weight, as by this means the nutrition of the infant is best determined. This can be accomplished by systematically and accurately weighing the infants at stated intervals.

**59. Intercutaneous Stitch in Plastic Operations on Perineum.**—The plan adopted by Anspach is to perform the operation (Hegar or Emmet) according to the customary technic up to the insertion of the external sutures, which are usually introduced from the skin surface of the perineal body. By this new method the external sutures are introduced and brought out just within the skin borders of the denudation. After these sutures are tied, the intercutaneous stitch is employed, running from above downward. The advantages of an intercutaneous stitch are as follows: The crown sutures are well protected from infection by the neatly approximated skin. Catgut sutures may be used throughout the operation, so that there are no sutures which require removal—a matter of considerable importance to many patients. The pressure necroses and the pitting of tissue commonly observed when the usual external stitch is used are entirely avoided.

**Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.**

*December 15.*

- 61 Prevention and Treatment of Cancer. R. E. Farr, Minneapolis.  
62 Early Diagnosis of Carcinoma. J. F. Corbett, Minneapolis.  
63 \*Gastric Ulcer and Cancer. C. Graham, Rochester.  
64 An Alleged Neoplasm. W. N. Porteous, Minneapolis.

**63. Gastric Ulcer and Cancer.**—Graham presents the past year's experience bearing on the etiologic relationship existing between ulcer and cancer of the stomach. In his series of 82 cases the males and females ran in proportion of 4 to 1, and ranged in age from 29 to 76 years, the average being a little over 50. About three-fourths of the whole number presented themselves for amelioration of symptoms that had been pressing, for one year or less, that is, malignant manifestations had been present for only one year or less, the average being a little less than five months. Twenty-three of the number presented long histories, complained of malignant symptoms only a year or less, the average in this number being a trifle more than five months. Pain was rather constant. In eight the histories did not state either way; one said no pain; the remainder (73), openly declared for pain, most of them complaining rather bitterly. Vomiting was not recorded in 11 histories; 3 stated no vomiting, while the greater number (68), complained more or less severely. In 42 the lesion was situated at the pylorus or lesser curvature, in 3 at the cardia. The location was not recorded in many of the inoperable cases, but the symptoms, for which the operation was undertaken, most often spoke for the pyloric end or lesser-curvature location. Of the whole number operated on, 67 had test-meals and other routine stomach examinations, chemical and physical. Tumor was present 27 times and doubtful in 3 more. Dilatation was present 54 and obstruction 36 times. In 32 cases free hydrochloric acid was present, ranging from 1 to 50 acidity; combined in 32, lactic 42, fatty 19, both hydrochloric and lactic, found 13 times. Blood was found often. There were 39 cases in which a portion of the stomach was removed for examination. In over half (54 per cent., 21 in number) the pathologic evidence was good that cancer had developed on an old ulcer base; in one-fourth (25.60 per cent., 10 cases) the evidence was fair that the same was true, while 8 patients gave no evidence of preceding ulcer irritation.

Then in over three-fourths (79.5 per cent.) the pathologic evidence was good or fair that ulcer was first as a cause.

**Journal of the Kansas Medical Society, Lawrence.**  
*December.*

- 65 Significance of Sugar in the Urine in Surgical Patients. J. G. Sheldon, Kansas City.  
66 \*Diabetes Mellitus and Its Curability. C. C. Seabrook, Burlingame, Kansas.  
67 Bilateral Deformity from Costal Cartilage Fracture. A. L. Skoog, Parsons, Kan.

**66. Diabetes Mellitus and Its Curability.**—Seabrook records the histories of eight patients, all of whom were ordered restricted diets, one that appeared best to meet the indications in each case. Some were more stringent than others, while in all the restrictions were only so far as was absolutely necessary to maintain strength. During the past two years Seabrook has had 11 patients with glycosuria under observation, some of whom were not under treatment. Of this number three have died, one a child of 3 years, another a woman aged 30, and another about 20 years of age. Seabrook is positive that the greater number would have received more benefit than they did had they continued treatment for a longer period of time. In one family the father and mother, two sons and a daughter have glycosuria, only one of them received treatment with good effect. The others are always complaining and are easily depressed by adverse influences.

**Journal of the South Carolina Medical Association, Greenville.**  
*November 21.*

- 68 \*Report of 217 Cataract Operations. C. W. Kollock, Charleston.  
69 \*Inflammatory Nasal Obstruction as an Etiologic Factor in the Production of Sputa. W. P. Porcher, Charleston.  
70 Perineal and Cervical Infection as Factors in the Production of Gynecic Surgery. A. B. Knowlton, Columbia.  
71 Value of Bloodletting in Pneumonia. B. F. Wyman, Aiken, S. C.

**68. Cataract Operations.**—Out of the 217 operations for cataract done by Kollock, 205 were successful, 8 were lost, 3 were doubtful, and 1 patient was found to have an intraocular growth that rapidly caused blindness after the operation, though it did not interfere with the healing of the wound.

**69. Nasal Obstruction and Sputa.**—Porcher concludes his observations as follows: 1. As a result of inflammatory obstructions in the nose, posterior nasal secretions do pass down into the sacculi laryngis and are expectorated by the contraction of the muscles of vocalization. 2. Nasal obstructions are often overlooked among the etiologic factors in the production of profuse expectoration, diseases of the middle ear, aural polypi, facial neuralgia, refractive errors, and other pathologic conditions in the eye as well as many reflex neuroses and other diseases of the adjacent organs.

**American Medicine, Philadelphia.**  
*November.*

- 72 Value of Rectal and Colon Irrigation in Nephritis, Some Physiologic Experiments. R. C. Kemp, New York City.  
73 Iodin and Some of Its Uses in Surgical Work. J. E. Cannaday, Hansford, W. Va.  
74 Diagnosis of Incipient Tuberculosis. J. B. Huber, New York City.  
75 A Professional and Successful Life Wrecked by Ill-Fitting Glasses. G. M. Gould, Philadelphia.  
76 Two Cases of Vaginal Cesarean Section for Eclampsia with Recovery. J. F. Moran, Washington, D. C.  
77 Prevention of Postoperative Adhesions. A. G. Ellis, Philadelphia.  
78 \*Anatomy and Surgery of Meckel's Diverticulum. R. Winslow, Baltimore.  
79 Persistent Tinnitus Aurium Cured by Eustachian Inflation with Heated Dry Air. E. L. Vansant, Philadelphia.  
80 \*A Simple Method for Putting the Intestine on the Stretch to Facilitate End-to-End Anastomosis. T. H. Potter, Detroit, Mich.

**78. Meckel's Diverticulum.**—Winslow reports four cases. 1. Acute peritonitis due to a gangrenous Meckel's diverticulum, followed by death. 2. Lump in the right side in which Meckel's diverticulum was found. Operation. Recovery. 3. Intestinal obstruction from Meckel's diverticulum. Death. 4. Intestinal adhesions and Meckel's diverticulum. Operation. Recovery.

**80. End-to-End Anastomosis.**—The method employed by Potter is as follows: The only instruments required are those used in the ordinary abdominal operation, with the exception of two plates or splints which may be made from metal, hard rubber, or wood. Potter's are constructed for the most part



from berry boxes. If the plates are made from hard rubber or wood, care should be used to see that the corners are rounded to prevent undue pressure at any one point of bowel, and the edge of the plate which comes in contact with the bowel should be slightly beveled. The plates are from 1.1 to 1.3 inches long, by four-tenths of an inch wide, and about one-twentieth of an inch thick. Two holes, one-fourth of an inch apart, are drilled through the plate, near the beveled edge, in which is placed a silk suture forming a loop of about two inches in length. The intestine is brought out of the abdominal wound, but before severing, an attempt is made to force the intestinal contents out of the portion of the bowel to be opened. An assistant should grasp it about five or six inches from the point where the incision is to be made to prevent the leakage of the intestinal contents into the already emptied portion of the bowel. The mesentery is now perforated between the large vessels which can readily be recognized. A strand of gauze is tied around the intestine just firm enough to prevent leakage, and all exposed surfaces are protected by moist aseptic gauze or towels. The plates with their flat sides placed together are inserted into the cut end of the bowel, the loops being pulled on, the stretching, however, must not exceed the physiologic limit. While in this position the plates are caught in the jaws of a long hemostatic clamp, a long narrow jaw being preferred, and it should enter the bowel opposite the mesenteric attachment. The loops are removed from the plates, the edges of the bowel brought in apposition, and a suture placed in the bowel at either edge of plate to keep it in correct position while the remaining sutures are being placed. The splints are passed from the bowel in from two to five days.

#### Medicine, Detroit.

November.

- 81 Aids in Teaching Climatology and Climatotherapy. G. Hinsdale, Hot Springs, Va.
- 82 Electives in the Medical Course and Preparation for Specialism. A. L. Benedict, Buffalo.
- 83 Early Cirrhosis of the Liver and Its Treatment. H. Richardson, Baltimore.
- 84 Role of the Medical Profession in Combating the Social Evil. J. M. Anders, Philadelphia.
- 85 Diagnosis of Carcinoma of the Stomach. E. K. Kerr, Chicago.
- 86 Further Observations on Citrate of Soda. J. W. Van Derslice, Chicago.

December.

- 87 \*The Way of Infection in Tuberculosis. L. F. Flick, Philadelphia.
- 88 Case of Keratitis Disciformis. C. A. Veasey, Philadelphia.
- 89 Case of Fulminant Retrobulbar Neuritis. C. A. Veasey, Philadelphia.
- 90 Paralysis Agitans Without Tremor. A. A. Eshner, Philadelphia.
- 91 Role of Organic Phosphorus in the Treatment of Asthenic Conditions in Various Nervous Diseases. A. Gordon, Philadelphia.
- 92 Kleptomanias the Result of Fetishistic Impulses. W. L. Howard, Mossfell, Westboro, Mass.
- 93 Chlorosis and Its Treatment. G. F. Butler, Chicago.
- 94 Macroscopic Agglutination of the Typhoid Bacilli as a Diagnostic Test for the General Practitioner? A. M. Stober, Chicago.

87. Way of Infection in Tuberculosis.—Flick claims that if we wish to block the way of infection in tuberculosis, (1) we will have to control the exit of the tubercle bacillus from hosts already infected. This means that every individual who has tuberculosis must be brought under observation and taught how to devitalize all tuberculous matter given off. (2) We must endeavor to sterilize all enclosures which have been infected with tuberculous matter as well as those things which have been infected by reason of being within those enclosures or being used by persons who have tuberculosis. This is a herculean task, which can not be accomplished immediately. Until it can be accomplished every effort should be made to have people ventilate their houses and to expose them as much as possible to fresh air and sunlight. (3) We must look after the children who are exposed to tuberculosis; (a) through contact with those who have the disease; (b) through living in enclosures in which the disease has existed; and (c) through infected food. Such children should be placed under better environments, be given food which is sterile from tubercle bacilli, and be kept well nourished. Special supervision should be given to their upper air-passages and buccal cavities, and so far as possible these parts should be kept in a perfectly healthy condition.

#### Therapeutic Gazette, Detroit.

November 15.

- 95 Results Obtained from the Radical Operation for Chronic Purulent Otitis Media. S. M. Smith, Philadelphia.
- 96 Treatment of Gonorrheal Urethritis by Iodid of Silver. G. P. La Roque, Richmond.
- 97 Treatment of Constipation Due to Atony of the Bowel. W. R. Jamieson, Torreon, Coah, Mexico.
- 98 Manitou, Colorado, as a Health and Bathing Resort. B. B. Creighton, Manitou, Colo.
- 99 Treatment of Neurasthenia. B. Oettinger, Denver.
- 100 Some Dietetic Errors and Their Effects. W. B. Stewart, Atlantic City, N. J.

#### Journal of the Minnesota State Medical Association and Northwestern Lancet, Minneapolis.

November 15.

- 101 Choreiform Manifestations in Middle and Advanced Life. A. S. Hamilton, Minneapolis.
- 102 Grave Errors in the Diagnosis of Typhoid Fever. S. P. Rees, Minneapolis.
- 103 Management of Pregnancy Complicated by Valvular Disease. L. Osborn, Mankato, Minn.

#### Fort Wayne Medical Journal-Magazine.

November.

- 104 Traumatism of the Eye and Its Appendages. A. E. Bulson, Jr., Ft. Wayne.
- 105 Experience with the Tuberculin Test. C. G. Beall, Ft. Wayne.
- 106 Duodenal Ulcer. M. F. Porter, Ft. Wayne.
- 107 Duodenal Ulcer, Some of Its Aspects. G. W. McCaskey, Ft. Wayne.

#### Virginia Medical Semi-Monthly, Richmond.

November 23.

- 108 Cases of Apparently Hopeless Eye Diseases Benefited by Treatment. J. H. Claiborne, New York, N. Y.
- 109 Two Cases of Aneurism Treated by Operation. A. S. Richardson, Okeefe, W. Va.
- 110 Prevention and Treatment of Incipient Tuberculosis. W. Porter, St. Louis, Mo.
- 111 Puerperal Eclampsia. J. B. Halligan, Smoky Ordinary, Va.
- 112 Treatment of Hemorrhoids. L. Elliot, Washington, D. C.
- 113 Uric Acid and Apple Brandy. A. Memminger, Charleston, S. C.
- 114 General Consideration of Chronic Nephritis. T. A. Parker, Richmond.
- 115 Case of Appendicitis with Complications. W. S. Slicer, Cripple Creek, Va.
- 116 Multiple Intussusceptions Caused by Castor Oil. W. A. Strother, Lovington, Va., and J. W. Cringan, Arrington, Va.

#### Wisconsin Medical Journal, Milwaukee.

November.

- 117 A New Method for the Reduction of Fractures of the Lower Extremity. C. H. Lemon, Milwaukee.
- 118 State Provision for Epileptics. W. F. Wegge, Milwaukee.
- 119 Negligence of the Profession in Its Duty to Secure Temporary Detention Quarters for the Alleged Insane. J. P. McMahon, Union Grove, Wis.
- 120 The Prostate Gland—Its Principal Affections, with Some Observations on Diagnosis and Treatment of Hypertrophy. V. F. Marshall, and E. W. Quick, Appleton, Wis.

#### Annals of Gynecology and Pediatrics, Boston.

November.

- 121 Ectopic Gestation. (To be continued.) H. F. Quackenbos, New York City.
- 122 Cervix Uteri Before, During and After Labor. A. E. Gallant, New York.

#### Northwest Medicine, Seattle, Washington.

November.

- 123 Local Anesthesia in Its Present Development. B. Hahn, Tacoma.
- 124 Necessity for State Control of Public Water Supplies and Sewage Disposal. E. E. Heg, Seattle.
- 125 Id. W. J. Roberts, Pullman, Wash.

#### Southern California Practitioner, Los Angeles.

November.

- 126 Chloroform, Its Indications and Advantages. D. D. Thornton, Los Angeles.
- 127 Ether. H. G. McNeil, Los Angeles.
- 128 Anesthol. J. L. Hagadorn, Los Angeles.
- 129 Spinal Anesthesia. F. S. Dillingham, Los Angeles.
- 130 Scopolamin-Morphin Anesthesia. Z. T. Malaby, Pasadena.
- 131 Complications of Anesthesia. F. D. Bullard, Los Angeles.
- 132 Inaugural Address, at the Opening of the Twenty-Second Annual Session of College of Medicine of the University of Southern California. W. D. Babcock, Los Angeles.
- 133 Climate. B. Reed, Los Angeles.
- 134 Neoplasms of the Ovaries. J. M. Burlew, Santa Ana.
- 135 Sanitary Inspection. J. L. Choate, Los Angeles.

#### FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

#### British Medical Journal.

December 1.

- 1 \*Public Aspects of the Prevention of Consumption. R. W. Philip.
- 2 Comparative Frequency of Impaired Nasal Respiration as an Antecedent to Pulmonary and to Extra-Pulmonary Tuberculosis. W. C. Rivers.



- 3 Treatment of Phthisis by Sanatorium Methods. E. W. Diver.
- 4 Case of Hemoptysis. C. W. Branch.
- 5 \*Treatment of Chronic Constipation. W. K. Sibley.
- 6 \*Use of Digitalis in Valvular Disease of the Heart. E. H. Colbeck.
- 7 A Consideration of the Poisons of Amanita Phalloides. W. W. Ford.
- 8 \*Application of Physical Chemistry to Serum-Pathology. W. H. Manwaring.
- 9 Gastric Erosions. C. H. Miller.
- 10 \*Study of the Influence Exerted by a Variety of Physical and Chemical Forces on the Virulence of Carcinoma in Mice. G. H. A. Clowes.
- 11 Investigations of the Imperial Cancer Research Fund. E. J. Bashford.
- 12 Evidences that Infected Cages Are the Source of Spontaneous Cancer Developing Among Small Caged Animals. H. G. Gaylord.
- 13 Study of the Biology of Tumor Cells. S. P. Beebe and J. Ewing.
- 14 Structural Continuity in New Growths. F. G. Bushnell.
- 15 Rarity of Cancer Among the Aborigines of British Central Africa. H. Hearsey.
- 16 Beriberi. H. Wright.
- 17 Infection and Intoxication in Experimental Glanders. M. Nicolle.
- 18 Hypersensibility and Immunity in Experimental Glanders. M. Nicolle.
- 19 Relapsing Fever and Spirochetes. F. G. Novy and R. E. Knapp.
- 20 Rhinosporidium Kinealyi (Minchin). J. M. Beattie.
- 21 Virus of Smallpox and Vaccinia. W. E. de Korté.

December 8.

- 22 The Borderland of Epilepsy. W. R. Gowers.
- 23 Therapeutic Value of Complete Vocal Rest During the Sanatorium Treatment of Laryngeal Tuberculosis. F. Semon.
- 24 Present Views on Diseases of the Joints. H. Marsh.
- 25 Sprains and Their Consequences, Mainly in Relation to Treatment. W. Bennett.
- 26 Errors of Vision as a Factor in Motor Car Accidents. C. Clements.

1. **Prevention of Consumption.**—Philip gives considerable space to the discussion of a tuberculosis dispensary and the sanatorium treatment of consumption, indicating the leading features of each factor in a scheme of organized and co-ordinated operations against tuberculosis. He regards the dispensary as the central institution from which patients are sent to hospitals, sanatoriums and colonies.

5. **Treatment of Chronic Constipation.**—In this paper Sibley reviews the treatment now in vogue, dividing it into the external and the internal. The former consists of what is now called physical therapeutics, including the use of electricity. The internal treatment is subdivided into diet, drugs, and the use of enemas.

6. **Digitalis in Valvular Heart Disease.**—Colbeck says that digitalis should seldom, if ever, be given in cases of aortic regurgitation which has developed during or after middle life, since the ventricular wall is seldom perfectly sound under these circumstances; and never in patients who give evidence of myocardial degeneration or disease. If complete rest is obtained, digitalis is permissible and beneficial up to a certain point in young, otherwise healthy adults showing signs of circulatory failure, more especially when the aortic lesion is combined with mitral incompetence. The drug should be discontinued for some time before exercise is resumed, and this rule should be rigidly observed. Neglect of this precaution might be followed by rapid failure of the ventricle and sudden death. Theoretical considerations suggest that the utility of digitalis in aortic incompetence is strictly limited. It may be accepted as a good working rule that digitalis is beneficial in cases of aortic incompetence proportionally to the magnitude of the stress which has led to failure of the heart and vice versa. Colbeck says that digitalis is contraindicated in aortic stenosis apart from the appearance of cardiac failure. He endorses the use of digitalis in cases of mitral insufficiency, but in mitral stenosis he says that it can be of no benefit in the absence of failure of the right ventricle, and in this event, so long as the pulmonary blood pressure has been raised to the point at which the maximum charge of blood is delivered to the left ventricle, the drug will again act prejudicially.

8. **Physical Chemistry and Serum Pathology.**—Manwaring sums up the main conclusions in his paper as follows: 1. The physico-chemical law proposed for the absorption of the specific thermostable substance of hemolytic serum by blood corpuscles can neither be proved nor disproved, due to changes

in the chemical nature of heated hemolytic serum after exposure to corpuscles, and the consequent impossibility of at present applying analytical methods to the phenomenon. 2. The physico-chemical law proposed for the interaction of the specific thermostable and thermolabile substances of hemolytic serum can neither be proved nor disproved, due to the impossibility of varying the amount of either of these substances in a serum experiment, without producing indeterminate changes in the non-specific auxilytic and antilytic substances necessarily present in such serum. 3. The physico-chemical law proposed for the interaction of diphtheria toxin and antitoxin of measuring by animal experiments the amount of free toxin present in a toxin-antitoxin mixture, if the physico-chemical law itself holds good. Manwaring emphasizes, however, that these facts do not prove that physical chemistry is not applicable to serum phenomena.

10. **Virulence of Carcinoma in Mice.**—From experiments conducted on 7,000 mice Clowes draws the following conclusions:

1. Primary tumors are only transplanted with great difficulty; after the first generation the yield of tumors gradually increases until a maximum virulence is attained, which subsequently remains fairly constant for a considerable period of time.

2. Increase in virulence of a tumor strain is invariably associated with an increased rate of growth of the individual tumors.

3. The proportion of tumor mice recovering spontaneously in any series is apparently inversely proportional to the virulence and speed of development of the tumors of that series.

4. The larger the dimensions actually reached by a tumor the smaller are the chances that it will recover spontaneously.

5. Incubation of tumors possessed of a low grade of virulence, previous to injection into mice, is found to exert a stimulating effect, larger yields of tumors being obtained than in control series.

6. The resistance of tumor cells to mercuric chlorid and other inorganic disinfectants is very high. It was found possible, for example, to destroy the bacteria present in badly-infected tumors by means of potassium cyanid without seriously affecting the virulence of the tumor on subsequent transplantation.

7. The chemical analysis of over 300 tumors shows a relatively high potassium and nucleo-proteid content, associated with high virulence and rapid development, and a low potassium and high calcium content, associated with low virulence and relatively slow development.

8. The principal evidence of the existence of immunity against cancer is as follows: Spontaneous recovery of mice from true tumors actually occurs. Those mice which have recovered are not reinoculable with tumor materials possessed of the same degree of virulence as that previously employed, and exhibit in addition a considerable immunity to subsequent injections of far more virulent strains. The reinoculation of mice which have failed to develop fatal tumors shows in our experience a great reduction in the proportion of tumors, and inoculation for a third time has so far failed to be productive of a single tumor. The serum of recovered mice apparently exerts a definite though slight effect on the small tumors in other mice when directly injected, and also on tumor materials when admixed previous to inoculation. Mice on which tumors are already developing are, with a few exceptions, immune to subsequent inoculation, even with a more virulent tumor, indicating the production of immune forces in the serum antagonistic to the development of cancer.

9. The injection of tumor materials incubated at such temperatures as to render development impossible, or of tumor materials previously treated with chemicals at such a concentration as to inhibit development, fails entirely to confer immunity on the mice so treated.

10. The treatment of mice with increasing doses of nucleoproteids (extracted from the most virulent tumors) at stated intervals of time has so far failed to confer an immunity.

11. The process of immunizing mice against cancer appears to be analogous to that of vaccination against smallpox, the animals which recover from an attenuated form of the disease developing an immunity capable of protecting them in the large majority of cases against injections of a more virulent cancer stain than that originally employed.

The Lancet, London.

December 1.

- 27 Tobacco Amblyopia. P. Dunn.
- 28 Tropical Dysentery. R. J. Blackham.
- 29 Phlyctenular Ophthalmia. J. B. Nias and L. Paton.
- 30 Cerebrospinal Meningitis in the Sudan. C. Nedwill.
- 31 Indigestibility of Plummer's Pill. J. Sawyer.
- 32 \*Lepra Tuberosa; Treatment with Chaulmoogra Oil. J. A. Thompson.
- 33 Extensive Rupture of the Trachea with Complete Detachment of the Left Bronchus Without External Injury. J. L. Barford.

December 8.

- 34 Case of Lingual Goiter. G. H. Makins.
- 35 Further Observations on Endemic Goiter. R. McCarrison.
- 36 Water Gas, Carburetted Water Gas and Carbon Monoxide Poisoning. J. Glaister.
- 37 A New Synthesis of Tyrosine. P. W. Latham.
- 38 Case of Epileptic Idiocy Associated with Tuberoses Sclerosis of the Brain. M. B. Dodson.
- 39 Coincident Acute Appendicitis and a Twisted Ovarian Pedicle. J. Cahill and W. H. Bennett.
- 40 Influence of an Excessive Meat Diet on the Osseous System. D. C. Watson.



32. **Chaulmoogra Oil in Leprosy.**—In the case of tuberculous leprosy reported by Thompson, the patient was under observation for about two years, during which time he was given chaulmoogra oil, beginning with 45 minim doses taken three times a day; he was given as much as 315 minims a day. Thompson notes, however, that whatever the value of the oil as a remedy for leprosy, it would not have produced the excellent results in his case unless the patient had possessed an unusual inherent power of combating the infection.

Journal of Tropical Medicine, London.  
November 15.

41 \*Malaria in Greece. R. Ross.

42 Operation Leucoeytosis. P. N. Gerrard.

December 1.

43 Human Spirochlosis in Loanda (Angola). A. de S. M. Leitao.

41. **Malaria in Greece.**—Ross describes his experiences in the study of malaria in Greece. He says that malaria in that country is not of a benign type. Pernicious attacks are very common, and blackwater fever is extremely common. All species of the parasites are found. The mild tertian parasite occurs most frequently, the so-called malignant species next commonly, and the quartan least of all. Out of 1,839 mosquitoes concerned in the production of malaria, 1,778 were found to be *Anopheles maculipennis*, 21 to be *Anopheles bifurcatus*, and 20 to be *Pyretophorus superpictus*. The Kopaiik Plain, formerly a marsh, but now drained and cultivated to its fullest extent, is traversed by several small streams which are torrents in winter but in summer become trickles of water with marshy borders. In May and June, when Ross visited the district, he could find no mosquito larvæ, though some have been found since, with the advance of the dry season. In addition to the streams there are a series of small "borrow-pits" made by engineers in constructing a railway embankment, and in these Ross found the larvæ of *Myzomyia maculipennis*, a well-known carrier of malaria.

The Practitioner, London.  
November.

44 Valvular Disease of the Heart. R. Crawford.

45 \*Liver as a Toxin Filter. W. Hutchinson.

46 \*Serum Therapy. W. D. Emery.

47 Diagnosis of Pleural Effusion and of Empyema in Children. G. S. Middleton.

48 \*Mortality in Infancy. T. Divine.

49 \*Physical Methods of Treating Heart Disease. A. G. Bennett.

50 Recent Literature on Arthritis. F. J. Poynton.

51 \*Prophylactic Treatment of Postpartum Hemorrhage. G. W. Fitzgerald.

52 Case of Sarcoma of the Temporal Dura Mater which Simulated a Suppurative Mastoiditis. W. Downie.

53 Nature of Malignant New Growths of the Testis. F. G. Bushnell.

54 Immediate Treatment of Ruptured Perineum. D. T. Barry.

45. **The Liver as Toxin Filter.**—The studies made by Hutchinson has convinced him that the liver is the principal protector of the body tissues against toxins from whatever source, and that the question of the degree of systemic invasion is largely a question of the degree to which it can rise to emergency.

46. **Serum Therapy.**—Emery continues his review of the use of serums in the treatment of disease. In the present article he considers the serum therapy of scarlet fever, rheumatism, anthrax, typhoid, plague, pneumonia and dysentery.

48. **Mortality in Infancy.**—Divine discusses the report of the registrar general of England and Wales with reference to the wasting diseases of childhood.

49. **Physical Methods in Treating Heart Disease.**—The Nauheim bath is the subject under discussion by Bennett, who summarizes its action as follows:

1. A general dilatation of the capillaries and smaller blood vessels of the surface, with consequent relief to ventricular contraction.

2. A slowing of the pulse with more complete emptying of the ventricles.

3. An increase in the tone of the capillaries, with probable increase in the force of their rhythmical contractions, causing additional volume and rate of the distal circulation.

4. A floating upward of the heavy abdominal viscera by hydrostatic pressure.

5. A reflex nervous effect on the cardiac ganglia, whereby the ventricular power is increased and regulated.

6. The action of the skin and kidneys is also increased.

7. Certain beneficial trophic effects, in cases of anemia, neurasthenia, osteoarthritis, diseases of the spinal cord, and some cases of peripheral paralysis.

51. **Prophylaxis of Postpartum Hemorrhage.**—Fitzgerald speaks of the methods employed for the prevention of postpartum hemorrhage during the past ten years at the Rotunda Hospital, Dublin, in over 30,000 cases of labor. Hemophilia, hydramnios precipitate labor and the management of the third stage are the topics considered. Nothing new is offered.

Annales de l'Institut Pasteur, Paris.  
Last indexed, XLVII, page 1599.

55 (XX, No. 10, Pp. 785-880.) Glanders in Guinea-pig. M. Nicolle. (Morve exp. du cobaye.)

56 Neurotoxic Sera and Lesions They Induce. P. F. Armand-Deville. (Sérums névrotiques et les lésions qu'ils provoquent.)

57 \*Experimental Research on Syphilis. E. Metchnikoff and E. Roux. (Etudes exp. sur la syphilis.)

58 New Acetone-producing Microbe. Bréaudat. (Nouveau microbe producteur d'acétone.)

59 \*Mechanism of Destruction of Nerve Cells. Y. Manouélian. (Mécanisme de la destruction des cellules nerveuses.)

60 Relations Between Tropical, Quartan and Tertian Fever. Thiroux. (Observations prises au Sénégal.)

57. **Vaccination and Medical Prophylaxis Against Syphilis.**—Metchnikoff and Roux announce that they have succeeded in establishing the attenuation of human syphilitic virus by passage through small monkeys, opening a prospect for successful vaccination against syphilis. They further reiterate their former announcements in regard to the efficacy of a 25 or 33 per cent. calomel-lanolin salve as a means of antisiphilitic prophylaxis. The student, Maisonneuve, inoculated with human virus and then treated with this salve, has been absolutely free from any sign of syphilis for nearly a year to date. (This experience was described in THE JOURNAL for June 9, 1906, page 1779.) Another experience on man is reported in this present communication, which proves the attenuation of the virus by passage through monkeys. About a year ago one of the assistants in the research, free from the slightest syphilitic taint, accustomed to examine the inoculated monkeys every day, noticed a small ulceration on his lower lip. He feared accidental contagion from the inoculated monkeys, but physicians consulted could find no evidence of syphilis in the ulceration. To ease his mind, monkeys were inoculated with scrapings from the lesion. In due time the monkeys developed typical syphilitic lesions at the point of inoculation, with numbers of the spirochetes. The assistant has been kept under the closest supervision by Fournier, but nothing has been observed to justify antisiphilitic treatment, no enlargement of the glands nor other sign of syphilis, and yet his lesion transmitted syphilis to small monkeys. Inoculation of anthropoid apes was constantly negative. This is accepted as evidence that the passage of human virus through the lower monkeys attenuates its virulence so that it fails to produce the typical syndrome when injected into man or the higher monkeys, inducing merely a reaction similar to that of cowpox in relation to smallpox. This assumption has been confirmed by numerous experiences with monkeys. It has been found possible to keep the monkeys free from tuberculosis and in good health by excluding tuberculous monkeys and attendants and boiling the milk. The prospects seem promising that it will be possible to produce by several passages through the smaller monkeys, especially the *Macacus rhesus*, a vaccine which will prove as effectual for man as it has proved for anthropoid apes, and probably also in the case of the assistant mentioned above. He refuses to submit to the final test as to his being vaccinated, that is, to allow himself to be inoculated now with virulent human material as a test of his immunization. Another person, a man of 79, free from syphilis, allowed himself to be inoculated with virus from a human chancre, after five passages through the monkey organism. Two minute papules developed in the man at the points of inoculation, but soon subsided, and during the year since there have been no further signs of syphilitic infection.

59. **Mechanism of Destruction of Nerve Cells.**—Manouélian's research on the nervous systems of 2 persons who had succumbed to hydrophobia sustains Metchnikoff's assertions in regard to the destruction of nerve cells by phagocytosis. He was able to trace the macrophagocytes as they made their way into the nerve cells and attacked the pigmented granulations, and finally incorporated them, with the ultimate destruction of the nerve cell. Metchnikoff ascribes senile



changes to this same phagocytosis, the noble elements of the tissues being attacked and devoured by the macrophagocytes, with resulting sclerosis.

#### Centralblatt f. Chirurgie, Leipsic.

*Last indexed, XLVII, page 1517.*

- 61 (XXXIII, No. 40, Pp. 1073-1088.) Insoles of Celluloid, Felt and Rubber. Lengfellner. (Zelluloideinlagen in Verbindung mit Filz und Gummi.)
- 62 \*Importance of Acute Angle at Knee in Cases of Contraction of Hip from Severe Coxitis. C. Lauenstein. (Zur Bedeutung der spitzwinkligen Stellung des Kniegelenkes in Fällen von Beugekontraktur des Hüftgelenkes durch schwere Koxitis.)
- 63 (No. 41, Pp. 1089-1112.) Surgical Treatment of Acute Appendicitis in Intermediate Stage. P. Fiori. (Die chir. Behandlung der akuten App. im Intermediärstadium.)
- 64 (No. 43, Pp. 1137-1160.) \*To Ensure Bloodless Operations on the Skull. L. Kredel. (Ueber Blutleere der Galea bei Schädelop.)
- 65 (No. 44, Pp. 1161-1184.) \*Ideal Truss for Infants. K. Fiedler. (Ein ideales Leistenbruchband für Säuglinge.)
- 66 (No. 45, Pp. 1185-1208.) Suprahoid Pharyngotomy. von Hacker. (Zur Pharyngotomie suprahyoidea.)
- 67 Dorsal Fixation of Arm for Fracture of Clavicle. E. Cordua. (Dors. Fixation des Armes bei Schlüsselbeinbruch.)
- 68 \*Preparation of Iodized Catgut. Burmeister. (Jodcatgut-präparation.)
- 69 (No. 46, Pp. 1209-1240.) \*Catgut Sterilization. C. Stich.
- 70 \*Peritoneal Plastic Operations with Isolated Pieces of Omentum. S. S. Girgola. (Perit.-Plastik mit isol. Netzstücken.)
- 71 Sterilization of Iodoform Gauze. Heyde. (Iodoformgazesterilisation.)
- 72 Apparatus for Aseptic Taking of Soap. C. Stich. (Apparat zur asept. Seifenentnahme.)
- 73 (No. 47, Pp. 1241-1264.) \*Thread Drainage. H. Hans. (Fadendrainage.)

62. **Acute Flexion of the Knee with Untreated Coxitis.**—Lauenstein calls attention to the flexion of the knee in an acute angle which is a frequent accompaniment of severe inflammation of the hip joint that has not received proper treatment, the hip being left much contracted. In an experience with two patients he found that even moderate pressure on the leg, to reduce the contraction at the knee, caused fracture of the femur as the lower epiphysis became detached. He warns, therefore, that the knee should be left untouched for a time, and that attention should be directed exclusively to correcting the deformity at the hip joint as the bone is liable to be atrophied from the long disuse.

64. **To Prevent Hemorrhage in Operations on the Skull.**—Kredel passes a stout curved needle through the scalp about an inch from the line of the proposed incision and parallel with it, and ties the stout silk thread thus passed through the scalp over a narrow, grooved metal plate 1 cm. wide and 0.5 cm. thick, curved to fit to the skull. This is repeated with more plates until the incision is walled in on each side with a single row of these plates, each from 5 to 7 cm. in length. The thread is tied, lengthwise, tightly over each, which not only insures complete hemostasis, but holds the parts in their natural position. He has used somewhat similar plates to wall off the field of operation in extirpating angiomas on children.

65. **Ideal Truss for Infants.**—Fiedler's truss is a skein of white worsted, ordinary zephyr wool, with from 20 to 30 threads to the skein. He makes a loop of the cut skein, from 35 to 45 cm. long, tying the ends of the threads in a bunch with a strip of tape. The hernia is reduced and the loop of worsted is placed around the abdomen and the tied end drawn through the loop. A small pad of cotton is placed over the hernia and the crossed part of the loop is brought over the hernia and drawn taut, after which the tape is tied around the leg and fastened to the child's band. The elastic pressure of the worsted bandage prevents the tendency to hernia, and a clean one can be put on every time the child is dressed. The truss does not have to be removed when the child is bathed, and otherwise fulfills, he says, every requisite for an ideal truss for infants.

68. **Improved Iodized Catgut.**—Burmeister claims that his modification of Claudius' technic has a number of advantages, saying that catgut thus prepared never becomes friable, never swells when placed in aqueous solutions or living tissues, can be kept dry or in a fluid as desired, never has any irritating action, whether rinsed or not, while it is fully as strong as if not stronger than that prepared by other techniques. His modification consists simply in the use of a mixture of 1 gm. metallic iodine in 15 c.c. or 22.5 gm. of chloroform instead of the ordi-

nary solutions of iodine. The catgut is placed in this mixture for a week, when it is ready for use. The chloroform evaporates so rapidly that the catgut dries in a minute, but always retains its flexibility.

69. **Sterilization of Catgut.**—Stich describes the method of sterilizing catgut with silver nitrate which he has been using since 1903 to his great and increasing satisfaction. The catgut is placed in a cylinder filled with a 1 per cent. alcoholic-ammoniacal solution of silver nitrate, protected against light, in which it is left for from fifteen to thirty minutes. It is then rinsed in alcohol and exposed to sunlight in a second, sterile cylinder. The catgut is then transferred to a vessel containing alcohol and 10 per cent. glycerin, when it is ready for use.

70. **Isolated Pieces of Omentum for Peritoneal Plastics.**—Girgola relates that extensive experiments on dogs and cats showed that a large piece of omentum, 4 by 6 cm. square, can be used as an isolated patch to cover defects in the viscera, and that it heals readily into place without the formation of adhesions later. Circulation through the implanted piece was visible even in 24 hours. Plastic operations by this technic succeeded perfectly in operations on the stomach, large intestine and bladder, but he was less successful in operations on the small intestine. The isolated patches of omentum were found particularly useful after resection of the liver, the living tampons, as he calls them, proving particularly effectual in preventing after-hemorrhage or laceration from the stitches.

73. **Thread Drainage.**—Hans sutures the wound as usual, but leaves the ends of the ligature thread long and draws them out through the lower corner of the sutured wound. He has found that capillary attraction insures that the current is always outward. By this means he claims that he has all the advantages of drainage, with none of its disadvantages.

#### Centralblatt für Gynäkologie, Leipsic.

*Last indexed XLVII, page 1517.*

- 74 (XXX, No. 39, Pp. 1065-1088.) Automatic Retractor to Open Vulva and Vagina for Vaginal Operations. M. Blumberg. (Selbsthaltender Vulva- und Vulvovaginalspreizer für vag. Op.: Kolpotomien, digitale Ausräumung, Curettage, Dammrisse, Prolaps-Operationen usw.)
- 75 (No. 41, Pp. 1113-1144.) Birth Mechanism. R. Olshausen. (Zur Lehre vom Geburtsmechanismus.)
- 76 (No. 43, Pp. 1177-1208.) Gonococcus Peritonitis in Child-bed. G. Leopold. (Zur Gon.-Peritonitis im Puerperium. Laparotomie. Drainage. Genesung.)
- 77 \*Puerperal Morbidity at Zweifel's Clinic. T. Thies. (Fieber im Wochenbett, 1905.)
- 78 Roentgen Treatment of Severe Menorrhagia, Due to Myoma. Görl. (R.-Bestrahlung wegen starker, durch Myome hervorgeruf. Menorrhagien.)
- 79 (No. 44, Pp. 1209-1248.) Cause of Arterial-Mesenteric Occlusion of Duodenum. F. Lichtenstein. (Zur Ätiologie des art.-mesent. Verschlusses des Duodenums.)
- 80 (No. 45, Pp. 1249-1272.) Is Sterilization of a Wife Justified? Mensinga. (Keine Sterilization der Frau?)
- 81 Two-Way Uterine Catheter. Gutbrod. (Ein neuer Uterus-spülkatheter.)
- 82 (No. 46, Pp. 1273-1296.) \*Behavior of Peritoneum in Presence of Foreign Body. W. S. Gruzdev. (Verhalten des Bauchfelles Fremdkörpern entgegen.)
- 83 (No. 47, Pp. 1297-1320.) Colpeurynter or Knife in Treatment of Total Inversion of Uterus? F. v. Neugebauer. (Kolpeurynter oder Messer?)

77. **Puerperal Morbidity at Zweifel's Gynecologic Clinic.**—Thies states that the use of gloves in the maternity reduced the morbidity by 9 per cent. A further reduction followed the adoption, in 1903, of the plan of wiping out the clots of blood in the vagina after delivery. During 1905 the morbidity was 8.02 per cent. of 1,471 cases. From four to ten hours after delivery a Trélat speculum is introduced very gently into the vagina and the larger clots of blood seen in the vagina are removed with small swabs introduced in such a way that they do not come in contact with the skin. The clots are wiped out very gently so as not to disturb the healing of any erosions or cracks in the vaginal walls. Another innovation at the clinic to which Zweifel ascribes a great reduction of the morbidity is the use of caps for the nipples, the infants sucking through the caps.

82. **Foreign Body in Abdomen.**—Gruzdev relates that a multipara of 51 had an ovarian cyst removed by an eminent surgeon in a well-managed hospital. She was healthy for a year and then abdominal pains were experienced, gradually



growing more severe in the course of six years, and finally localized at a certain point in the abdominal wall, where the tip of a sharp instrument at last presented. It was recognized as a forceps; the handle could be palpated in the pouch of Douglas. It was removed through an incision at this point and proved to be a Terrier forceps, closed, measuring 22 cm., nearly 9 inches in length. The peritoneum had tried to encapsulate the foreign body, so that its removal was practically an extraperitoneal operation. The membranous encapsulation covered all parts of the instrument except the sharp tip.

**Deutsche medizinische Wochenschrift, Berlin and Leipsic.**

- 84 (XXXII, No. 46, Pp. 1849-1888.) Agglutination of Meningococci. H. H. Kutscher. (Zur Aggl. der Meningococcen.)  
 85 \*Permeability of Digestive Tract for Bacteria. A. Uffenheimer. (Durchlässigkeit des Magendarmkanals für Bakt.)  
 86 \*Experimental Studies of Eclampsia. W. Weichardt and W. Piltz. (Exp. Studien über die Eklampsie.)  
 87 \*Serous Meningitis. G. Riebold. (Ueber seröse Men.)  
 88 \*Defective Hearing for Musical Tones. E. Barth. (Zur Diplacusis disharmonica.)  
 89 "Inundation Fever." M. Ogata. (Ätiologie der Tsutsugamushi-Krankheit: Ueberschwemmungsfieber nach Baeiz.)

**85. Permeability of Digestive Tract for Bacteria.**—Uffenheimer introduced a suspension of the *Bacillus prodigiosus* into the rectum of rabbits, and found that the bacteria rapidly made their way upward into the stomach, esophagus and throat and from the throat into the air passages and lungs. The bacillus was found in the lungs four hours after the experiment. He believes that this upward migration of germs from the stomach explains the passage of bacteria from the digestive tract into the lungs, without the necessity for assuming that they pass through the intestinal walls. He reviews the various works that have been published in German on the intestinal origin of tuberculosis. In recent previous experiments he found that the *Bacillus prodigiosus*, *Micrococcus tetragenus* and the *Bacillus anthracis* were unable to pass through the walls of the digestive tract of new-born guinea-pigs, but that tubercle bacilli were able to traverse the wall with ease, both in the young and in the adult guinea-pig, and he found that the intestinal tract of the new-born rabbit was also permeable for the *Bacillus prodigiosus*. The positive results reported by others in regard to the permeability of the walls of the intestinal tract of the adult rabbit are more likely to be due, he thinks, to upward migration of the germs introduced into the stomach through an external incision or introduced into the rectum rather than to any permeability of the intestinal walls. Bacteria arriving in the throat from below can easily be aspirated into the lungs.

**86. Experimental Studies of Eclampsia.**—Weichardt has succeeded in isolating a blood-coagulating substance from the toxin isolated from the placenta of eclamptic women, besides the element in the toxin which causes arrest of the respiration. By segregating these substances and treating rabbits with them he was able to produce an immune serum which, he claims, checked the development of the symptoms after injection of the toxin, as he describes in detail. His findings seem to indicate that eclampsia is induced by toxic substances formed by cytotoxicity of the elements of the placenta arriving in the circulation, occurring in women in whose blood there is a lack of natural anti-endotoxic or inhibiting elements. If it were possible to detect the women with this predisposition to eclampsia and to supply artificially the lacking anti-endotoxic or inhibiting elements, the eclampsia might be warded off in the clinic as effectually as in his experimental researches. The new inhibiting substance has always shown itself perfectly harmless for man, he states, and, as it dialyzes readily, it passes rapidly and unmodified into the circulation through the stomach walls when given by the mouth.

**87. Acute Serous Meningitis.**—Riebold describes several cases of acute serous meningitis which he does not think is such a rarity as generally assumed. The prognosis is favorable in general; the principal danger lies in the effects of compression from the increased fluid, and this, he declares, can easily be averted by spinal puncture done early and repeated at need. The rapid subsidence of the symptoms after relief from the pressure of the cerebrospinal fluid differentiates the affection. None of the others resembling it allow of such rapid retrogression. In one case described a single puncture

at the fourteenth day was followed by complete recovery. In another case the meningitic symptoms vanished the fifth day after the puncture, and when they recurred after an interval of ten days they subsided again permanently by the fourth day after the second puncture. The clinical picture may be very serious, simulating that of purulent or tuberculous meningitis or an abscess or tumor in the brain, and the symptoms may vary from time to time. Serous meningitis in the course of typhoid, pneumonia or influenza is liable to be overlooked, but spinal puncture will reveal the overpressure of the cerebrospinal fluid and, he claims, is liable to banish the meningitic symptoms. In his primary cases the onset was sudden and severe, intense pains in head and limbs, high fever, constipation, sleeplessness and early delirium. Spinal puncture on the ninth day showed a pressure of 280 mm. water and 25 c.c. of fluid were withdrawn, with a terminal pressure of 110 mm. The fluid proved to be sterile, gave a positive albumin response and a few lymphocytes were found in the sediment. Immediately after the puncture the previously entirely comatose patient revived, was conscious and replied to questions, drank and urinated. This instantaneous transformation in the entire clinical picture was really amazing. After a night of quiet sleep, the patient became partially delirious again, but was relieved by spinal puncture; pressure, 180 mm.; amount withdrawn, 10 c.c. The following day the patient's mind was not entirely clear; spinal puncture showed a pressure of 60 mm., but no fluid was withdrawn. Recovery was rapid after this, the fever dropping as by lysis about the fourteenth day with no subjective disturbances. Convalescence was prolonged by an attack of mild myocarditis, which occurred also in some of the other cases. Some of the patients were syphilitic. In a few cases the serous meningitis was secondary to an affection of the ear, and persisted, notwithstanding repeated spinal punctures until the primary focus healed. In one case the onset was very stormy, and spinal puncture revealed a pressure of 300 mm. About 15 c.c. of a sterile hemorrhagic fluid were withdrawn, with immediate relief from the threatening symptoms. A number of punctures were required in this severe case, with fever for four weeks, but by the end of the fifth week the patient was restored except for left oculomotor paralysis with ptosis, rigid pupil, etc. In another case, in a woman of 40, the severe meningitic symptoms ceased abruptly after spontaneous perforation of the tympanic membrane and evacuation of pus, with complete recovery in a few days. In conclusion, Riebold urges the importance of spinal puncture as a harmless and frequently curative measure in all cases with meningitic symptoms of dubious origin, which may otherwise lead to acute internal hydrocephalus with occlusion of the ventricles or some chronic process.

**88. Disturbance in Hearing for Music.**—Barth reports the case of a singer who found that he heard musical tones with the left ear about half a tone below their true sound, and he was also slightly deaf in this ear. This condition lasted for sixteen months, when hypertrophied turbinates were partially removed, which put an end at once to the diplacusis disharmonica, although the nervous deafness was only slightly improved.

**Münchener medizinische Wochenschrift.**

- 90 (LIII, No. 45, Pp. 2185-2322.) Proteolytic Ferment of Leucocytes in Leucocytosis and Ferment-Inhibiting Action of Blood Serum. Eppenstein. (Proteolytisches Ferment der Leukozytosen, insbes. bei der Leukämie, und die fermenthemmende Wirkung des Blutserums.)  
 91 \*Frequency of Endocarditis with Muscular Rheumatism. A. Bechtold. (Ueber zeitweises gehäuftes Vorkommen von Endokarditis bei Musk.-Rheumatismus.)  
 92 \*Unusual Course of Valvular Affections. K. Grassmann. (Seltene Verlaufswesen von Klappenfehlern.)  
 93 \*Sarcomatosis of Epicardium. H. Schöppler. (Sarkomatose des Epik.)  
 94 Graphic Reproduction of Lung Findings. G. Besold. (Die bildliche Darstellung von Lungenbefunden.)  
 95 Differential Stain for Fat Granules, Hemoglobin and Cell Nuclei in Frozen Sections. J. Wallart. (Gleichzeitige Darstellung von Fettkörpern, usw.)  
 96 \*Suction Treatment of Nasal Affections.—R. Sondermann. (Zur Saugtherapie bei Nasenerkrankungen.)

**91. Infectious Nature of Muscular Rheumatism.**—Bechtold states that during a rainy summer recently two wards in von



Leube's service were filled almost exclusively with patients with muscular rheumatism. Among these patients he found six who presented signs of recent endocarditis. Examining the records he found that, since 1903, out of 902 cases of muscular rheumatism, five of the patients had presented the same signs of recent endocarditis. The eleven cases are described in detail. His article was referred to editorially on page 2097 of the last volume, especially his view that the endocarditis was probably due to the rheumatism. In three instances it entailed mitral insufficiency, in two a systolic murmur with accentuation of the second sound, although the heart was not enlarged. These facts he accepts as speaking for the infectious nature of muscular rheumatism, as also the large number of cases observed at certain times, the constant general symptoms and occasional fever, the frequent complication with endocarditis, and above all, the way in which certain epidemics run a mild and others a more severe course. Leube does not believe that the causal agent is the same for articular and for muscular rheumatism, but that the virus of each is closely allied. The difference in the response to the salicylates further differentiates the two causal agents. In a number of cases sore throat had preceded or accompanied the muscular rheumatism. Bechtold is inclined to regard it as always of infectious origin, outside of the toxic and traumatic cases, but that the bacteria causing it are of very slight virulence and induce merely a serous inflammation of the muscles. This assumption explains the favorable effects of massage, as it mechanically dispels the effusion. Miyake has observed the transition of a serous into a suppurative myositis.

**92. Unusual Course of Valvular Affections.**—Grassmann reports a case of apparently complete cure of a valvular defect, the relics of articular rheumatism in a child. Two years later there was a true recurrence of the previously cured valvular endocarditis, proving fatal this time. In a second case a patient of 60, with mitral stenosis and aortic insufficiency with failing compensation, succumbed to repeated intestinal hemorrhages. Nothing was found in the intestines to explain the hemorrhage beyond the general disturbance from the valvular affection.

**93. Sarcomatosis of the Epicardium.**—Schöppler reviews the literature on the subject of primary tumors of the heart and reports a case of primary sarcomatosis of the epicardium. Only 13 cases of sarcoma of the heart are on record, with 32 of myxoma or fibroma, 7 of carcinoma, 5 of lipoma, and 1 of teratoma. The pericardium was affected in only one of the total 61 cases. The left ventricle is the most frequent site. The age of the patients ranged from 3 days to 83 years. Analysis of the cases fails to reveal any characteristic syndrome from the cardiac tumor.

**96. Suction Treatment of Nasal Affections.**—Sondermann has taken the lead in Germany in applying aspiration in treatment of the nose and sinuses. The results are better, of course, the more recent the affection to be treated. The apparatus he is now using for the purpose is a glass, olive-shaped part, to introduce into the nostril, with a rubber bulb on the outer end. The olive is made in two parts, the outer stem projecting into the center of the larger part so that secretions aspirated into the olive do not obstruct the lumen of the narrower, outer part connected with the rubber bulb. He applies the suction for five minutes at a time, repeating it from two to twelve times a day. The suction draws the secretions out of the nose and accessory cavities; it can also be applied in ear affections. It is useful in diagnosing, as it sometimes aspirates pus from some unsuspected recess. The principle is the same as Bier's suction therapy and has the same advantages. Its benefits are peculiarly apparent in the severe cases which otherwise can not be cured without extensive surgical interference. Sondermann gives a number of other practical points to aid the non-specialist in treating such patients. If the secretions retain their purulent character in spite of repeated application of the suction for a week or two, not much relief can be anticipated from this treatment alone. As a rule, however, the secretions, even in ozena, grow less and become more and more serous. If no benefit is obtained in two or three days, further suction treatment is useless.

## Therapie der Gegenwart, Berlin.

*Last indexed, XLVI, page 643.*

- 97 (XLVII, No. 5, Pp. 193-240). Treatment of Habitual Constipation. E. Klein. (Behandlung der Obstipierten.)
- 98 \*Meat and Vegetable Diets. K. Bornstein. (Fleischkost, fleischlose und veg. Diät.)
- 99 \*Pepsin-Hydrochloric Acid for Infants. L. F. Meyer. (Pepsin-Salzsäure als Stomachicum beim Säugling.)
- 100 Causes and Treatment of Severe Hemorrhages in Case of Hypertrophied Prostate. B. Goldberg. (Ursachen und Behandlungsmethoden schwerer Blutungen der Prostatiker.)
- 101 Carboic-Acid-Camphor Treatment of Surgical Infections. I. Lemberger. (Phenol-Kampher.)
- 102 Administration of an Alkali to Avoid Irritation of Kidneys from Salicylates. E. Frey. (Zur Frage der Vermeidung der Salicyl-Nierenreizung durch Alkaligaben.)
- 103 Aluminum Electrodes. R. Weise. (Wandlungen in der Elektrotherapie.)
- 104 (No. 6, Pp. 241-288.) \*Subcutaneous Alimentation with Fats. H. Winternitz. (Subkut. Fettnahrung.)
- 105 \*Essence and Treatment of So-called Membranous Enteritis. A. Albu. (Colica mucosa and Myxorrhœa coli.)
- 106 \*Treatment of Habitual Constipation. O. Kohnstamm. (Behandlung der chron. Verstopfung.)
- 107 (No. 7, Pp. 289-336.) \*Symptoms of Treatment of Absence of Ferments of Gastric Juice. K. Faber (Achyilia gastrica.)
- 108 \*Hot Baths in Treatment of Chlorosis. H. Rosin. (Behandlung der Bleichsucht mit heissen Bädern.)
- 109 Influence of Bodily Exercise on the Temperature, Pulse, Respiration and Blood Pressure in Health and Disease, with Special Reference to the Tuberculous. Flemming. (Einfluss von Körperbewegung, usw.)
- 110 \*Avoidance of Injurious After-effects from Spinal Anesthesia. K. Kroner. (Rückenmarksanästhesie.)

**98. Meat in Diet.**—Bornstein regards 1 gm. of albumin to 1 kg. of body weight as the best proportion of albumin in the diet. It is not necessary to supply this albumin in the form of meat, and he protests most emphatically against the superstition in regard to the special value of meat as a strength giver. Meat contains substances that irritate and produce uric acid; it increases putrefactive processes in the intestines, and promotes autointoxication, and consequently its use should be diminished or suspended entirely in conditions accompanied by irritative processes. Neuralgia, especially when due to autointoxication, improves after reduction of the amount of meat in the diet. Neuritis, rheumatism, hysteric disturbances, neurasthenia and exophthalmic goiter require a non-irritating diet with little if any meat, as also cutaneous affections of the "nervous" type. In diabetes he forbids not only every drop of alcohol, but also reduces the amount of meat, although providing for an abundant supply of albumin in the form of the harmless albumin of milk, generally some preparation of casein, to which he adds a little iron and quinin, and has always been extraordinarily gratified with his results. Avoidance of everything that irritates or intoxicates the insufficient cell, gives the cell a chance to recuperate. He attributes to injury from meat and alcohol a large proportion of the nephritic processes in diabetes. In heart affections the amount of meat should also be reduced, but not entirely suppressed. A "meat scanty" diet is also indicated in gout. The fine results sometimes attained in the so-called "naturopathic" establishments are due to the limitation or entire suppression of meat in the diet. Bornstein adds that obstipation from atony of the intestines should not be treated by overloading the intestines with a voluminous vegetable diet. This induces a vicious circle, which is unnecessary. The intestines should be spared all unnecessary work, and their evacuation be accomplished with a small oil enema or harmless laxative, while treating the organism as a whole to strengthen the muscular system and to cure the generally accompanying anemia. As the extractives of meat stimulate the gastric secretions, meat should be totally avoided during treatment of an ulcer in the stomach.

**99. Pepsin-Hydrochloric Acid to Stimulate the Appetite in Infants.**—Meyer describes the excellent results obtained in a number of cases by the use of pepsin, with or without hydrochloric acid, when infants had lost their appetite, either from weaning or during convalescence from sickness or merely from a kind of nervous anorexia. He found it equally beneficial also for older children suffering from nervous anorexia. The hydrochloric acid alone did not seem to answer the purpose, but this was accomplished sometimes by pepsin alone.

**104. Fats in Subcutaneous Alimentation.**—The experiments related by Winternitz confirm his assertion that fats are not adapted for subcutaneous feeding in any form. He found that an emulsified fat was more readily absorbed, but the total fat in the mixture had to be correspondingly reduced.



**105. Essence and Treatment of Membranous Enteritis.**—Albu gives the conclusions of ten years of study of hundreds of cases of this kind. He distinguishes two forms: The first, which he calls colica mucosa, is characterized by intermittent abdominal pain, while the other form, which he calls myxorrhoea coli, is free from the cramps, although sharing with the first form the chronic obstipation and the voiding of cylindrical masses of mucus. The second form is due to atony of the large intestine, while in the first form there is tonic spasm of the intestinal wall. Owing to the sluggish action of the bowels the mucus remains a long time in them, and takes the shape of the tube. He encountered about 10 cases of colica mucosa in the course of the year, and about 100 of the second form. Colica mucosa is observed exclusively in extremely neurasthenic patients, both men and women. It is essentially a neurosis from irritation of the intestines, a primary purely nervous spasm of the colon. The second form of membranous enteritis is a neurosis from relaxation due to primary atony of the large intestine. Treatment of the latter includes cautious massage of the large intestine with the hand or a vibratory apparatus, preferably with the intestines empty; frequently repeated brief faradization of the intestines, with the abdominal walls relaxed; a more or less coarse vegetable diet, with buttermilk, kefir, honey, stewed fruit, milk sugar, grapes, etc., an enemata of cold water or glycerin, and glycerin suppositories. Astringents irritate the intestines and increase the production of mucus. It is important to clear the intestines from the accumulation of mucus, and if repeated soda water or oil enemata do not accomplish the purpose, he gives castor oil as a mild purgative. The colica mucosa is best treated by application of heat to the part, cataplasms, hot sitz and full baths, and sedatives in the form of a suppository with 0.01 or 0.02 gm. belladonna, with or without codein. Opium in any form is contraindicated, as it is apt to entail paralysis of the intestines which increases the tendency to obstipation. In addition, sitz or full baths for twenty to twenty-five minutes should be taken three times a week, and warm enemata of pure oil, with or without soapy water, slowly injected under moderate pressure, to be retained for a time, supplemented by a milk-vegetable diet, the vegetables all mashed and the fruit stewed. Internal administration of bromids, etc., does no good. The treatment of neurasthenia by physical-dietetic measures alone offers chance of success.

**106. Meat as Source of Chronic Obstipation.**—Kohnstamm believes that there is some substance among the products of intestinal digestion of meat which has a direct inhibiting effect on peristalsis, or it may possibly act indirectly by checking the secretion of the intestinal walls and thus rendering the contents of the intestines drier, which in turn renders them less susceptible to the peristaltic action of the intestines. He advises constipated patients to refrain from meat, eating abundantly otherwise, with plenty of milk and butter. In from two to four days the bowels will be acting normally. Kohnstamm thinks that Nature intended man to eat like the monkeys, and that he is not a carnivorous animal.

**107. Treatment of Gastric Achylia.**—Faber long ago demonstrated that gastric achylia always has a basis of chronic gastritis. In treatment the food must be in such a form as to spare the stomach the task of further division. Milk should be avoided if there is a tendency to intestinal disturbance. Buttermilk can sometimes be taken or whipped cream diluted with water. Butter is a great help, also eggs, but meat and raw fruit should generally be all avoided, and vegetables should be mashed and strained. There is no reason for strict dietetic regulations if there are no subjective symptoms. Pepsin and hydrochloric acid are sometimes indicated, but bitters are liable to act still better, especially a dose of fluid extract of condurango before meals. There is seldom any hope of an actual cure, as this stomach function is generally totally lost. The aim of treatment is to keep the condition symptomless. When the condition has lasted a long time without cachexia or retention, malignant disease is scarcely probable.

**108. Hot Baths in Treatment of Chlorosis.**—Rosin says that hot baths have a powerful stimulating action on the bone

marrow. In chlorosis he orders a hot bath with the water constantly at 40 C. (104 F.) taken about 11 a. m. for ten to twenty minutes. The patient then takes a cold douche and is rubbed down and then lies down for an hour. Three of these baths are taken during the week for from four to six weeks. A cool wet cloth is kept on the head during the bath. In a month, he declares, the improvement generally amounts to a complete cure.

**110. To Avoid Untoward Effects After Spinal Anesthesia.**—Kroner calls attention to a means of avoiding ill effects after spinal anesthesia. He states that after injection of the anesthetic the anesthesia occurs very promptly, but the anesthetic spreads very slowly through the spinal cavity. This proves, he thinks that only a very small amount of the anesthetic is actually needed. Consequently, he leaves the needle in the tissues after injecting the anesthetic, and after from two to five minutes he allows from 5 to 10 c.c. of the cerebrospinal fluid to escape, thus washing out more or less of the injected anesthetic. No diminution in the anesthesia could be detected, and yet a considerable amount of the anesthetic is evidently washed out with the fluid.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS, with Especial Reference to the Clinical Application of Drugs.** By J. V. Shoemaker, M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine, etc. Sixth edition, thoroughly revised. Cloth. Pp. 1255. Price, \$5.00 net. Philadelphia: F. A. Davis Company, 1906.

**DISEASES OF THE NOSE, THROAT, AND EAR.** By C. P. Grayson, A.M., M.D., Clinical Professor of Laryngology in the Medical Department of the University of Pennsylvania, etc. Second edition, revised and enlarged. Cloth. Pp. 532. Price, \$4.00 net. Philadelphia: Lea Brothers & Co., 1906.

**VOICE PRODUCTION IN SINGING AND SPEAKING, Based on Scientific Principles.** By W. Mills, M.A., M.D., F.R.S.C., Professor Physiology in McGill University and Lecturer on Vocal Physiology. Cloth. Pp. 282. Price, \$2.00 net. Philadelphia: J. B. Lippincott Company, 1906.

**A TEXT-BOOK OF PATHOLOGY.** By A. Stengel, M.D., Professor of Clinical Medicine, University of Pennsylvania, with 399 illustrations in Text. Fifth edition, thoroughly revised. Cloth. Pp. 979. Price, \$6.00 net. Philadelphia: W. B. Saunders Company, 1906.

**TRANSACTIONS of the Fourth Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine-Hospital Service.** Washington, D. C., May 23, 1906. Cloth. Pp. 75. Washington: Government Printing Office, 1906.

**TRANSACTIONS of the Third Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine-Hospital Service.** Washington, D. C., May 15, 1905. Cloth. Pp. 52. Washington: Government Printing Office, 1906.

**PULMONARY TUBERCULOSIS, Its Modern and Specialized Treatment, with a Brief Account of the Methods of Study and Treatment at the Henry Phipps Institute of Philadelphia.** Illustrated. Cloth. Pp. 247. Philadelphia: J. B. Lippincott Company.

**REPORT of the Associated Committees of the Massachusetts Medical Society for the Prevention and Control of Tuberculosis.** By A. T. Cabot, M.D., Chairman, and T. F. Harrington, M.D., Secretary. October, 1906. Paper. Pp. 33.

**DIAGNOSIS OF NERVOUS DISEASES.** By P. Stewart, M.A., M.D., F.R.C.P., Physician to Out-Patients at the Westminster Hospital, etc. Cloth. Pp. 380. Price, \$4.20 net. New York: Longman's Green & Co., 1906.

**COOK COUNTY HOSPITAL REPORTS, Compiled and edited under the Direction of Publication Committee of the Cook County Hospital Attending Staff.** W. L. Baum, M.D., C. L. Mix, M.D., and others. Cloth. Pp. 304.

**REPORT of the Surgeon-General U. S. Navy, Chief of the Bureau of Medicine and Surgery, to the Secretary of the Navy, 1906.** Paper. Pp. 196. Washington: Government Printing Office, 1906.

**REPORT of the Minister of Agriculture for the Dominion of Canada for the Five Months Ended March 31, 1906.** Paper. Ottawa: S. E. Dawson, Printer, 1906.

**THE MAKING OF AN AUTOMOBILIST.** By H. A. Grant, M.E. Flexible Leather. Pp. 141, 39 illustrations. Price 50c. Tarrytown, N. Y.: Maxwell-Briscoe Motor Co., 1906.

**THERAPEUTISCHE TECHNIK FUER DIE AERZTLICHE PRAXIS.** By J. Schwalbe. Erster Halbband. Mit 390 Abbildungen. Paper. Pp. 352. Leipzig: Verlag von Georg Thieme, 1906.

**POKER JIM, GENTLEMAN, and Other Tales and Sketches.** By G. Frank Lydston. Cloth. Pp. 396. Price, \$1.00. Chicago: Monarch Book Company.

**TRAITE DE THERAPEUTIQUE ORTHOPEDIQUE.** Par le C. Ducroquet. Paper. Pp. 384. Price, 15 fr. Paris: Jules Roussel, 1907.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII.

CHICAGO, ILLINOIS, JANUARY 12, 1907.

No. 2.

## Original Articles

### THE PATHOLOGIC FINDINGS IN TWO FATAL CASES OF MYCOSIS FUNGOIDES.\*

SAMUEL T. ORTON, M.D. AND EDWIN A. LOCKE, M.D.

BOSTON.

The lack of agreement on the part of many writers as to the etiology and pathology of mycosis fungoides has led to a careful study of two cases observed at the Boston City Hospital and to the following report of this investigation.

Three main theories have been advanced concerning the type of changes taking place in the skin. First, the skin tumors have been regarded by many authors, including Köbner,<sup>1</sup> Virchow,<sup>2</sup> Payne,<sup>3</sup> DeAmicis,<sup>4</sup> Stelwagon and Hatch,<sup>5</sup> Krasnoglasow,<sup>6</sup> Auspitz,<sup>7</sup> Phillipson,<sup>8</sup> Hyde and Montgomery,<sup>9</sup> Hochsinger and Schiff,<sup>10</sup> as granulomata, either infectious or non-infectious. Second, Kaposi,<sup>11</sup> Funk,<sup>12</sup> Crocker,<sup>13</sup> Ranvier,<sup>14</sup> Pinkus,<sup>15</sup> Lerrede and Weil,<sup>16</sup> Besnier<sup>17</sup> and others believe the tumors to be sarcomata. This view is largely supported by the German writers. A third group (Pellagotti,<sup>18</sup> Landouzy,<sup>19</sup> Debove,<sup>20</sup> Demange,<sup>21</sup> Gaillard,<sup>22</sup> Tanturri<sup>23</sup>) regard the disease as a cutaneous localization of a leukemic process, a view first suggested by Gillot<sup>24</sup> and supported later mainly by the French and Italian authors. Biesiadecki,<sup>25</sup> Phillipert<sup>26</sup> and Kaposi each report a case of mycosis fungoides associated with leukemia.

Ullmann<sup>27</sup> places the tumors in an intermediate posi-

tion between granulation tissue and sarcoma. Two of the most recent writers, Wolters<sup>28</sup> and Joseph,<sup>29</sup> regard mycosis fungoides as a chronic general disease, caused by an infection, and first localized in the skin. They further separate leukemia and pseudoleukemia from this disease, but consider them all to be of similar origin.

The literature contains five cases with visceral involvement. Duhring<sup>30</sup> and Gaillard each report a case with a nodule in the wall of the bladder, but give no proof of any definite relation between the two processes. In two other cases examined by Lerrede and Weil were found lymphadenomata, one of the liver and one of the kidney. Bowen<sup>31</sup> in his case describes an identical histologic picture in the tumors of the skin and nodules in the testes, one kidney and the mesocolon.

Many reports have been made of the finding of microorganisms in the blood vessels and affected skin, and by some these are believed to have an etiologic bearing. These are most commonly accepted, however, as secondary invaders. Animal inoculations have in all instances yielded negative results. Observations on the histologic structure of the tumors are fairly uniform and may be briefly stated as consisting of a fine reticulum in which lie small round cells of the lymphocyte series. Wolters, Stelwagon,<sup>32</sup> Pellagotti and others consider the tumor cells to be lymphocytes. Kaposi and the writers who accept his view think them sarcoma cells of the small round type, while a third group, including Joseph, Paltauf,<sup>33</sup> Vollmer,<sup>34</sup> Ullmann, Krasnoglasow and others hold that they originate from the connective tissue cells of the corium. Practically all authors concur in reporting mitoses as very frequent. On the occurrence of other cells and structures there is less agreement. Unna,<sup>35</sup> Lerrede and Weil, Wolters and others have found plasma cells in large numbers, while Joseph and Ullmann report negative findings.

Wolters says that the occurrence of giant cells is not uniform, being present in large numbers in some cases and entirely absent in others. Vollmer claims that their presence depends on the age of the lesion, i. e., that they are found only in the late tumors and during resolution. Payne, Ullmann and Krasnoglasow claim that there is an absolute increase, by new formation, in the blood vessels of the affected part. Wolters finds an increase in capillaries only and considers this as purely secondary to the tumor growth.

The presence of elastic fibers in the tumors has been advanced by Joseph as evidence against the theory of a new growth.

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

From the Laboratory of the Boston City Hospital.

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2. Die Krankh. Geschwülste, 1854-5, p. 538.

3. Allbutt's "System of Medicine," 1899, viii, p. 884; also Trans. Path. Soc. Lond., 1886, p. 522.

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14. Bull. de la Soc. Anatomique, Paris, 1872, p. 477.

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17. Jour. Mal. Cut., 1892, p. 241.

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25. Mittheil. des Ver. der Aerzte in Nieder Oesterreich, 1875.

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28. Bibliotheca Med., division D, ii, No. 7, Stuttgart, 1899.

29. Arch. f. Derm. u. Syph., xli, No. 2; Arch. Ergänzungsband, 1900, p. 183 (Kaposi's Festschr.).

30. Jour. Cut. and Genitourinary Dis., Sept., 1898, p. 423.

31. Jour. Cut. Dis., 1897, p. 65.

32. "Diseases of the Skin," 1902, p. 827.

33. II. Internat. Derm. Cong., Wien., 1893; also, Lubarsch Dater-tags Ergebn., 1895, il.

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35. "Histopathology of the Skin," 1896, p. 507.



The position of the infiltrate immediately beneath the Malpighian layer of the skin without the interposition of a connective tissue layer is mentioned by Kaposi, Joseph and others.

**CASE 1.—History.**—Man, aged 40, entered Boston City Hospital, Aug. 15, 1905, in the service of Dr. Henry Jackson.

Family history and past history was good. He denies venereal infection.

**Present Illness.**—Indefinite history of a preceding eczematous condition. Three months previous to admission a small papule appeared on abdomen in left iliac region accompanied by intense itching. Similar lesions appeared in scattered distribution, growing rapidly in size and developing into tumors varying from the size of a pea to that of an orange. There was some ulceration of the larger tumors and a marked tendency to disappearance and reappearance.

**Examination.**—Physical examination revealed nothing abnormal in the internal viscera. Lymph glands were not enlarged. There was no constitutional disturbance until two weeks before death when symptoms of sepsis were manifest. Toward the end the skin lesions gradually diminished in size, the



Fig. 1.—Case 1. Postmortem photograph showing results of involution. Only one well-defined tumor mass remains (left axilla).

smaller disappearing entirely and the larger shrinking very markedly, until at the time of death only one well-defined tumor mass remained (Fig. 1).

**Blood:** A blood examination showed a slight anemia with an absolute leucocythemia of 18,750. A differential count of 1,000 cells showed a very marked relative increase of the large mononuclear leucocytes. These cells amounted to 44.3 per cent. of the total with a proportionate decrease in all other elements.

**Cultures:** Cultures from the ulcerating and non-ulcerating lesions showed the ordinary pus organisms, together with *B. coli* and *B. subtilis*. Smears from a pustule were stained in Wright's stain and examined for *Treponema*. One organism of the *refringens* type was found, but a careful search failed to reveal more of either type.

One of the growing tumors was excised under aseptic conditions, the skin surface removed and the mass teased in normal salt solution. The suspension thus obtained was injected into a full-grown ring-tail monkey, both subcutaneously and intraperitoneally and into the femoral vein. In addition, a small bit of the

tumor was tucked under the skin of the abdomen. The animal exhibited no symptoms. The mass under the skin gradually disappeared. A blood count one week after inoculation was entirely negative, as was another done at the time of the autopsy. Gross and microscopic examination of the animal's tissues were negative.

**Histology.**—Histologic examination of the tumors from the patient was made after Zenker's fluid and formalin fixation in various staining methods. No autopsy could be procured on this case.

The tumors showed that the corium had been entirely replaced by the invading cells, except for small strands of connective tissue, which were widely separated and thinned out by the infiltration. The muscle layer below showed a lesser grade of the same process. The tumor mass was most dense in the lower layers but the infiltration extended up to the thinned-out epidermis without the interposition of any connective tissue layer between the tumor cells and the basement cells of the Malpighian layer. The papillae of the corium were very much widened into broad club-shaped or oblong masses. The interpapillary projections of the epidermis were greatly elongated and thinned out in most places. In some areas they had disappeared entirely, leaving only an attenuated epidermis. In some places the papillae were solidly packed masses of the tumor cells, in some the cells were more or less widely separated and between them lay a very finely granular pale staining material and many leucocytes. The infiltration seemed no more dense around the vessels than in other areas (Fig. 2).



Fig. 2.—Section of a tumor from Case 1 showing thin epidermis and more or less closely packed infiltrating cells. Eosin and methylene blue stain.  $\times 30$ .

The coiled portions of the sweat glands were found lying at a considerable depth in the tumor mass. The tumor cells were all of the small round-cell type, but varied somewhat in size. They lay embedded in a very delicate stroma which could be very readily seen after staining with Mallory's phosphotungstic acid hematoxylin without ferric chlorid. The elastic fibrils demonstrated by Weigert's elastic tissue stain and by the anilin blue connective tissue stain were almost entirely lacking in the tumor masses, being represented only by short straight fragments. At the edges of the tumor a gradual disappearance of elastic fibrils could be demonstrated, passing from the wavy fibrils in the adjacent normal skin to straightened thin lines, less in number and more scattered in distribution as the tumor proper was approached (Fig. 3).

At the base of the interpapillary projections of the epidermis, some of which were more or less broadened out by the here the tumor cells could be seen pushing in between the process, active infiltration with tumor cells was taking place. columnar epithelium of the lower row of cells of the Malpighian layer and also between the prickle cells.



In the areas of most active infiltration another mode of invasion was noteworthy. This consisted of a penetration of the neoplastic cell into the body of the epithelial cell. The actual mode of entrance was not observed, but lying within a vacuole completely surrounded by protoplasm bearing the typical radiating lines or prickles and crowding the prickly cell nucleus into a crescentic mass at one end, were one or more cells of the type comprising the tumor. These cells had been observed, with their nuclei, in the resting stage and in mitosis, and one, two, three and four cells had been seen in such a space. In one prickly cell three invaders were seen, two of which showed definite karyokinetic figures. All stages of dissolution of the containing epithelial cell were noticed from instances in which the vacuole was small and the prickly cell nucleus only slightly pushed to one side to those in which the nucleus was represented by only a faint crescentic line and the protoplasm was faint-staining and somewhat broken up. These invasions, while readily seen by any of the ordinary staining methods, were best brought out by rather light staining in phosphotungstic acid hematoxylin, followed by thorough washing with ferric chlorid. This method differentiates strikingly the nucleus of the invading cell from that of the host (Figs. 4 and 5). The neoplastic cells, though varying considerably in size, were apparently all of one type. Their protoplasm was small in amount and faintly basophilic in staining reaction. The nuclei

ones broke down and ulcerated. Prolonged treatment with iron and arsenic apparently caused a considerable improvement but the condition again became exaggerated and at the time of admission nearly the whole body was covered with small tumor masses and indurated nodules.

*Examination.*—Physical examination revealed no abnormalities, except in the skin. The patient failed rapidly and died Jan. 29, 1906. During the last few weeks the tumor masses almost entirely disappeared, leaving only a general nodular induration.

*Blood:* Blood examination showed a slight anemia and a slight leucocythemia. Differential count showed 9.2 per cent. of eosinophiles. A few normoblasts were seen. Otherwise negative. Blood culture, about two weeks antemortem, was entirely negative.

*Autopsy.*—At autopsy, except for the skin, nothing noteworthy was found on gross examination. Microscopic examination of the autopsy material was practically negative. Bone marrow showed many eosinophiles, both mononucleated and multinucleated. Neutrophilic myelocytes were numerous. Erythroblasts were much increased in number and occurred in clumps of dozens. Giant cells were numerous and in all stages of development. There were many small clumps of undifferentiated cells (probably premyelocytes and not tumor cells).



Fig. 3.—Elastic fibers, wavy and close packed at the right near the normal skin, disappearing toward left as tumor is reached. Weigert's stain.  $\times 30$ .

of the smaller cells were fairly deeply staining, while those of the larger were pale and round, often showing a definite nucleolus and various arrangements of chromatin masses.

Many mitoses in all stages were observable. The cells were very evidently of the lymphocyte series.

No plasma cells were found in the tumor, though they were not infrequent near its edges in the surrounding tissue, either uninvolved or just undergoing involvement. No giant cells were seen. There were occasional phagocytic endothelial cells with vacuoles and with vacuoles containing tumor cells.

*CASE 2.—History.*—Man, aged 59, was referred by Dr. H. F. Copeland, Whitman, Mass., and admitted to Boston City Hospital, Jan. 16, 1906, in service of Dr. F. H. Williams.

Family history and past history negative. Always in excellent health.

*Present Illness.*—Two years previous to his admission, patient was troubled with a rash which was diagnosed as a nettle rash. This only partly disappeared. At the end of a year the entire skin of the body presented a severe eczematous condition. After a few months nodules developed, varying from very minute size to that of an orange. Many of the larger



Fig. 4.—Tumor cell lying within epithelial cell of prickly layer. Phosphotungstic acid hematoxylin stain.  $\times 1000$ .

*Skin:* Strips were taken from abdomen and left and right arms and legs. Left leg had not been exposed to the x-rays.

*Histology:* Infiltration was chiefly localized along the course of the larger vessels, principally the veins and along the hair follicles and deep glands, and consisted largely of cells of irregular shape with faintly staining neutrophilic protoplasm and large oval pale vesicular nuclei, apparently endothelial cells. Among these cells were numerous eosinophiles and small round cells of the lymphocyte series, many of which were in mitosis. These cells had a small amount of slightly basophilic protoplasm and a compact deeply staining nucleus. Throughout the infiltrated areas were many endothelial cells showing a tendency to multinucleation and some well-defined giant cells. These bore no demonstrable relation to the elastic fibrils. The corium in all areas showed considerable thickening. Epidermis was normal, even where it came in contact with the infiltrated areas beneath.

Scharlach R. stain showed, in addition to the fat cells in the lower layers, a moderate amount of fat in very small droplets, confined almost entirely to the connective tissue cells in the corium in and near the areas of infiltration. Weigert's stain showed no fibrils in the the infiltrate, in other areas they



appeared normal in amount and arrangement. Other special staining methods brought out nothing of importance. No difference could be made out in the character nor extent of the process between the parts exposed to the *x*-rays and those unexposed.

The material examined from Case 1 was from the growing tumors of the third or mycotic stage and the type of infiltrating cell is entirely compatible with those composing a small round cell sarcoma. They lie, however, in close apposition to the lower layers of the epithelium with no intervening connective tissue, while a comparative study of a number of undoubted sarcomata of various types, including lymphomata, show these growths to have their origin deeper in the corium and to push up as they grow a thin band of connective tissue which remains as an enveloping sheath between the tumor cells and the epithelium until actual necrosis and ulceration take place. In one type, however, namely, the melanotic sarcoma, the neoplastic cells lie in the same relation to the epithelium as that noted in mycosis but here the cell is entirely different.

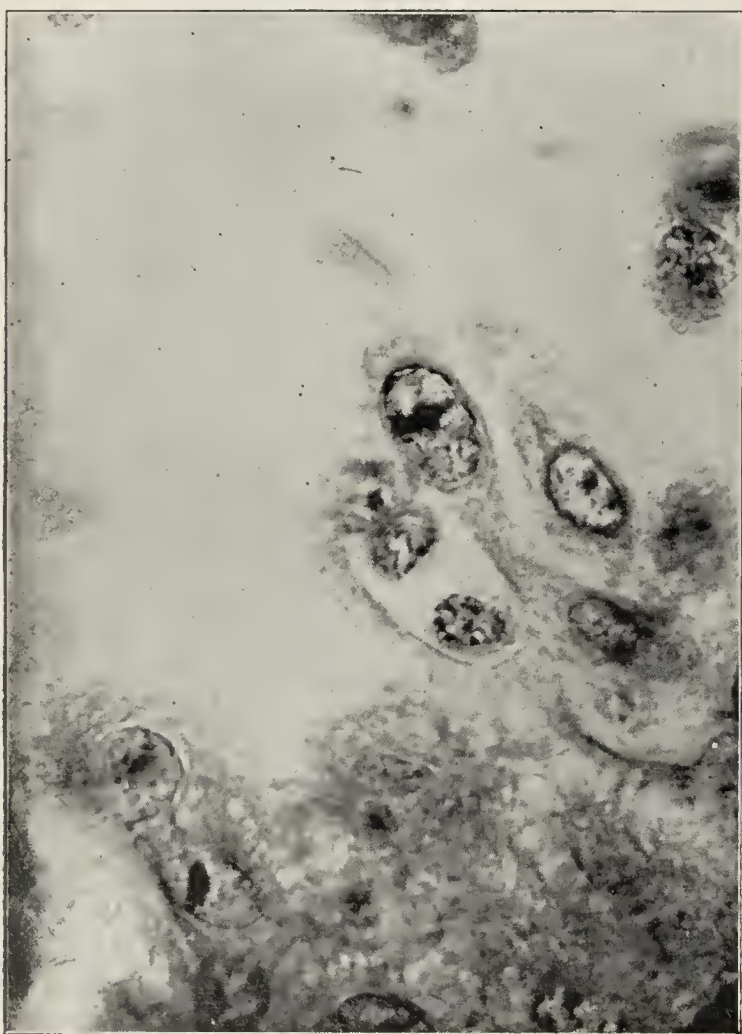


Fig. 5.—Two tumor cells within an epithelial cell. Phosphotungstic acid hematoxylin stain.  $\times 1000$ .

This localization of the infiltrate immediately beneath the Malpighian layer of epithelium may be likened to a similar deposit in the cutaneous lesions of the infectious granuloma. In both syphilis and tuberculosis and to some extent in glanders and leprosy (infectious granulomata) the round cell collections show an identical distribution, but in all of these the progress of the condition is marked by degenerations of adjacent normal tissue elements and often of considerable necrosis, both of which are notably absent in the growths of mycosis except in instances in which the involved structures have become attenuated to such a degree that necrosis can readily be accounted for by pressure or the cutting off of nutrition.

In this case there was an absolute leucocythemia of 18,750, of which 44.3 per cent., or nearly all of the actual increase over the normal count, was made up of

large mononuclear cells. These cells were of about the size and general appearance of the tumor cells. No mitoses were demonstrable in them, however, while in the fixed tumor cells karyokinetic figures were numerous.

In Case 2, as will be noted from the foregoing description, the skin examined was from the irregular indurations remaining after the entire disappearance of the tumor masses. Here was found an infiltration following the vessels and glands and consisting of accumulations of various types of cells which, as a whole, gave a picture of a simple chronic inflammatory change (Fig. 6). The autopsy findings were entirely negative.

From the findings of these two cases no definite conclusions as to etiology or nature of the disease can be drawn. For the reasons mentioned, together with the negative results of cultures and animal inoculations, however, it seems justifiable to conclude that the disease can not be classed with the infectious granulomata.

The conception which classes the leukemias with the malignant lymphomata, i. e., a tumor of the lymphocyte-forming organs whose cells are free in the blood instead of remaining fixed at their point of origin, seems to be gaining acceptance. This theory, combined with the well-recognized progression and regression of this disease, suggests the possibility of a leukemic process with



Fig. 6.—Section of indurated nodule from skin of Case 2 showing slight infiltration along line of glands. Eosin and methylene blue stain.  $\times 30$ .

its metastasis solely in the skin having as an analogy the selective metastasis often seen in carcinoma of the breast, in which the neoplastic tissue will be found almost replacing the liver, with no involvement of the other viscera and with no definite anatomic channel of transmission other than the blood stream.

A long series of cases, including exhaustive studies of the blood and blood-forming organs at various stages of the process, would be necessary to give weight to this suggestion, but the finding of some cases associated with leukemia and of metastases in others might be offered as partial evidence. The intimate correlation of the various types of leukemias through the border line or combined cases speaks for an etiologic factor which is not dissimilar and which might, though like midway cases, bear on the problem of mycosis fungoides.



## ENDOTHELIOMA OF THE SKIN.\*

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New growths composed of endothelial cells, and arising from the intima of the blood vessels and lymphatics, are well recognized pathologic entities. They are not infrequent in the internal organs, especially in the parotid and salivary glands, and in connection with the serous membranes. It is only of recent years, however, that they have been differentiated from other and

comparatively few. They have varied so much in appearance that it must be confessed at the outset we do not appear as yet to have any reliable clinical criteria for their recognition. Thus in Spieker's<sup>2</sup> three classical cases, which have been the basis of most of the subsequent studies of the disease, the scalps were covered with a considerable number of closely aggregated pea to orange sized hard tumors. In Braun's<sup>3</sup> case there was a single, quarter dollar sized ulceration with hard, carcinoma like edges. Allen's<sup>4</sup> case had a single cartilaginous tumor of the scalp; while in that of Hartzell<sup>5</sup> there was a softer mass of a yellowish-red color. Von Waldheim<sup>6</sup> had a case in which there were multiple, flat,

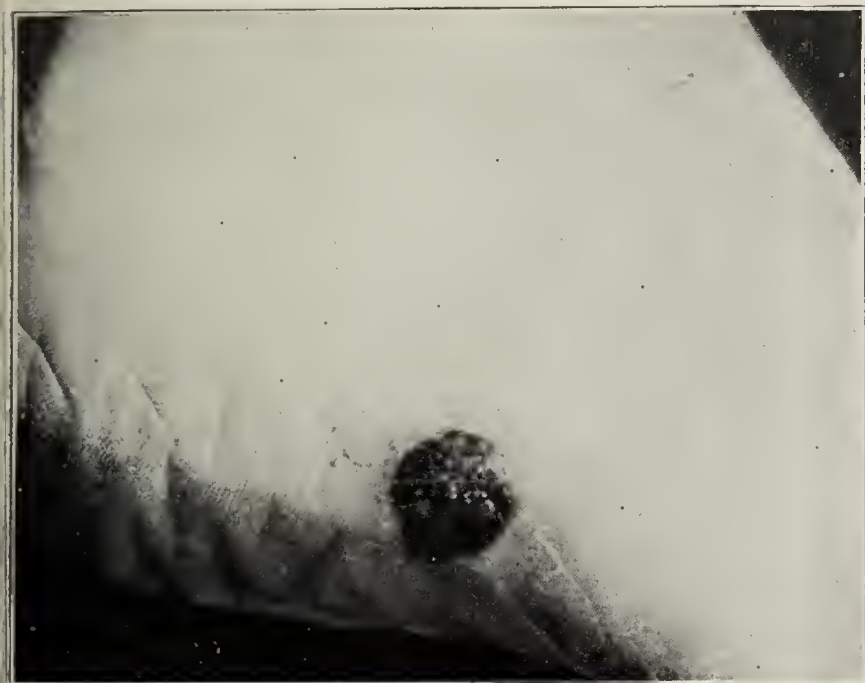


Fig. 1.—Endothelioma cutis.

commoner neoplasms; for in appearance the endothelial cells that make up their mass vary from a large nucleated somewhat rectangular cell very like the epithelial elements of carcinoma, to a smaller, rounded cell resembling those characteristic of sarcoma. Borst<sup>1</sup> voices the opinion, now general with pathologists, that to the class of endotheliomata undoubtedly belong many of the cases of atypical or mixed new growths which have been recorded under such names as endothelial carcinoma, endothelial sarcoma, angiosarcoma, cylindroma, fibroplastic tumor, lymphangioma, lymphatic canceroid, etc. Their differentiation from carcinomatous and sarcomatous new growths is important both from a prog-

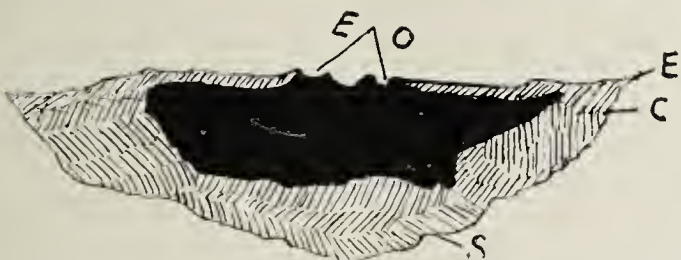


Fig. 2.—Endothelioma cutis. Sketch of the macroscopic appearance of the bisected tumor, double life size. EO, epidermic orifices; E, epidermis; C, corium; S, subcutis.

nostic and a therapeutic point of view. For the endotheliomata are essentially benign tumors, growing very slowly, having no tendency to metastasis or lymphatic gland involvement, and are not prone to relapse after removal.

Recorded cases of endothelioma of the skin are as yet

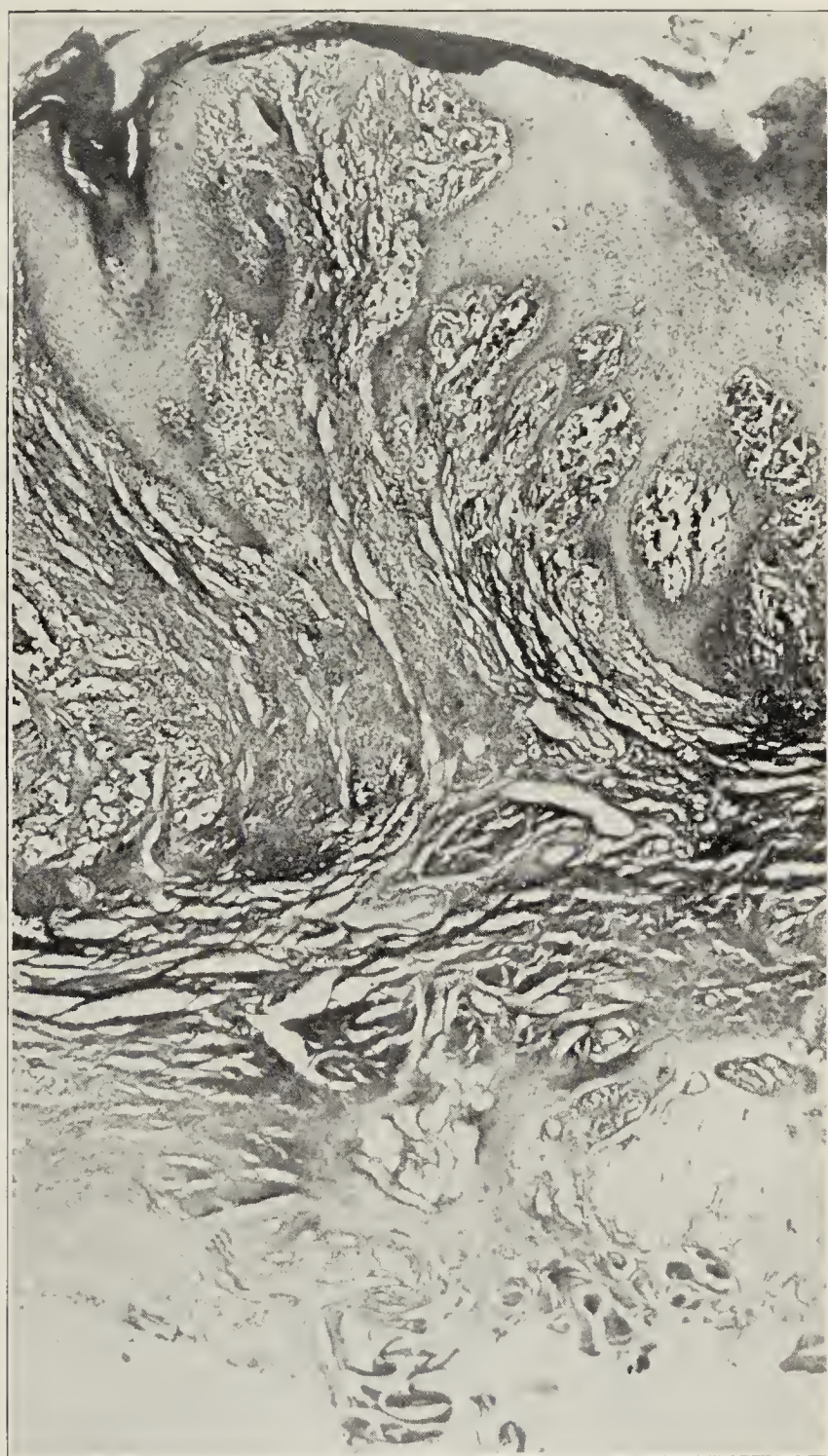


Fig. 3.—Endothelioma cutis (x33). Upward proliferation of dilated lymphatics from the interlobular plexus. In many of the spaces the cells have fallen out.

smooth tumors with an unaltered integument. In a number of other cases fatty, calcareous, and other regenerative changes seem to have occurred. Thus Kromayer<sup>7</sup> records one consisting of numerous minute yel-

\* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Die Lehre von dem Geschwülsten," vol. i, p. 295.

2. Monats. f. prakt. Derm., 1900, xxx, p. 76.

3. Langenbeck's Arch., xliii, 1; also Monats. f. prakt. Derm., 1893, xvii, p. 585.

4. Monats. f. prakt. Derm., 1900, xxxi, p. 47.

5. Brit. Jour. Derm., October, 1904.

6. Arch. f. Derm. u. Syphil., 1902, lx, p. 215.

7. Virchow's Arch., 1895, cxxxix.



low tumors, and Perthes' one that had undergone calcification.

It is very evident, therefore, that, in the present state of our knowledge of the subject, the diagnosis of cutaneous endothelioma can only be made positive with the aid of the microscope. A study of the recorded cases leads me to the following insufficient conclusions: Most cases of cutaneous endothelioma have occurred on the scalp; they have appeared most often as single or multiple, flat or pedunculated tumors; they are not prone to

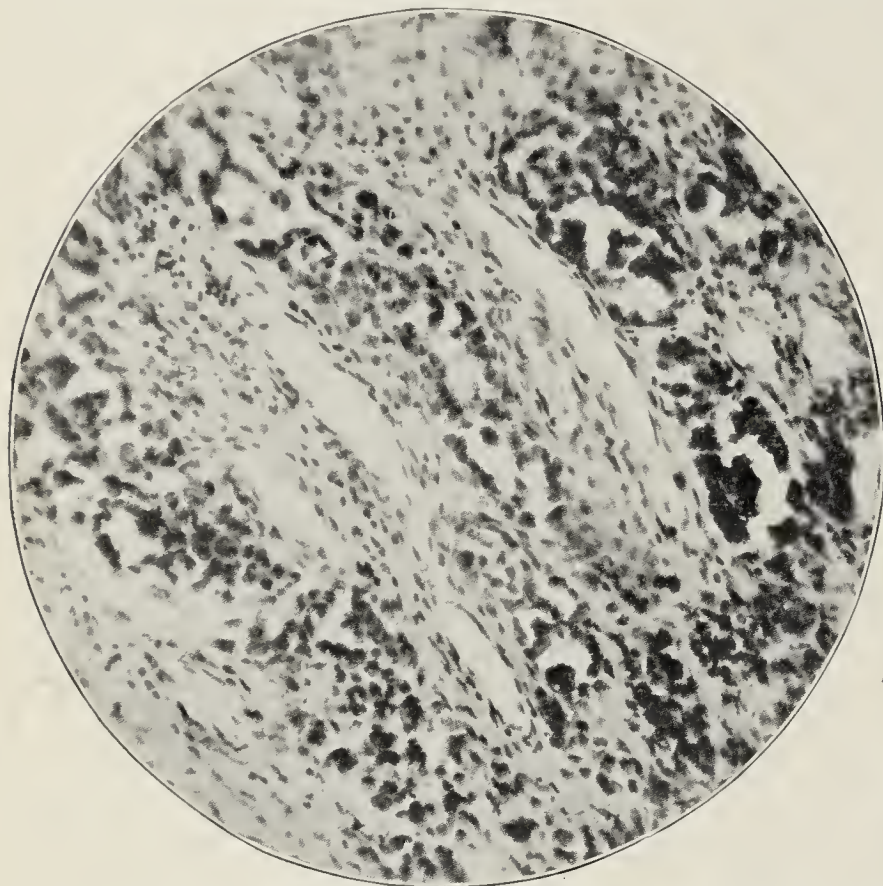


Fig. 4.—Endothelioma cutis ( $\times 200$ ). Dilated lymphatics stuffed with endothelial cells. In some these latter have fallen out during preparation.

break down, but are very liable to undergo degeneration, more especially of the fatty variety, and so to show a more or less marked yellow color; they grow very slowly and show no evidences of malignancy.

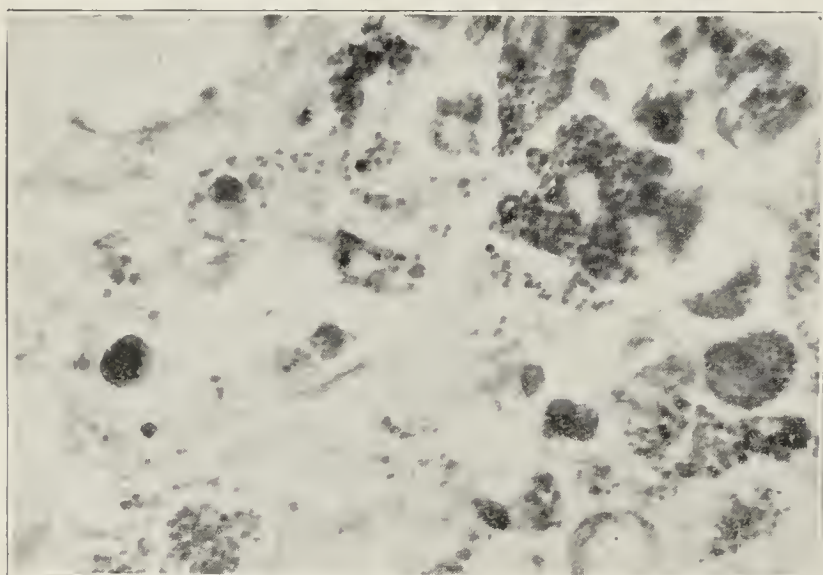


Fig. 5.—Endothelioma cutis ( $\times 800$ ). Pigment accumulation in the endothelial cells. From the margin of the tumor.

#### CASE REPORT.

I record the following case as a contribution to the study of the disease because it was diagnosed as sarcoma before extirpation, and because it shows the as yet unrecorded pigmentary degeneration in a case of the kind.

*History.*—Patient, an otherwise healthy married woman,

aged 27, was sent to me by Dr. Schulhofer, Oct. 16, 1905. Two years before, she first noticed a black spot as large as a French pea on the outer border of her right foot. It was slightly elevated and did not discharge or trouble her in any way. She paid no attention to it. During last summer she noticed that there would be blood on her stocking after walking, and that the tumor had grown considerably larger. Since then she has had some trouble from it. It would heal for a few days and then break open again and discharge a seropurulent fluid mixed with blood. It was undoubtedly increasing more rapidly in size.

*Examination.*—Just posterior to the middle of the outer border of the right foot there was an irregularly circular coal black lesion. The blackness was absolute and had no tinge of brown or blue, as if a piece of ebony had been imbedded in the skin (Fig. 1); and the infiltration was limited sharply as if with a fine pen, the surrounding skin showing no macroscopic evidences of any inflammatory reaction. The mass was  $\frac{3}{4}$  in. in its longest diameter by  $\frac{1}{2}$  in. in its shorter diameter. It was irregularly circular, with projections and

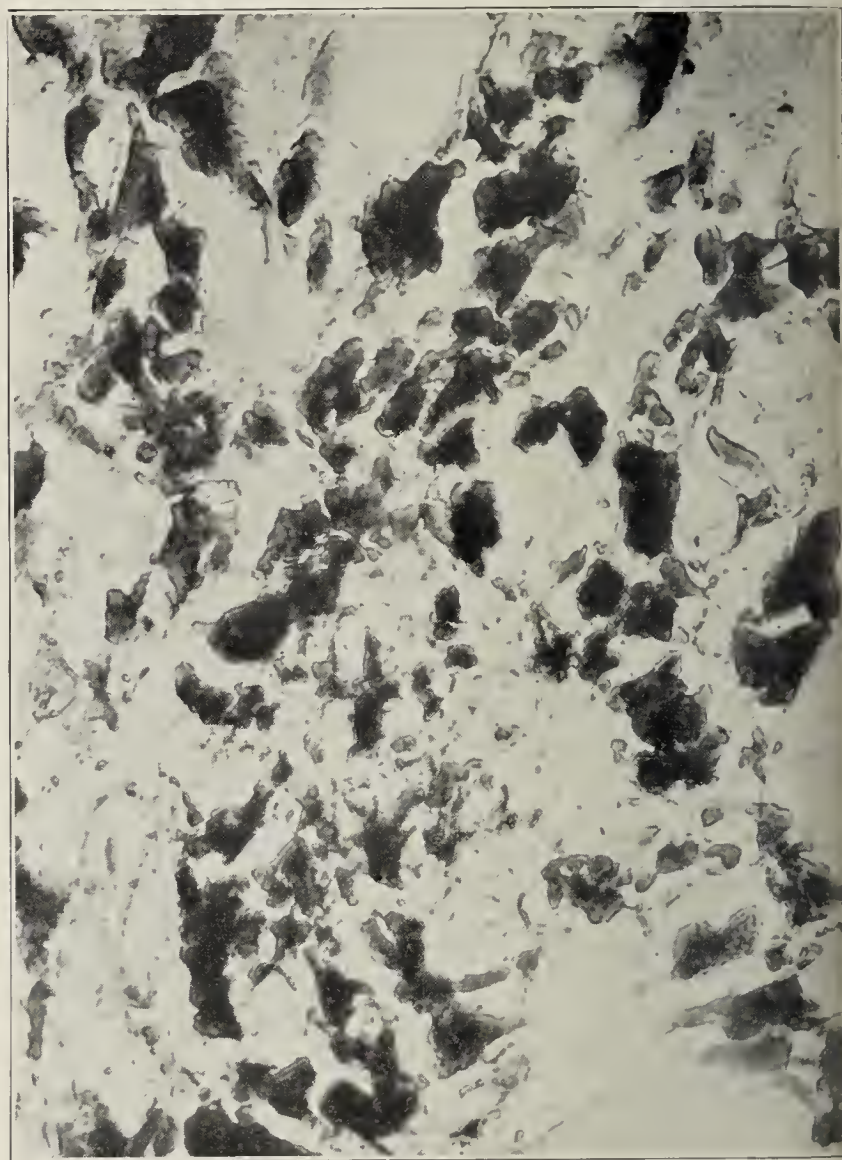


Fig. 6.—Endothelioma cutis. An unstained section from the center of the tumor, showing the endothelial cells completely filled with pigment.

was very slightly elevated. Its surface was smooth and covered with an apparently unchanged epidermis, save in its center, where there was a small pea-sized excoriation with two or three minute orifices in it from which a very little bloody serum exuded. There was neither pain nor discomfort from the growth, save that occasioned by the stocking sticking to the dried exudation. With the finest wire probe I could not penetrate over a line into any of the openings. In consistency the mass was a little harder than the skin and subcutis in the location affected (Fig. 1).

*Diagnosis.*—My first diagnosis of melanotic sarcoma was made with considerable hesitation; for the growth of the tumor had been very slow indeed, its blackness was intense beyond anything that I had seen in a condition of the kind, its absolutely linear demarcation from the surrounding tissues was unusual, and there was no history at all of the exist-



ence of a mole or wart at the spot previous to its appearance. At the Manhattan Dermatological Society, where the patient was shown in November, the diagnosis was generally concurred in. No treatment was advised and the patient was kept under observation.

*Operation.*—By the end of November it was very evident to me that the tumor was increasing in size, and there had been a smart hemorrhage from it after a bruise; so I excised it December 3 under local beta-eucain anesthesia. It was necessary to cut deeply into the subcutaneous tissue of the sole to get it all out, but even during the excision the coal-black tumor mass was absolutely distinct and circumscribed in the tissues. On bisecting the excised mass it was apparent that the tumor originated in the cutis and extended downward into the subcutis; the epidermis could be seen macroscopically as a fine uncolored line extending over the surface of the infiltration, except at the two places where the surface openings were present (Fig. 2). From its location it was, of course, impossible to close the wound; it was dressed and allowed to heal by granulation. In three weeks it had cicatrized completely. In March, 1906, the scar was entirely normal; at present, May, 1906, Dr. Schulhofer informs me that lately there has been a reappearance of the tumor *in situ*. As the tumor was growing rapidly a wide excision was done again this fall.

*Microscopic Examination.*—Portions of the excised tissue were hardened in alcohol and in Fleming, cut serially in paraffin and stained with Van Gieson, polychrome methyl blue and alum carmin for general view, resorcin-fuchsin for the elastin, depigmented and stained variously, etc. The new growth was found to be in the corium, extending into the subcutis and involving the epidermis only secondarily. It was composed entirely of proliferated, dilated lymphatic vessels stuffed with cells.

The new lymphatic growth can be distinctly seen stretching upward from the transverse subcutaneous lymphatic plexus in clubbed and branching masses, many of which penetrated the epidermis up to the corneous layer and perforates even that at the surface openings in the tumor mentioned above. There was a marked acanthosis of the prickle cell layer at the margins of the tumor (Fig. 3).

The stratum corneum of the epidermis was very thin where it was present, consisting of only four or five layers of cells, though the tissue comes from the sole of the foot. In some places only the stratum disjunctum was left; and where there was persistence of the nuclei and pigmentation of the corneous cells. Over the most prominent portions of the tumor and especially in the neighborhood of the external orifices, the epidermis was entirely wanting. The granular and prickle cell layers, on the other hand, were greatly hypertrophied in places, consisting of 15 to 20 rows of cells and projecting down in clubbed masses between the lymphatic overgrowth. The cells of the granular layer show marked karyokinesis, doubled nuclei, etc., and many of them were vacuolated. Keratohyalin was abundant; but the stratum acidum is not demonstrable.

The papillary layer was entirely absent where the tumor is well developed. At the margins of the growth where the acanthosis was marked, there was a small amount of perivascular small-celled inflammatory infiltration. This was also present in small amount at the base of the tumor. The collagenous tissue between the lymphatic masses was normal, the elastin, however, was diminished. The new growth itself was composed entirely of hypertrophic and dilated lymphatic vessels stuffed with cells (Fig. 4). In many places these cells had fallen out; in others the masses were intact. The cells were polygonal or rounded large nucleated structures. In some places their cytoplasm and nuclei were distinctly visible, though they variably contained pigment granules. But most of them were filled with pigment masses, aggregated into rounded clumps (Fig. 5). Very many of them were apparently composed of masses of round pigment clumps alone, both cell cytoplasm and nucleus being entirely obscured. Careful examination, however, revealed the presence even in these of the well preserved cell membrane, showing that the process was an infiltration and not a true cell degeneration

(Fig. 6). Sections bleached with chlorin, potassium permanganate, and oxalic acid revealed the intact though shriveled endothelial cells. The ammonium sulphid method showed the pigment to be true melanin and not of hematogenous origin.

The new growth with which we are dealing, therefore, belongs to the class formerly called lymphangioma; and since it was composed of an overproliferation of the endothelial cells of the lymphatics, we now classify it as a lymphatic endothelioma, or lymphangioendothelioma. It was peculiar in the excessive amount of melanotic pigment in the endothelial cells, causing its clinical resemblance to melanotic sarcoma. The essential difference in the prognosis of the two conditions renders their clinical differentiation important.

#### DISCUSSION.

DR. L. DUNCAN BULKLEY, New York City, said that these cases of endothelioma of the skin are very rare. An interesting example of the affection recently came under his observation. In this case the lesion, as in Dr. Gottheil's case, was on the foot. The patient was a man of 50 years or over, who was being treated in the surgical out-door department of the New York Skin and Cancer Hospital. There was no pigmentation, and when Dr. Bulkley first saw it, he examined it in a casual way, and was inclined to look on it as an epithelioma. It was excised, and a pathologic examination of it made at the Cornell Laboratory proved it to be an endothelioma. It recurred a number of times after excision, but finally disappeared entirely under the use of the x-rays.

DR. M. L. HEIDINGSFELD, Cincinnati, said that from his study of the disease he can not help coming to the conviction that the division of these various forms of malignant epitheliomata and sarcomata of the skin is a little bit too arbitrary. Various layers of the skin are at times involved by these growths; sometimes the hair follicles, sometimes the sweat glands, and the preponderance of the involvement of one of these elements over another seems to be enough ground to constitute a type. He said that cases have come under his observation which were pathologically very similar to the one reported by Dr. Gottheil, and chemically were merely ordinary types of epithelioma, the malignant changes being confined chiefly to the sweat glands. In a case of epithelioma of the forehead, which was typical in its clinical appearance, a section of the lesion was removed and had the microscopic appearance of an epithelioma; another section taken near by possessed all the histologic characteristics of a sarcoma. In malignancy there is a hypertrophy of all the involved tissues, irrespective of their nature and character, called forth by the still undefined and unknown stimulus, and the question naturally arises as to whether or not it is always justifiable to make an arbitrary division of these various types.

DR. EDMUND L. COCKS, New York City, recalled a case which was presented at two of the dermatologic societies in New York as an example of molluscum fibrosum. One of the lesions was excised and examined by Dr. Gottheil, and a microphotograph of the lesion which was subsequently presented showed the endothelial cells running from within outward.

DR. M. L. HEIDINGSFELD, Cincinnati, said that his remarks were not meant as a reflection on the excellent character and high class of the work done by Dr. Gottheil, but were simply intended to express his belief that the more he studies the pathology of malignant conditions the more of an agnostic he becomes in that particular direction.

DR. W. S. GOTTHEIL, New York City, said that he does not agree with Dr. Heidingsfeld in regard to the microscopic findings in these cases. The difficulty is in the fact that if a man studies one portion of a growth with the high-power objective he comes to one conclusion, while a study of another portion leads him to a different conclusion. Dr. Gottheil prefers the half-inch objective to the immersion lens; a general view of the chief pathologic changes being more important for diagnosis than a minute study of one corner of it. If the endothelial proliferation involves the lymphatic spaces, he thinks the diagnosis of endothelioma is justified.



RESULTS FROM THE SURGICAL TREATMENT  
OF BRACHIAL BIRTH PALSY.\*

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WITH A NOTE ON THE PATHOLOGY BY DR. T. P. PROUT.

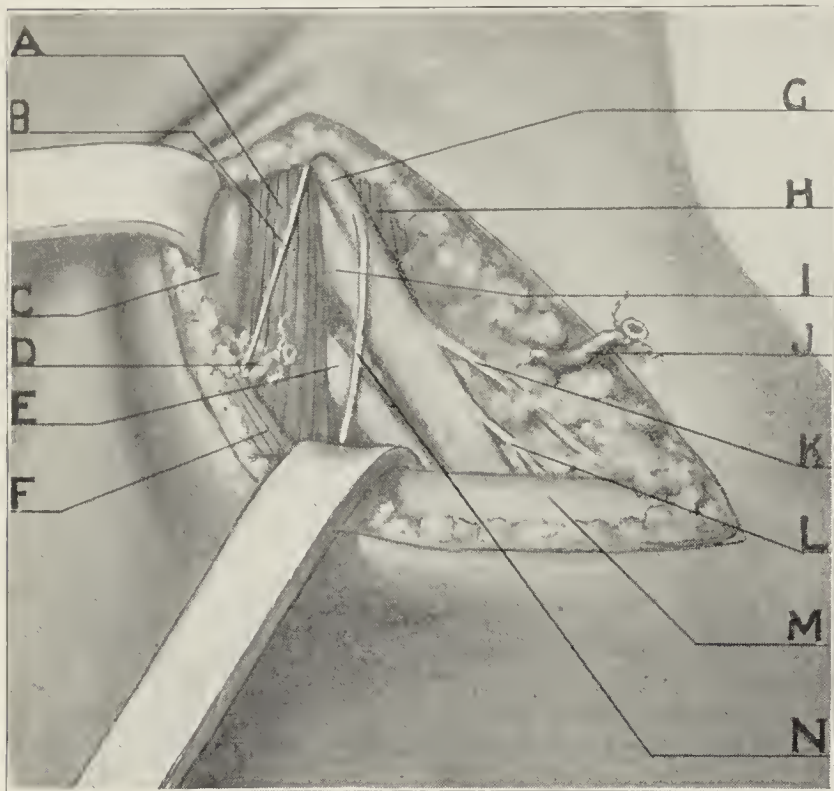


Fig. 10.—Operation for relief of brachial paralysis. A, scalenus anticus muscle. B, phrenic nerve. C, internal jugular vein. D, transversalis colli artery. E, seventh root. F, omohyoid muscle. G, fifth root. H, scalenus medius muscle. I, sixth root. J, transversalis colli artery. K, suprascapular nerve. L, external anterior thoracic nerve. M, clavicle. N, nerve to subclavius muscle.

## ETIOLOGY.

The surgical treatment of brachial birth palsy rests on the pathologic lesion, and this, in turn, for its type and distribution, depends on the etiologic factor at work.

In a publication on this subject<sup>1</sup> it was shown as a result of twenty dissections and many experiments on infantile cadavers, that tension (overstretching) of the nerve roots of the brachial plexus was the essential causative factor of this lesion. Observations of the lesions in the series of nine operative cases led to the same conclusion. The roots give way from above downward.

This overstretching is caused only by pulling the head and shoulder away from each other, i. e., pulling on the shoulders to deliver the after-coming head in breech cases or pulling on the head when the shoulders are obstructed in vertex cases.

After this study had been sent to the publisher, an actual case occurred under my fingers which corresponded exactly with the

\*Read in the section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906. As read at the Boston session, this paper also took up the subject of facial palsy, practically embodying the article by Dr. Taylor published in THE JOURNAL A. M. A., March 24, 1906, but including two additional cases. Dr. L. P. Clark, New York, was unavoidably absent from the section meeting and did not present the portion of the subject allotted to him.

1. Clark, Taylor, Prout: Amer. Jour. Med. Sci., October, 1905.

experimental work. Labor had been induced at a little over seven months for a badly deformed pelvis in the mother. Labor coming on while the attending obstetrician was unavoidably out of town, the delivery came to me as an emergency case.

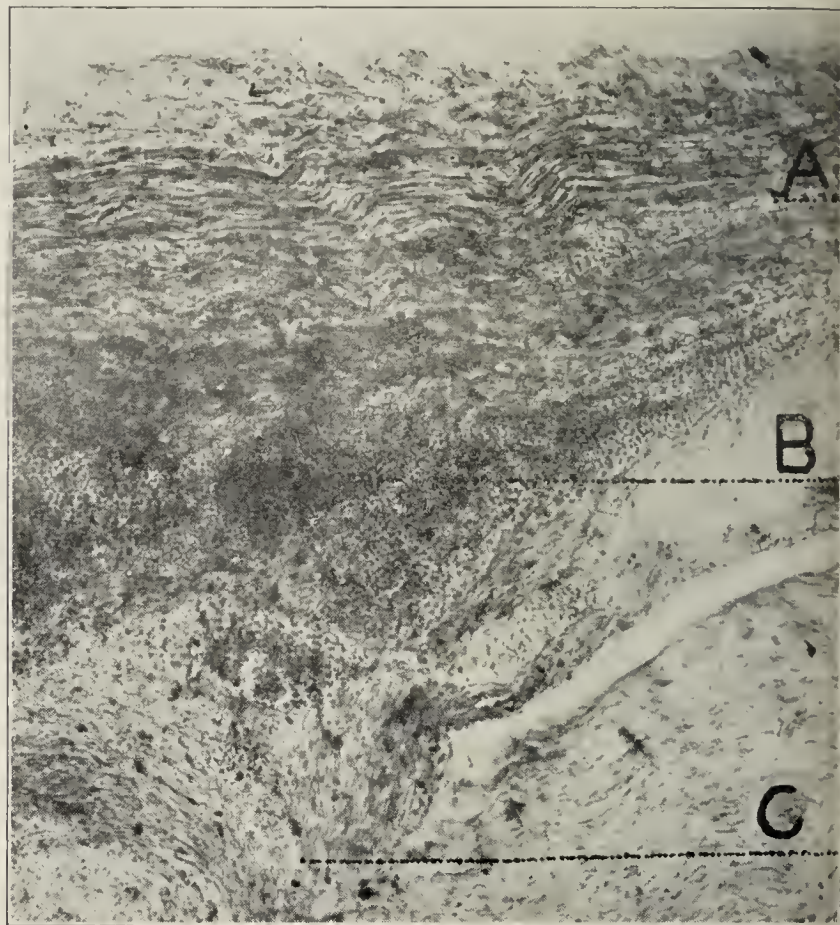


Fig. 18.—A, perineurial sheath at point of rupture and from which hemorrhage originated. B, hemorrhage, beneath the perineurial sheath which crowds aside the ruptured nerve fibers. C, Ruptured nerve fibers, turned inward.

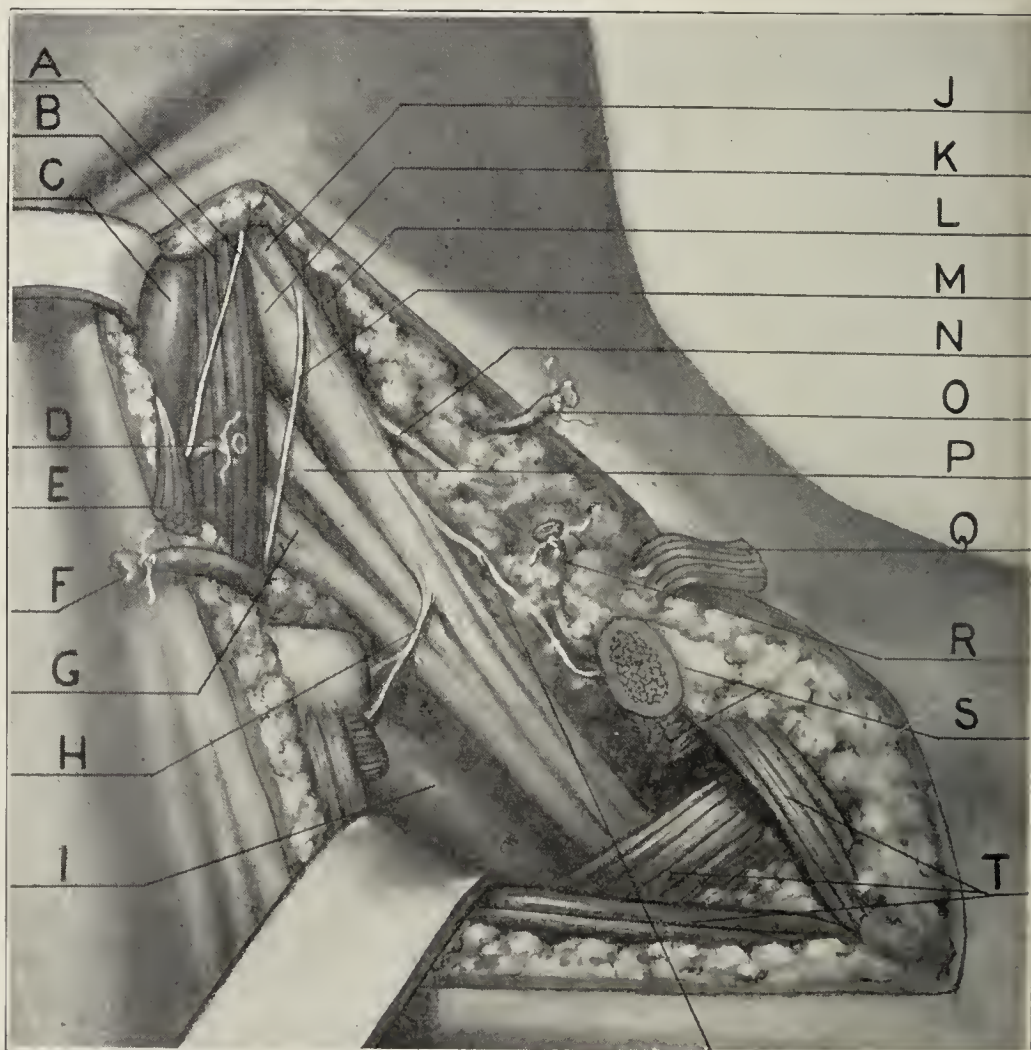


Fig. 11.—Operation for relief of brachial paralysis. A, phrenic nerve. B, scalenus anticus muscle. C, internal jugular vein. D, transversalis colli artery. E, omohyoid muscle. F, suprascapular artery. G, eighth cervical and first dorsal roots. H, muscular branch. I, subclavian vein. J, fifth root. K, sixth root. L, scalenus medius muscle. M, nerve to subclavian muscle. N, suprascapular nerve. O, transversalis colli artery; omohyoid muscle. R, suprascapular artery. S, clavicle and subclavius muscle. T, pectoralis major, pectoralis minor and deltoid muscles. U, anterior thoracic nerve.



Podalic version was necessary. The delivery proceeded satisfactorily until the after-coming head wedged at the brim of the pelvis. The danger of producing a lesion of the nerve roots was mentioned. The traction was put as much as possible on the lower extremities, and delivery was proceeded with as slowly as seemed consistent with getting a living child.

In spite of every precaution, the upper roots of the right plexus were felt to give way under the fingers (the right shoulder being posterior and the right plexus, therefore, being put on the stretch). A few minutes later the head came through and a living child was delivered.

The left arm was moved freely, but the right lay perfectly still, was evidently paralyzed, and assumed the position of inward rotation, characteristic of this palsy.

Two hours after birth the child abruptly developed convulsions and died. The cadaver was injected with and immersed in 10 per cent. formalin. After four days the tissues were excised from the triangular area overlying the right brachial plexus. The fifth root and its junction with the sixth presented the appearance of overstretching and thinning which was observed in the experimental work above mentioned. The plexus was excised *in toto* and preserved for microscopic study. The report on this by Dr. T. P. Prout forms an addendum to this article. On opening the skull the cause of the convulsions and death was found in extensive hemorrhage over both hemispheres.

As a result of this overstretching in these cases there is a rupture of the nerve sheaths, their vessels and the fibers themselves. The torn sheaths and blood clots cicatrize, compress the nerve fibers and prevent the transmission of impulses.

The cicatricial tissue is not necessarily all in one mass, but may consist of several foci scattered through the area of damaged nerve roots. This fact has a very important relation to the operative technic inasmuch as all the cicatrices must be removed to obtain the best results.

Another factor greatly influencing the results in these cases consists in the contractures of the paralyzed muscles and the ligaments of the joints which occur after from six to twelve months unless combated by systematic treatment, and which cause the characteristic deformity of this lesion (Figs. 1 to 8).

The bones of the extremity do not reach their proper development. In the older patients (3 to 12 years) full extension at the elbow is prevented not only by muscular and ligamentous contracture, but also by bony contact between the olecranon process and the lower posterior surface of the humerus which has not a properly developed olecranon fossa.

#### TECHNIC.

The patient is anesthetized and brought to the table with the field prepared for operation. A firm cushion is placed beneath the shoulders, the neck is moderately extended and the face turned to the sound side. The incision passes from the posterior border of the sternomastoid muscle, at the junction of its middle and lower thirds, downward and outward to the clavicle at the junction of its middle and outer thirds. After the skin, platysma and deep fascia are divided, the omohyoid muscle is exposed near the clavicle, and lying beneath it are the suprascapular vessels. These structures may be retracted downward, or, if the case requires the extra room, the omohyoid may be divided, and then the

vessels cut between double ligatures. The transversalis colli vessels are seen a little below the middle of the wound and are divided between double ligatures.

The dissection is rapidly carried through the fat layer to the deep cervical fascia covering the brachial plexus. In all the cases this fascia was thickened and adherent to the damaged nerve roots. This fascia is divided in the line of the original incision and is dissected away for the free exposure of the nerves (Fig. 10). The damaged nerves are usually noticeably thickened and of greater density than normal nerves. The extent and distribution of the paralysis, determined before operation, gives the clue as to which nerves are at fault. Usually the junction of the fifth and sixth roots is the site of maximum damage. The thickened indurated areas are determined by palpation and are excised by means of a sharp scalpel. Scissors should never be used for this work.

The nerve ends are brought into apposition by lateral sutures of fine silk involving the nerve sheaths only, while the neck and shoulder are approximated to prevent tension on the sutures. Cargile membrane is wrapped about the anastomosis to prevent connective tissue ingrowth. The omohyoid muscle, if divided, is sutured. The wound is closed with silk. A firm sterile dressing is applied, and a bandage is applied to approximate head and shoulder so as to prevent tension on the nerve sutures. This position must be maintained for at least three weeks. The most feasible method of accomplishing this result was found to be a plaster-of-Paris dressing placed on the child and allowed to harden in the proper position before operation. It was then trimmed and removed. When the nerve suturing was finished the splint was slipped on, the wound was then closed, the dressings applied, and the child put to bed without danger of pulling the nerve ends apart, even when the patient was struggling and vomiting in the recovery from anesthesia.

It will be noticed (Fig. 10) that (a) the tissues to be excised lie in close proximity to the phrenic nerve and internal jugular vein, and to the junction of the cervical sympathetic communications with the spinal nerve roots. (b) The suprascapular nerve comes off from the junction of the fifth and sixth cervical nerve roots, which, as already stated, is usually the site of maximum damage. This nerve is very small in children, but it should be sutured with the greatest care, since it innervates the external rotators of the humerus, the paralysis of which permits the posterior dislocation of the shoulder often seen in the older cases.

In cases in which the lesion is more extensive, especially when it lies beneath the clavicle, a wider exposure is necessary (Fig. 11). It is obtained by continuing the skin incision downward between the pectoralis major and deltoid muscles, which are then separated, dividing the clavicle in the same line, as well as the subclavius and omohyoid muscles and suprascapular vessels.

When the outer fragment of the clavicle and the shoulder are pulled outward the entire plexus is exposed down to the upper margin of the pectoralis minor muscle, which may also be divided if necessary. When the nerve suture is completed the divided muscles are repaired, the clavicle is sutured with chromic gut, and the skin closed with silk. In certain cases of extensive damage, in which so much nerve must be excised that the ends can not be brought together, a nerve-bridge of chromic catgut loops passed through the nerve ends and



surrounded by Cargile membrane may be used (see Case 9).

In other cases in which the cicatricial tissue reaches practically to the intervertebral foramen and its complete excision would not leave sufficient nerve stump to pass sutures through, the root may be divided transversely through cicatricial tissue a short distance outside the foramen and then the stump split longitudinally upward until good nerve tissue is exposed. The distal stump is then sutured up into this cleft, and at least some return of power may be expected.

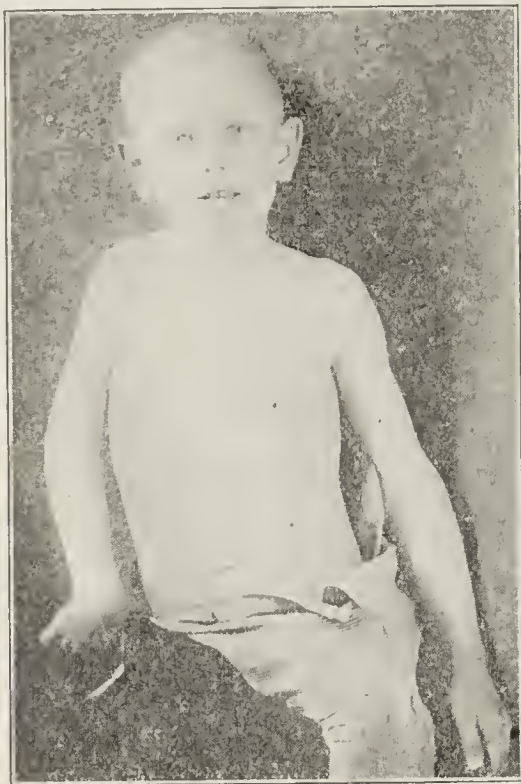


Fig. 1.—Before operation. Ordinary attitude of right arm; inward rotation of arm; pronation of forearm; flexion at elbow; marked flexion at wrist.



Fig. 2.—Before operation. Highest elevation of hand and forearm possible.

#### CASE HISTORIES.

Nine patients have been operated on. Of these, three have been selected as showing the most interesting conditions for presentation in the brief time allowed. They will be numbered according to their positions in the operative series.

CASE 3.—F. G. C., boy, aged 8 (1903).

History.—Birth palsy of the right arm (Fig. 1). He was the

third child (the two preceding labors were normal), vertex presentation, dry labor, lasting fourteen hours, in which instruments were finally used. After prolonged traction he was born asphyxiated and with total paralysis of the right upper extremity. During the first year there was slight return of power, but improvement has ceased since that time.

*Examination.*—The right upper extremity and half the left side (Fig. 1). Palpation showed the fifth and sixth roots to be involved in a cicatricial mass. There was loss of reaction to faradic current and reaction of degeneration in all muscles supplied by the fifth and sixth nerves. The shoulder was a flail-joint. The elbow could not be extended nearer than 30 degrees to a straight line. The wrist was markedly flexed and the ulnar adducted. The extremity was cooler than the normal one and the hand was purple colored. The bones of the extremity were from 12 to 20 per cent. shorter than the corresponding ones of the opposite side. There was pronounced posteroinferior dislocation of the shoulder. The coracoid and acromion processes were longer, more pointed, and more bent downward and forward than normal.

*Operation.*—June 24, 1903. Chloroform anesthesia. The simpler of the two procedures above described was resorted to. The fascia in front of the plexus was much thickened and adherent to the nerves. When the plexus was exposed the external nerve trunk coming from the junction of the fifth and



Fig. 3.—Ten months after operation, showing increased power of elevation.

sixth roots was found torn away and displaced downward and inward 2.5 cm. and was adherent to the front of the scalenus anticus muscle by firm fibrous tissue. The nerve was dissected free and its damaged end removed. The junction of the fifth and sixth roots and the posterior trunk derived from them were cicatricial. The damaged tissue was excised, the freshened nerve ends were sutured, Cargile membrane wrapped around the junction, and the wound closed as usual. The operation lasted one hour.

*Subsequent History.*—Reaction was good. Primary union resulted. Recovery was complicated by a severe bronchitis. Decided return of power began at the end of five months.

At the end of nine months there was marked improvement in the natural attitude of the arm (Fig. 4). At the end of ten months the hand could be raised to the hair line on the forehead (compare Figs. 2 and 3), and the head of the humerus had become firmly pulled up under the acromion process, although the posterior dislocation persisted. The shoulder could not be completely reduced because of the shortening of the pectoralis major muscle and the anterior ligamentous structures. Radiographs showed the head of the humerus and the glenoid cavity to be very much undeveloped, so that there was little natural tendency for them to retain their proper relations to each other when the dislocation was reduced.



At the end of ten months the boy was able to button two buttons of his coat with his right hand, for the first time in his life.

Attempts at supination of the hand and arm resulted in flexion and adduction at the wrist, with almost no supination, but when any form of support was given to prevent flexion at the wrist, nearly complete supination could be easily done.

June 11, 1904: One year (less thirteen days), after operation, there was first noted positive, though slight movement in the deltoid, and also in the extensor carpi radialis muscles.

During the succeeding year the patient could be seen only at long intervals. There was no increase in the range or variety of motion, although there was improvement in the strength and definiteness of movements already acquired, as well as in the general health of the patient. Systematic passive movements given by the parents had not stretched the contracted muscles and ligaments of the joints satisfactorily, and there had been no evidence of return of power through the suprascapular nerve. Therefore it was deemed wise to give ether again and forcibly to stretch the contracted soft parts

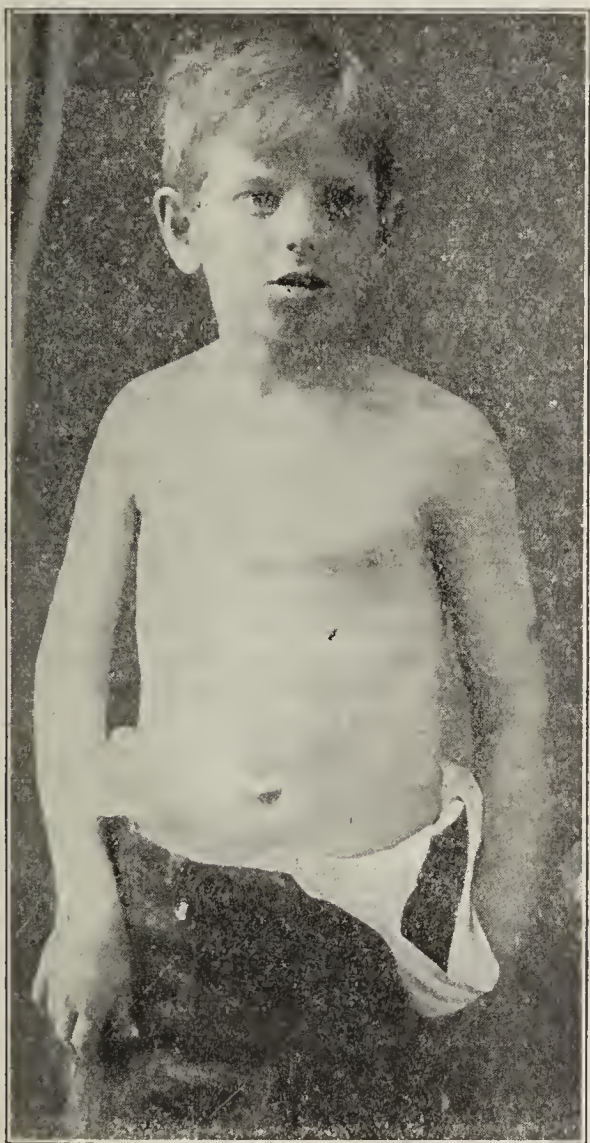


Fig. 4.—Nine months after operation, showing improved attitude of right upper extremity.

to reduce the dislocation of the shoulder, and to explore the suprascapular nerve. The operation in this case was done when the real importance of the suprascapular nerve was not appreciated, and not much attention was paid to it. When it is remembered that the muscles which rotate the humerus outward are entirely supplied by this nerve, and that the mobility of the extremity is greatly hampered through lacking this very external rotation, the necessity of most carefully suturing its distal stump to the proximal root will be readily appreciated.

**Second Operation.**—July 6, 1905 (two years after the first operation). Under ether the joints were forcibly mobilized, and the shoulder was reduced without great difficulty. The suprascapular nerve was then exposed by an incision involving the lower part of the previous scar and passing outward over the clavicle. The proximal end of the nerve felt hard and fibrous; it was excised and the distal portion was implanted

well up into the fifth root. The wound was closed. The flexed elbow was drawn backward and toward the median line, the humerus was rotated outward, and by a plaster-of-Paris bandage the extremity and chest were fixed in this relation with the hope of maintaining the reduction of the shoulder. The wound healed by primary union. After three weeks all dressings were removed. Partial recurrence of the dislocation was almost immediate.

During the resuturing of the suprascapular nerve the site of the previous nerve suturing was explored. The nerves had united firmly; there was some enlargement and slight induration at the site of union.

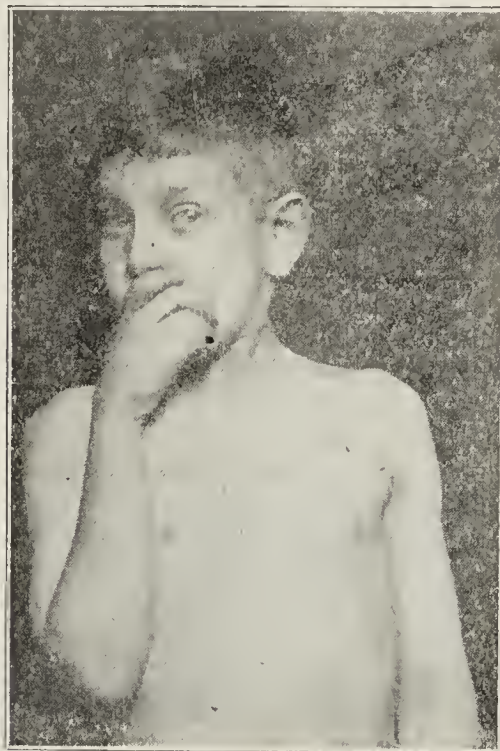


Fig. 5.—Two years and seven months after first operation and six and one-half months after the second operation, showing power to put the hand to the face, involving some external rotation of the humerus and some supination of the forearm.



Fig. 6.—Same time as Fig. 5, showing slight power of abduction. Deltoid activity.

Oct. 28, 1905 (three months and twenty-two days after re-implantation of the suprascapular). There appeared slight voluntary power in the supraspinatus muscle for the first time.

Jan. 26, 1906 (thirty-one months, and six and one-half months respectively after the two operations.) There was lessened posterior displacement of the shoulder, the external rotators were beginning to act more definitely (both due to returning power in the suprascapular nerve) and power in the deltoid was increased (Figs. 5 and 6).



*Remarks.*—A very interesting and important feature in this case was the improved nutrition and growth of the extremity after operation. Before operation it was cold and usually blue. About three months after operation it began to keep warmer and to assume a more natural pink color. Within a year it was normal in both respects.

Measurements were not taken till April 2, 1904 (about nine months after operation), and were repeated Sept. 23, 1905 (twenty-seven months):

	Right.		Gain.		Left.	
	Apr. 2, 1904.	Sept. 23, 1905.	Right.	Left.	April 1904.	Sept. 1905.
Clavicle (length) .....	10.5	11.5	1	1	13	14
Humerus (acromion to external epicondyle) .....	22	24	2	0	25	25
Radius (head to styloid tip)...	16.5	18.5	2	2	18.5	20.5
Ulna (olecranon to styloid tip)...	18.5	19.5	1	.5	20	20.5
Arm (circumference at middle)...	15	17	2	1	18.5	19.5
Forearm (cir. 5 cm. below elbow)	16.5	17.5	1	.5	19	19.5
Hand (circumference) .....	16	16	0	.5	17	17.5

It will be noticed that in most measurements the right extremity has gained more in actual centimeters, and relatively still more in percentage of growth (see Figs. 1 and 4, showing changed relative proportions of the two extremities).

#### CASE 8.—R. H., boy, aged 10.

*History.*—He was the second child. The details of the labor could not be obtained. Soon after birth it was noticed that the left upper extremity was motionless. For the greater part of the first year it remained completely paralyzed. After that time motion began to return and there was improvement up to three or four years of age, since when there has been no change in kind or range of motion. The extremity has always been smaller than its fellow. He has never been able to reach his mouth with his left hand, nor to place his left hand on his head, although he could elevate the hand above the level of the head.

*Examination.*—The boy was well nourished and normal in all respects except for the left upper extremity, which was evidently smaller than the other, and which, at rest, assumed the abnormal position of inward rotation and pronation shown in Figure 8. Passive external rotation of the humerus was prevented by the contracture of the pectoralis major (and probably subscapularis) muscle and anterior ligaments of the joint. Voluntary abduction was free (Fig. 9). Supination of the forearm, active or passive, was practically absent (Fig. 7). Movements of the fingers, hand and wrist were free. The elbow could not be extended nearer than 45 degrees to a straight line (Fig. 8).

*Operation.*—March 14, 1905. Ether anesthesia. The plexus was exposed, as in the preceding case. The deep cervical fascia, lying just in front of the junction of the fifth and sixth roots, and the origin of the suprascapular nerve, was much thickened and very adherent to the nerves, apparently causing compression of them. This fascia was dissected away. Underneath it the proximal end of the suprascapular was found to be thinner than its distal portion, and lying in a tortuous manner for about a centimeter. Palpation of the roots of the plexus disclosed no cicatrices (Figs. 10 and 11). The damaged portion of the suprascapular was removed and the distal stump implanted into the upper end of the junction of the fifth and sixth roots. Cargile membrane was wrapped about the nerves and the wound closed as usual.

*Postoperative History.*—Primary union resulted and after three weeks the extremity was given perfect freedom. The mother was instructed as to massage, passive motion, etc. From the early part of June till Oct. 31, 1905, this patient was not seen (seven and one-half months). At this time the mother reported that the extremity was warmer, and seemed to be growing more than formerly, and that its movements were becoming more free. There seemed to be no objective evidence to corroborate these statements except that the color and warmth seemed more normal.

May 22, 1906 (fourteen months after operation). The boy appeared again for inspection and this time there was evidence

of substantial improvement. Supination of the hand and forearm was present as never enjoyed before operation (compare Figs. 7 and 12). Before operation he had never been able to touch his face or head with his left hand by itself (absence of external rotation of humerus), but could now do so with comparative ease (Figs. 13 and 14). A moderate power of external rotation has appeared which means that the suprascapular nerve is functioning again. As the contracted soft parts are stretched this power of external rotation should rapidly increase. Since the middle of May he has reported three times a week for treatment with an arthromotor, a mechanical appliance for graduated mobilization of joints, and this promises to give quicker results than other forms of manipulation.<sup>2</sup>

Measurements of the two upper extremities were taken for comparison Oct. 31, 1905 (seven and one-half months) and May 30, 1906 (fourteen and one-half months) and were as follows:

	Right.		Growth.		Left.	
	Oct.	May.	Right.	Left.	Oct.	May.
Clavicle (length) .....	12	12	0	.5	10	10.5
Acromion to ext. epicondyle of humerus .....	25.5	25.5	0	0.	24.5	24.5
Ext. epicondyle humerus to tip radial styloid .....	21.5	22.5	1	2	20	22
Olec. to tip of ulnar styloid...	21.5	22	.5	1.	20.5	21.5
Circumference arm .....	19.5	20	.5	.5	18	18.5
Circumference forearm .....	19.5	21.5	2	1	18.5	19.5

*Remarks.*—It will be noted here as in the preceding case that the gain in actual measurement is greater in most of the items in the paralyzed extremity and that the percentage gain is still greater. This case is particularly interesting because, from the complete palsy of the arm for the first few months, and the permanent disturbances of nutrition, growth and function, we must believe that there was originally a gross lesion of the plexus roots. Still, at the time of operation no lesion could be found except that in the suprascapular nerve, and the adhesions of the deep fascia which compressed the upper roots of the plexus. The correction of these two difficulties has certainly greatly improved the boy's condition.

#### CASE 9.—R. F., girl, aged 1 year.

*History.*—She was the second child, was large, and was delivered with instruments. Soon after birth it was noticed that the left upper extremity was motionless, and there has been no improvement since. In other respects she has been very well.

*Examination.*—Large well-nourished child, normal except for the left upper extremity, which hung lifeless by her side (Fig. 15). There was some power in the serratus magnus, contraction of which, with some contortion of the trunk, would throw the extremity slightly forward. The soft tissues were flabby and the extremity was cold. Muscles showed reaction of degeneration. A large indurated mass could be felt on the left side of the neck at the site of the brachial plexus.

*Operation.*—June 8, 1905. Ether anesthesia. The plexus was exposed by the usual dissection. The deep fascia was much thickened and adherent to the whole plexus, which itself was one large mass of cicatricial tissue, with the nerve roots running into it above, and the nerve trunks coming from it beneath the clavicle. The nerve roots of the entire plexus were divided above the cicatricial tissue (nearly at the intervertebral foramina). The plexus was removed *en masse* by dividing the nerve trunks at their exit from its distal end beneath the clavicle. The severed nerve ends could not be approximated to within less than 2 cm. so loops of chromic gut (No. 1, 40 days) were passed through the roots and distal trunks, and around these loops was passed Cargile membrane to form one large canal through which the nerves might have an opportunity to grow to each other. The suprascapular nerve was carefully included. The wound was closed without drain-

2. We desire to make grateful acknowledgement to Dr. Wm. O. Rau for volunteering to mobilize the joints in these cases with his arthromotor.



age, and the shoulder and neck fastened in the closest approximation. This position was maintained six weeks, i. e., twice as long as usual. The reaction was good and primary union resulted.

*Postoperative History.*—After its return home this child could be seen for examination only at long and irregular intervals. At the end of three months the muscles were more flabby than ever, the shoulder was a flail joint, and there was no sign of returning power.

Dec. 21, 1905 (six months). The mother first noticed that the terminal joints of the thumb, index, middle and ring fingers were swollen, glossy, red, and ulcerated on the tips. They were not sensitive and were not infected. They remained in this condition for about six weeks, the mother reported, and then gradually sensation returned and the fingers improved, until, on May 21, 1906, they were almost normal again.

While this trophic disturbance was present in the digits, there was, on Dec. 21, 1905, distinct, but slight activity in the pectoralis major, triceps and serratus magnus muscles.

May 21, 1906 (one year less eighteen days). The movement in the above mentioned muscles was stronger. There also appeared some power in the deltoid, both for anterior elevation of the arm (Figs. 16 and 17), and very slightly for abduction. There was also slight power of flexion at the wrist. When she was lying supine she could elevate the extremity to the position seen in Figure 17, without effort. At this time there was distinct contracture of the flexor muscles of the fingers (Figs. 16 and 17). The mother had not followed instructions as to massage. The shoulder had lost its flail character (Fig. 16) and the tissues of the extremity were firmer. The mother reports that at times the movements are more extensive than those shown in the illustrations.

*Remarks.*—This case is interesting, because, inside of a year after operation there is good evidence of returning motor power, and this could have occurred only after the bridging over by the nerves of a space 2 cm. long, inasmuch as the plexus was excised in one mass. The general view with regard to nerve-bridging is pessimistic, but it would seem to succeed in certain favorable cases, i. e., in young, healthy children. There is every reason to expect very great improvement in this last case with the lapse of sufficient time, since the child will not have to overcome the serious contractures and deformities which appear in the older cases.

#### RESULTS.

In all, nine patients have been operated on.

*Immediate Results.*—In Case 1, a child, 2 years old, in whom the entire plexus was excised, rapidly developed a temperature of 108.8 F. and died in about 19 hours. Cultures from the wound were sterile. Death was probably not due to shock, since shock was absent in all the succeeding cases, and in Case 9 the entire plexus was also excised in a much younger child. It has been suggested that death was due to one of the lymphatic conditions.

In Case 4, a child, 8 months old, immediately after operation, suffered from a recurrent diarrhea, with temperature, which had been absent for a month before operation, and on the third day developed suppression of urine and died. Cultures from the wound were sterile.

In the other seven cases there was no shock or rise of temperature, and in all of them primary union occurred, which means that an increasing number of cases will steadily diminish what seemed to be a high primary mortality, and one not inherent in the operation itself.

In all the cases except 8 and 9 there was an increased area of paralysis, due to the necessity of dividing some normal nerve fibers in excising the electric foci. In all cases the power lost through operation has been retained.

*Remote Results.*—Improvement in nutrition of the limb is one of the first signs of regeneration in the

sutured nerves, just as it was in the cases of faecal anastomosis, and is evidenced by the appearance of more natural warmth and color. This change usually begins about the end of four months. The improvement in growth of the extremity is evidenced by the measurements (Cases 3 and 8). The return of power in the muscles paralyzed by the operation is usually rapid, and may be complete at the end of from six to eight months, although in Case 6 it was rather slow (15 months). The return of power in the previously paralyzed muscles appears in from six to ten months.

In the older cases the paralyzed muscles can not be expected to cause much motion for some little time after new nerve power has reached them, for during their prolonged paralysis their unopposed antagonists become contracted and the corresponding ligaments shortened. Therefore, to cause observable motion they have a double load to carry. This fact strongly accents the necessity of systematic after treatment (massage, electricity, passive motion, etc.) to prepare good mechanical conditions for the exercise of nerve power when regeneration occurs. Better still, it shows the desirability of preventing these undesirable sequelæ of paralysis by the use of the

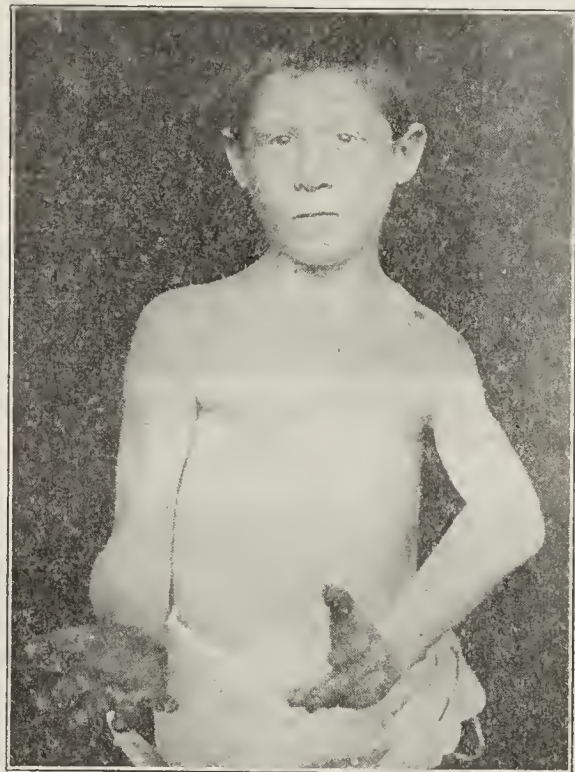


Fig. 7.—Before operation. Extreme limit of supination (nearly absent).

above means from a period shortly after birth till either spontaneous cure occurs or operation is indicated.

The increased range and freedom of motion are readily seen in the photographs of the three illustrative cases cited in this paper. The improvement in supination is specially marked in Case 8, Figure 12.

A study of the photographs (and, better still, the cases) demonstrates that the chief handicap to free range of motion lies in the absence of external rotation of the humerus. Even strong force applied in passive motion fails to cause external rotation because of the great resistance of the contracted pectoralis major muscle.

The external rotators of the humerus are entirely supplied by the suprascapular nerve; hence, the necessity of giving it special attention at the time of operation. In Case 3, in which this nerve was not successfully sutured at the first operation, there was no return of power in its muscles after two years. It was then resutured and within six months there was evidence of activity in the



spinati muscles, and the improved mobility of the extremity is shown in Figures 5 and 6.

In Case 8 in the same way the usefulness of the arm was greatly limited by the absence of external rotation. This power is gradually coming, as is evidenced in Figures 13 and 14 by the fact that he can carry the hand to his face and top of his head, movements never possible before operation. The power of all the muscles of the extremity is also increasing.

Case 9 is very interesting in that there is evidence of nerve-bridging through a space of 2 cm. after excision of the entire plexus, with the return of some motion in

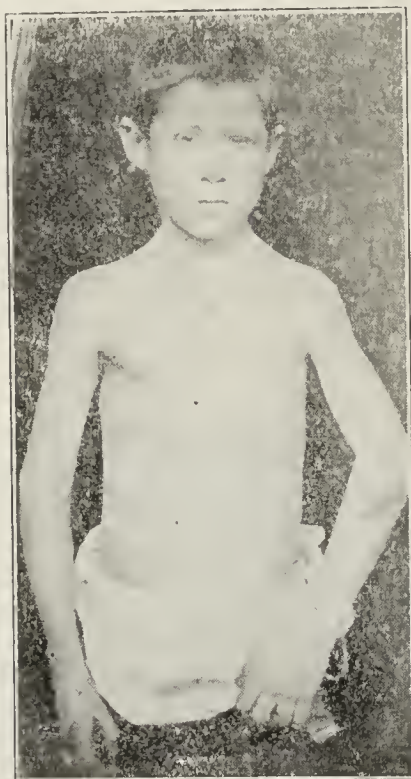


Fig. 8.—Before operation. Natural posture. Typical deformity of left upper extremity.



Fig. 9.—Before operation. Nearest approach of hand to face.

six months. This is the only case which showed trophic disturbances. The extreme youth and very good general health of this patient made it an ideal one for plastic healing, and the absence of the usual contractures at shoulder and elbow render the prognosis very hopeful.

The flexor contracture of the fingers has occurred largely through the mother's failure to carry out the instructions for after treatment. The fingers can be straightened with the use of very little force and it is hoped that the contracture will soon be overcome.

#### CONCLUSIONS.

Brachial birth palsy of the Erb type is due to overstretching of the nerve roots which results in rupture of the sheath, fibers and vessels of the nerves. From the cicatrization of the resulting hemorrhage and torn sheath there results a permanent obstruction to the transmission of nerve impulses. These cicatrices may be single or multiple. The only way to re-establish nerve conduction is to excise the cicatricial area and do an end-to-end suture of the nerves.



Fig. 12.—Fourteen months after operation with very irregular and slight after-treatment. Greatly improved supination of the hand and forearm.

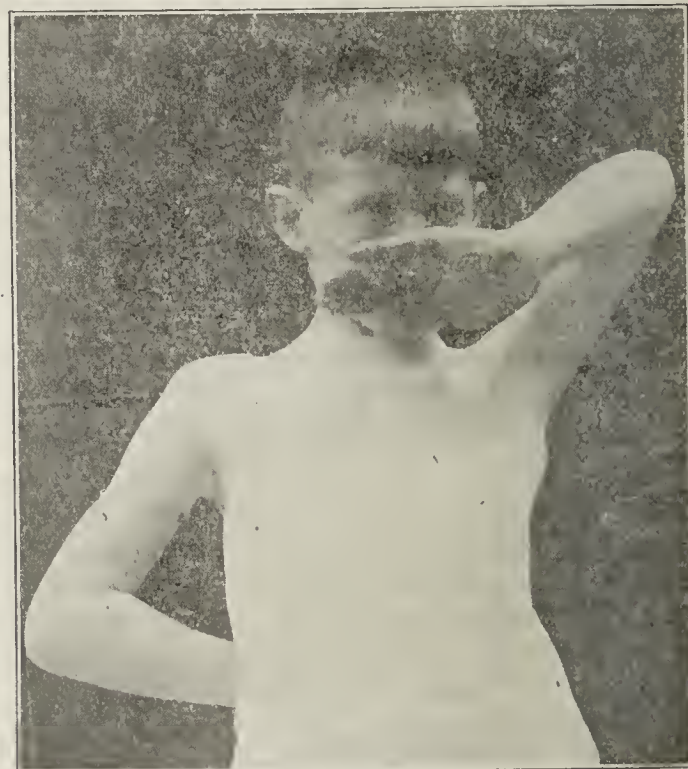


Fig. 13.—Same time as Fig. 12. Ability to get the hand to the face. Supination in this position is very difficult.

If operation be delayed too long there result: Impaired development of the extremity; contractures of muscles and ligaments, and atypical shape of the joint ends of the bones, all of which cause the characteristic deformity of this lesion, and which render postoperative return of the extremity toward normal exceedingly slow and laborious. It is probable that the older a patient



before operation the slower and more incomplete will be the return to normal.

Early operation is, therefore, indicated. From six to twelve months would seem a suitable time, as the lesion would then have become well localized. Further experience may suggest an even earlier date.

In any case, the deformities should be prevented by the systematic use of massage etc., both before and after operation.

The damage to the nerve roots in the order of severity is from above downward. The suprascapular is always

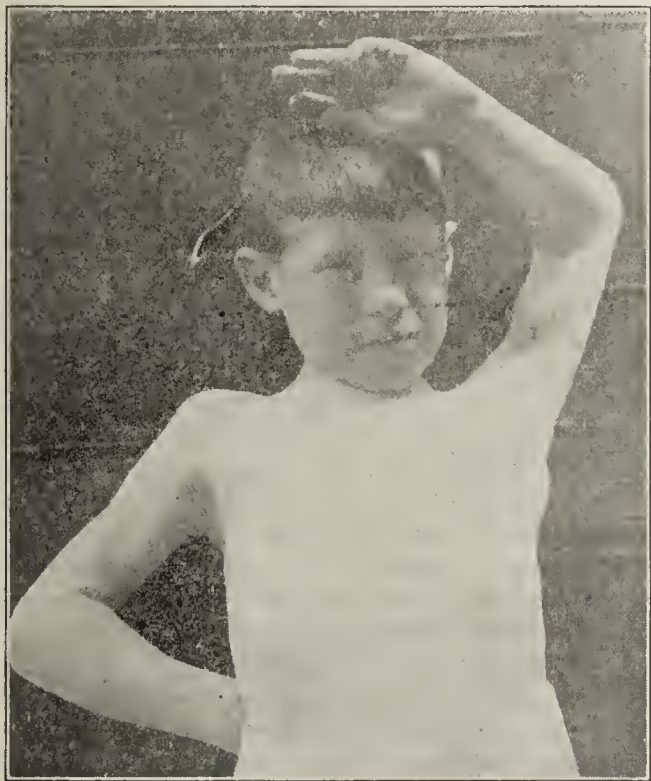


Fig. 14.—Ability to place hand on top of head.

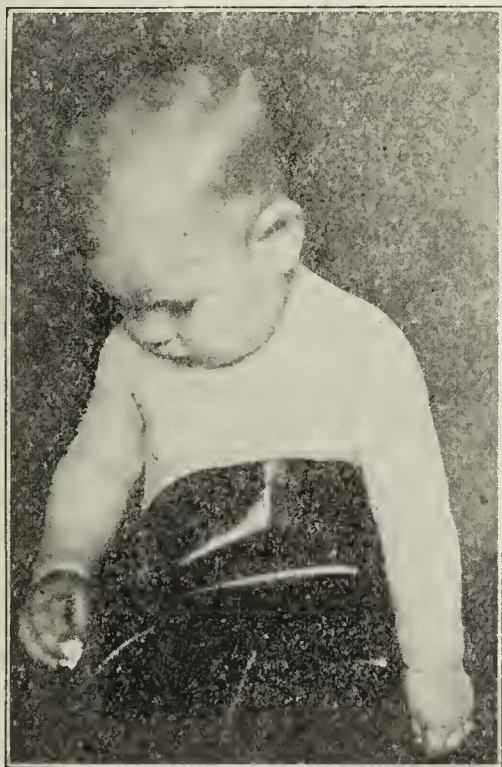


Fig. 15.—Before operation. Total palsy of left upper extremity.

damaged, controls the important group of external rotators of the humerus, and should, therefore, be most carefully sutured to a good proximal nerve stump at operation.

It is a common matter to have some additional palsy caused by operation, but recovery from this soon takes place.

Following operation there come improved nutrition and growth of the extremity, with increased range and

power of motion. Nerve bridging may succeed in the very young (Case 9).

Correct diagnosis should be made early in order to follow proper lines of treatment.<sup>3</sup>

#### PATHOLOGY OF BRACHIAL BIRTH PALSYP.

BY DR. T. P. PROUT OF NEW YORK.

In treating of the pathology of this condition as developed by the study of the excised specimens from six cases of brachial birth palsy, it was shown that the possible sequence of events in the production of the permanent palsy of the type presented in these cases was as follows: Rupture of the perineurial sheath immediately sur-



Fig. 16.—Eleven and one-half months after operation. Elevation of extremity anteriorly. Contracture of flexors of fingers due to neglect of massage, passive motion, etc., which were advised.

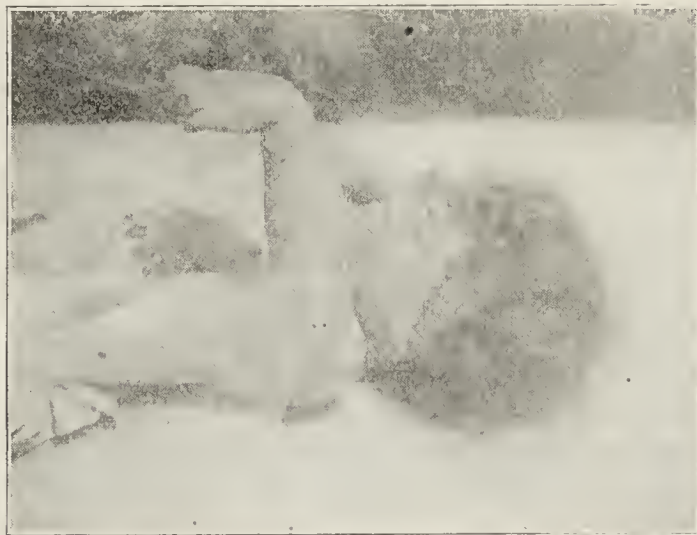


Fig. 17.—Same time as Fig. 16. Extremity raised perpendicular to floor with child lying on its back. This photograph was blurred, but it is the only one of this position.

rounding the nerve bundles and incidental hemorrhage from the torn vessels belonging to it. Following this, rupture of the perineurial sheath, the nerve fibers themselves become torn and the consequent hemorrhage inter-

3. Every few months cases are reported under the title of "Congenital Dislocation of the Shoulder," with one or another type of treatment, which, from the description must be cases of brachial birth palsy complicated by posterolateral dislocation of the shoulder as in Case 3 of this series. This dislocation is due to the paralysis of the external rotators plus the contracture of the pectoralis major and subscapularis muscles. The dislocation should not distract one's attention from the essential nerve lesion.



poses a blood clot between the torn ends of the nerve fibers.

In some instances, also, there is a buckling inward of the torn perineurial sheath which thus interposes between the torn ends of the nerve fibers a mass of living connective tissue which, together with the hemorrhage already mentioned, effectually prevents the process of regeneration in the severed nerve strands.

I am able at this time to present in addition and in corroboration of the above, a study of the fresh lesion as presented by a case delivered at seven months through a contracted pelvis, and in which the lesion was known to have been produced during traction in delivering the after-coming head. The child died a few hours after delivery, the right upper extremity having meanwhile shown the typical picture of a brachial birth palsy.

The entire brachial plexus was removed and an unusually thin strand was noticed at the point of junction of the fifth and sixth roots to form the outer cord of the plexus. The microscopic appearance of this area is shown in Figure 18. It was found that there had been an incomplete rupture of the perineurial sheath (a) with hemorrhage beneath it (b) and infiltration of the hemorrhage into the ruptured nerve strands (c).

This lesion belongs to the milder types of this affection, since the incomplete rupture of the perineurial sheath made it impossible for it to buckle inward and so interpose itself between the ruptured nerve fibers. Had the child lived, a spontaneous recovery would probably have taken place following the absorption of the blood clot (b).

NOTE:—The articles of Drs. Murphy, Taylor and Powers were discussed together. By special request of Dr. Powers, the publication of his article is postponed. The discussion will also appear later.

## LANDRY'S PARALYSIS,

WITH REPORT OF FIVE CASES.\*

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Cases of Landry's paralysis are so unusual and in the past have been so indifferently reported that the recent occurrence of three cases in our practice, of one case kindly reported to us by Dr. H. W. Kirby, Georgetown, Colo., and of a fifth case by Dr. C. F. Wolfer, Louisville, Colo., leads us to report them, with a review of the literature for the past year.

There seems to be no general agreement as to just what cases should be included under the term acute ascending paralysis. In the literature we have found a number of cases reported under this head that were obviously myelitis, poliomyelitis, or multiple neuritis.

In our report we shall consider as typical only those cases characterized by acute onset, motor paralysis, ascending in character, without material involvement of sensation, and with loss of the deep and superficial reflexes, with or without involvement of the sphincters, and generally fatal by respiratory paralysis within one or two weeks, or rarely progressing to a slow recovery. The following five cases we regard as such typical examples:

CASE 1.—F. R., male, 22, farmer, single, came from Kansas to Colorado six months ago. The other six members of the family living and well.

*History.*—Patient has had no illness since childhood; no venereal infection. Three days ago, at 3 p. m., he had severe abdominal pain, cramplike in character, followed by lancinating pains in the back, thighs, calves and feet. These pains kept him awake all night. He was up and around the next two days, but not well, and the pains recurred on the night of the second day. There was no muscular weakness yet.

About 64 hours after the beginning he felt tingling, numbness and weakness in the legs, such that he fell to the ground, and the pains in his legs recurred. He got into bed and rested two hours, entirely conscious, but found himself completely paralyzed as to motion in lower extremities when he then tried to rise. The bowels were constipated. There was marked anorexia; no vomiting, nose-bleed nor sore throat. Retention of urine now appeared, and the bowels moved involuntarily under a cathartic.

*Clinical History.*—He was admitted to the Denver City and County Hospital on the fourth day of the disease, in the service of Dr. Hall. He was soon transferred to the neurologic service of Dr. Edward Delehanty, and seen in consultation by the late Dr. J. T. Eskridge. To Dr. Delehanty we are indebted for the permission to report the case.

The face was flushed, temperature 100, pulse 88, respiration 32, tongue coated; it was protruded properly. Cheeks were sunken. Pupils were moderately dilated, responding to light and accommodation, the left slightly larger. The vertical diameter of the left pupil was slightly greater than the transverse. There was no narrowing of visual fields. Chest and abdomen were not notable, except for lack of respiratory action in the chest. Epigastric movement was comparatively greater, the breathing being evidently chiefly diaphragmatic. There was complete paralysis of all muscles, including the sphincters, below the level of the navel. All deep and superficial reflexes were absent below this level. Tactile, localization, muscular, joint, pain, temperature, position in space senses normal. Consciousness was perfectly normal.

On the sixth day there was no perceptible motion to chest on inspiration. The patient was unable to cough, and secretions, which he was unable to expectorate, collected in the throat; the arms were very weak; could feel catheter in bladder, but without pain; could tell of action of enema, but had no control over sphincter. Temperature had varied between 98 and 103.1, averaging about 101 in hospital, and 99 or less during the remaining three days. The pulse ran between 80 and 100 and the respiration between 20 and 32. The urine was negative, and passed in nearly normal amount. Infusion of digitalis, and liquor ammonii acetatis were given, with dry cups to the back.

Patient was removed on the eighth day against advice, and started on the train to Kansas. He seemed moribund when he started, and we understand did not live to reach home.

CASE 2.—Dr. Hopkins saw the following case with Dr. H. M. Ogilgsbee of Manitou, Colo., August 7, 1904.

*History.*—A healthy girl, five years of age, had had no serious illness. On August 4 she waded in cold mountain water. She retired that evening feeling perfectly well, but on awakening the following morning she was unable to move her legs. The paralysis gradually ascended the limbs, affecting the trunk and the muscles of the throat and of speech.

*Examination.*—Friday, August 7: Patient was unable to move legs, but could move arms slightly. Pulse was irregular and rapid; respiratory actions irregular; all deep reflexes were absent; superficial reflexes were absent, except the plantar, which were present, but very slight. All sensory phenomena were normal. Sphincters were intact. Pupils responded to artificial light. Fundi were normal. Speech was markedly impaired; unable to pronounce words distinctly. Saliva dribbled from the mouth. Intellect was bright.

Patient died the night of August 7, very suddenly, after taking a drink of water.

CASE 3.—The notes of this case are furnished by Dr. C. H. Call of Greeley, Colo., with whom Dr. Hall saw it in consultation on the third day, and many times later.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



*History.*—W., a healthy single man, aged 26, superintendent of lumber yards, gave a good family history. Patient has not had syphilis or any serious illness; does not drink; was entirely well four days ago, but came home sick the next day, complaining of aching and malaise. Dr. Call of Greeley, Colo., found the temperature 101, pulse 100. No physical signs were found in the chest or abdomen. There was pain in the back and the testicles required 1/2 gr. of morphia for relief.

Next day the bladder was paralyzed, and the catheter became necessary. There was no cough nor vomiting. On the second day the legs became paralyzed, the patient falling helpless when attempting to rise from the bed. Dr. Call found motor paralysis of the legs and thighs. There was a slight wandering delirium at night, and for several days after.

*Examination.*—When I saw the case with Dr. Call, of Greeley, Colo., on the third day, we found the temperature 100.8, pulse 100, respiration 20. There was complete flaccid motor paralysis of all parts below the last dorsal vertebra, except for a perceptible movement of the toes, about one-fourth inch in magnitude, more marked on the left foot. So complete was the paralysis of the bladder that pressure with the hand was needed to empty it after the introduction of the catheter. The anus was relaxed and the bowels had failed to respond to repeated cathartics, finally moving fairly after an enema. Sensation in all its forms was perfect. No superficial nor deep reflexes could be elicited below the point named. The arms were so weak that the patient could not turn himself. Slight muscular twitching had been noted by the patient in hands and forearms, but the reflexes were present and normal. There was no paralysis of face or of the extrinsic eye muscles. Pupillary reflexes were normal. Retinæ were negative. The chest and abdomen presented nothing abnormal. Spleen and glands were normal. Marked sweating existed, and persisted for more than a week. Patient had not slept since the beginning of the illness, and chloral was given by Dr. Call with good results. Sodium salicylate had been given at first, but we decided to continue the iodid of potash prescribed the preceding day by Dr. Call, and the urotropin (hexymethylenamin) given to prevent bladder infection. Inunction with mercurial ointment was instituted.

When seen again, seven days later, temperature was 99, pulse 90, respiration 22; weakness of arms was much more notable. The patient could not use the diaphragm, and hence could not speak well, nor sneeze nor cough. Respiratory movements were very feeble. A bad prognosis was given, and the treatment continued. On December 23, the patient was seen with me by Dr. S. D. Hopkins at St. Luke's Hospital in Denver, to which he had just been removed. He had improved slowly, but steadily, since my last visit, the respiration becoming easier from that very day. Dr. Call had instituted irrigation of the bladder with boric acid, had just omitted the iodid, and started the patient on strychnin in fair dosage. No serious bladder infection had occurred. Patient had regained sufficient strength in the arms to turn himself in bed. The abdominal muscles were nearly restored to their normal function, and the bladder would empty itself through the catheter, without pressure on the abdomen. The legs could be moved slightly and some of the muscles responded to the Faradic current. On May 20, 1906, he could stand on his feet, and is apparently making a slow but fairly complete recovery.

*CASE 4.*—We present the following abstract of a case occurring in the practice of Dr. C. F. Wolfer, Louisville, Colo., and carefully observed and reported by him.

*History.*—W. G., male, aged 10, had always been delicate, but had had no illness aside from measles and chicken-pox. Family history was negative. The mother states that the boy's eyes have lately been so protruberant as to be noticeable. Sept. 8, 1903, Dr. Wolfer vaccinated the boy at his office. Patient was much excited about it, and had a chill, presumably nervous in character, on the way home, and another on arriving there. From September 8 to 11, the boy complained of not feeling very well, but was not confined to bed. He vomited on September 10. The vaccination wound showed no signs of irritation. He had several crying spells, and said he could not prevent them, and that he had no control over his hands. On the evening of September 11 he lost control of the bladder, and during the

night the mother reported that the feet and legs became paralyzed, so that he fell to the floor on attempting to rise from the bed.

On September 13 Dr. Wolfer found the boy's temperature 104, pulse 130, respiration 40. There was complete motor paralysis below the hips, without involvement of sensation. No urine had passed for eighteen hours, and 4 ounces were obtained by catheter. He complained of no pain, and was perfectly conscious. He feared that he was going to fall, and said that his feet felt as if tangled up in wire, or as if he was lost in the tall weeds growing on the farm. He could be reasoned out of these fears if the feet were moved, and encouragement given him. His appetite remained good throughout the illness except on the day of the vomiting.

On September 14, temperature was 104.6, pulse 150, respiration 48. The motor paralysis extended to the iliac and hypogastric regions. Very little urine was obtained by catheter. There is no note of the presence of albumin or sugar. On this day the abdomen became much distended with gas, as though from intestinal paresis. There was neither pain nor tenderness over the belly.

Patient died at 2 a. m. September 16, about four and a half days after the beginning of the illness. Temperature rose to 106. The diaphragm and respiratory muscles were apparently paralyzed at last, since the boy in attempting to speak, could only move the lips, being unable to make a sound.

Treatment was symptomatic only. No autopsy was held. We have no record of the reflexes, but the history seems sufficient for a diagnosis of acute ascending paralysis.

*CASE 5.*—The notes in this case were furnished us by Dr. H. W. Kirby, Georgetown, Colo., to whom we are much indebted.

*History.*—R., widower, aged 64, mining engineer, of good family history, was a moderate drinker and smoker. He had subacute rheumatism in December, 1905, but was not confined to bed. On Feb. 24, 1906, he had pain in the knees and chest, thought to be also rheumatic. On February 28 the pain was absent, but marked weakness existed in the left leg. Next day complete motor paralysis was noted below the lower third of each thigh. This paralysis reached the abdomen on the eleventh day, and, on the fourteenth, the muscles of respiration, death ensuing early on the sixteenth day from respiratory paralysis.

There was no pain, but numbness and formication in the lower limbs, without any material impairment of sensation. All reflexes were lost. No atrophy of muscles was noted. Sphincters were involved on the ninth day. Consciousness was impaired. Constipation was obstinate. Iodid of potash, salicylates and strychnin were administered, but without apparent results. Urinary antiseptics were given also.

This abstract apparently justifies the diagnosis of Landry's paralysis.

#### SUMMARY OF THE CASES REPORTED IN THE LITERATURE DURING NINETEEN HUNDRED AND FIVE.

The cases reported during the past year and analyzed by us are briefly abstracted below:

1. FOLEY:<sup>1</sup> Male, 35. Ascending paralysis; sweating; lost reflexes; sphincters not involved; cardiac pain; sensation dull; no real anesthesia; recovery after two months.

2. PAGE:<sup>2</sup> Male, 25. Overheated and then wet in rain; pain in back and legs; ascending paralysis on the third day; numbness and tingling in legs and feet; retention of urine; rectal sphincters paralyzed; reflexes absent; moderate fever; mind clear; death after 108 hours from respiratory paralysis.

3. DILLER and BILLARD:<sup>3</sup> Male, 17. Ascending paralysis, complete on second day; severe pain in back; retention; no sensory phenomena; in hospital nearly two months; full recovery.

4. DILLER and BILLARD:<sup>3</sup> Male, 20. First attack, motor paralysis of legs and arms; sensation not involved; sphincters normal; no mental symptoms; recovery in three months. Second attack, twenty months later; paralysis complete in fifteen

1. Brit. Med. Jour. 1905, p. 18.

2. Austral. Med. Gaz., Sydney, 1904, July 20, p. 348.

3. St. Louis Med. Rev., 1905, April 15, p. 289.



hours; reflexes absent; no sensory involvement; death in five days.

5. McNAMARA, E. D.:<sup>4</sup> Male, 30. History of syphilis; paralysis complete in three days; reflexes absent; no sensory involvement; electrical reactions normal; pupils scarcely react to light; defective articulation; double vision; gradual recovery.

6. BRAMWELL:<sup>5</sup> Female, married. Pain in back; bilateral facial palsy; ascending paralysis afterward; reflexes absent; cold, numbness and hyperalgesia in legs; eyes normal; delirium; no fever; death on the eighteenth day.

*Autopsy.*—At postmortem the gray matter of the brain and cord was congested. Pronounced changes were found in both seventh nuclei and in cells of lower part of cord. Degeneration in right facial and external popliteal nerves. Although staphylococci were found in the throat during life, the blood, spinal fluid, spleen, cord, etc., were negative. Bramwell states that "the postmortem examination leads him to believe there may have been a toxic process acting on the lower neurons which originated from a sore throat of some time before paralytic symptoms appeared."

7. MAXWELL:<sup>6</sup> Chinese, male, 16. Failure of vision one week before and complete motor paralysis, and retention of urine ten days before; gonorrhea; cystitis; reflexes lost; some impairment of sensation; no fever of note; no wasting of paralyzed muscles; death after three weeks from respiratory paralysis.

8. TULEY:<sup>7</sup> Female, 2 years. Moderate fever; ascending motor paralysis; reflexes lost; sphincters intact; no sensory involvement; death in three days from respiratory paralysis.

9. ZEIT, F. R.:<sup>8</sup> Male, 24. Ascending motor paralysis; slight involvement of sensation; sphincters involved; cystitis; reflexes lost; moderate fever, till near death, then 103.8; pulse, 160; respiration, 44; sweating; sudamina; duration twelve days.

*Autopsy.*—Brain showed no external change except hyperemia of the pia. Spinal cord showed redness of gray matter at various levels.

Anatomic Diagnosis: Hemorrhagic poliomyelitis; purulent cystitis; hyperemia of viscera; pulmonary edema and hypostatic congestion; fibrous pleuritis and fibrous pericarditis; edema of back; bed sores over sacrum.

Bacteriologic Examination: Heart blood showed encapsulated diplococci arranged in chains; stained by Gram's method. Seven days later one blood-agar tube, suspended in 4 c.cm. of bouillon, was injected in a rabbit; animal sick three days, but recovered.

Cord: Emulsions were made in salt solution and various media inoculated. Only colon bacillus obtained. Same with sciatic nerve.

Liver: Pneumococcus and *Staphylococcus cereus flava* found.

Peritoneal Fluid: Pneumococcus and *Bacillus coli communis* obtained.

Spleen: *B. coli communis* found.

Histologic Examination: This showed some degeneration of the nerves; no sign of neuritis; brain almost normal.

10. WALKER, T. J.:<sup>9</sup> Male, 40. Had long suffered from stricture, with frequent retention of urine; sudden ascending paralysis; numbness and tingling in feet; death after eighteen hours.

11. WALKER, T. J.:<sup>9</sup> Male, 62. Cystitis for years; death in forty-eight hours from acute ascending paralysis; "uncomfortable sensations in lower limbs."

12. WALKER, T. J.:<sup>9</sup> Male, 67. Chronic cystitis for many years; acute ascending paralysis fatal after eighteen hours.

13. DONATH:<sup>10</sup> Male, 26. Total paralysis of extremities; bulbar paralysis; sensation decreased below third rib, absent in legs; backache and headache at first; incontinence; deep reflexes lost; Babinski present; recovery after three months.

14. LORISCH:<sup>11</sup> Female, 48. Tabes dorsalis; acute ascending paralysis, fatal after eight days from respiratory paralysis; no fever; no sensory phenomena; cranial nerves involved.

*Author's Summary of Autopsy.*—The anatomic basis for the ascending paralysis is the acute affection of the gray matter in all parts of the spinal cord and medulla oblongata, characterized by hemorrhages, disappearance of the medullary sheaths, degeneration of ganglion cells with consecutive degeneration of anterior roots. Therefore, we have to deal with an acute diffuse disseminated poliomyelitis in which the motor portion of the gray matter is more involved than the sensory. These conditions satisfactorily explain the clinically rapid course. The disease evidently began in the lumbar region, ascended rapidly, and lastly involved the medulla oblongata. This case, therefore, is one of those in which palpable lesions of myelitic nature existed in the spinal cord and medulla oblongata.

15. MCCARTHY, D. J.:<sup>12</sup> Male, 35. Advanced tuberculosis; ascending paralysis; slight sensory involvement; reflexes absent; died on the eleventh day from respiratory paralysis.

*Author's Autopsy Note.*—The lesions in this case are therefore entirely confined to the motor ganglion cells of the spinal cord and medulla.

16. GARDINIER, H. C.:<sup>13</sup> Female, 42. Ascending paralysis; no disturbance of sensation; duration nine days; fatal from respiratory paralysis; changes in ventral horns of cervical and lumbar regions of cord; thrombi; degeneration of peripheral nerves, Wallerian type; axones appeared atrophied; bacteriologic examination negative.

17. GARDINIER, H. C.:<sup>13</sup> Male, 38. Lagrippe on October 6; on October 10, paralysis of the legs, delirium; October 12, paralyzed below neck; incontinence of urine; sweating; no bulbar symptoms; October 14, regained control of sphincters; reflexes absent; no sensory phenomena; recovered in three months.

18. NAZARI:<sup>14</sup> Female, 46. No known cause; formication; restlessness, dyspnea, insomnia; acute ascending motor paralysis; dysphagia; death in a few days.

#### STATISTICAL SUMMARIES.

A summary of these 23 cases gives the following results:

OCCUPATION.	
No occupation .....	4
Farmer .....	3
Laborer .....	3
Butcher .....	2
Housewife .....	2
Schoolboy .....	2
Nurse, barber, salesman, merchant, miner, waiter, roofer, of each.....	1
	23

AGE.	
1st decade .....	3
2nd " .....	3
3rd " .....	6
4th " .....	4
5th " .....	3
7th decade .....	3
Not given .....	1
	23

CAUSE. <sup>15</sup>	
Undetermined .....	13
Cystitis .....	4
Exposure .....	2
Alcohol and syphilis, tuberculosis, rheumatism, lagrippe, of each.....	1

CHARACTER OF MUSCULAR PARALYSIS.	
In legs, and ascending.....	22
In hands and arms, and ascending .....	1

IMPAIRMENT OF SENSATION.	
None .....	11
Slight impairment .....	10
(Including 5 in which there was numb and tingling sensation.)	

DEEP REFLEXES.	
Lost .....	13
Not recorded .....	10
Decreased .....	1

SUPERFICIAL REFLEXES.	
Lost .....	11
Not recorded .....	10
Present .....	1
Decreased .....	1
Babinski reflex was positive in one case.	

ELECTRICAL REACTION.	
Not recorded .....	20
Normal .....	2
Lost Faradic and R. of D....	1

4. Trans. Clin. Soc., Lond., 1905, xxxviii, p. 194.

5. Rev. Neur. and Psych., Edin., iii, p. 327.

6. St. Barth. Hosp. Rep., 1904, xl, p. 49.

7. Kentucky Med. Jour., 1904, September, p. 112.

8. Trans. Chlc. Path. Soc., 1904, Nov. 14, p. 97.

9. Trans. Clin. Soc., Lond., 1905, xxxviii, p. 80.

10. Wien klin. Wochsch., xviii, (s. v.), p. 1327.

11. Arch. f. Psych., 1905, xl, p. 422.

12. Trans. National Assn. for the Study and Prevention of Tuberculosis, 1, p. 243.

13. Albany Med. Annals., 1904, xxv, p. 56.

14. Il Polliclinico, August, 1904, p. 337.

15. In examining the figures given it must be noted that one of these subjects suffered from two attacks.



PAIN.	
Present . . . . .	9 <sup>*</sup> The pain was present in the lower back, thighs and legs, and in one of our cases in the testicles also.
(And in one other case due to tabses.)	
Absent . . . . .	9
Not recorded . . . . .	4

ATROPHY.	
Present . . . . .	1 It is evident that atrophy is rarely or never noted, excepting in cases of recovery.
(Our own case.)	
Absent . . . . .	14
Not recorded . . . . .	8

TROPIC DISTURBANCES.	
Blisters and Bedsorcs:	
Present . . . . .	3
Remainder not recorded.	

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

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Absent . . . . .	9

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Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

Present . . . . .	3
Absent . . . . .	9

CAUSE.	
Typhoid fever . . . . .	3
Exposure . . . . .	3
Pneumonia . . . . .	2
Diarrhea . . . . .	2
Alcohol . . . . .	2
Influenza . . . . .	2
CO <sub>2</sub> poisoning . . . . .	1
The type of paralysis was ascending in every one of these cases.	
Toxemia . . . . .	
Scarlet fever . . . . .	1
Syphilis . . . . .	1
Rheumatism . . . . .	1
Small pox . . . . .	1
Not recorded . . . . .	34

SENSATION.	
Normal . . . . .	29
Impaired . . . . .	16
Lost . . . . .	2
Not recorded . . . . .	7

PAIN.	
Present . . . . .	13
Remainder not recorded.	
Absent . . . . .	2

TROPIC DISTURBANCES.	
Bladder:	
Retention . . . . .	3
Incontinence . . . . .	8
Not involved . . . . .	22
Remainder not recorded.	

Bowel Control:	
Normal . . . . .	24
Incontinence . . . . .	7
Spastic condition of the sphincter . . . . .	1
Constipation . . . . .	3

DURATION.	
1 case . . . . .	10 mos.
2 cases . . . . .	7 mos.
1 case . . . . .	6 mos.
2 cases . . . . .	5 mos.
1 case . . . . .	6 mos.
2 cases . . . . .	5 mos.
1 case . . . . .	11 wks.
1 case . . . . .	3 wks.
1 case . . . . .	6 wks.
3 cases . . . . .	5 wks.
2 cases . . . . .	4 wks.
1 case . . . . .	3 wks.
Remainder not recorded.	
1 case . . . . .	18 days
3 cases . . . . .	15 days
2 cases . . . . .	13 days
3 cases . . . . .	12 days
2 cases . . . . .	11 days
2 cases . . . . .	10 days
1 case . . . . .	8 days
5 cases . . . . .	7 days
1 case . . . . .	6 days
7 cases . . . . .	5 days
2 cases . . . . .	4 days
1 case . . . . .	3 days

RESULT.	
Death . . . . .	37
Recovery . . . . .	11
Not recorded . . . . .	6

In comparing our own cases with the earlier group we find the percentage of males in ours to have been 74 per cent.; in Martinette's, 76 per cent., approximately. These figures seem to accord very well with the general consensus of opinion. From the variety of occupations in each series, it seems safe to assume that the disease has no especial relation to any occupation. In Martinette's cases, 29 out of 50 cases were in the third, fourth and fifth decades, a percentage of 58. In our own, 13 out of 23 cases were within the limits given, a percentage of 56.5. No cause is given in the majority of cases in both reports, but we have here collected for comparison all those in which the supposed cause was mentioned.

Cause.	Marti- nette. thors.	Cause.	Marti- nette. thors.
Typhoid . . . . .	3	Scarlet fever . . . . .	1
Exposure . . . . .	3	Syphilis . . . . .	1
Pneumonia . . . . .	2	Rheumatism . . . . .	1
Diarrhea . . . . .	2	Smallpox . . . . .	1
Alcohol . . . . .	2	Tuberculosis . . . . .	0
Influenza . . . . .	2	Cystitis . . . . .	0
CO <sub>2</sub> poisoning . . . . .	1	Remainder unrecorded.	4

It is striking to note that whenever a cause is given, aside from exposure, a toxic or infectious condition existed. Gowers mentions the striking similarity in causation to that of ordinary multiple neuritis.

ETIOLOGY.

Concerning the etiology of Landry's disease, Donath<sup>16</sup> states:

There occur, aside from undoubted infections, also typical intoxications. There have been found anthrax and typhoid bacilli, streptococci, staphylococci, diplococci, the Fraenkel-Weischselbaum bacterium, pneumococcus, and also a proteus pathogenic in animals.

Influenza, variola, syphilis, diphtheria, pertussis and also the gonococcus have been associated with Landry's paralysis, and Donath himself reported a case following malaria.

Thoinot and Maselli state:

Affections similar to Landry's paralysis have been produced in animals by the introduction of the micro-organisms into the blood.

16. Donath, Julius: Wien. klin. Wochschr., 1905, xviii, (s. v.), pp. 1327 to 1330.

Since 8 out of 23 showed considerable fever, it is evident that the disease can not be regarded as generally afebrile, as is so commonly stated.

High . . . . .	5
Moderate (32 or less) . . . . .	4
Not recorded . . . . .	13
Cheyne-Stokes . . . . .	1

Retention . . . . .	9
Incontinence . . . . .	5
Not involved . . . . .	4
Not recorded . . . . .	5

Incontinence . . . . .	8
Spasm of sphincter . . . . .	1
Not involved . . . . .	5
Not recorded . . . . .	9

Present . . . . .	6
Absent . . . . .	7
Not recorded . . . . .	10

Present . . . . .	4
Absent . . . . .	12
Not recorded . . . . .	7

Normal . . . . .	15
Albumin . . . . .	1
Not recorded . . . . .	7

Although eruptions of different characters have been reported, none was present in any of these cases, excepting a sudaminal eruption in one case, evidently of no specific importance since it occurred in conjunction with profuse perspiration.

Ocular paralysis . . . . .	1
Optic neuritis . . . . .	1
(And dilated pupils were noted in the same case.)	
Nystagmus . . . . .	1
Inequality of pupils . . . . .	1
Impaired speech . . . . .	1
Impaired speech and hearing . . . . .	1

Lumbar puncture was employed in but one case, that of Donath, 3 c.c. being removed. The fluid coagulated at once. Bacteriologic examination was negative. The fluid contained fibrinogen and albumose.

DURATION.	
1 day . . . . .	2
2 days . . . . .	1
3 days . . . . .	2
5 days . . . . .	3
7 days . . . . .	1
8 days . . . . .	1
9 days . . . . .	2
12 days . . . . .	1
15 days . . . . .	1
16 days . . . . .	2
17 days . . . . .	1
21 days . . . . .	1
2 months (recovered) . . . . .	1
3 months (recovered) . . . . .	3
4 months (recovered) . . . . .	1
6 months (recovered) . . . . .	1
(Note two attacks in one.)	

RESULT.	
Recovery . . . . .	7
Death . . . . .	17
Patient 4 recovered from a first attack and died in a second one, occurring 20 months later, after an illness of 5 days.)	

We have also analyzed the imperfect data obtainable from H. Martinette's Paris Thesis, 1897, "La Paralyse ascendante Aigue, 80 Paris," after throwing out 17 cases which appear to us, in the light of modern study, wholly inadmissible.

AGE.	
1st decade . . . . .	5
2nd decade . . . . .	7
3rd decade . . . . .	9
4th decade . . . . .	11
5th decade . . . . .	9
6th decade . . . . .	7
7th decade . . . . .	2
Not given . . . . .	4
	54

SEX.	
Male . . . . .	14
Female . . . . .	13

OCCUPATION.	
Servants . . . . .	3
Soldiers . . . . .	3
Laboreis . . . . .	3
Mechanic . . . . .	1
Schoolboys . . . . .	2
Not given . . . . .	42



The action of the toxins was the cause of the infectious paralyzes, as has been demonstrated by Roux and Yersin and also by Babonneix on the diphtheria toxin. Babonneix found the anatomic lesions in dogs (with Landry's paralysis), necrotic areas in the spinal cord, especially in the gray matter of lumbar region, accompanied by acute cellular atrophy, chromatolysis and changes in the nuclei. The less pronounced involvement of the anterior and posterior roots appeared to be of secondary nature.

Donath further states:

The toxic action of constipation following intestinal diseases, gastric diseases, and carcinoma of pylorus, and also chronic cystitis deserves consideration in the etiology of Landry's paralysis. A purely toxic action is evidenced in Landry's paralysis due to alcoholism. A fatal case of this kind was recently reported by Aberthur and Arthur. Ketley reported a case of fatal typical Landry's paralysis resulting from poisoning by corrosive sublimate. It was accompanied by loss of reflexes and loss of sensation, while autopsial findings showed only general anemia.

Gowers mentions one case apparently due to syphilis, the patient recovering under antisiphilitic treatment. Dr. Hall records a case of similar nature, seen with Dr. Conway, Cheyenne, Wyo., but not sufficiently clear to be included in this report, in which a partial recovery followed heroic treatment with iodids and mercury.

The group of cases reported by T. J. Walker following cystitis and urinary infections is worthy of careful consideration. Walker believes the cause to be a bacterial infection originating in the bladder, and, as a result, a virulent intoxication of cells in the cord already weakened by the long-standing cystitis.

As regards bacteriology, Aubertin<sup>17</sup> reports:

Bacteria found in cases of Landry's paralysis have been variable, as follows: In one case, diphtheria and staphylococci; in two cases, the streptococcus (Ettinger and Marinesco, Remlinger); in two cases, the pneumococcus (Seitz, Roger and Josue); in two cases, the bacillus of charbon (Baumgarten, Marie and Marinesco); in two cases, the staphylococcus (including Bramwell's); in two cases, the bacillus of Eberth; in six cases, unidentified bacilli have been found.

It is obvious that no especial bacterial intoxication can be the cause of this rare disease.

#### PATHOLOGY.

The character of the muscular paralysis in the cases we have admitted was ascending in every instance, always beginning in the legs, excepting in one of our own series in which the hands and arms were first affected, then ascending to the bulb.

Sensation was normal in 53.7 per cent. of Martinette's cases, in which record was made, and in 52 per cent. of our own series. In no case of ours was anything more than slight impairment noted, although in two of Martinette's admitted cases complete loss was observed. Pain was present in 9 of our cases and 13 of Martinette's series, but not noted in the great majority. We can not compare the reflexes, electrical reactions, atrophy, trophic disturbances, eruptions, special senses, temperature, pulse and respiration, sweating or several other features, for the records are absent or incomplete in the earlier series.

Much dispute still exists as to the involvement of the sphincters in Landry's paralysis. In our own series, retention of urine existed in 9 cases and incontinence in 5, while in Martinette's series incontinence was noted in 8 cases and retention in 3. In most of his cases, how-

ever, no note was made. It is very striking that, in 14 out of the 18 cases in our series in which record was made the bladder was involved and 9 out of 14 the rectal sphincter. This is not at all in accord with the statement of Oppenheim that "the bladder and rectal functions are, as a rule, not disturbed, though there are exceptions," nor with Gowers, who says, "The sphincters, moreover, escape in the vast majority of cases, but not in all," nor with Church and Peterson, who state that "the sphincters, as a rule, are not relaxed," nor with Starr, who states that "the bladder and rectum usually remain in a normal condition." Dana says: "The bladder and rectum are involved only in rare cases." Sajous: "Paralysis of the trunk muscles follows, the sphincters escaping." We must conclude that in the carefully reported modern cases involvement of the sphincters is present in a majority.

#### DURATION.

A comparison of the duration when recorded in the two series results as follows:

Martinette.	Hall and Hopkins.
One week or less.....	16 9 (all fatal).
More than 1 week or less than 2 weeks..	10 4 (all but 1 fatal).
More than 2 weeks and less than 2 months	12 5 (all fatal).
Over 2 months .....	10 6 (all recovered).

It is to be observed that in our own series all the fatalities occurred within two months, and this practically held true in Martinette's cases.

#### MORTALITY.

In the 24 attacks in our series, there were 7 fatalities, a recovery rate of 29 per cent. In Martinette's series, 11 recoveries are recorded out of 48 in which the result is known, a rate of 22.9 per cent. It is fair to conclude that, on an average, 75 per cent. of the cases are fatal.

#### CONCLUSIONS.

Our conclusions as to the pathology and nature of the disease, after careful study and comparison of the autopsy reports above quoted and of the general literature, might be summarized in this quotation from Oppenheim:

On the whole, late researches, founded on the new methods, have always given positive results; and particularly alterations in the spinal cord, especially of the gray matter. They were either inflammatory and vascular conditions . . . or alterations of the nerve cells, which, rarely, however, reached the degree of distinct atrophy. . . . The clinical picture is sufficiently clear and characteristic, and there is no doubt that it is due to infectious causes and toxins, which in most cases are bacterial products. The disease may develop after diphtheria, typhoid, variola, anthrax, influenza, pneumonia, whooping-cough, puerperium, gonorrhea (?), probably also septicemia and other unknown infectious processes. It seems to be able to occur in rabies or following on Pasteur's treatment. . . . Alcoholism, and particularly syphilis, have been considered etiologic factors.

Whether the entrance of the micro-organisms into the spinal cord, medulla oblongata, and peripheral nervous system is able to produce the disease, is doubtful. It is probable that the poison injures the motor conducting tracts of the spinal cord, medulla oblongata, and peripheral nerves, so that it evokes paralysis without exciting any recognizable lesions in the nervous apparatus, but that it occasionally leaves visible (microscopically detectable) lesions, found in the motor tracts of the medulla, or in the peripheral nerves, or in both places.

*Differential Diagnosis.*—We can not give a better idea of our conception of Landry's paralysis than the summary of the symptoms given in the third paragraph of this article. Confusion is likely to arise only with acute ascending myelitis, multiple neuritis and anterior polio-

17. "Bacteriologie de la Paralyse de Landry," La Tribune Med., 1905, Jan. 14, p. 22.



myelitis. Acute ascending myelitis may be recognized by the presence of the complete sensory paralysis below the point involved, the tendency to trophic disturbances in the skin, if the patient lives long enough, the wasting of muscles and the loss of faradic irritability. In multiple neuritis the sphincters are not involved, the paralysis is ordinarily limited to peripheral muscles, and there are very marked pain, tenderness, and disturbance in sensation. Gowers says:

The mysterious disease, acute ascending paralysis, may resemble the most rapid cases of multiple neuritis, but in it, the symptoms ascend the trunk from the legs to the arms, and do not begin in the hands and feet at the same time or successively, and involve the trunk last as does the usual form of multiple neuritis.

In acute anterior poliomyelitis, the paralysis is limited to certain groups of muscles, and affects the extremities, especially the lower ones, without involvement of sensation. Marked wasting of the affected muscles occurs, with the presence of electrical changes, and there is an immediate tendency toward improvement, in marked contrast to the progressive course of the more serious disease.

*Treatment.*—The treatment of the disease is not satisfactory. In general it must be chiefly supportive. The bladder, if involved, must be most carefully irrigated, and urotropin given if urinary infection threatens. In our own case, in which the patient recovered, Dr. Call gave salicylate of soda, which was followed by iodid of potash and mercurial inunction, in spite of the absence of syphilis. Later, large doses of strychnin were given, with the Faradic current and massage to the paralyzed muscles. Three-dram doses of fluid extract of cascara were needed in the early stages, owing to the profound torpor of the intestines, while later  $\frac{1}{2}$ -dram doses sufficed. In the other cases we report the course was so rapid that no effect could be observed from any treatment.

#### DISCUSSION.

DR. L. H. METTLER, Chicago, said that the query always arises in his mind: What is Landry's paralysis? Two or three years ago he published a paper in THE JOURNAL A. M. A., in which he tried to cover the whole ground. In that paper he emphasized the fact that under the term Landry's paralysis too many conditions are included and that Landry himself never included among his cases any in which there was involvement of the sphincters. Landry's clinical picture was a clear, sharp, well-defined one, entirely motor, without sensory symptoms. It may be called ascending or acute paralysis, but Dr. Mettler thinks that great care should be used not to call all cases of ascending paralysis, with other collateral symptoms, Landry's paralysis.

DR. WHARTON SINKLER, Philadelphia, said that he had gone over the literature of Landry's paralysis in connection with a case he reported at the recent meeting of the American Neurological Association, and he was struck by what has also been the observation of Drs. Hall and Hopkins that there is great confusion as to what acute ascending paralysis or Landry's paralysis really is. Even in the text-books there seems to be a lack of accord on this subject. The conclusion he has come to is that, in order to follow Landry, the patient must have an ascending paralysis with acute onset, but without sensory symptoms, and without involvement of the sphincters, the case ending either in death in a short time or, in a small proportion of cases, in recovery, the convalescence being more or less gradual. In the case which he reported the recovery was rather rapid, although the paralysis was complete and general, involving not only the legs and arms, but the facial muscles and the muscles of deglutition. If one leg were flexed, the patient could extend it, but this was the extent of the voluntary muscle power for a few days. The complete loss of power lasted but a week, and recovery

began in the parts last affected. This seems to be the general rule with patients who recover. The condition of the bladder and rectum is characteristic in cases of Landry's paralysis, for these organs are not involved. In the case to which Dr. Sinkler referred, the patient, although completely paralyzed, had no loss of control of these organs; the only abnormal sensation in connection with the bladder was that the patient did not know when he had finished urinating.

DR. J. N. HALL, Denver, said that he thinks it is time that the neurologists should assist in the diagnosis of these cases of Landry's paralysis. He believes that there is an acute ascending paralysis, which sometimes occurs in two forms: In the one there is practically no involvement of the sphincters nor any sensory involvement, in the other there is such involvement. In a very considerable proportion of the cases, about one-third, there was considerable pain, which, to Dr. Hall's knowledge, is a symptom not spoken of very frequently. In his last case there was violent pain in the left testicle. The term Landry's paralysis evidently does not cover all cases of acute ascending paralysis.

### THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

WITH A REPORT OF FIFTY-SIX OPERATIONS.\*

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The familiarity of the members of this Section with the history of the submucous resection of the septum and the principles underlying the operation enables me to devote the time allotted for this paper to an account of my personal work during the last ten months and to some practical deductions from my experience in dealing with the fifty-six cases operated on.

#### CLASSIFICATION OF CASES.

Of the fifty-six cases, forty-one were males and fifteen females. Five were between the ages of 10 and 19, eighteen between the ages of 20 and 29, seventeen between the ages of 30 and 39, twelve between the ages of 40 and 49, and four between the ages of 50 and 57. The youngest patient was 10 years of age, the oldest 57.

I have followed the classification of Freer, which is based on the form of the deflection rather than on its cause. He reports finding a preponderance of the double-angled variety in which there is a distinct, vertical deflection meeting a horizontal deflection at an angle near the floor of the nose. Only five of my cases were of this form. The crest-like deflections of his nomenclature were in the majority, there being thirty-six. In this form the crest usually followed the superior border of the vomer. These crest-like deflections often extended very nearly to the posterior border of the vomer, and in nine cases they ended in marked spur-like deflections pressing against the posterior end of the inferior turbinate and causing considerable obstruction. The extreme posterior border of the vomer, however, as viewed by posterior rhinoscopy, was usually in the median line. In fourteen of the crest-like deflections there were also deflections on the opposite side of the septum higher up in the region of the middle turbinates, forming what might be described as a vertically sigmoid deflection. Ten of the deflections were of the bowed, or C-shaped, variety in which a large part of the septum was bent to one side, encroaching on both the middle and inferior turbinates of the same side. In five cases the antero-inferior border of the quadrangular carti-

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



lage was dislocated into one nostril where, together with the ala of the nose, it formed a valve-like obstacle to inspiration. In these cases the main part of the deflection was usually on the opposite side of the septum. A few of the deflections were of irregular form not easily classified.

Both inferior and middle turbinates were encroached on in thirty-six cases, the inferior alone was crowded on in eighteen cases, and the middle alone in two cases. The deflections consisted of both bone and cartilage in fifty-one cases, in each of which I resected the deflected bone as well as the deflected cartilage. In only three cases were the deflections purely cartilaginous, and in two they were confined to the bone. The septum was considerably thickened in eight cases. In four of these the deflections were of traumatic origin, and in the others the thickened bone was at the apex of marked deflections in the posterior part of the septum. There was often some thickening of both the cartilage and the perpendicular plate of the ethmoid near their line of union in the region of the anterior ends of the middle turbinates. But after passing their line of union the perpendicular plate, as a rule, became quite thin. Removal of this thickened area often relieved the pressure of the septum against the middle turbinates. The anterior end of the vomer was also somewhat thickened in a number of cases. But this often appeared much thicker than it really was on account of ledges of cartilage extending below the superior border of the vomer and resting on its side.

#### INDICATIONS FOR THE OPERATION.

It would be tedious to reiterate the far-reaching consequences of insufficient breathing space in the nose or of marked inequality of breathing capacity in its two sides. In the recent triumphs of the "cold air cure," not only in tuberculosis, but also in many other chronic ailments, we have a most convincing argument in favor of unobstructed respiratory passages. It is becoming more and more apparent that the nose is not only the key to the situation in many chronic affections of the ears, the accessory sinuses, and the respiratory tract below, but that it may be an important factor in many other chronic diseases. The internist recognizes the important rôle played by improperly oxidized by-products of digestion and metabolism in many chronic ailments. Improved alimentation may limit the production of these poisons, but oxygen is indispensable for reducing them to harmless end-products. The body needs an abundant air supply not only to produce heat and support energy, but also to complete the oxidation of the products of destructive metabolism, so as to secure their prompt and perfect elimination and thereby prevent degenerative changes.

In nasal obstruction we often have to decide whether to operate on an enlarged turbinate or on a deformed septum. On account of the former unsatisfactory methods of straightening the septum, doubtless many turbinates were sacrificed which would now be spared with better means for correcting septal deviations. If nasal obstruction is sufficiently marked to require any operation and it can be relieved by correcting the septal deviation, I believe that the submucous resection of the septum is preferable to cutting off the inferior turbinate. In these erectile bodies we have an important functional tissue. If they are intumescent from being crowded on, either by a septal ridge or by a bony enlargement of the middle turbinate, they often assume their normal proportions after such pressure is relieved.

The results obtained by the submucous resection of the septum will doubtless give it the preference over the older straightening operations, such as the Asch or Watson-Gleason operation. The question may well be raised whether sawing off a spur or crest is ever preferable to submucous resection. The insight into the septal skeleton afforded by the submucous resection has taught us, as suggested by Freer, that crests and spurs are seldom solid projections of bone from a plane septum, but that they are usually deflections of comparatively thin bone. If the crest is simply sawed off or chiseled away, the main part of the deflection will remain to obstruct the nares, or, if an attempt is made thoroughly to remove it, a perforation is likely to be made. When the mucoperichondrium covering the crest is thus completely destroyed there is likely to result a dry, scabbing area at the point of the operation. For the epithelial covering which afterward grows over the granulating wound is not equivalent to the original mucosa in secreting power. This condition is aggravated by the fact that the deflection is not completely removed and the atrophic spot is consequently in a prominent position and directly exposed to the desiccating action of the inspired air. If the spur is situated well back where the mucous membrane is more moist, a scabby condition is less likely to result from sawing it off.

#### METHOD OF OPERATING.

The principles underlying the various operations now in vogue are much the same, except in two particulars, the manner of making the initial incision in the mucous membrane and the character of the instruments used. In choosing a method and in selecting instruments I have been guided more by a desire to correct the deformity completely and permanently than to do the operation in the shortest possible time, realizing that the operation once done can not well be done over. As I have used Freer's instruments and followed his technic mainly, I shall not enter into the details of the several steps of the operation, but simply refer you to his lucid and comprehensive papers.<sup>1</sup>

A good chair and an electric head lamp add much to the ease of operating, as well as to the comfort of the patient. I use a modern dental chair, finished in leather, which is adjustable to all positions and can be easily raised or lowered by a foot lever. If the patient is faint at the beginning of the operation, his head may be lowered, if necessary, to a point much lower than his feet. Laying the patient down need not interrupt the operation, for the electric head lamp makes one independent of an outside source of light. The operator stands on the same side of the chair as the side being operated on, with the patient in a slightly reclining position.

Freer's method of local anesthesia was used in each case. Each side of the septum is first swabbed with a 1/1000 solution of adrenalin, and this is followed in about three minutes with an application of pure powdered cocaine rubbed on to the mucous membrane by means of a swab moistened in the adrenalin solution. The absorption of the cocaine is largely prevented by the contraction of the blood vessels produced by the preliminary application of adrenalin, and thus the effect of the anesthetic is practically limited to the field of the operation, while the use of the pure cocaine undiluted

1. *Annals of Otology, Rhinology and Laryngology*. June, 1905. *THE JOURNAL A. M. A.* Sept. 30, 1905, and *Fraenkel's Archiv für Laryn.*, vol. xviii, 1906.



produces profound anesthesia. I supplemented this method by the injection of Schleich's solution beneath the perichondrium in only six cases in which the resection was from the antero-inferior edge of the cartilage. General anesthesia was not used in any case. My patients have seldom complained of pain, and then it has been from the jarring incident to the removal of thickened bone. In one of the most tedious cases, lasting an hour and forty-five minutes, the patient, a boy of only 10 years, insisted that the operation was not painful. No symptoms of cocain poisoning have been observed. Some caution should be observed in applying either the adrenalin or the cocain too frequently. One or two thorough applications of the cocain following a single application of the adrenalin to each side of the septum are usually all that will be required for the operation. Too frequent applications, I believe, impair the vitality of the membranes and may be a cause of marked superficial inflammation following the operation. Troublesome hemorrhage during the operation was present in only two cases, in one of which another preparation of the suprarenal gland than adrenalin was used.

In choosing the side from which to operate I am influenced entirely by the shape of the deflection, for one can operate with his right hand as easily in the right nostril as in the left, provided he stands on the same side of the chair as the side being operated on. It would, of course, be awkward to operate with the right hand in the right nostril if the operator sits in front of the patient who is seated in an ordinary rhinologic chair. I do not always operate on the side of greatest convexity. There is usually no difficulty in operating on the side of concavity if the deflection is located in the posterior or superior part of the naris, but it is particularly tedious to operate on the concave side of a deflection at the anterior end of the vomer. I operate, therefore, as a rule, on the side which has the greater convexity at the anterior end of the vomer, provided this convexity is of sufficient size to require removal. The right side was operated on in twenty cases, the left in thirty-three cases, and both sides were incised in three cases.

I have tried retractors and a number of nasal specula, but nothing has been found so convenient as the DeVilbiss self-retaining speculum. With it one can operate without assistance, except a nurse to handle instruments and use the mallet when the anterior end of the vomer and crista are being chiseled away. A good view of the space between the membranes may be had during forced inspiration, provided the initial incision has been made in the anterior part of the septum. The various long-bladed specula for holding the membranes apart have proved to be a hindrance in my hands rather than a help. The thin elevators, which are used for separating the mucous membrane, may be employed to hold the mucoperichondrium to one side if necessary for deep inspection. If a flap needs to be held out of the way, a thread may be passed through it and tied over the patient's ear, or if it is a superior flap, such as is sometimes made in marked crest-like deflections, it may be tucked into the upper part of the naris out of the way.

There is more difference of opinion possibly as to the position of the initial incision in the mucous membrane than in any other part of the operation. Killian makes a single, linear incision in the anterior part of the septum from the floor of the nose upward and forward, beginning a half centimeter back of the edge of the cartilage. He makes this incision, it appears, in all cases, no matter what the character of the deflection may be,

except when the antero-inferior edge of the cartilage deviates from the median line, in which case he makes the incision follow the antero-inferior edge of the cartilage, as does Hajek in all cases. Instead of this single, linear incision at the front of the septum, anterior to the deflection, Freer makes his incision "follow the summit of the angle or angles of deviation wherever they may be, except in deep-seated crest-like deflections," when he also makes a vertical incision in front of the deflection. The most common deflection encountered by Freer was the double-angled variety, having both a vertical and a horizontal angle. In these cases he makes a vertical incision following the summit of the vertical angle and a horizontal incision from the foot of the first incision forward, following the summit of the horizontal angle, if it is pronounced, otherwise the floor of the nose is followed. Thus in the majority of his cases he dissects an anterior flap having the shape of an inverted L. When there is a horizontal, crest-like deflection, beginning well in front, but with no vertical angle, his incision extends from behind along the summit of the crest, and then turns upward at the anterior part of the septum, thus forming a superior flap. If this type of deflection is seated more deeply in the naris, behind the nasal vestibule, he simply makes a vertical incision in front of the deflection.

I have followed Freer's principle of making the incision follow the summit of the angle or angles of deviation, when the angles are very pronounced or sharp and at the same time situated in the anterior part of the septum. But when the deviations are not pronounced in the anterior part of the septum, I prefer to make the incision in front of the deflection. For this reason and also because I have encountered but few deflections having sharp vertical angles, I have seldom made the L-shaped flap, though in a few cases, having pronounced vertical deflections, it has proved to be an excellent procedure. In the majority of my cases a single incision was made in front of the deflection. It was more nearly vertical than Killian's incision, being located farther back at the top, and care was taken to extend it fully to the floor of the nose so that dissection of the membrane below the summit of the crest could be begun beneath the periosteum near the floor of the nose.

In the case of marked horizontal, crest-like deflections, there is more reason for incising the membrane along the summit of the ridge than in vertical deflections, for it is very difficult to separate the membrane from these crests, and in attempting to make the dissection without an incision along the summit of the crest, one is apt to perforate the membrane. If a horizontal, crest-like deflection, therefore, is pronounced and extends well forward, I believe the membrane will usually be better preserved by making an incision along the summit of the crest than by trying to make the resection through a button-hole incision at the front. The objections which have been made to extending the incision backward, I believe, have been overestimated. A strip or two of lint on the floor of the nose, beneath the interior flap, holds the latter in apposition to the superior flap, and healing by first intention without continued crusting has been the rule in my cases. Moreover, there is an advantage in having a slit in the membrane posteriorly, for if the packing is not inserted with uniform pressure on the different parts of the septum there may be more or less bleeding and accumulation of blood between the membranes. The packing prevents the blood reaching an anterior incision, and if there is no



opening in the membrane posteriorly the blood remains in the intraperichondrial space to delay healing and possibly produce permanent thickening of the septum. With a slit in the posterior part of the membrane it finds exit and is absorbed by the dressing. For this reason I often purposely make an opening in the posterior part of the membrane when the resection has been made entirely through an anterior incision.

When the antero-inferior edge of the cartilage deviates into one nostril, I begin the resection by a mucous membrane incision following the free border of the cartilage, from which incision I dissect out as much of the bent tip as will remove the obstruction it has created in the nostril into which it has protruded. I then begin the resection of the deeper portion of the deflection, whose convexity projects into the other nostril, by a mucous membrane incision in that nostril, made in the usual manner already described, just as if there had been no deflected free border to resect. The cartilage is then cut through from this side and in such a manner as to leave an intact strip between the end of the resection of the dislocated tip and the beginning of the window made in the other nostril, this strip being designed to give support to the tip of the nose. This may not be necessary, though I prefer to leave some support at this point.

The elevators used for separating the perichondrium are generally of a heavier type than Freer's. When the deflection is not marked and the perichondrium separates easily, the heavier elevators make the separation rapidly, but I have found Freer's thin, slightly curved elevators more practical when the deflections were marked, especially when the septum was in firm contact with the turbinate, making it difficult to introduce any instrument between them. His round-bladed knife bent on edge, has been especially useful in separating the periosteum from the concave side of the vomer, which is sometimes a difficult task. The claim has recently been put forward that keen-bladed instruments are seldom necessary for the separation of the membranes. I have not often found keen dissection necessary above the superior border of the vomer, but on account of the periosteum on the two sides of the vomer being continuous with, and connected by, a fibrous band of connective tissue lying between the vomer and the cartilage, especially in the anterior part, I have found it difficult or impossible to separate the periosteum of the vomer without sharp instruments, and as the great majority of the deflections encountered have included the vomer, keen-bladed instruments have been used in nearly every case. The separation of the periosteum below the crest on the convex side is more readily effected by introducing the thin-bladed elevator beneath the periosteum near the floor of the nose, and continuing the separation upward to the summit of the crest.

For making the first incision through the cartilage I prefer a sharp-cutting instrument, such as Freer's half-round, straight knife, held lightly in the hand, and obliquely to the surface of the cartilage. I no longer insert my finger in the opposite nostril, but determine when the knife is through the cartilage by the resistance offered to the knife. In beginning the elevation of the opposite perichondrium the procedure should be watched through the other nostril, and in this step of the operation the beginner will do well to "make haste slowly," for it is very easy with the sharp dissector to plunge through the perichondrium, mucosa and all. A perforation of the mucoperichondrium at this point makes the

rest of the operation much more tedious and difficult, and if the rent in the membrane is not carefully covered by the opposite membrane when the packing is inserted, a permanent perforation of the septum will result.

Ballenger's swivel knife has been used for the removal of the cartilaginous part of the deflection in the majority of the operations. This instrument makes this part of the operation very short, but it is possible to do some damage with it. A report of my experience in one case may help some one else to avoid the same experience. The only perforation occurring at the time of the operation I am obliged to charge to the use of this instrument. The mucoperichondrium of the opposite side had been separated without perforating it, at least no perforation could be seen from that side and the naris was free from blood. The swivel knife was introduced at the lower part of the cut in the cartilage, and after passing it backward some little distance an inspection of the opposite nostril showed that the knife was slitting the mucous membrane as well as the cartilage. One tine of the fork had pierced the membrane, possibly at a point where the perichondrial layer had been lacerated. An effort was made to cover the slit in the membrane by the opposite membrane, but it was unsuccessful and a permanent perforation resulted. When using the instrument now I am very particular to watch the membranes carefully on each side. I know of one other surgeon who had the same experience as mine. It may be said to the credit of Freer's angular cartilage knives that such an accident would be impossible with them.

For the removal of bone Freer's modification of Grünwald's bone forceps has been used, except in operating at the interior end of the vomer and crista which has been removed by means of Hajek's chisel. I have endeavored in each case to remove all of the deflected bone, except in the extreme upper part of the perpendicular plate, realizing that it would be difficult or impossible to follow a submucous resection with a second operation for the resection of remnants of bone that should have been removed in the first operation. When the turbinates are contracted by adrenalin one is apt to be satisfied with too incomplete a resection of the bony portion. After resection of the cartilage the vomer beneath it can be of little use as support to the external nose, and if deflected there can be no objection to its removal.

I am not able to report an average of so short a time for doing the operation as some others. The majority of my operations have taken forty-five minutes to an hour. Some have taken much less time than this, while a few have required an hour and three-quarters. One might be led to believe that the submucous resection is a simple little operation from the reports of some who have done many operations in ten or fifteen minutes, and report an average time of a little more than that. My experience leads me to infer that either their cases have been simpler than mine, or else they do not attach the same importance to the removal of the osseous part of the deflection. Up to and including the removal of the cartilaginous part of the deflection but a few minutes have been required. The tedious part of the operation is the resection of marked deflections in the posterior part of the vomer and of deflections at the anterior end of the vomer.

In about one-third of the cases the mucous membrane has been secured in place by a silk suture, Killian's hook-shaped needle and an artery forceps being



used for the purpose. Both nostrils have been packed according to Freer's method, narrow strips of surgeon's lint impregnated with subnitrate of bismuth powder, being inserted one at a time, stretched over a blunt-pointed applicator. The removal of the packing is usually begun on the morning following the operation. A few strips of lint are left on the floor of each nostril until 24 to 36 hours after operation, for hemorrhage is most likely to occur near the floor of the nose from the septal artery. In no case has it been necessary to repack the nostrils. There has occasionally been some bleeding on removal of the dressing, but it has been readily checked in each case by an application of cold to the entire face, and back of the neck.

The majority of my patients have been able to resume their occupations on the first or second day after the operation. The mucous membrane is kept smeared with the following ointment until healing takes place, and there is no tendency to crust formation:

R. Acidi salicylici .....	gr. viii	5
Olei eucalypti .....	m. v	3
Camphoræ .....	gr. iv	25
Thymolis .....	gr. 1/8	008
Lanolini .....	3ii	8
Petrolati .....	3vi	24

#### COMPLICATIONS.

The only complications of any account which occurred in my fifty-six resections were one case of pus infection between the two perichondria, one case of perichondritis, two cases of marked superficial inflammation of the mucous membrane, and four perforations.

The case having pus infection was a woman of forty. A marked C-shaped deflection extending between the middle turbinates had been removed. The wound followed the usual course of healing until the evening of the fifth day, when I noticed some obstruction of the right nostril from swelling of the mucous membrane of the septum. I did not see the patient again for two days when her physician told me that her temperature was 103°, and that she had probably "taken cold." An examination of her nose showed that the mucous membrane of both sides was bulging markedly into the lumen of the nares, especially in the superior part of the septum. I lanced the membrane of the side operated on and evacuated considerable fluid pus. The patient's temperature dropped to normal within a few hours and there was nothing unusual in the farther course of healing. Several months afterward in writing to her physician she said, "The operation on the septum is entirely successful. I am glad I had it done."

In the case diagnosed as perichondritis there was marked swelling of the membranes, especially in the posterior part, and a temperature varying from 99° to 102° lasting for about a week. No pus was discovered, though the swollen mucous membrane was lanced several times. Neither was there superficial inflammation of the mucous membrane with desquamation of epithelium. The swelling and fever gradually subsided and after two or three weeks the passages became perfectly free and the patient expressed himself as well pleased with the result of the operation.

In the two cases of marked superficial inflammation of the mucous membrane, there was swelling of the membrane and some desquamation of epithelium, but there was little or no fever. There was considerable pain in the nose for two or three days. After subsidence of the inflammation there was a marked tendency to crust formation for some little time. In both these

cases, however, the mucous membrane resumed its normal function after three or four weeks, and all tendency to crust formation ceased. My explanation of the unusual inflammation in these two cases, is the manner in which the cocain was applied. I had been using an inferior article requiring repeated applications to secure anesthesia. For these two cases I had secured another brand which proved to be a pure article. This I applied as formerly with the above result. The difficulty was not from applying it too strong, but too often, for I have applied the pure powder in every case.

The only case in which perforation of the septum occurred at the time of the operation, was the one previously described, in which the opposite mucoperichondrium was slit by the Ballenger swivel knife. The perforation was near the floor and situated sufficiently far back so that there was no tendency for crusts to form in it after a few weeks. Two of the other perforations appeared during the second week after operation. They each occurred in patients having superficial inflammation of the mucous membrane with resulting crust formation. They were small and situated so far back that they gave no trouble. The fourth and last perforation did not occur until about four months after operation. I had seen the patient about three months after the operation and had asked a rhinologist, who was visiting me, to examine the septum, which he did very carefully, and pronounced it a most satisfactory result. An examination of the nose about a month afterwards revealed a small perforation. My only explanation of the occurrence is that there might have been a defect in the perichondrium at the point of perforation and that the mucous membrane yielded to some sort of force, such as blowing the nose. I believe that I am the first to call attention to post-operative perforations.

I believe that perforations may be avoided altogether by taking particular pains not to wound the perichondrium of the concave side, a precaution which sometimes takes a little time. No perforations have occurred since my seventeenth resection. In none of the four perforations mentioned did crusts continue to form, nor was there any whistling, the only two objections to a perforation of any account.

#### RESULTS OF THE OPERATION.

Nasal stenosis was relieved in practically every case, and usually the breathing space was approximately the same on the two sides. If there was any difference, the side operated on was more often better on account of previous vicarious hypertrophy of the turbinates on the concave side. The turbinates were operated on in addition to the septum in only five cases, in each of which the middle turbinate on the side of greater concavity was removed. The enlargement of the middle turbinate, being usually of a bony nature, offered an unyielding contact with the septum when the latter was brought into the median line. In no case was the inferior turbinate operated on.

In most cases the symptoms which brought the patient for treatment were markedly improved, if not entirely relieved. Chief among these were headaches about the eyes, temples or frontal region, nasal catarrh, obstruction in the Eustachian tubes, and in a few cases a marked tendency to sneeze.

Alteration of the external contour of the nose has not been observed, except that in a few patients the dilatores nasi were not so tense after removing the nasal obstruction, thus giving the nose a much less flattened ap-



pearance, and the tip of the nose in a few cases was less bent to one side. Sinking in either of the bridge of the nose or its tip has not occurred, but I have taken the precaution to leave a sufficient strip of cartilage at the antero-superior border of the quadrangular cartilage, and have also not sacrificed more of the antero-inferior border of the cartilage than was necessary to correct the deformity.

#### ADVANTAGES OF THE OPERATION.

1. All obstruction due to septal deformity is relieved in practically 100 per cent. of cases, while by the older methods of straightening the septum "good" results were obtained by the better operators in only about 65 to 70 per cent. of cases.

2. To the feature of thoroughness is added absolute permanency of results.

3. The functional mucosa and submucosa is wholly preserved in nearly all cases. The only function which needs to be considered as liable to be interfered with is that of support to the external nose. Very few operators have mentioned any deformity of the external nose resulting from the operation, and those who have, mention only a slight sinking in of the bridge of the nose due to the removal of too much cartilage beneath it, or to cicatricial contraction of specific origin.

4. The operation may be performed with very little pain under local anesthesia and the risk of general anesthesia thus avoided. It is also unnecessary to subject the patient to the torture of wearing nasal splints for days or weeks after the operation.

5. On account of the results obtained from the submucous resection, doubtless nasal obstruction will now be corrected more often by operation on the septum than formerly, and thus many inferior turbinates, which have an important functional value, will be saved intact, which have been heretofore sacrificed in whole or in part.

In conclusion I append a detailed report of two cases of deflection encountered, together with the results obtained from operation.

CASE 1.—Mrs. S., aged 40; occupation, housework; nationality, American.

*History.*—At the age of 9 years the patient was kicked in the face by a horse, which rendered her unconscious for several hours. The nose was badly bruised, but apparently not broken, and was not set. The forehead and cheeks were also badly cut. From the time of the accident and up to 27 years of age the patient states that she was unable to force air through the left nostril. At about the age of 27 she took treatments for several months from a nose and throat specialist, which consisted of local applications, and after this she was able to force a little air through the affected nostril, though that nostril was still of no use for respiration. At 34 years of age she had a severe fall on the face, which fractured the bridge of the nose, necessitating having it set. Following this injury she could breath a little better through the left nostril, but it was still of no practical use for respiration. The patient states that from the time of her first accident at 9 years she has had an almost constant pain over, and back of her left eye, which at times was very distressing. There was also a disagreeable sense of pressure in the forehead and the external nose was extremely sensitive to pressure, so much so that it was painful even to wash her face, and she was unable to wear glasses that had been prescribed for her. The pain was not quite so severe after her accident at 34 years of age. She had sought relief from both oculists and rhinologists, and was willing to undergo any operation which would offer any hope of relief, but had never received any treatment which had permanently relieved the pain.

*Examination.*—The septum presented a very marked bowed, or C-shaped deflection crowding against the middle turbinate,

the side wall of the nose, and the interior turbinate of the left side, and there was a corresponding concavity on the right side. The breathing space on the right side was practically normal, but on the left side the obstruction to breathing was very nearly complete. I have never examined a nose, I believe, so sensitive to external pressure, without signs of local inflammation.

*Treatment.*—On account of the extreme sensitiveness of the patient, together with the marked character of the deflection, I shrank somewhat from proposing a submucous resection under local anesthesia. To my remark that an operation on the septum might possibly afford her some relief she immediately requested that it be done as soon as possible. A submucous resection was done as usual under cocaine anesthesia, a large part of the cartilage, perpendicular plate, and vomer being removed. A part of the bone at the junction between the vomer and perpendicular plate was considerably thickened. The wound healed without complications.

*Results.*—Very nearly as good breathing was obtained on the affected side as on the other. The relief from pain about the eyes and the extreme sensitiveness of the external part of the nose was complete from the day after the operation, when the packing was removed, and was permanent. Two months after the operation the patient wrote me, "The operation on the septum has completely relieved me of pain about the left eye and the disagreeable feeling of pressure in my head."

CASE 2.—Mr. H., age 22, occupation dishwasher.

*History.*—The patient had suffered from nasal catarrh with considerable obstruction to breathing for many years. About seven years ago he began to be affected by epilepsy. The attacks at first came about once in two or three weeks. They had increased in frequency until, during the past year, and up to the time I operated on him, they had been coming regularly once a week, and he was unconscious usually about an half hour at each attack.

*Examination.*—The septum presented on the right side a marked crest-like deflection crowding against the interior turbinate, and higher up on the left side there was also a marked deflection pressing against the left middle turbinate, the deflection being sigmoid vertically. There was considerable obstruction to breathing on both sides.

*Treatment.*—A submucous resection of the septum was performed under local anesthesia. As the day on which the operation was done was the one on which the patient expected an epileptic attack, I gave him ten grains of potassium bromid before the operation, he not having had any bromid for several months. A large amount of cartilage and bone was resected, which resulted in a practically straight septum.

*Results.*—A good breathing space was obtained on each side. I was somewhat surprised at the effect of the operation on the epileptic attacks. The patient did not have another attack until four weeks after the operation, which was five weeks after his last seizure. I had the patient keep a record of his attacks up to within a few weeks ago. For several months they came only about once a month and after that they increased to once in about three weeks. Since the operation the period of unconsciousness at an attack was usually not more than ten minutes, whereas, before the operation, it was usually a half hour, and the attacks came regular once a week. The patient did not have bromids after the operation, nor had he had them for several months before the operation. There was practically no change in his general treatment after the operation. I do not advocate the operation as a cure for epilepsy, but simply give the facts in this particular case. Several months after the operation the patient had a severe fall on a cement floor, striking directly on the bridge of his nose. This resulted in a severe hemorrhage, but an examination of his nose several hours after the operation showed that the accident had not altered materially the external contour of the nose. In this particular case I had removed a large part of the cartilage vomer, and perpendicular plate of ethmoid beneath the bridge of the nose, but the results of the fall would seem to indicate that the support of the external nose was not materially weakened by the operation. A very marked improvement in the patient's catarrhal condition resulted from the operation, and he reported several months after the operation that he had not felt so well for years.



# THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

SOME REMARKS BASED ON SEVENTY-FIVE CASES.\*

LEE MAIDMENT HURD, M.D.

NEW YORK CITY.

In the series of submucous resection cases which forms the basis of this paper, I find that the number of males predominates over the females three to one. The average age is 27.2 years. The youngest patient was 10 years of age; five patients were under 15 years of age; the oldest patient was 64 years. The deflection occurred one-third oftener to the left than to the right. Only six gave a clear traumatic history, while in one-third of the total there was an indefinite traumatic history. In all these cases the bone as well as the cartilage was involved. Seven patients had previously been operated on with the saw or by the Asch method.



Fig. 1.—The author's submucous elevator.

There were three perforations of the septum, equaling 4 per cent., one due to early inexperience, one to Ballenger's knife and one to a knife slipping off the anterior nasal spine while dividing a very thick periosteum. None of these perforations gave the patient the slightest trouble. Their only knowledge of their presence is from being so informed. One girl of 14 years had exophthalmic goiter which disappeared after the submucous operation. Another woman of 34 years had atrophic rhinitis with crusts on the concave side. She is now entirely well of that condition.

## INDICATIONS AND CONTRAINDICATIONS.

The indications might be summed up in a few words by saying that any and all conditions of the septum requiring the removal of tissue should be done submucously. Do not misunderstand me; I do not advise a

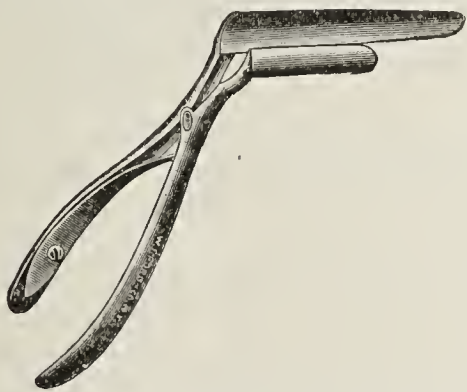


Fig. 2.—The author's submucous nasal speculum.

window resection for a small spur, but I claim that it should be removed without sacrificing any mucous membrane. Deflections should be corrected submucously with but few exceptions, namely, recent traumatic cases where the component parts of the septum can be replaced.

The window resection should entirely replace the former methods of Asch, Gleason, Roe and others. In addition to the recognized pathologic conditions in which this operation is indicated and practiced, I have found where there are (1) a septum that is too thick, a condition which can probably be traced to some previous injury; (2) a thickened cartilage and much fibrous tissue between it and the anterior nasal spine, which may be

abnormally high and thick; (3) the neurotic type where the thickening is high up on the septum. These all yield equally well to the submucous method.

The contraindications are few. Do not operate where there is any indication of active syphilis, acute rhinitis, hay fever, diabetes, or advanced tuberculosis. Pus in the nasal cavities due to sinusitis is not a contraindication.

## METHOD OF OPERATION.

The method that I have employed is to make a curved incision just in front of the deflection through the convex mucous membrane down to and slightly into the cartilage from the floor upward and forward as far as it can go, generally about one inch. Some operators claim that this incision does not give enough room for vision and attack of the bony deflections. I can only say that I have worked with a plain 32-candlepower

electric lamp and can see perfectly and reach any portion of the septum easily with the submucous speculum in place. This incision I place just in front of the deflection. The mucoperichondrium is then elevated a short distance, or until it shows no adhesions, by using the sharp end of the elevator. Then proceed with the reverse or dull end of the elevator, which is made of copper, so that its shape can be adapted to any structural irregularities. It is sometimes impossible to elevate the membrane behind a very acute angular deflection until the cartilage has been removed above it. I now go through the cartilage to reach the membrane of the other side. I accomplish this by using a bone curette, thereby

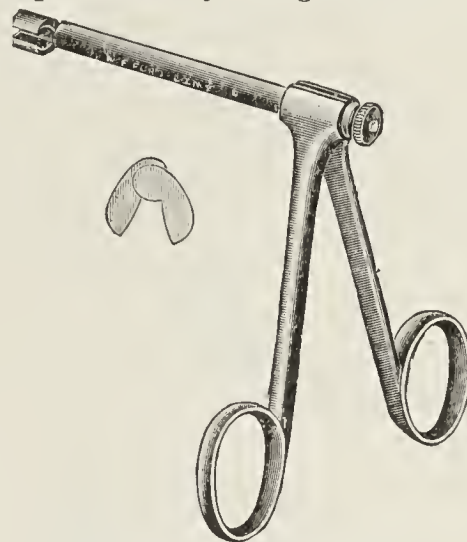


Fig. 3.—The author's down-cutting forceps for attacking the septal ridge.

avoiding any injury to the opposite membrane. By this means I take out a strip of cartilage about one-eighth of an inch wide and half an inch long, which gives a sufficiently large space in which to start the elevation of the opposite mucous membrane with the sharp end of the elevator. This accomplished, I continue with the blunt end.

Now, having the mucoperichondrium and periosteum free on both sides over the deflection, the cartilage is removed either with my forceps or with a Ballenger knife. Introducing my speculum, which has a long upper blade and a short lower one, so that the long blade is uppermost at all times, I have a perfect view of the operative field, without lateral interference. With the same forceps used for the cartilage, the bony deflection is now broken away, first above the ethmo-vomer articulation,

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session June, 1906.



then below, generally bringing the thickened ridge with it.

I leave the anterior nasal spine until the last whenever it is possible to do so, as I have found that its mucoperichondrium is separated more easily from behind forward than the reverse, and because there is more tendency to hemorrhage at this point than at any other, on account of the two palatine arteries that enter the spine from the foramina of Stenson. Sometimes there is a slight shock when this spine is broken off, on account of the severing of the nasopalatine nerves. The periosteum of the anterior nasal spine covers it entirely and

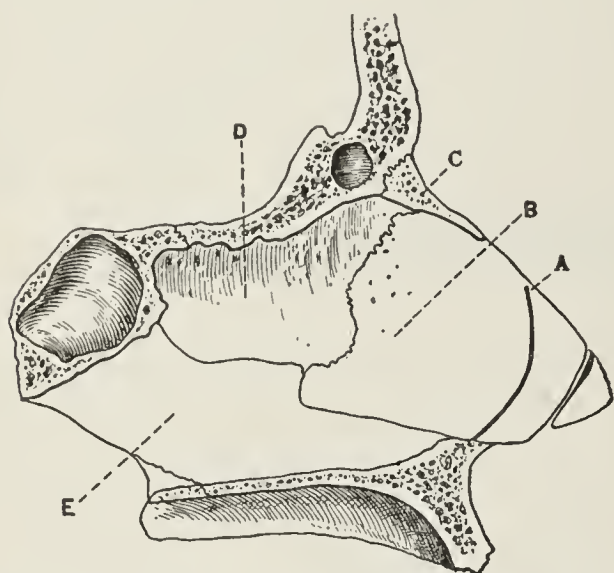


Fig. 4.—Nasal septum. A, curved incision; B, quadrilateral cartilage; C, nasal bone; D, perpendicular plate of ethmoid; E, vomer.

the cartilage sits on it. At times it is so thick and tough that it is necessary first to incise it with a knife in order to separate it from the bone before using the elevator. If the periosteum is very adherent, I use the bone curette as an elevator; as soon as the periosteum is free the deflected bone is easily removed with the down-cutting forceps. This method is painless and there is no danger of injuring the mucous membrane.

I now remove the submucous speculum and coaptate the two septal membranes. If they are in the median line, with no bulging areas, the operation is complete.

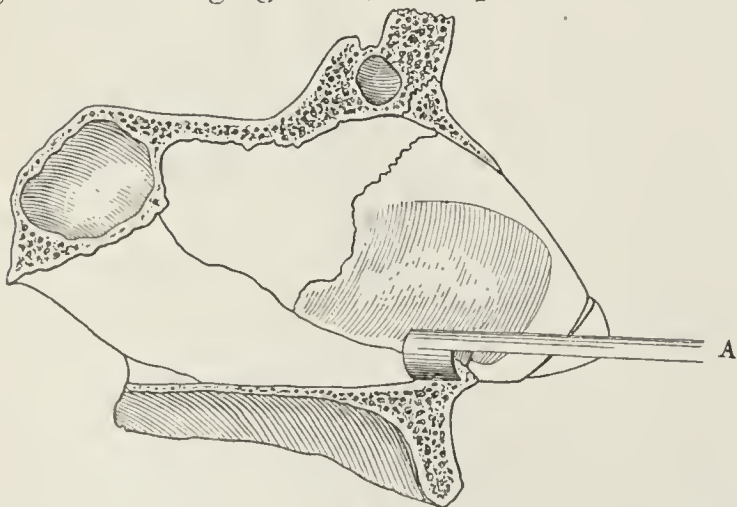


Fig. 5.—The shaded part shows the portion of the cartilage removed. A, the cutting forceps engaged on the anterior nasal spine or incisor crest and the vomer.

Should any deflection of bone or cartilage remain it must be removed, after which the sac formed by the septal membrane and the nasal chambers is irrigated with a mild antiseptic solution. The membranes are then coaptated and the two nasal cavities packed.

I have as yet found no entirely satisfactory form of packing. I formerly used Bernay's sponges, but they do not cover sufficient area and they create a pressure which can not be regulated. Lately I have been using

gauze strips packed between two layers of guttapercha tissue. This with a hard rubber splint on one side gives some opportunity for nasal breathing and is fairly satisfactory.

#### SPECIAL INSTRUMENTS NECESSARY.

I find four special instruments necessary, augmented by a few others that can be found in every rhinologist's armamentarium. The necessary instruments are an elevator, submucous speculum, and two pairs of forceps—one downcutting—which have been previously described.<sup>1</sup> Some form of knife is necessary for the initial incision. I personally like Myles' septum knife, set at right angles to the shaft, and a bone curette to go through the cartilage. These few instruments may be supplemented by more forceps of different sizes and a Ballenger knife. I am not as enthusiastic over the Ballenger knife as formerly, on account of two bad lacerations I have had from its use, accidents over which I seem to have had no control, but I still use it in young patients where I have reason to believe the cartilage is large. A smaller and thinner elevator can at times be used to advantage in traumatic cases.

#### COMPLICATIONS.

Among the complications following this operation the most annoying is the formation of hematoma. This

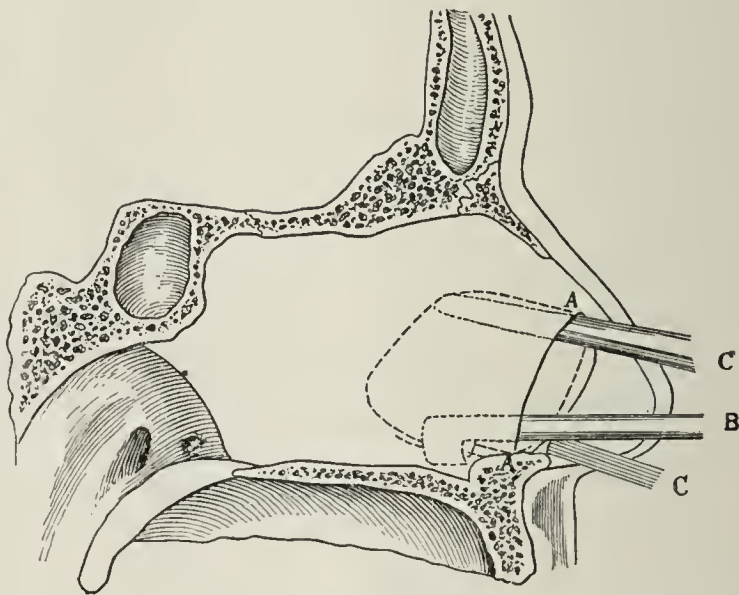


Fig. 6.—A-A shows the incision held open by the long blades of the speculum C-C; the dotted enclosure indicates the amount of cartilage removed; B, down-cutting forceps attacking the lower deflected border.

forms between the septal membranes usually beyond the reach of the packing, or else after the removal of the packing. To prevent the formation of hematoma in cases liable to excessive bleeding, my custom is to place the packing in both sides of the nose, and allow that on the convex side to remain two days instead of 12 hours.

I have seen no septic infection, and there should be none if the operator is clean. I may say here that extreme attention to asepsis, such as covering a patient with sterile towels, disinfecting the nose and face, which I formerly used and recommended for a time, I now find is not necessary, provided all instruments, the surgeon's hands and everything that goes into the nose is sterile. This method has given me good results.

#### IMMEDIATE RESULTS.

The nasal packing causes considerable discomfort. To some extent I have diminished this by using a hard rubber splint in the opposite side, which gives the patient some breathing space. I find there is more complaint from the enforced mouth breathing than from

1. Medical Record, Nov. 25, 1905.



the pressure caused by the packing. The first night there is considerable oozing of blood-stained serum which is very annoying and often frightens nervous patients. There is a reactionary swelling seen after the packing is removed, which subsides in from two days to two weeks. For this condition I give an ointment containing 1 per cent. of menthol, which affords some relief.

#### ULTIMATE RESULTS.

The ultimate result achieved by this operation respecting nasal breathing particularly has been uniformly good. In some we have not only a deviated septum to deal with, but also a bulging of the turbinates which may be either bony or hyperplastic in character. This condition may be simulated by the septal deviation pressing on the turbinates or by a true bulging of the bone as well. In these cases after the septum has been placed in the median line it will free the previously occluded side and partially close the formerly open cavity. If the bulging of the turbinates is due to a hyperplasia of the mucous membrane (which is often the case, due no doubt to a local vasomotor change caused by the deflected septum pressing against the opposite turbinate) the hyperplasia will gradually subside and in the course of a month or two the nose will have an entirely normal appearance. Should the bulging of the turbinate in the formerly open chamber be bony, it is best, in my judgment, first to place the septum in the median line and later to correct the shape of the turbinate by a submucous method, practically remodeling the nasal cavity.

The question now arises, Do the cartilage and bone regenerate? They do not. After a period of from one to two years I have examined most of my old cases and have found the septum flaccid to the slightest touch of the probe. From one patient, aged 14, I removed a section and submitted it to a microscopic examination and found only the two mucoperichondria with a small amount of fibrous tissue between them. As the septal ossification is not complete until the twelfth year I am keeping the few patients I have treated below that age under observation to see if there will be any regeneration. I do not believe in leaving islands of bone or cartilage adherent to one membrane as nucleus for further growth of bone or cartilage, as one operator suggests, for I believe that this would rather act as a foreign body. I have had one patient complain of soreness across the dorsum of the nose and in the columnar nasi on being moved from side to side even four months after operation.

The nasal profile I have never seen affected except in one case, that of a child 10 years old who had one of the worst deflections I have seen. The tip of the nose was strongly bent over to one side and somewhat depressed. After several months there was a slight depression just below the nasal bone, but the physician who referred the case to me was of the opinion that there was no change in the profile.

I go as far forward in the cartilage as is necessary to remove the deflected portion, and have not had any sinking of the nose, but I do not believe that it is a good plan to start the cartilage resection at the free border, if it can be avoided, as in the few cases in which I have done so the result is a weakened nose—at least the tip has not the same resiliency it had before operation, although there is no depression. I think it is better to leave a small strip of cartilage in front, running from the floor upward to the junction of the lateral cartilages. If this strip is badly deflected, replace it in

the median line at the time of operation or by a slight subsequent operation.

In regard to the interference with the nerves and blood supply caused by removing the anterior nasal spine or nasopalatine canal, I have attacked both whenever that portion was affected and have had no bad results of a neurasthenic nature; therefore, I am strongly of the opinion that those who have advocated that theory find the anterior nasal spine hard to remove and use this means of excusing their faulty technic.

The mucous membrane of the septum, which before operation was congested and inflamed, generally becomes perfectly normal in color without any after-treatment.

At times the incision leaves a white linear scar, at others no scar is visible. Rarely there is a slight dryness of the membrane near the incision for several months afterward.

Perforations seem to give no trouble. The patients are only aware of their presence on being so informed, and there is no crusting about their edges. Theoretically an operator should have no perforations, but practically he will have a small number. As they cause no disturbance, I think there has been too much stress laid on the subject. Of course, it is pleasant not to have them.

The submucous window resection has now been sufficiently tested both in relation to number of cases reported and their ultimate results to place it on the firm foundation it deserves.

15 East Forty-eighth Street.

## SUBPERICHONDRIAL AND SUBPERIOSTEAL OPERATIONS ON THE NASAL SEPTUM.\*

ROBERT CUNNINGHAM MYLES, M.D.  
NEW YORK CITY.

The history of the subperichondrial and subperiosteal operations on the nasal septum is brilliant. It seems that every writer who has dealt with this subject has added something to the progress leading to the perfection of the technical details, and has also improved or added some new instrument to carry out the intricate and difficult proceedings incidental to the satisfactory performance of these remarkable operations.

In my opinion, your chairman, Dr. Freer, has done more than any one else in this country to popularize and promote the operation. For several years he has persistently demanded its adoption, making many original suggestions in regard to procedure, instruments and technical details which to-day may be said to be almost complete.

#### AUTHOR'S PREVIOUS TECHNIC.

I commenced to experiment and operate beneath the perichondrium fifteen years ago, and presented a paper<sup>1</sup> on the subject to this Section at Atlanta, May, 1896. I crave your indulgence for an extensive quotation from the same in order that you may appreciate the progress that has been made since that time. Speaking of my method of subperichondrial resection of the offending portion of the cartilage of the septum in cases of vestibular stenosis, I said:

The operation consists of first carefully cleansing the vestibule (squamous epithelium area) and then making it aseptic

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Surgery of the Nasal Vestibule with Reference to Certain Forms of Stenosis and Facial Disfigurements." THE JOURNAL A. M. A., Sept. 26, 1896.



with solutions of 5 per cent. carbolic acid and 1/1,000 bichlorid of mercury. After this the anterior part of the fossa, posterior to the vestibule, is carefully packed with bichlorid and iodoform cotton. Extreme precaution is used in regard to asepsis in everything. A perpendicular incision is made about 2 or 3 mm. posterior to the margin of the projecting cartilage. The incision is usually made about an inch long and extends down to or near the floor. The perichondrium and the mucous membrane are dissected from both sides of the cartilage, and a piece about 10 to 15 mm. in length and 2 to 4 mm. in width is removed with great care, especially in reference to making a counter opening in the membrane. I never remove the anterior upper part of the cartilage, which is left for the purpose of sustaining the tip of the nose in its proper position. Delicate knives, periosteal elevators, Dr. Noye's eye speculum, a small needle-holder, the smallest size curved needle, and a pair of self-registering rat-tooth forceps are the most essential implements. In certain cases I have found a small knife with short, lateral curve very useful in making the transverse cut

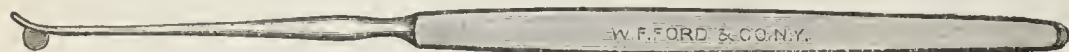


Fig. 1.—Dr. Myles' septal knife.



Fig. 4.—Dr. Myles' septal knife.

for severing the cartilage. The wound is very carefully cleansed, all blood clots and ragged edges are removed, and the parts are brought together with very fine silk sutures. In the majority of these cases the wound unites by first intention and the after-treatment consists of filling the vestibule with aseptic cotton and leaving it in place from two to three days. The results are beneficial from a respiratory sense; the appearance is much improved, and a decided improvement in the quality of the voice usually follows.

Another form of vestibule stenosis, which ought to be placed in the second class, is caused by a deflection, and circumscribed ecchondrotic growth or enlargement on the convex side of the triangular cartilage, and can be relieved by this method of subperichondrial dissection. In Case 3 the atmospheric pressure has caused a depression in the space between the upper and lower lateral cartilages; the stenosis was almost complete when he applied to me about one month since. I dissected out a large growth, which was situated on the septum opposite the depression, and three-quarters of an inch from the margin of the anterior nares. Cocain made the operation



Fig. 2.—Dr. Myles' sub-mucous speculum.

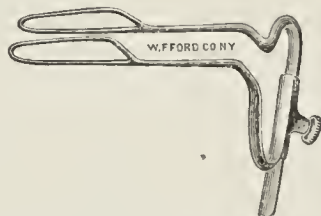


Fig. 3.—Dr. Myles' sub-mucous speculum.

painless. The wound was brought together with four stitches; it united by first intention; in five days the dressing was left off and a small glazed line was all the evidence to indicate the place of operation. The stenosis was relieved and the breathing through the nostril was comfortable.

It is taken for granted that thorough care in aseptic methods should be used in any case that demands this extensive surgery between the deeper layers of the periosteum and perichondrium of the septum nasi. Sepsis, perforation and hematoma are the three points a thoughtful physician keeps most in mind. The irregular deviations and exostotic growths on the convex side have all been sufficiently described many years ago by numerous authors when advocating the different cutting, crushing and sawing operations for straightening the septum and relieving stenosis.

## AUTHOR'S PRESENT TECHNIC.

My most favored incision is usually made 2 to 6 mm. posterior to the anterior end of the cartilage, commencing on the septum about 4 to 6 mm. from the edge of the cartilage which forms the bridge of the nose. This is sometimes made perpendicular with a slight oblique slant backward, and on other occasions slightly in the shape of a crescent. I rarely employ the L-shaped incision of Freer, but make an additional incision along the ridge which marks the junction of the cartilage and the vomer, as well as the junction of the ethmoid and vomer, leaving a band of nasal membrane intact extending down to the floor of the nose. When this latter incision is not made, and in cases in which deep dissection from the perpendicular plate of the ethmoid and vomer has been performed I make small counter openings by cutting out a small piece of the nasal membrane and securing drainage through the mucosa near the base of the cavity on the side in which the incision has been made.

The most favorable point for the initial elevation of the perichondrium is beneath the upper part of the alæ nasi at the uppermost end of the incision. Figure 1 represents a knife which I have used for many years and have found far superior to any of the many kinds that are otherwise in use. It is circular-shaped, can be easily sharpened and kept sharp, and it is almost impossible to wound with it the opposite side of the nasal membrane. A little care and time expended on the first elevation of the perichondrium will be well repaid by the ease, safety and rapidity of the operation, for the perichondrium, after leaving the vestibule, is usually easily separated by a dull, wedge-shaped elevator.



Fig. 5.—Dull elevator.

The minute details of the operative procedures have been reported and described so frequently that it would seem superfluous to repeat the greater part of them. But there are certain points, the importance of which I would impress on you. Encouraged chiefly by Freer's reports for several years past, I have removed extensive sections of the quadrangular cartilage, the perpendicular plate of the ethmoid bone, the vomer, and the nasal spine of the superior maxillary bone, and have never caused a perforation, nor made the bridge of the nose sink, nor had a death. All these possibilities are naturally considered by careful, conscientious operators.

Perforations posterior to the anterior third of the septum should cause no serious concern, save that they are usually indicative of a clumsy and indiscreet manipulative technic. I have had one serious case of hematoma which formed and became septic more than a week subsequent to the operation. I also had another case which became purulent two weeks after the operation at a point on the vomer two inches within, where a large exostosis had been removed. Free incisions, curettage, irrigation and tamponage cured the cases after several days of solicitude in the case of the hematoma. I may add that these infections occurred simultaneously with severe attacks of influenza which extended throughout the nose, pharynx, larynx, trachea and bronchi.

My favorite method of procedure which I have employed more or less for several years is inaugurated by washing the vestibular walls of the anterior nose with



water, green soap, alcohol and ether. When possible, I apply a bichlorid dressing over the region of the vibrissæ for a few hours. Sterilization should be as complete as for a brain or abdominal operation. The upright position is preferred with local anesthesia. When patients are extremely nervous or hysterical, I use a reclining chair with an incline of 20 to 45 degrees.

The same methods of using cocaine are employed as we have been using for more than 15 years: careful rubbing in over the operative area of small quantities of the crystals, moistened with a 10 per cent. solution; this to be followed by 1 to 1000 solution of adrenalin, and this to be followed in turn by the application of thin layers of cotton moistened in the same manner as the swabs. Care should be exercised that the secretions do not carry the cocaine down on the floor of the nose and into the rhinopharynx.

After about 5 to 8 minutes everything should be in readiness for the operation. Two hypodermic syringes with asbestos pistons should be previously prepared, one containing a sterile solution of cocaine, .12 of 1 per cent., and the other a solution of adrenalin, 1 to 1000. I use the asbestos pistons, because glass pistons draw the air in when used in an upward position. The .12 of 1 per cent. solution can be used freely and often, and is needed frequently when extensive dissections are required near the floor of the nose and on the vomer.

#### INSTRUMENTS.

The operation can be done with a few instruments, but I believe it would be best for us to continue experimenting with many new and old instruments in the



Fig. 6.—Horned chisels.

hope of selecting without personal prejudice a more servicable kit than we have at present. Some thoughtful worker might produce an instrument that might compare favorably in usefulness with the indispensable and matchless Ballenger knife.

Two speculums which I have found useful when removing the deeper parts of the cartilage and bone are represented in Figures 2 and 3. They are self-retaining and can be manipulated with the left hand.

I have experimented with many knives, but have returned to those which I suggested many years ago. Two of them are represented in Figures 1 and 4. Two are of the disc pattern and the other is sharp-pointed and protected. Freer's sharp elevators have proven very useful for the initial elevation of the perichondrium and also wherever the perichondrium and periosteum are tightly adherent. The dull elevator, semi-olive shaped, resembling very much the form of a bean set at right angles to the handle, has been found very useful for separating the membranes from the cartilage and bones, except as above stated (Fig. 5). Previous to the advent of the Ballenger knife I employed two little horned chisels for removing the greater parts of the cartilage. I still find them useful for severing small inaccessible pieces of cartilage and sections of the bones (Fig. 6).

My excisor forceps have been found sufficiently strong for removing sections of the cartilage and thin bones, but I would not advise their use for cutting thick and exostotic bones. The anterior lower part of the perpendicular plate of the ethmoid bone is thick, especially

where it articulates with the cartilage. A strong edge-to-edge cutting forceps, a Kyle saw, or a trephine may be required to make the proper section. The Hurd forceps for cutting the ridge and the Foster-Ballenger forceps for heavier bones give promise, but, in my opinion, are too large to permit a good view when the part is being severed. The want of delicacy combined with strength, the stumbling block so frequently met with when operating in the recesses of the nose, meets us here with equal force. It is my opinion that many of the perforations made through the membrane on the convex side in the deeper parts add to the general good results by providing counteropenings for the drainage of blood and serum.

Tamponage may act in a way reverse to its intention by preventing drainage and causing the blood to dissect the membranes from the cartilage and bone and produce necrosis, as is the case in traumatic hematoma, which could cause meningeal sepsis through the cribriform plate or sinking in of the nose in the region of the bridge.

#### TIME AND SPEED.

The question of time and speed should be seriously considered. Some operators contend for an average time of ten, twenty and forty-five minutes. This, in my opinion, is absurd, for they might as well contend for an average speed in operations on the little toe and the thigh bone, as they both belong to the lower limbs. I have done the cartilage operation in five minutes, ten minutes and half an hour, depending on the amount to be removed, the nervousness of the patient and the hemorrhage. Another patient has required an hour and a half. He had been operated on several times previously by different operators; there was an adhesion almost the entire length of the inferior turbinate, an extreme deviation of the cartilage and bones, about two and a half inches in length. The sawing, trephining and burning operations had caused hiatus in the cartilage, and firm periosteal adhesions to the bone. I noted that the adhesion held the membrane of the convex side, and was a great aid in keeping it out of the way of the operative field. A thick membrane was dissected from the outer wall, where the adhesion was located, and carried over and placed against the membrane of the opposite side of the septum, and a splendid nasal fossa was secured without any tendency to reformation of the synechia.

#### VALUE OF THE OPERATION.

The submucous operation has solved the problem in those cases in which the anterior inferior part of the perpendicular plate of the ethmoid bone is deviated to such an extent that it presses firmly on the anterior end of the middle turbinal, the ethmoidal cells and the nasal process of the superior maxilla. This condition is frequently associated with a feeling of pain and pressure in the side of the face and head, which incapacitates the patient in many ways. Occasionally there is an empyema of the frontal ethmoidal and antral sinuses due to pressure on their outlets.

In several cases I have obtained cures, in spite of their being most obstinate and long-standing cases of empyema, by executing a complete submucous operation, removing all of the deviated cartilage and bone which had previously made it impossible to perform the internal operation of removal of the anterior ethmoidal cells, floor of the frontal sinus and median wall of the antrum of Highmore.

In two cases the perpendicular plates of the ethmoid



were removed to within 2 or 3 mm. of the cribriform plate above and nasal bones in front.

In the cases of extreme deviation of the end of the cartilage, where it practically closes the nostril on the side of the concavity, I do not dissect out the projecting end, as described in my former paper,<sup>1</sup> but perform the classical submucous operation on the convex side, leaving a column of cartilage of 4 to 6 mm. in its longest horizontal diameter to support the tip of the nose. If the tip should not recede sufficiently toward the center line, a part of the anterior edge can be dissected, as described in the original article.

I emphasize the importance of one or two counter-openings through the flap of the side of the incision. These openings should be made in all cases where the cavities between the membranes are deep and as near the bottom of the cavities as possible.

### DISCUSSION

ON PAPERS OF DRS. BYINGTON, HURD AND MYLES.

DR. J. GIBB WISHART, Toronto, Can., said he did not know why one operation should be expected to do all the work of putting the septum in proper shape, or in the shape required for the use of the person who owns that septum. A perfectly straight septum is very rarely seen. There are cases in which the septum is not perfectly straight, and yet apparently the patient suffers no inconvenience. Each case must be investigated on its own merits and it falls to the surgeon who has the case in charge to adopt from his experience the best method to be selected for the treatment of the particular difficulty he has to deal with. He decried the idea of a blanket operation to do all of this work, and also the idea going forth of the rhinologists who are coming up and being educated, that the submucous resection operation is the operation *par excellence* for the treatment of all cases of deflection of the septum. Another point. He would hesitate to remove any more septum than was absolutely required in his judgment for the purpose of the operation. To preserve the mucous membrane it is quite as important that the cartilage and the bone should be preserved to as great an extent as possible. Conservatism should be the watchword in this respect; the real conservatism that seeks only the best welfare of the patient. As to the question of removing the septum in young children, he knew of no case in which he had attempted to do that, and he could not say that he had yet heard or learned anything that would lead him to remove the septum in a young child. He operates frequently to straighten septums in children, but he objects to their removal. Concerning strong antiseptic solutions in preparing the nasal cavities for operation, he said that antiseptics, or rather asepsis, should certainly be used, but he has a suspicion that these strong antiseptic solutions do damage to the delicate mucous membrane.

DR. JOHN O. ROE, Rochester, N. Y., said that all new operative procedures requiring special skill usually have so many advocates that they soon become very much overdone. Nearly every operator believes it necessary for him to report a long series of operations in order, as Dr. Wishart has said, to show his brilliancy and dexterity in this line of work. This can not be more clearly illustrated than by the numerous operations for resection of the septum that are reported, it being evident that every deviated septum that comes under observation is at once elected for this operation regardless of the conditions present. Resection of the septum is of special service in cases of thickening of the septum with or without deviation, if the nasal passages are small and undeveloped, it being preferable to remove the thickened cartilage rather than the turbinated bodies in order to give free breathing space. He agreed with Dr. Myles that in the large majority of cases in which resection is called for it is necessary only to remove the thickened portion, sufficient to restore the normal patency of the nose. It is not only unnecessary, but unscientific, to remove the framework of the septum because bent out of the median line, when it can be easily and quickly fractured and put in its normal position. It must seem as absurd and uncalled for in such cases, as it

would be to remove the entire bone of a bent femur for the purpose of straightening it. The removal of the entire or greater portion of the supporting framework of the septum is to be deprecated, and it will not be very long before a series of flattened noses will require attention. Recently he saw a medical student who had had his triangular cartilage and vomer resected by his professor to correct a deviated septum. There is now not only a very large hole through the septum but, after a lapse of but a few months, the nose is becoming so flat that it looks very much like a syphilitic nose, and the student wishes very much that he had his bent septum back again. He fully agreed with Dr. Wishart in regard to the performance of this operation in children. Resecting a large portion of the septum ought not to be done in children because it interferes with the growth of the septum and its proportionate development to the other parts of the nose, and after a while the child has a flat nose. In the case of spurs, enchondromas, etc., associated with the deflection, resection of the thickened portion is necessary, but to remove the entire framework of the septum because it is simply deviated from its normal position is uncalled for. He resects the thickened portion, fractures the osseo-cartilaginous portion and puts the septum in the center of the passage, then by holding it there 4 or 5 days with a suitable support, until it becomes "set," so to speak, there is a normally straight septum. He has seen cases in which the nose has been completely obstructed by a deviated septum and the operator thought he had made a great success by simply making an opening so that the patient could breathe through it. An operation is not a success unless the septum is put in the center and made normally straight on both sides, with both nostrils equally free and unobstructed. The fracture of the osseous and osseo-cartilaginous portion is made by means of fenestrated comminuting forceps. These forceps are a valuable adjunct to the other operations designed for, or adapted to, the correction of deviations of the cartilaginous portion only. They are a great aid in the submucous resection operation in fracturing the deeper portion of the septum when deviated but not thickened and when resection is unnecessary. In all these operations thorough asepsis is of the utmost importance. In the submucous resection of spurs or thickening from one side of the septum only, there is scarcely any danger of a perforation resulting from a solution of continuity of the mucous membrane so long as the mucous membrane on the other side is undisturbed. There is also little or no danger of sepsis in these cases if the proper antiseptic precautions are carefully observed.

DR. T. R. CHAMBERS, Jersey City, N. J., recalled the time when one of the fathers of rhinology taught how to place a little piece of fine rubber tissue delicately in the nose so as to separate the parts, the septum from the turbinate, etc. After that came Asch with his operation, and after a number of successes it seemed that the question was solved, that everything was going nicely. Then came the Gleason operation and its modifications. It seemed, with its successes, that things were a good deal better than they could ever have been expected to be. Now comes the submucous operation, and it seems for the present as if this has solved the whole question. It provokes admiration to hear of Ballenger and others who do the operation in an average of 10 to 30 minutes. Dr. Chambers operated in his office on a case in which there was an angle posteriorly and one perpendicularly, a case that had been operated previously by the Asch method. He came against that perpendicular plate and was two hours in getting past it. His collar was wilted, his patience gone, but he thought he was doing well to get through in two hours. He believed many others have the same kind of cases and meet with the same trouble. Dr. Freer spoke of an important point, viz., getting around the angle with a blunt hook. Dr. Chambers thinks he can get up there as fast as anybody, but when he gets there he is almost sure, if not very gentle, to find himself through. He can not see it but he knows if he pushes a little further the director will go through. He did not know about the loss of perichondrium. Dr. Byington spoke of the cartilage not returning after two years. Dr. Chambers, whose experience is about two years old, finds in his cases that very often he gets mucous membrane without perichondrium, and has good results. Dr. Byington spoke of having a good chair and headlight. Dr. Chambers does not understand how an operator can sit down with the



patient in front, and use cocain. Perhaps the patient may have an idiosyncrasy against cocain and faint. Dr. Chambers always stands on the patient's right hand, whether operating on the left or right side. Before the Simpson tent modified in the shape of the nostril came out, there was a tent of compressed cotton made circular, and shaped as the case may need. These he uses. He has tried to sew the mucous membrane, but found the stitches pulled out and he gave that up. In regard to this operation there is one cause of congratulation, viz., that it does away with the mutilation of the Asch operation and operations in which forceps were necessary in order to relieve the elasticity of the cartilage. Taking out the cartilage between two layers of mucous membrane is not mutilation, it is simply making the inner tissue fall back to its proper place.

DR. SIDNEY YANKAUER, New York City, said that there are two main bends in a deviated septum; they lie at right angles to each other. One, an oblique bend, going from the vestibule upward and backward, marks the line of union between the cartilage, and the vertical plate of the ethmoid above and the spine and vomer below. The vertical bend passes through the middle of the cartilage above; below, in the bony portion, between the tip of the vomer and the anteronasal spine. The point at which these two cross is an important point in the anatomy of the deviation, the apex. Attention should be directed to the anatomy of the upper surface of the spine and of the vomer. This surface is very rough and the edges are prolonged in the form of irregular projections or serrations. In removing the bony part of the deviation, which is the most important part in every deviation in which bone is involved, the separation of the periosteum is essential for the removal of the bone in order to save the mucous membrane; for if the periosteum is adherent at any point it will tear when the bone is removed. For removing the periosteum he has found the following plan of advantage: After thoroughly scraping the upper surface of the crest, the elevator is introduced behind and brought down from the vertical plate of the ethmoid to the vomer so as to separate the periosteum in the posterior part of the wound. Then the hook-shaped elevator is introduced with the bend of the hook around the edge of the bone; by drawing the hook forward the periosteum is separated from the roughened edges with great facility. In this way he has separated the entire periosteum on both sides without causing its perforation, in most cases. In making the incision he finds it advantageous not to perforate the mucous membrane in the neighborhood of the apex of the deviation if that can be avoided; because that is the point at which the mucous membrane is thinnest and most easily torn, and it is advisable to preserve it on both sides. He makes the incision in front of the deviation, but if the incision is made on the septum alone it will not give sufficient room to get to the deeper parts, unless the mucous membrane is unduly stretched. If the incision is carried outward where the floor of the nose and the vestibule meet, half way across the muco-cutaneous junction, the mucous membrane can be carried over and laid on the outer wall of the nose, without a special speculum. If the patient is told to inspire it will lie against the outer wall of the nose and it is not necessary to touch the flap at all. Removal of the bone has been necessary in the majority of his cases, although he realized the importance of allowing as much cartilage and bone to remain as possible. Under no circumstances would he return to the crushing procedure. The external nose is deviated usually to the opposite side from which the bone is deviated. He has found it possible to straighten the external nose by making two incisions: One is made between the mucous membranes, from this point upward until the instrument can be felt under the skin at the lower edge of the nasal bone. The other incision is made along this line. This frees the bridge of cartilage, and it can be brought over to its proper position in the median line, and held with adhesive plaster. The instruments he used are made by Tiemann & Co. Some are modeled after the instruments of Dr. Freer and Dr. Ballenger. The hook-shaped elevator is a very useful instrument.

DR. GEORGE L. RICHARDS, Fall River, Mass., spoke of questions of technic. More or less has been said about fainting in this operation and having the patient lie down at some period. Dr. Chambers has said he does not see how the operation is done in an upright position. For many years Dr. Richards

has used a human head-rest, having gotten the idea partly from the dentists, who always have an assistant standing at the shoulder of the patient. He has a young lady who has been taught to hold the patient's head with almost the rigidity of a head-rest and a good deal more flexibly, and to use the mallet with her left hand and a self-retaining nasal speculum in the right hand. So he has no trouble with the patient as to the light and uses an ordinary argand gas light. If the patient faints it is early in the game, it lasts two or three minutes and rather lessens the amount of bleeding. He does not stop to lay the patient on the floor or any other place. He always tells the patient to bring a friend and in one or two instances he has had the friend support the patient's knees for a few minutes. He always sits at the right hand of the patient, uses an ordinary lamp and an ordinary chair, has no trouble, and much prefers it to any form of chair moving backward and forward.

The operation is satisfactory. A breathing space is obtained without the loss of more tissue than is absolutely necessary. The individual operation is suited to the needs of the particular case. He knows a young physician who was operated on three or four years ago who shows what he regards as the removal of too much cartilaginous tissue, says his nose has fallen in somewhat, and has difficulty in breathing. This does not discredit the operation, but shows the need of care as to this point.

DR. W. E. CASSELBERRY, Chicago, emphasized the distinction between the new submucous resection operation and that which Dr. Richards cited as evidence that "there is nothing new under the sun." The operation, as done to-day, is new. In it is involved a new salient principle, viz., the extended liberation of the mucoperiosteum from both sides of the entire deformed portion of the septum by access from one side, thus making it possible to avoid perforation. Moreover, it involves a new purpose, viz., to dissect out wholly the crooked bone and cartilage, not merely to pare off a fragment at the angle of the crook, which was the sole purpose of the older operations, unless supplemented by forcible straightening measures. For many years he has been accustomed to the Asch, the Watson-Gleason and Roe straightening operations and was able, by one or other of them, to make such satisfactory corrections of deformed septa, that he yielded reluctantly, and chiefly through the advice and painstaking efforts of the chairman, Dr. Freer, in favor of the submucous operation, but within the last couple of years he was converted. He believes submucous resection to be an ideal operation for a large majority of variously deformed nasal septa. He does not sympathize with the name sometimes given it, of "window resection." As a "window," that is, perforation, is to be avoided. "Submucous resection" is the more scientific name for the operation; submucous being understood to mean submuco-perichondrial or periosteal, for this is another of the new principles involved in the operation and one which is essential to its success, inasmuch as the mucosa alone peels hardly at all, while the additional perichondrial layer is essential to stability of the new septum; "resection," meaning to cut out such part of the underlying cartilage and bone of the septum as is included in the deformity, all that and no more. Views differ as to the best method of getting the perichondrium loose from the underlying parts, especially the maxillary ridge and angular excrescences. One says, to dissect from before backward and above downward; another says, dissect from behind forward and below upward (Yankauer); still another says, do not do it at all at the base, but take a forceps and crush it loose (?). That is the point of special difficulty, the detachment of the mucoperiosteum over, under and behind spurs without tearing and within reasonable time. In certain easy cases only can it be done in 15 to 30 minutes; the extended complicated cases require as long as one to two hours. To avoid such an unreasonable duration of the operation when a sharp angular spur lying far back, remains for a final step of the operation, Dr. Casselberry simply saws it off at the posterior part, instead of trying to resect it all, having previously loosened the mucoperichondrium from the concave side so as not to saw through it. He thus sacrifices on one side the mucoperiosteum of a limited area and that far back in the nose, for the sake of taking half an hour from the patient's suffering, for he does suffer, notwithstanding the pain itself is not unbearable. Of course, this expedient violates the ideal of com-



plete submucous resection, hence it is proposed not as a modification but as an occasional expedient only. Another expedient has served well to avoid what seemed an inevitable perforation; viz., having accidentally penetrated the opposite mucosa while incising the cartilage in the Killian line, he has then abandoned this line as a point from which to commence the separation of the mucosa of the concavity and deliberately made a quarter-inch cut through that mucosa, a wide margin back of the accidental penetration and used it as a starting point for separating the mucosa of the concavity from its own side. Suturing the mucosa of the convexity in the Killian line is not difficult and is, under these adverse circumstances, an additional safeguard. He believes in asepsis as opposed to antiseptics. He does not favor putting strong antiseptics into the nose, they are irritating and thus harmful. It suffices to keep unclean things out of the nose.

DR. J. F. BARNHILL, Indianapolis, agreed in the main with most that has been said concerning this procedure as a useful operation. He has watched its progress from the time Dr. Freer, under difficult circumstances, first brought it before the Section at Saratoga. He agreed most positively with those who have said that the entire septum seldom needs removal, and that anyone who does remove the whole septum that is not curved in some part of its extent to the amount of obstruction and positive interference with the function of the nose, does an injustice to his patient. Since these discussions and papers are circulated so broadly over the country, those who read them but who do not know the uncertainties and difficulties that sometimes attend the work and who do not have an opportunity to visit these meetings or the great centers of medical education and see submucous operations performed by such skilled men as the chairman, are apt to be misled by what is said unless both sides, the bad as well as the good, are heard. It has been stated that the crushing operation is and has been a failure and that, therefore, it has no place in nasal surgery. Many eminent men in this country have believed otherwise for a long period, from their experience in performing this class of operations which preceded the submucous operation. At the New York Academy of Medicine, a symposium was held, he thought in 1889, at which were present Bosworth, Asch, Mayer, Beaman Douglass and others. Bosworth read a paper in which he stated that for 10 or 12 years he had not seen a case in which he was not able to remove satisfactorily to himself and his patient, the obstructions with his nasal saw. Asch, he believed, told the Section in 1899, that he had seen no cases in which the Asch operation had not been sufficient to cure these conditions. Now to say, some years later, that this submucous operation is the only operation, would reflect on these operators. Dr. Mayer, perhaps, has done the Asch operation oftener than any other man in America, and Dr. Barnhill requested his opinion as to whether or not he is mistaken as to the records he has made concerning the Mayer-Asch operation. Dr. Barnhill said that, in properly selected cases, he had often felt satisfied with the saw operation. Frequently he had been highly gratified when he had thoroughly, and according to their methods, performed the Mayer-Asch operation; and on many occasions he had been gratified at the rapidity with which he could perform the Gleason operation, as well as the success that attended his efforts. He was unwilling to admit that, under all circumstances, some of these simple operations should be cast aside for an operation requiring an hour and a half for its performance. Nor did he wish to be understood as thinking that the operation in question, so ably advocated by Dr. Freer and others, is not a proper and essential one in a large number of cases.

DR. EMIL MAYER, New York, said that he had hesitated for some time before expressing an opinion on the operation for resection as it is now perfected, for the reason that he felt that such an opinion would, under the circumstances, have some weight, and hence it becomes necessary to consider carefully every possible viewpoint beforehand. When he heard some of the younger men in the profession talking of the results the fathers did not get he felt as if he ought to apologize for some of the statements he had made before various medical bodies and in medical journals as to the results he obtained, or that his friend Dr. Asch obtained, and to admit that he was entirely mistaken. It seemed as if he did not get any such results at

all, as if the method formerly advocated was absolutely wrong. This, on due reflection, he thought, would be shown not to be the case. Not for a moment did he decry or overlook the advantage of the operation of submucous resection. He felt that if Dr. Asch were living to-day he would be foremost among those doing this operation, and Dr. Mayer said he himself approved of it. He believed that the Asch operation had great merit and has yet. He is still unwilling to advocate the removal of the cartilage of the nose in a young infant or child under ten. He thinks just as good, if not better results, can be obtained by methods that do less harm to the child. In very young children he frequently relies on the Gleason-Watson method, and is satisfied with the results obtained. He had not heard a single objection by any of the speakers to the use of concentrated cocain in the nose. He emphatically protested against its use. No advantage is to be gained over a solution of reasonable strength. Cocain which will answer every purpose should not be stronger than 20 per cent. He has never used a solution stronger than that and has found patients satisfied and the freedom from danger very great. He could not accept the statement of Dr. Byington, that the presence of adrenalin in the nose prevents the physiologic effects of cocain. He doubted that, but thought that some day serious cocain poisoning will occur. Dr. Mayer rarely operates on a patient sitting up. He does all his operations with the patient lying down and has good results. The patient is not in a strained position, is lying down with the head on a pillow, and Dr. Mayer stands up. Dr. Yankauer has assisted him and would bear him out that the operation is done comfortably to the operator and to the patient. The statement has been made that the operation should not be done on a patient who has tuberculosis. Dr. Mayer does not agree with that. Unless it is an advanced case, and the patient has deviation of the cartilaginous septum the operation should be done. He has seen a number of cases with pronounced tuberculosis in which the operation was done without disadvantage to the patient but with a great deal of added comfort. He would like to hear from the writers of the papers as to their experience of the amount of external deformity that has been bettered by the resection operation. With the Asch operation the external deformity is decidedly relieved. Very frequently patients come with deformities of the nose, and do not care very much that they can not breathe right. They will not be satisfied unless they are assured that the deformity will be bettered.

DR. KASPAR PISCHEL, San Francisco, pointed out the value of a morphin injection half an hour before the operation. It quiets the patient, lessens the quantity of cocain to be administered and obviates the pain which follows after the effect of the cocain has passed off. As a dressing, he recommended the collodion dressing (see THE JOURNAL A. M. A., Oct. 7, 1905).

DR. OTTO T. FREER, Chicago, expressed his surprise that Dr. Hurd should feel justified in stating so positively that the cartilage and bone are never restored when removed in the submucous resection. In this assertion Dr. Hurd has ignored the record of Dr. Freer's observations in an article in the *Annals of Otology*, June, 1905, in which he reported re-examinations of nine adult patients seen from two years to two years and eleven months after the operation, in five of whom the site of the window became firm as the normal septum and firmer than a merely fibrous one could be, and in four of whom, areas only, much smaller than the original window made and occupying approximately its center, were found flaccid. The only thing lacking to prove the reproduction of cartilage and bone in these cases was histologic demonstration, and Dr. Freer could not conceive of any tissue but cartilage that could give such a feeling of firmness as was evident to the probe in the cases referred to and in a number examined since. To assure himself that he was not in error he has shown such cases to others and they have agreed with him that nothing but a reformation of cartilage could have restored the degree of firmness of the septum present in the patients shown them. One case, in a boy, six weeks after the operation, had been examined by Drs. John E. Rhodes, George Shambaugh and George Morgenthau, who were convinced that the cartilage had been reproduced. In children, Dr. Freer has seen restoration of the firmness of the septum over the region of the excised cartilage occur with surprising rapidity, in two weeks even, and he at-



tributed this to the great formative power of the perichondrium at this age. Several times he had even seen a partial rebuilding of the deflection in children, only once enough to impair the result, but in all of these cases sufficient to suggest to the unprejudiced that the cartilage had even been restored in excess. He has also found, that while in children the area over the cartilaginous excision becomes firm speedily, the region of the bony excision stays flaccid for a much longer period or even in part remains permanently so, showing to his mind that the perichondrium is more rapidly productive than the periosteum and proving to him that the new tissue giving firmness to the septum in the area of the excision of the cartilage can not be merely fibrous, for if it were it would seem strange that such a connective tissue partition should be firm where it replaced the cartilage and yield readily when touched with the probe where it took the place of bone. The firmest connective tissue in the body, that of the ligaments, is flexible and possesses none of the stiffness of cartilage and if a fibrous substitute for excised cartilage had this property it would be a type of connective tissue hitherto not found in the body. Dr. Freer attributed the restoration of the firmness of the septum over the area of the resection in the cases mentioned to the perfect preservation of the perichondrium and periosteum possible with his technic and instrumentarium. The large, blunt elevators so commonly used by others, are apt to uplift the mucosa only, leaving the perichondrium and periosteum to be sacrificed with the resected cartilage and bone, of course merely a mucous membrane partition resulting.

Dr. Freer's method permits minute inspection during the entire operation and he thinks it might be called the open operation as opposed to the resection through a buttonhole incision, as advocated by Killian and others, in which the work is largely hidden from sight. He does not claim that in all of his cases firmness of the septum was restored over the site of the operation and he has seen some in which after a year a fair-sized area of flaccidity remained, never equal to that of the original resection, however.

The operation has been declared unfit for children, it being asserted that operating in their minute nostrils is too difficult and that the development of their noses will be interfered with. He agreed that the attempt to do a submucous resection in a child's nostril with the large instruments of Killian or Hajek and with the use of the buttonhole cut appertaining to their methods will result in failure, as he had seen from personal observation. His experience, however, in operating with his open-flap method and his instrumentarium on 33 children between the ages of 7 and 15, and on 12 between the ages of 7 and 11, has been most satisfactory in all but one patient in whom the deflection was, in a measure, reproduced. The nostrils have all remained perfectly patent, there has been no interference with the growth of the nose whatever and instead of hesitancy in accepting an operation on a child's nose, he was always eager to perform it because of the ideal result he felt sure of gaining and the great benefit to the patient's growth and health, certain to result from the free nasal breathing obtained. From his experience, the objection to performing the submucous resection on children on the ground of possible interference with the growth of the nose in childhood is purely theoretical and inspired by the timid imagination of the inexperienced, and he further asserted that the contention that the difficulties of performing the operation in children's noses are excessive is suggested by disappointments resulting from inadequate and faulty operative methods. The question of what amount of cartilage and bone may be removed in the operation has been raised. No more or less cartilage or bone should be taken away than is included in the deflection, its extent being the exact guide of the limits of the resection. Operative methods which excise straight cartilage in front in order to reach such as is deviated behind are faulty. Deformity of the external nose will not result, however, even if the resection be begun at the anterior inferior free border of the septal cartilage and be carried back to the vomer, if this extensive sacrifice of cartilage be needed. Nevertheless, a certain rubbery, limp feeling to the external nose results, for a time at least, after resections extending so far forward and he, therefore, leaves the anterior inferior free border of the quadrangular cartilage intact where he can. He has had to remove this foremost part of the cartil-

age by reason of its obstructing dislocation into the nasal vestibule of one or the other side in all in 21 out of his 178 cases. A strip of cartilage, at least a centimeter and better more in width, should always be left untouched under the nasal bridge above the level of the wings of the nose, this portion of the septal cartilage being welded into a buttress with the triangular cartilages of the external nose. To get free breathing, however, in anterior deflections the resection has to extend up to this limit in some cases. The resection backward into the vomer and perpendicular plate and downward, excising the crista incisiva as far as needed toward the nasal floor, may be extended to the full limit of the deviation, because these parts do not support the external nose, which depends on its own cartilaginous framework for its shape.

Dr. Freer has never seen deformity and he has performed 178 submucous resections. He has no doubt that in certain imperfect operative methods, especially when the somewhat uncontrollable swivel knife has been used to excise the cartilage, the cartilaginous buttress mentioned has been unduly encroached on and slight sinking-in of the nasal bridge has resulted. This unfortunate result must be very rare, however, for considering the thousands of submucous resections that have already been done to this time, beginning with those of Krieg, in 1886, enough people with sunken noses would be going about by now to quite discredit the operation if deformity were anything but the rarest of sequels.

In conclusion, he referred to the numerous ostensibly new ways of doing the submucous resection which are constantly appearing in the literature and in which authors of small experience, straining to be original, create as far as possible, the operation and instrumentarium anew. They would much better further the cause of the method if they waited until a larger usage enabled them to estimate more justly the procedures of those who have led the way and he thought they would be then less inclined to change the methods of the earlier workers, developed from the lessons taught by mistakes and trials, and would do what would really further this or any method of operation, improve and build on what has gone before and by their approval make standard things that are worth commending while condemning what they find unfit. Attempts to create the whole matter *de novo* simply lead to a repetition of mistakes and retard instead of helping the submucous resection.

DR. R. C. MYLES, New York, said that, in his opinion, it is very important not to remove too much cartilage from a child's nose. He had had children of 5, 10 and 12 years and had removed just enough to get normal breathing, and the results have been most excellent. He had not taken out enough to make it dangerous. Whether these cartilages have redeveloped since this removal, he did not know. It is not sound surgery to remove a straight cartilage from a child's nose. In regard to extreme dissection, a single incision in the anterior end of the nose at the mucocutaneous junction and cartilage and bone dissected to the depth of about two inches, nearly reaching the cribriform region, necessitates the escape of blood and secretions from the wounded tissue at the original point of entry. In this class of cases he made one or two counter openings near the base of the cavity. In extensive operations in which the bone is buried in the outer wall, the necessary manipulative technic for its removal usually causes a perforation of the convex membranous wall. This provides drainage, without which there might be hematoma. He had seen many crooked septums that did no harm. As to external deformity: When he has removed the anterior external part of the cartilage, especially when protruding under the ala, there has been very marked improvement. In those cases in which there was a decided deviation of the external nose, best results were obtained when extensive sections of the convex parts of the cartilage were removed and the anterior superior and inferior margins of the cartilage were left intact.

DR. LEE MAIDMENT HURD, New York, said that to do the operation rapidly does more harm than good and is wrong. He has done it in 15 to 20 minutes. He does not hurry; in one case he took over three hours and got a good recovery. Dr. Hurd uses neither headrest nor assistant. He has seen several cases in which the nose has been tipped over to one side to regain the median line after the operation. He thinks that



everybody concedes that with the submucous method there are 100 per cent. of cures, and that is what is wanted.

Dr. J. F. BYINGTON, Battle Creek, Mich., said that the main objection to the operation appears to be that it may be overdone. This is not his only method of dealing with nasal obstruction, but when a septal operation will relieve the obstruction and a submucous resection is chosen, he advocates a thorough operation. Removal of the cartilaginous part of the septum only would have done little to relieve the obstruction in the majority of his cases, for the bony part was usually deflected sufficiently to hold the membranes to one side, to the extent of causing stenosis. The only objection to a thorough operation is that the support of the external nose may be impaired. But it should be remembered that those who have reported sinking in of the bridge of the nose have attributed it to the removal of too much cartilage and not to the removal of too much of the vomer or crista. Regarding the objection to using pure powdered cocain, the drug has been so used in each of his cases and no symptoms of poisoning have been observed. But care has been taken first to blanch the entire mucosa with adrenalin and then apply only sufficient cocain to anesthetize the region of the operation. Any excess has been swabbed away, thereby preventing it dropping into the throat.

## TRYPANOSOMES.

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(Concluded from page 10.)

### GAMBIAN HORSE DISEASE.

This disease was first recognized by Dutton and Todd, in 1902, among the horses of Senegambia. Of 36 examined, 10 were found to have the trypanosome in their blood. As far as known no other domestic animal is subject to the disease, although most mammals, including sheep, goats and cattle, can be infected.

The natural disease is very chronic in character and differs from nagana by the absence of edemas. In the latter respect it agrees with caderas, but, as will be seen, the trypanosomes of these two diseases are easily differentiated. The duration of the disease is not known, though it probably lasts from a few months to more than a year. In an experimental infection of a horse, Laveran and Mesnil noted the formation of an edematous patch, but otherwise the animal did not appear to be ill. There was an occasional rise in temperature and trypanosomes were present at first in the blood, but later were recognized only by inoculation of rats and mice. In this way they were found to be present as late as the one hundred and eighty-third day. The disease is presumably transmitted by biting flies, although no positive evidence on this point has been obtained.

The examination of living and stained preparations shows the presence of two forms; hence the name of the organism, *Tr. dimorphon*. The short form is about 12 microns, while the long one is 20 to 25 microns. A similar occurrence of long and short forms has been noted in galzielte and in bird infections. Unlike as in *Tr. brucei*, the undulating membrane is not conspicuous, but by far the most important characteristic is the absence of a free flagellum. This condition is due to the prolongation of the protoplasm of the cell along the flagellum to the very tip. This feature serves to identify this organism in the same way that the minute blepharoplast characterizes the trypanosome of caderas (Fig. 8\*).

The artificial culture of this organism was attempted by Laveran and Mesnil, but, although they succeeded in

keeping it alive on artificial media for over a month, they were unable to secure subcultures. Thomas and Breinl were more successful, for they maintained it on blood agar for 78 days and were able to infect animals as late as the twenty-third day.

The structural peculiarity of the trypanosome serves at once to differentiate the infection from all other flagellate diseases. As further evidence of its individuality it may be mentioned that animals immunized to the other trypanosomes remain susceptible to inoculation with *Tr. dimorphon*. Thus goats which have been vaccinated against surra, nagana and caderas are very sensitive to this parasite.

The treatment of the experimental infections has not been as good as with nagana and the other trypanosomiasis. Thus arsenic either in the form of arsenite of sodium or atoxyl causes the organisms to disappear temporarily and the duration of the disease has been prolonged, but no cure has been effected. Trypan-red has a similar action on the trypanosome, but neither Laveran and Mesnil nor Thomas and Breinl have noted any definite curative powers. Human serum in large enough dose may also cause the disappearance of the trypanosomes for a varying length of time. The action, however, is more feeble than in the case of nagana.

### GALZIEKTE.

A trypanosomiasis of cattle wholly distinct from nagana or surra appears to exist throughout South Africa and probably it occurs elsewhere. Thus a similar if not identical infection has been observed in East Africa (Sander, Panse), in West Africa (Schilling, Ziemann), in India (Lingard), and in the Trans-Caucasus (Ziemann). The disease itself has been known for many years and is known by a variety of names, such as gall-sickness, or galzielte, malaria, jaundice or bilious fever of cattle.

Compared with the other diseases of domestic animals in Africa, this is of but slight importance. The disease is marked by a light fever which lasts several days, and a severe anemia which may be either acute or chronic. The mortality as given by Theiler is but 12.5 per cent.

In the blood of the infected cattle in 1902 Theiler discovered an unusually large trypanosome which Laveran and Bruce, independently, designated as *Tr. theileri*. It is the largest of the pathogenic trypanosomes and is about the size of the large form of *Tr. avium* as met with in robins and blue-jays. Like the *Tr. avium* and *Tr. dimorphon* it occurs in the blood in two forms, one short and the other long. The former are 25 to 30 microns in length by 2 to 3 microns in width, while the latter may be 60 to 70 microns long and 4 to 5 microns wide. It is very actively motile and has a prominent undulating membrane and a long free flagellum.

Experimentally the disease can be readily transmitted to cattle by injection of the infected blood. The trypanosomes may be very numerous or, on the other hand, scarce. Like the trypanosome of the rat, the *Tr. theileri* appears to be limited to a single host, since all attempts to inoculate other animals have failed. After recovery the cattle are immune. The disease appears to be transmitted by the bite of a fly, *Hippobosca rufipes*.

### HUMAN TRYPANOSOMIASIS (SLEEPING SICKNESS).

For a long time it was supposed that man was not subject to trypanosomatic infection. This appears to be true for surra and nagana as well as the other diseases discussed. Certain it is that the bites of the insect carriers are without effect in man, and even accidental in-

\* The illustrations appeared in THE JOURNAL, January 5.



oculations have occurred without any observable result. In a way this immunity of man to the animal infections is largely, if not wholly, due to the peculiar action of human serum on these trypanosomes.

The first authentic case of human infection with trypanosomes was observed in Bathurst, Gambia, in 1901 by Forde, who, however, did not recognize the nature of the organisms which he described as "small, worm-like, extremely active bodies." On subsequent examination of the patient, an Englishman in the government service, in December, 1901, by Dutton, the organism was at once recognized as a trypanosome and was named by him *Tr. gambiense*. On his return to England, Dutton examined 115 blood films obtained from native children in Gambia and one of these preparations showed a double infection with malarial parasites and trypanosomes. The result of these discoveries was of far-reaching importance. The Liverpool School of Tropical Medicine at once sent out an expedition, consisting of Dutton and Todd, to Senegambia, with the result that these observers recognized seven cases out of 1,043 persons examined. About the same time (1902) Manson diagnosed the disease in a woman, wife of a Congo missionary. Other cases were soon reported by Broden at Leopoldville, Brumpt at Boumba and by Kermorgant. The existence of a human trypanosomatic fever was thus established, but its relation to the terrible disease known as sleeping sickness was not suspected.

Sleeping sickness itself has been known to exist on the west coast of Africa for more than a century. From the time of Winterbottom, who described it among the slaves of Benin in 1803, it has repeatedly been studied by English and French physicians and missionaries on the Gold Coast and at Sierra Leone. Although undoubtedly hundreds of slaves infected with the disease were transported to the West Indies, there is no reason to believe that new cases ever developed on this side of the Atlantic. The disease is stated to exist on the west coast of Africa from Senegal on the north to Benguela in Angola on the south. In certain localities of this vast territory it has proved particularly destructive, notably along the Lower Congo. Since the establishment of the Congo Free State, in 1885, the disease has been carried to the Upper Congo in the first place by traders and, secondly, by military expeditions (1892 to 1896) against the Arab raiders. In 1900 its presence was reported for the first time in Uganda, where already it had caused an enormous destruction of life. This serious outbreak is generally supposed to be due to the return of the remnants of Emin Pasha's army which were brought from the regions west of Albert Nyanza during the years 1892 to 1895 and established on Victoria Nyanza in Busoga. Whatever its origin, since its introduction the disease has spread along the entire north shore of Lake Victoria Nyanza and has even passed down the Victoria Nile as far as Wadelai (Greig).

The British and Portuguese governments recognizing the need of definite information regarding the cause and spread of sleeping sickness appointed commissions to investigate the disease. Considerable attention was given at first to the supposed bacterial cause, and while engaged in this study in Uganda, Castellani noted the presence of trypanosomes (November, 1902) in the cerebrospinal fluid of five cases of sleeping sickness. At the time he did not consider that this trypanosome had any causal relationship to the disease, but later, on the suggestion and with the aid of Colonel Bruce and others, he examined additional cases of the disease and was able to

report the presence of trypanosomes in 70 per cent. of the cases (April 1903). Subsequent studies by Bruce, Nabarro, Greig and others have demonstrated the constant occurrence of the *Tr. ugandense* (Castellani) in either the blood or cerebrospinal fluid of sleeping sickness cases.

The trypanosome found in sleeping sickness was at first supposed to be distinct from the *Tr. gambiense* of Dutton, but subsequent researches have shown that in all probability the two organisms are identical and that the trypanosomatic fever is but the first, while sleeping sickness is the last stage of the human disease.

Still more recently the important fact has been brought out that glandular enlargements are a constant feature of early cases of human trypanosomiasis; in other words, that sleeping sickness during the early stage is a specific polyadenitis caused by the *Tr. gambiense* (Greig and Gray). It has been shown that the trypanosome could practically always be found in such enlarged glands, and Dutton and Todd have pointed out that cervical gland palpation is a simple and very accurate method of detecting cases of trypanosomiasis in which clinical signs are wanting. The recognition of the existence of such cases explains the ease with which the disease has been carried into uninfected districts by the migration of apparently healthy persons. And, furthermore, being a simple means of diagnosis of the earliest stage of the infection, it enables putting into effect measures for the prevention of the disease. This means the exclusion and removal of persons having glandular enlargements from uninfected territory and their segregation as far as possible. The necessity of adopting every possible means of arresting the progress of the disease is seen in the fact that in many villages Dutton and Todd found from 30 to 50 per cent. of the population infected, which means, since the disease so far as known is invariably fatal, that at least a third of the people in such districts will probably die of trypanosomiasis. That this is far from exaggerating the conditions of things is evidenced by the history of the spread of the disease in Uganda, where in a few years hundreds of thousands have died of the infection and whole regions have been depopulated.

It has been shown conclusively that sleeping sickness is conveyed by the bite of a tsetse-fly, *Glossina palpalis*. This species is different from that which carries the nagana of South Africa. Whether other species of this genus can convey the disease has not been established. In all probability as in nagana the fly is a mere vector, a mere mechanical means of carrying the trypanosome from the sick to the healthy persons. The presence of multiplication forms of trypanosomes in the stomachs of such flies (Gray and Tulloch, Koch) has been taken to show that the fly is not a passive carrier of the organisms. The tsetse trypanosome, however, has not been shown to be identical with the human parasite; in fact, there is reason to believe that they are in no wise related, and that the former (*Tr. grayi*, Novy) is a harmless parasite peculiar to the fly.

Human trypanosomiasis is characterized by two stages. In the first the trypanosomes exist in the blood, but always in small numbers. An irregular remitting fever is the chief symptom of this stage. The pulse and respiration are accelerated. Slight edemas and erythemas are at times met with, and in addition enlarged glands and spleen. Owing to the mildness of these symptoms, the disease passes unnoticed among the natives. The second stage follows after the lapse of a variable length of time. It is this stage which is known as sleeping sickness. The



fever is marked especially toward evening. The patients become dull and apathetic and complain of intense headache. Weakness of the arms and legs develops, speech becomes difficult and emaciation sets in. Somnolence increases and eventually a comatose condition supervenes with death.

The *Tr. gambiense* is present in but small numbers in the blood of man. Most of the experimental animals are subject to infection, and in the blood of such it may become very numerous. The course of the disease in monkeys is at times very suggestive of that in man. The baboon has been supposed to be refractory, but Thomas and Breinl have succeeded in infecting four of these animals. The strain inoculated from one of these proved to be highly virulent. The macaques are susceptible and die in from one to two months. In the horse and donkey the infection is very chronic, with very few parasites in the blood, and recovery seems to occur. The cow is even more refractory than the horse. Sheep contract also a mild infection and recover. Goats are apparently more susceptible, and death may result (Thomas and Breinl). Dogs are easily susceptible, but may survive for 6 or even 9 months, though death may occur in from 5 to 6 weeks. Cats are likewise subject to infection, and especially kittens, in which the parasites appear in large numbers and cause death in from 3 to 7 weeks. In rabbits and guinea-pigs the trypanosomes are very scanty, especially in rabbits, and the infection is very chronic, lasting for several months. In mice the infection is also very slight and recovery may take place. On the other hand, white rats are easily infected. As a result of intraperitoneal injection, we have seen the parasites appear in the blood within three days, though the period of incubation is usually given as about 15 days. The parasites may increase enormously in numbers for a while and then almost completely disappear from the circulation. Death occurs in from one to three months.

Morphologically the *Tr. gambiense* resembles very closely *Tr. brucei* and *Tr. evansi* (Figs. 9 and 10). The cultivation of the organism has been attempted by Laveran and Mesnil and also by Thomas and Breinl. The former were able to keep it alive on blood-agar for 19 days, but were unable to obtain subcultures or to infect rats with such material. The latter succeeded in maintaining it for 68 days, but they also failed to obtain actual subcultures.

Normal human serum, which possesses a pronounced action on the trypanosomes of caderas and nagana, is without effect on *Tr. gambiense*. According to Thiroux, the serum of cases of sleeping sickness, in which the blood is free from trypanosomes, possesses a slight protective action with respect to mice.

The treatment of experimental animals with arsenic (atoxyl), trypan-red and other anilin dyes (Mesnil and Nicolle) have given very encouraging results. With the aid of an alternate treatment with arsenic and trypan-red Laveran was able to cure monkeys. With the exception of one case in a woman, reported by Dutton and Todd, the treatment of the human cases has thus far been ineffectual.

#### KALA-AZAR.

A brief consideration must be given at this place to a peculiar organism which is present in kala-azar and the cachexial fever of India, especially since recent studies go to show that it is a flagellate and closely related to the trypanosomes. In 1903 Leishman found certain bodies in the spleen of a patient, who had the disease,

and surmised that they were degenerated forms of trypanosomes. Very shortly after Donovan, at Madras, confirmed this finding, but he was unable to get any trace of trypanosomes. Laveran, to whom specimens were submitted, pronounced the parasite to be a piroplasma and gave to it the name *Piroplasma donovani*. Ross regarded it as representing a new genus, and for that reason he called it *Leishmani donovani*.

In his investigations, which have since been confirmed by others, Rogers found that when the fresh blood obtained by spleen puncture was transferred to test tubes containing a few drops of 2 to 5 per cent. citrate of soda in normal salt solution the parasites remained alive for many days, and after about three days some of them developed into elongated flagellated bodies which he took to be trypanosomes, although no undulating membrane could be detected. Rogers has since found that the flagellation took place more uniformly and regularly if the citrated spleen blood was faintly acidified with citric acid. The flagellated forms develop best at about 22 degrees C., the same as in the case of the cultural trypanosomes. The Leishman-Donovan bodies, it may be said, resemble greatly rounded up forms of trypanosomes. They show a nucleus and a micro-nucleus. In the citrated blood these forms increase in size, elongate, and give off a flagellum. The latter start from the blepharoplast which lies close to the anterior end of the cell. It is perhaps on account of this close proximity to the end that, as in the case of the mosquito trypanosomes, no undulating membrane can be made out. At all events, on account of the absence of this structure, Rogers has recently come to the conclusion that the organism belongs to the herpetomonas group and not to the trypanosomes, and he has designated it as the herpetomonas of kala-azar.

The fact that we have in this case an undoubted flagellate developing from the Leishman-Donovan bodies goes to establish a certain relationship between this disease and those which have been heretofore considered. The exact position of the organism can only be determined by further study. It certainly presents some of the cultural characteristics of the bird trypanosomes and more especially of the mosquito flagellates. It may be added that, while ordinarily the mosquito herpetomonas fails to show an undulating membrane, in some cultures evidence of such can be observed, and hence the apparent absence of the structure does not necessarily exclude the organism from the group of trypanosomes.

As to the transmission of this fatal disease, nothing definite can be stated. Rogers is of the belief that the common bed-bug or possibly mosquitoes are the most likely hosts. By allowing mosquitoes to bite a patient Patten has been able to find in their stomachs flagellates. *Herpetomonas* and *Crithidia*, such as have been described in these insects, and consequently such forms can not be considered as stages of this parasite. Patton, in a personal communication, however, states that he has been able recently to observe divisional and even flagellated forms in bugs, which important fact goes to show that this insect is the transmitting agent.

#### TRYPANOSOMES OF OTHER ANIMALS.

In the foregoing an effort was made to give a brief resumé of the mammalian trypanosomes, particularly of the pathogenic species. These organisms, however, are by no means limited to the mammals, but, on the contrary, may be found in almost all forms of life down to the insects.

Some of the earliest observations made on trypano-



some were on those of the frog. At present a number of species are known to occur in these animals. They are nearly all characterized by their great bulky size, although long and slender as well as short forms are known. Williams first obtained a successful initial culture of the *Tr. rotatorium*, and since then the cultures have been more fully studied by Bonet. Not only frogs, but also turtles and snakes, have been shown to harbor trypanosomes in their blood.

Of particular interest, perhaps, are the flagellates present in the blood of fish either from fresh or from salt water. Of these, two genera have been recognized: *Trypanosoma* and *Trypanoplasma*. The latter genus was created by Laveran and Mesnil and includes forms which differ from the true trypanosomes in having a posterior as well as an anterior free whip.

The trypanoplasmas have been studied particularly by Laveran and Mesnil, Brumpt, and by Keysselitz. The latter has observed a double infection with the two genera in 14 species of fish. Although a considerable number of species of fish trypanosomes and trypanoplasmas have been described, Keysselitz regards the latter, in the fish studied by him, as representing but one species, *Tr. borreli*. The percentage of naturally infected fish can not be readily given, but there is reason to believe that it is very large. As in the case of birds, the flagellates may be present in but very small numbers and hence escape detection.

The infection is undoubtedly spread among fish through the agency of blood-sucking parasites and more especially the leeches. The studies of Brumpt and of Keysselitz have shown that a large percentage of the leeches contain variable numbers of flagellates in their intestinal canal. Owing to the many difficulties attending such investigations, it has not been possible as yet to prove definitely that the flagellates observed in the leech are derived from those in the blood of fish or that, conversely, the fish flagellates develop from those multiplying in the gut of the leech. Nevertheless it has been assumed, and it is quite generally accepted, that the leeches are the immediate hosts of the parasites. Keysselitz, and especially Brumpt, have succeeded in infecting fish by placing on them infected leeches. In a similar manner by means of infected leeches Brumpt has succeeded in infecting frogs and eels.

*Insect Trypanosomes.*—It is an interesting fact that flagellates are present in the gut of many insects, irrespective as to whether these feed on blood or otherwise. The herpetomonas of the housefly is an example of infection of a non-biting insect. Many similar observations could be given to show that intestinal parasitism by flagellates is a common occurrence. I have shown that 15 per cent. of the wild mosquitoes are infected with herpetomonas and crithidia, while Ross, Legér and others have shown similar parasites in the larval and pupal stages. These two organisms when grown on blood agar retain the same form as observed in the insect, thus demonstrating that they are cultures *in vivo* and as such that they are probably multiplication forms of trypanosomes and not distinct genera. Thus it follows that much caution must be used in drawing conclusions as to the relation of flagellates found in insects to the blood trypanosomes or to the intracellular parasites found in vertebrates. As has been pointed out, the trypanosomes of tsetse flies are not to be regarded as multiplication forms of *Tr. brucei* and *Tr. gambiense*, and the same conclusion holds for Schaudinn's views regarding *Tr. noctuæ* and *Spirochæta ziemannii*, which two forms he

considered as flagellate stages of the halteridium and leucocytozoon of the owl.

The foregoing summary of the trypanosomatic infections would be incomplete without a brief reference to the flagellates of birds. These were first studied by Danilewsky, who described a large and a small form of *Tr. avium* (1885). Since then these forms have been found by a number of other investigators, and for the details of this work the reader is referred to the monograph on "Bird Trypanosomes" by Novy and MacNeal.

It has been shown by us that flagellate infection of birds is exceedingly widespread and that it can be recognized best by the cultivation method. A number of species have been shown to exist in our common birds. These can be readily cultivated and the characteristics presented by the cultures permit the differentiation of species. Since then Thiroux has been able to grow the *Tr. paddæ* and Cerqueira has been equally successful with the trypanosome of the *Nicticorax of Brazil*. The most important result of these studies on bird trypanosomes has been the demonstration that these flagellates are in no wise related to the intracellular parasites.

## TREATMENT OF FRACTURES OF THE NECK AND SHAFT OF THE FEMUR.\*

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PROVIDENCE, R. I.

### I. FRACTURE OF THE NECK OF THE FEMUR IN ADULTS.

The treatment of the fracture of the neck of the femur in the old familiar way by weight and pulley, extension and a long T-splint, was always disappointing and the result was a more or less crippled condition of the patient, which remained for life. To be sure the trochanter would be pushed upward and make for itself a sort of socket in the soft tissues, which would tolerate some weight-bearing, but a crutch or cane was a necessity in the majority of cases. This was not the fault of the medical attendant, but rather of the method of treatment. A patient put up in this manner is far from being immobilized as regards the fracture.

Every time the bed-pan is inserted, which is several times daily, the fragments are moved. If the body is turned at all for the necessary care of the skin on the back, more motion is obtained, so that if proper care is given to the skin and the patient waited on, as must be done, the fragments are in more or less of a state of constant motion. Could anything be more impossible than a bony union under such conditions? Yet this has been considered the proper treatment for years and cases are even so treated to-day.

Under such a method of treatment, it is small wonder that patients did not do well. In the aged it came to be considered that they did not stand confinement in bed very well, yet all the while the trouble was not that they were confined in bed, but that they were not properly cared for while in bed. Still another bugbear, especially in the aged, was the bed sores which came early and which were often very large in area. This was very weakening and was often the immediate cause of exhausting the strength and so hastening death. The most troublesome place for bed sores was in the sacral region, and this because it was usually soaked in urine. Turn-

\* Read before the Rhode Island State Medical Society at the annual meeting, May 31, 1906.



ing the body caused so much pain that the patient would let the urine escape without notifying the attendant, thus resulting in more or less maceration. These bed sores were usually attributed to the less resistant tissues of old age rather than to the true cause, i. e., faulty treatment.

Now all this is changed. The fracture of the neck of the femur can be fairly immobilized. Bed sores are no longer necessary, and under such conditions it has been found that the aged stand confinement exceedingly well and that solid union is a possibility, and in some cases without any shortening whatever.

As far as I know, Dr. John Ridlon,<sup>1</sup> of Chicago, was the first to write about treating this particular fracture by means of a modified Thomas splint, and for a while it was not mentioned in any text-book, but the later edition of Dr. Scudder's<sup>1</sup> book gives all the details for making it. Any surgeon, however, who treats many cases varies the details of fitting and applying.

First, as regards making the splint. The curve of the stem of the splint fits the curves of the body as accurately as possible, in order that there may not be any points of pressure. In order to do this, the hospital bed, which is a necessity, must be rendered level and unyielding by placing crossbars underneath the mattress. These may be of wood or metal, as preferred. The patient is

adhesive plaster on the sides of the leg in the ordinary way, by webbing at the end passing through a set of buckles attached to the lowest band on the end of the stem of the splint, while on a second set of buckles attached to the same band is attached the cord which passes over the pulley at the foot of the bed and at least a fifteen-pound weight suspended. Another way is to allow the extension directly from the leg.

In my own cases every patient goes into the splint without any shortening, because in every case ether is given, the fragments gotten into the best apposition possible, the leg pulled down to length and, if anything, a little longer than its mate. When this is accomplished fact by measurement, then the various bands are strapped around the body, fifteen or twenty pounds of weight attached to the pulley cord and the foot of the bed elevated. The splint is applied about the end of the first week and it has been as late as the end of the second week. During the interim a moderate weight is applied in order to keep the muscles from getting very much contracted so that getting the leg down to length may be easy when ether is finally given. After the splint is applied, then care and attention and eternal vigilance is the price of success. The whole weight of the body comes directly on the stem of the splint; hence great care is necessary to have the curves of the stem fit the

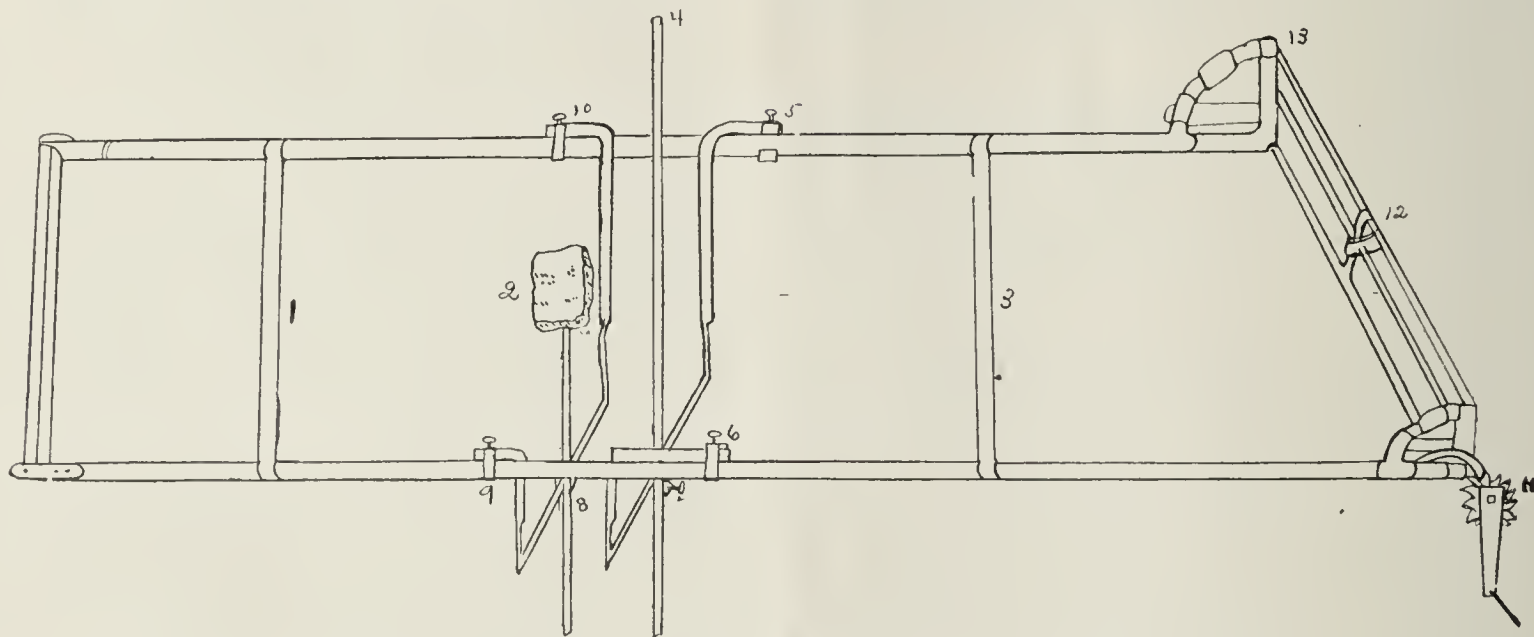


Fig. 1.—Reproduction of frame, with all the parts in position.

then laid on this level bed when the curves of the body may be traced by placing a flexible metal band underneath the well side and having it extend from a point at about the level of the axilla down to the lower end of the swell of the calf of the leg. This point is, perhaps, about the junction of the middle and lower third, possibly a little lower. With a little practice this gives the curve for the stem of the splint very accurately. For the body I have gotten in the habit of making three bands instead of two where the patient's body is of sufficient length. One is at the upper end of the splint encircling the body at the axillary line; another is at the waist line, and the third is between the two. These bands are passed beneath the stem so that in lifting the patient they will not pull off, as they are liable to do if riveted on the upper surface. The smaller bands encircling the leg are riveted to the upper surface, as there is no strain on these fastenings. All of these encircling bands are adjusted by buckles and straps which are so arranged that the straps pull toward the operator when standing at the side of the injured leg. For full description of the splint see Ridlon or Scudder.<sup>1</sup> Extension is made by strips of

curves of the body, and especially must the curve around the buttocks be considered. The more splints one makes the greater skill is acquired in fitting. The bands are flexible, so that if pressure points are found they can be remedied by bending the bands cut at these points. The bands are made a little shorter than the exact circumference of the body to allow for the shrinking of fat tissue. Even when allowance is made for a fleshy person, there may be so much shrinkage that the bands overlap; then the ends may be sawed off with a hack saw and thus this difficulty is obviated. If a pressure point occurs at the buttock, the fat tissue and skin is so loose here that the irritated place may be pushed off to one side and the splint allowed to touch in an entirely different place while the irritation subsides. If the pressure point is higher up on the body, then folded towels may be introduced above and below the band, thus lifting the irritated area away from the splint. Another method of removing all pressure from the skin, from the buttock up, is to lift the patient bodily and insert a pillow lengthwise beneath the body, then restrap the band around pillow and patient together. In this splint, as so carefully explained by Dr. Ridlon, the patient can, and must,

1. Scudder: The Treatment of Fractures, 5th edition, p. 309.



be turned over every day, and in some cases several times daily, for bathing and powdering the skin, thus preventing the formation of bed sores.

When thoroughly put up in this splint, all of these things may be done, including insertion of bed-pan, without moving the fragments very materially, and consequently, if kept immobilized for a sufficient length of time, and if also the leg can be kept down to length, it is fair to expect union with no shortening in an increasing number of cases. In order to keep the leg from rotating and absolutely down to length, it is my custom to measure the length of the leg frequently, by passing the tape underneath the straps, and with this actual verification to keep the leg at its proper length from

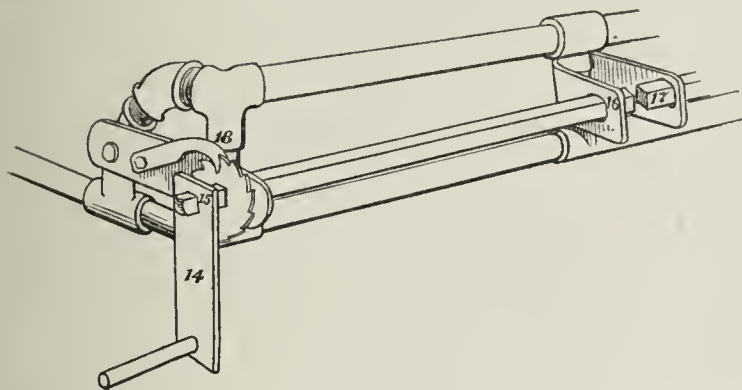


Fig. 2.—Reproduction of end of frame, with windlass attachment.

start to finish. Another point of the utmost importance is to arrange a smooth pad just back of the heel and just beyond the end of the splint. That is, the lower end of the leg between the end of the splint and the heel must be properly supported. This prevents the end of the splint from digging into the flesh and also prevents pressure sores on the heel. After the splint is buckled up its whole length the leg is then bandaged to the splint, leaving the buckles and straps exposed for daily adjustment. In this way the treatment is continued for from six to eight weeks from the time of fracture. When the splint is omitted it is my custom, if possible, to continue the weight and extension for another week and also to protect the leg by sandbags or some arrangement to prevent extreme rotation of the leg. Then the extension is completely removed, but the patient should still be kept in bed for two or three weeks longer to become accustomed to using the leg somewhat, as turning over in bed and assisting in body movements in general.

About the end of three months it is allowable to get up and about with crutches, at first bearing no weight at all, but gradually using the leg more and more until by the end of another four weeks full weight is borne and by the aid of a crutch or cane walking is very satisfactory. Probably by the end of the sixth month from the date of fracture walking is possible without any artificial assistance, and the result to be hoped for at this time is bony union and good functional use of the leg. This at present is the ideal or perfect result, and is not obtained every time, by any means, but with more care as to details and by constant daily attention this result should be much more frequent in the future and in consequence there should be fewer cripples seeking for help.

A number of cases, especially in the aged, have been treated in this manner, and there are four of these in apparently perfect condition, i. e., they are walking without artificial assistance, they are not lame, the leg is practically the same length as its mate, and there is no

pain or discomfort, and the presence or absence of bony union can only be demonstrated by *x-ray* pictures, and I hope in the future to present even these proofs. Bad results are obtained by any method of treatment, and I have had one case of non-union. There was apparently no callus at all. When it was impossible to have personal care of the case, it became necessary to have some method by which care and attention to mechanism was reduced to a minimum. The only other way seemed to be plaster of Paris. In order to apply plaster of Paris properly, it became necessary to hold the patient in some way that fracture could be reduced and held reduced while the plaster was applied and set, the plaster extending from the axilla down to and including the leg and foot of the affected side. To accomplish this a frame was constructed as follows:

The frame is an ordinary gas-pipe frame which may be laid across two tables or stands in any house. The patient is placed on the frame with the sacrum resting on the support No. 2 (Fig. 1), which is a metallic disc covered with felting and is made so that it is detachable from the upright which is clamped at No. 8 (Fig. 1). This upright can be elevated or depressed and also moved laterally. The shoulders rest on the crossbar No. 1 (Fig. 1) and the head may rest on a pillow on the table which supports the end of the frame. The calves of the legs rest on the crossbar No. 3 (Fig. 1).

Extension is applied to each leg by means of adhesive plaster, and the ends of the extension straps are wound around the windlass attachments at Nos. 11, 12 and 13 (Fig. 1). These two attachments are entirely separate, as shown by Nos. 15, 16 and 17 (Fig. 2), so that traction may be made separately on each leg. The bar No. 4 (Fig. 1) which is clamped at No. 7 (Fig. 1) is thickly padded with felting and goes directly against the perineum so as to give a point of counterpressure as both legs are pulled on. Nos. 14, 15 and 18 (Fig. 2) show how traction is made on each leg and held so that it will

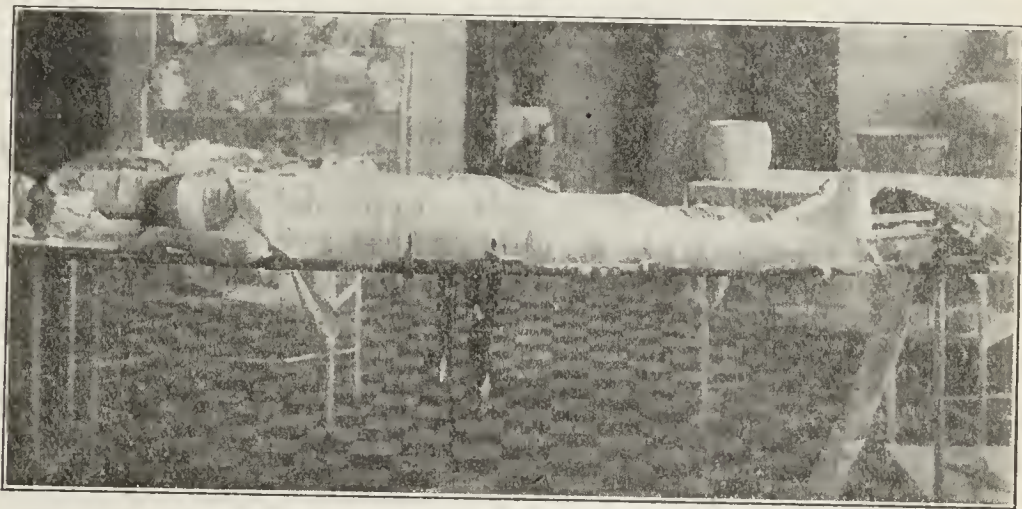


Fig. 3.—Reproduction of photograph of patient on frame, with plaster applied.

not let go. When all is ready, with the patient etherized and in position, both legs are pulled downward until the leg shortened from the fracture is just as long as its mate and at the same time the anterior superior spines are kept in their correct relations. Then by keeping the clutches locked, No. 15 (Fig. 2) the patient and fracture and legs and body are all held perfectly in position while plaster of Paris is applied from the axilla down, including the leg and foot of the affected side, as seen in the photograph (Fig. 3). To remove the patient, pass two or three strips of a four-inch unbleached cotton roller bandage around the sides of the frame and under



the buttocks of the patient very tightly so that when the sacral support and the perineal bar is removed the frame can be lifted with the patient on it and placed on an ordinary hospital truck or, if in a house, on the bed. Then the crossbars, Nos. 1 and 3 (Fig. 1) are removed; also the bandage is cut away, when the whole frame is lifted away, leaving the patient in bed. There is nothing new in the mechanical principles here involved, but they have simply been blended together, thus making a portable frame which can be easily conveyed from house to house.

The patient, etherized, is placed on the frame and extension made on both legs by the windlass attachment until the fracture is reduced and proved so by actual measurement. Then, while held in this position, plaster is applied from axilla down to and including the leg and foot of the affected side and so held until the plaster is set. At this stage a four-inch cotton roller bandage is passed back and forth under the buttocks, over the sides of the frame and securely tied. Then the sacral support and perineal bar are removed and the patient may be lifted by means of the frame on to the hospital bed which has been prepared.

In preparing the patient for the plaster, just a few words. The body, from the axilla down, also the leg and foot, are wrapped in sheet cotton and then held se-

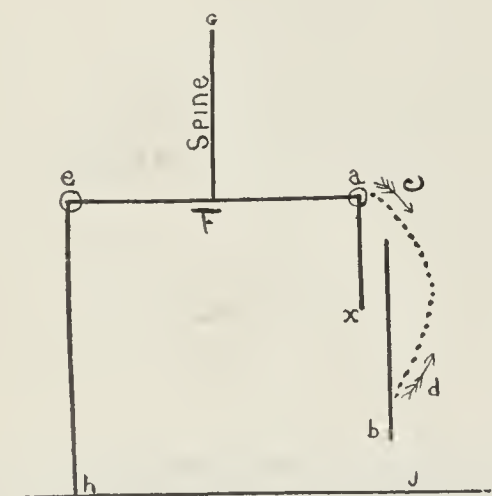


Figure 4.

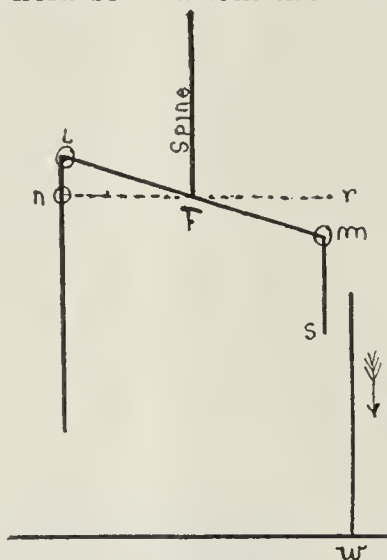


Figure 5.

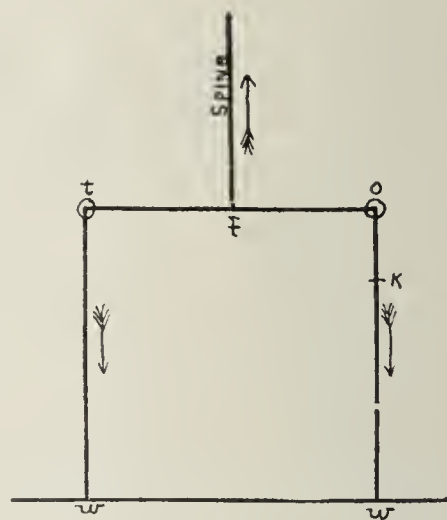


Figure 6.

curely by means of a gauze roller bandage. In addition to this, a piece of thick felting is bandaged to the back so that the whole weight of the body pressing downward will not get the skin in contact with the plaster and so, if possible, avoid pressure sores. In order to get extension the adhesive plaster strips which are applied to the sides of the leg have to be made in a special manner. The webbing is placed between two layers of adhesive plaster and stitched in. The webbing extends the whole length of the adhesive plaster and a sufficient distance below the end to allow of being wound up on the windlass attachment at the end of the frame. The foot is bandaged to a point just above the malleoli, then the extension straps are placed on the side of the leg and covered its whole length by a cotton roller bandage. After the plaster is applied, which includes the foot, spaces are cut where the webbing emerges from the plaster so that the extension is made directly from the leg and not from the plaster of Paris. This is very important. It is also very important to make extension on the well leg when the patient is fixed up in bed, because, if it is not done, the pelvis will tilt and the short fragment will be pulled downward and thus overlap just as without extension the bony fragments will be pulled upward. Either way it is done, shortening is the result. This is explained by Figures 4, 5 and 6.

In Figure 4 let  $fg$  represent the spine,  $a$  and  $e$  the hip joints and  $eh$  and  $aj$  the legs. On the fractured leg  $aj$  there is a muscular pull represented by the dotted line  $ab$ . This muscular pull is in the two directions represented by the arrows  $c$  and  $d$ , in consequence of which the fragments will pull by each other at  $x$ . In Figure 5 imagine the weight  $w$  attached only to the broken leg, and the pelvis will be pulled away from the normal line  $nr$  to the line  $lm$ . The fulcrum, in Figures 4 and 5, is at  $F$ . As the leg is pulled down to  $lm$  the fragments still remain riding by each other at  $s$  and the fracture still remains incompletely reduced. In Figure 6 the spine holds the pelvis up at the fulcrum  $F$ , and, the weight or pull being applied to both legs, the line  $to$  is kept at its proper angle, with the spine and both legs are pulled down until they are of equal length, when the fracture at  $k$  must be completely reduced. Therefore, shortening can be prevented only by making extension on both legs. Fifteen pounds is usually attached to the fractured leg and twenty to the well leg. Encased in plaster, of course, there is more danger of the skin getting in trouble, because it can not be bathed and powdered, whereas in the modified Thomas splint every square inch of the skin, unless pillows are used, can be reached, bathed and powdered. In patients with whom the urine is troublesome, it is much more difficult

to keep from getting sore, as the plaster is apt to get wet, followed by excoriation and then a slough.

## II. FRACTURE OF THE SHAFT, ESPECIALLY IN THE UPPER THIRD.

A fracture in this location is also a very hard one to care for with the ordinary method in use, and shortening is almost a certainty, except in children, and in them it is the rule rather than the exception, judging from the cases brought to me after treatment. It was really for such cases that the frame with the windlass attachment was made. The patient is placed on the frame and prepared with cotton and felting, as already described. The extension is applied to each leg and traction made until the fracture is absolutely reduced, as proved by measurement, and then plaster is applied, as already outlined. This method seems to be the most effective way to deal with this class of fractures. In the aged, however, pressure sores become a real danger, as I have lost one patient, aged 75, from this cause, while with a modified Thomas splint, with proper care, such a condition should not arise.

### FURTHER TREATMENT COMMON TO BOTH CLASSES.

These fractures may be left in plaster or splint for six to eight weeks if possible. If any trouble arises it would probably be perfectly safe to omit them sooner,



but each case must be considered by itself and treated accordingly. In fracture of the shaft, walking is allowed with crutches immediately after the removal of the plaster. In regard to the *x*-ray in these particular fractures, it is of the utmost importance taken before treatment is applied. It gives absolute knowledge as to the kind of fracture, and when it is taken after the fracture has been reduced and fixed (if in plaster) it shows how well the reduction has been accomplished and whether the treatment is effective. The *x*-ray picture is a *sine qua non*.

In cases of non-union, whether in the neck or shaft, operation should be advised, as a good result after operation is much more likely to be obtained if done early than if months are allowed to elapse. In cases of non-union in the neck of the femur, the fragments should be pegged, a wire nail or bone peg is satisfactory, but I think a nail is rather preferable. In non-union of the shaft of the femur, canvas is stretched from end to end of the holding frame and sterilized sheets placed over it, thus making it a very satisfactory operating table. The leg is then pulled down to length, incision is made, the fragments are sutured (animal sutures), the wound is closed, and plaster of Paris applied while being held in position by the frame.

#### SUMMARY.

1. Find out accurately as may be and with the *x*-ray, if possible, exactly what the condition is. Portable *x*-ray outfits now permit radiographs at the bedside, so that fractured necks and shafts may be accurately studied in this way.
2. Reduce the fracture under ether and apply the Thomas splint in fractures of the neck and plaster of Paris in case of fractured shaft.
3. Practice eternal vigilance all through the bed treatment to prevent pressure sores or any other trouble from arising.
4. Operate immediately on all cases of non-union.

### TREATMENT OF LOBAR PNEUMONIA.\*

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DARTMOUTH, N. S.

The subject of this paper will probably be regarded as uninteresting, so much having been said and written on it without producing any form of treatment that has appeared to modify much the course of pneumonia. More than one has mentally summed up the position with the thought: "We trust in the future."

Yet we can not rest content with the present state of things. Osler calls pneumonia the "Captain of the Men of Death," and says it outranks consumption as a cause of death. At the Johns Hopkins Hospital the death rate in pneumonia is about 1 in 4. Of course, many of the patients come to the hospital only when the disease is far advanced and from most unfavorable surroundings. THE JOURNAL of the American Medical Association, in an editorial, quotes Dr. E. F. Wells' statistics published in 1902, in which it was shown that the mortality from pneumonia was 18.1 per cent. This was based on a study of 233,730 cases.

In the past I have found the different methods of treatment of little avail in influencing the disease, but I now

desire to give first place to the treatment advocated by Dr. W. J. Galbraith,<sup>1</sup> chief surgeon of the Cananea Consolidated Copper Company, Cananea, Mexico. It is based on the view that quinin in sufficient doses acts as an antitoxin in pneumonia, destroying the micro-organisms and their products which produce sepsis.

#### QUININ AND IRON.

As long ago as 1884, when I was an interne in the hospital, an old man not expected to recover from pneumonia was given, by the mistake of a nurse, large doses of quinin and iron intended for a case of erysipelas, and the man recovered. I felt at the time that the recovery was more than a coincidence. I had been taught by my teacher in medicine, one of the greatest physicians of America, the late Prof. Alfred L. Loomis, to value quinin in this disease. He wrote in 1881 as follows:

In the sulphate of quinin I believe we have a true antipyretic; it has been claimed that this remedy is an arterial sedative. By its action on the nervous system it increases the power of the heart's action. On this principle, for the past four years my rule of practice has been to place all patients with pneumonia of a severe type on the sulphate of quinin, in doses varying from twelve to thirty grains each day, and it is the exception for a pneumonia patient not to show a marked reduction of temperature within thirty-six hours after the commencement of its use. It does not seem to arrest the progress of the pneumonia, but it lowers the temperature, shortens the duration of the febrile stage, and hastens the stage of resolution to complete recovery.

It will be seen that Dr. Galbraith endorses these views, but by doses three times as great he is able to go further than these statements. Dr. Galbraith does not use any local application, as poultices, and in a letter to me he says he dresses his patients in as light weight clothing as he possibly can; that thorough ventilation and flushing of the kidneys with an alkaline water are of the utmost importance; and that, as a rule, he administers the quinin in wafers and the chlorid of iron in a syrup mixture. In answer to the question as to unfavorable symptoms produced by such large doses of quinin, he says that with the exception of a slight ringing in the ears, in two or three cases only, not an unfavorable symptom has ever been reported.

#### DR. GALBRAITH'S TREATMENT.

When so many therapeutic remedies are being put forward only to prove to be failures, I do not wish to advocate a remedy without being myself convinced that it is worthy of trial. I believe with the great majority whom I have quoted, who have written in THE JOURNAL A. M. A., that, to use the words of Loomis, quinin lowers temperature, is an arterial sedative, shortens the duration of the febrile stage, and hastens the stage of resolution. But I am further inclined to believe with these writers that in the large doses advocated by Dr. Galbraith, it acts as a specific, as much as the antitoxin is in diphtheria. It will be noticed that those who formerly followed the Juergensen treatment did not give the immediate initial dose of from 40 to 70 grains called for by Dr. Galbraith. They used half measures. Yet in all cases I have seen reported there is only one case mentioned in which there were any symptoms of quinin poisoning. In this case there was profound deafness and almost complete blindness. The case is reported by Dr. Gustetter, who attributes the condition to a cumulative action from the use of quinin in pill form, which he strongly deprecates. Both the symptoms passed off within ten or twelve hours.

\* Part of a paper delivered before the Maritime Medical Association at Prince Edward Island, July 12, 1906.

1. THE JOURNAL A. M. A., 1906, February 10.



My own experience with the treatment, following Dr. Galbraith's methods, numbers four cases, three in the Victoria General Hospital, Halifax, and one in private practice in the country. I may say that the giving of 50 grains of quinin at one dose to a patient appeared at first like heroic treatment, and more than once my house surgeon, after taking down my prescription, handed it to me to be initialed, so as to be relieved of any personal responsibility in the matter. The result hardly showed as much discomfort from 50 grains of quinin as from 10. The colored girl, Annie T., in Case 2, was not even a little deaf. The case in which there was most deafness was the last one cited, Case 4, and I feel that I bungled the treatment of this case from unnecessary timidity. I gave only  $7\frac{1}{2}$  grains of quinin every four hours at first, and it was not till double pneumonia set in on the eighth day that I proceeded to give 30 grains at once, 72 grains in twenty-four hours. This was late for a specific treatment to be effective. We are told that the dose should be large when given late in the course of the disease. I should perhaps have given a larger dose. But the patient being far away, without a trained nurse, and the treatment new, was the reason of my hesitation. In all the cases I should have given larger doses.

As to the method of giving so large a dose I found that if given in several capsules the quinin could be taken without inconvenience or if, as in one case, it was administered suspended in milk. In none of the cases did the stomach fail to retain it. The three hospital cases are reported by Dr. Cliff Goodwin of the interne staff of the Victoria General Hospital. The four cases cited from my own experience seem to prove the safety of the method of treatment. The total number of cases reported from all sources is not large enough to establish the efficacy of the treatment, but it is large enough, in my judgment, to indicate that the method should be further tried by all members of the profession in cases of lobar pneumonia.<sup>2</sup> I believe the earlier the treatment is begun the more marked is the result.

CASE 1.—Reported by Dr. Cliff Goodwin.

*History.*—W. J., age 28, colored, took a chill March 7, while working in a saw mill. The cold chills ran all over him and he had to leave his work and go home to bed. After some time he thinks he must have had a very high fever, for he felt as if he were burning up. Pain in the right side began shortly after the chill, of a sharp and stabbing nature, especially when a long breath was taken. This continued to increase in intensity. Cough began at the same time as the pain, with some expectoration of blood. On March 8 he had severe headache, pains in the limbs and back and felt very thirsty and weak.

*Examination.*—He came to the hospital March 9, and was examined by Dr. Smith. He was a fairly well nourished man; appetite was poor; tongue was heavily coated with a yellowish fur and clean on the edges. Chest inspection showed the following conditions:

Respiration: Short, shallow and panting.

Palpation: Fremitus increased in right base and anteriorly in right apex.

Percussion: Dulness in right base beginning one inch above lower angle of the right scapula.

Auscultation: Respiratory murmur feeble and high pitched, with fine crepitant râles at the base.

Left lung appeared normal.

Pulse, 110; temperature, 104.5; respiration, 48.

*Treatment.*—He was given quinin sulphate, 50 grains at 3 p. m., suspended in milk, to be repeated in doses of 30 grains

after 3 hours, if temperature was above 102. At 6 p. m. his pulse was 98; temperature, 101.3; respiration, 40.

March 10: Patient feeling much better this morning; complained of very little buzzing in ears. Pulse, 70; temperature, 101; respiration, 32. Pain in side was not so bad.

March 11: Patient continued to improve. Pulse, 60; temperature, 99.5; respiration, 34. He felt comfortable. There was no pain in the side, not much cough, appetite coming back; at 9 a. m. his temperature was normal.

Patient continued to improve as shown by 3-hour chart, which was omitted on March 19, 1906.

Besides quinin treatment, all this patient had was a laxative:

R. Hyd. ehlor. mit.	
Sodii bicarb.	
Pulv. sacchr. lactis, āā.....	gr. vi
	36

And a mixture:

R. T. ferri. mur.....	3ii	8
Syr. simple ad.....	3i	30

M. Sig.: One dram every 4 hours with water.

CASE 2.—Reported by Dr. Cliff Goodwin.

*History.*—A. T., aged 17, said that on March 29, got her feet wet and contracted a severe cold. She was admitted on April 1, complaining of the usual symptoms of pneumonia, pain in side, sore limbs and back, etc. Breathing was rapid with respirations from 30 to 50 and good deal of cough which gave her great pain. Mustard plasters were applied to side. She was examined by Dr. Smith.

*Course of Disease.*—April 2: In the morning her temperature was 103.8; pulse, 110; respiration, 52.

April 5: There was some dulness on percussion all over right lung. Respiratory murmur was slightly diminished. Respiration was prolonged in right apex. Vocal fremitus increased and great number of adventitious sounds. Posteriorly there was bronchophony on right interseapular and suprascapular regions; also slight involvement of left base.

She was given quinin sulphate; 40 grains at 12 o'clock; at 3 o'clock her temperature was 102; pulse, 90; respiration, 45. At 9 p. m. temperature, 98.5; pulse, 90; respiration, 30.

April 3: Temperature went up again to 103 and dose was repeated, which brought it back to 98.5 in the evening, and the patient seemed much easier.

April 4: Patient had only a slight buzzing in ears, and though she complained of severe headache up till now, to-day the headache did not bother her. On April 4 and 5 doses were repeated of 30 grains each and on April 6 her temperature went up for the last time to 102.8, according to the 3-hour chart, bringing a crisis on the sixth day after the beginning of the disease, for the girl said she had no fever before Sunday morning, April 1, and only complained of a cold. She continued to improve and on April 15 she was allowed out of bed. April 19 she was discharged recovered.

CASE 3.—Reported by Dr. Cliff Goodwin.

*History.*—W. G., aged 16, was admitted to hospital June 2, in an unconscious state. He was sent first to surgical ward and next morning came down to medical ward with the diagnosis of pneumonia.

*Course of the Disease.*—Patient was visited by Dr. Smith on June 3, who ordered dose of 48 grains of quinin at 12 p. m., and a 3-hour chart. Temperature was 104.8; pulse, 98; respiration, 30. At 9 p. m.; temperature, 99; pulse, 82; respiration, 38.

June 4: His temperature this morning was up to 104.8; pulse, 96; respiration, 38. He was given 18 grains of quinin at once and after that, every 3 hours, 6 grains of quinin. Temperature was 100.2 that night at 6 o'clock.

June 5: There was some dulness on percussion all over right lung; respiratory murmur was slightly diminished; scapular region was pepectoriloquy. The 6-grain doses were kept up every 3 hours until temperature remained about normal, which was on the seventh day of his admission to the hospital. He was discharged June 12, recovered. He complained really more of buzzing in the ears with 6-grain doses than he did with the 48 grains of quinin given at one time.

CASE 4.—Case in Dr. Smith's private practice.

*History.*—N. T., aged 19, on Thursday evening, April 5, took a severe pain in the left side. I was not called to see her until

2. NOTE, November, 1906: In a letter just received Dr. Galbraith writes: "Over three hundred cases now (of pneumonia) with a mortality of about 2 per cent."



Sunday, April 8. Family history showed that one sister, an aunt and an uncle died of consumption.

**Examination.**—I drove three miles into the country to see the patient at her home, which was sanitary and comfortable. I found the following: Temperature, 102; pulse, 132; respiration, 40. Lower lobe of left lung was almost flat on percussion. There was bronchophony. Breathing was labored and shallow. Sputum was pink in color and tenacious. Patient complained of severe pain in left side.

**Diagnosis:** Pneumonia left lower lobe.

**Treatment.**—Quinin sulphate, 7.5 grains every 4 hours and tincture of the chlorid of iron, eight drops every 4 hours. Hot mustard and linseed poultices were applied to left side.

**Course of Disease.**—April 9: Temperature, 103.2; pulse, 120; respiration, 36. Quinin and iron were continued in same doses and one bottle of Vichy water was ordered to be taken daily.

April 10: Temperature, 102.6; pulse, 115; respiration, 48. There were slight dulness and signs of involvement of right apex. Pain in side continued. Quinin and iron and Vichy water were continued.

April 11: Temperature, 102; pulse, 116; respiration, 49; breathing was rapid, shallow and difficult.

April 12: Temperature, 99; pulse, 102; respiration, 36. The patient appeared much better and this being the seventh day of the disease it appeared the crisis had arrived for the better.

April 13: Temperature, 102.5; pulse, 110; respiration, 36. Patient complained of severe pain on right side. The right base had become involved. Percussion showed marked dulness over whole of right lower lobe and some dulness over right upper lobe. The left base appeared to be closing up. The case was an anxious one.

**Treatment.**—Quinin, 30 grains at once and 12 grains afterward, every 4 hours as long as temperature continued about 102; 6 grains every 4 hours in any case. Iron and Vichy water were repeated. Poultice was applied to right base. Sputum contained bright red blood.

April 14: Temperature, 102; pulse, 116; respiration, 36. Patient complained of deafness, but not much more than from the 7.5 grain doses; 30-grain dose was repeated and then 12 grains every 4 hours. Patient was now taking 72 grains of quinin in 24 hours.

April 15: Tenth day of disease. Temperature, 102.3; pulse, 111; respiration, 39. Patient had again taken 72 grains of quinin in 24 hours.

April 16: Temperature, 102; pulse, 112; respiration, 38. No quinin to-day as 72 grains for 24 hours had not been all taken. Bovinine ordered.

April 17: Temperature, 102.3; pulse, 109; respiration, 39. Diarrhea (caused from bovine), chalk mixture ordered and quinin, 36 grains for next 24 hours.

April 18: Temperature was nearly normal. Sputum was clear. After this the patient made a good recovery.

## THE ANTITOXIN TREATMENT OF TERTIAN MALARIAL INFECTIONS.

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The observations here recorded are in sequence of others formerly made on this subject at Fort Reno, O. T.<sup>1</sup>

In that series the antitoxin was developed by inoculating rabbits with defibrinated blood of patients harboring the parasite of tertian malaria (*Plasmodium vivax*) or by the bites of mosquitoes infected with that protozoön. Four patients in that series were treated with the hypodermic injections of defibrinated blood drawn from inoculated rabbits, one with serum, two with desiccated serum in salt solution and two with desiccated erythrocytes in salt solution. The injections

of defibrinated blood and of desiccated erythrocytes and one injection of desiccated serum were followed by more or less prompt recovery. The undesiccated serum and serum in salt solution had been given in such small quantities (0.75 gm. and 0.50 gm., respectively) that no result could reasonably have been expected.

In the present series the animals employed were monkeys, indigenous to the Philippines "*Cynomolgus mendenensis* (Mearns)" and goats. The former animals gave more satisfactory results than did the latter, but for reasons which suggest themselves injections of their blood were discontinued as soon as material from another source was available. Though six monkeys were inoculated, the blood from only one was utilized. In thirty-four days the animal received four inoculations, each consisting of 2 c.c. of defibrinated human blood containing the *Plasmodium vivax*.

The charts of the several monkeys showed as a rule a diurnal range in the rectal temperature of from two to three degrees or rarely five degrees. Two animals were infected with uncinaria, and this may have influenced the temperature curve in these cases. The injection of human blood containing the malarial parasites did not appear to have any definite influence on the temperature curve, though in monkeys No. 1 and No. 5, it assumed a remittent instead of its usual intermittent character. In monkey No. 1 it ranged for two weeks between 99 and 102 F., then becoming intermittent as before. In monkey No. 5 its course for sixteen days was quite similar.

In blood specimens from none of these animals was the malarial parasite demonstrated, either prior to inoculation or immediately subsequent thereto. The results of examinations made for it at frequent intervals from fifteen minutes to forty-one days after inoculation were invariably negative. In this connection I would cite the contrast to a series of inoculations made on human beings at Fort Reno, O. T., and previously unreported. Two of these patients were colored and five were white. Each received hypodermically on April 6, 1905, from the same patient, 1 c.c. defibrinated blood containing the *Plasmodium vivax*. All the white patients developed malaria in from nine to forty days (average, twenty-one days), but neither of the colored patients did so, though one had had an attack of tertian malaria in the preceding autumn.

The patients treated with monkey blood are as follows:

CASE 1.—Admitted Feb. 25, 1906. Temperature 104 F. Laboratory examination showed abundant quartan parasites in the blood.

February 26: The patient received hypodermically at 3 p. m., 5 c.c. defibrinated blood of monkey No. 5.

February 28: Parasites were demonstrated in blood at 9 a. m. Chill and febrile paroxysm occurred at 4 p. m.

March 1: Blood examination was positive.

March 2: Chill and febrile paroxysm occurred at 3 p. m. Blood examination was positive. Quinin was ordered. Recovery was uneventful.

CASE 2.—Admitted March 5, 1906. Temperature 104.6 F. Blood examination at 8:30 a. m. showed numerous benign tertian parasites.

March 6: Patient received 5 c.c. defibrinated monkey blood.

March 7: One benign tertian parasite was found in twenty minutes' search. No chill nor fever.

March 8: Pronounced eosinophilia was present. No parasites. No chill nor fever.

March 10: Eosinophilia was increased. No parasites.

March 14: Eosinophilia was diminished. No chill nor fever since injection.

1. Medical Record, New York, Dec. 24, 1904.



CASE 3.—Admitted March 27, 1906. Temperature 104.2 F. Laboratory examination showed numerous benign tertian parasites in blood.

March 28: Patient received 10 c.c. defibrinated blood of Monkey No. 5.

March 29: No chill nor fever. One parasite was found in blood after eighteen minutes' search.

March 30: No parasites were found in blood. No recurrence of chill or fever since inoculation.

CASE 4.—Admitted March 27, 1906. Temperature 105.6 F. Diagnosis was confirmed by blood examination on same date. Malarial fever, benign tertian, parasites were very abundant, one brood.

March 28: Patient received 5 c.c. defibrinated monkey blood.

March 29: Patient had chill. Temperature rose to 104.8 F. Blood examination revealed numerous parasites.

March 30: Patient received 5 c.c. defibrinated blood. Blood examination at that time was positive.

March 31: No chill nor fever. Blood examination was negative.

April 3: Blood examination was negative. No recurrence of chill nor fever.

CASE 5.—Admitted March 28, 1906. Temperature 105.2 F.

March 29: Blood examination for tertian parasites gave positive result; one brood. Patient received 10 c.c. defibrinated monkey blood.

March 30: Blood examination revealed one parasite in twenty-five minutes' search. No chill. Temperature rose to 99.6 F.

March 31: No parasites were found in the blood. Temperature rose to 99.2 F.

April 3: No recurrence of chill or fever.

CASE 6.—Admitted April 17, 1906. Temperature 103.4 F. There was a history of numerous attacks of tertian malarial fever in the past nine months.

April 18: Temperature rose to 103.2 F. Blood examination showed abundant tertian malarial parasites, double infection. Patient received 5 c.c. defibrinated monkey blood.

April 19: Tertian parasites were found in blood. Chill. Temperature rose to 102.8 F. Injection repeated.

April 20: Few tertian parasites were found. No chill, but temperature rose to 101 F.

April 21: Tertian parasites were very rare. No chill nor fever.

April 22: Blood examination was negative and so continued. There was no recurrence of chills or fever until June 6, when the patient was readmitted suffering from benign tertian malaria. This was probably a recurrence, but may have been due to another infection. The patient was again given 10 c.c. of defibrinated monkey blood on June 7, but recovery did not occur nor did the parasites disappear until this dosage was repeated four days later.

No animals other than monkeys were obtainable in the vicinity of Malabang, Mindanao, P. I., where these observations were conducted, but three goats were obtained from Zamboanga, a point about 125 miles distant. On their arrival it was found that all the animals were pregnant. Whether this condition had any influence on their power to develop antitoxin is unknown, but no blood was drawn for experimental purpose until they were delivered. Two of these animals received at various intervals injections of human blood containing the *Plasmodium vivax*, each injection containing from 2 to 8 gms. of fluid. Five injections were given to each animal. A rise of temperature of from 1 to 2.2 degrees F. followed each injection, the temperature remaining elevated for from one week to eleven days. At no time could the malarial parasite be demonstrated in the goat's blood.

CASE 7.—Admitted April 22, 1906. Temperature 104 F. Tertian parasites were found in blood, one brood.

April 23: Patient received 5 c.c. serum from white goat.

April 24: Temperature rose to 101 F. No chill. Parasites were found in the blood.

April 26: Temperature rose to 99.3 F. No chill. No parasites were found in blood.

April 30: There was no recurrence of chill or fever. No parasites were found in blood.

CASE 8.—Admitted April 28, 1906. Temperature 105.4 F. Abundant tertian parasites were found in blood, one brood.

April 29: Patient received 10 c.c. serum from black goat.

April 30: Patient had chill. Temperature rose to 104.6 F.

May 2: Patient had chill. Temperature rose to 105 F. Parasites were found in blood. Patient was ordered quinin.

CASE 9.—Admitted May 1, 1906. Temperature 104 F. Tertian parasites were moderately abundant. Double infection was demonstrated.

May 2: Patient received 6 c.c. serum from white goat.

May 3: Temperature rose to 100.6 F. No chill.

May 4: Temperature rose to 99.4 F. No chill. No parasites were found in blood. Temperature remained normal till May 13, when it rose to 104.2 F., after severe chill.

May 14: Patient had chill. Temperature rose to 104.4 F.

May 15: Patient had chill. Temperature rose to 104.2 F. Parasites were found in blood. Four hours after chill patient received 7 c.c. serum from white goat.

May 16: No chill. Temperature 101 F. Patient received 7 c.c. serum from white goat.

May 17: Temperature was 99 F. on this and on two subsequent days. No malarial parasites were found in patient's blood. There was no further recurrence of chill or fever.

CASE 10.—Admitted May 13, 1906. Temperature 104 F. Tertian parasites (double infection) were found in moderately large numbers.

May 14: Patient received 4 c.c. serum from white goat at 8 a. m. No chill. Temperature rose at 4 p. m. to 101 F.

May 15: No chill. Temperature rose to 100.2 F. Parasites scant.

May 16: No fever. No parasites were found. No recurrence.

CASE 11.—Admitted May 13, 1906. Temperature 104.2 F. Double tertian infection. Parasites abundant.

May 15: Patient received 4 c.c. serum from white goat during the forenoon. In the afternoon the temperature rose to 101 F., after a slight chill.

May 16: No chill. Temperature rose to 100.2 F. One parasite was found after twenty minutes' search.

May 17: Temperature 99.2 F. Blood examination was negative.

May 18: Temperature normal. Blood examination was negative. No recurrence.

CASE 12.—Admitted May 14, 1906. Temperature 104.6 F. Numerous quartan parasites were demonstrated in blood.

May 17: Patient had chill. Temperature 104 F. Patient received 10 c.c. serum from white goat.

May 20: Patient had temperature 103.8 F. Quinin was ordered. Recovery uneventful.

CASE 13.—Admitted May 18, 1906. Temperature 103 F. at 4 p. m. Blood examination showed mild double tertian infection.

May 19: Patient received 4 c.c. serum from white goat at 11 a. m. Chill occurred at 4:30 p. m., and temperature rose to 100.8 F.

May 20: No parasites were found in blood. Temperature rose to 99.4 F. without chill.

May 21: No fever. No parasites were found in blood. No recurrence.

CASE 14.—Admitted May 27, 1906. Temperature 105.6 F. One brood of tertian parasites were found in blood.

May 29: Patient had chill. Temperature rose to 105.4 F.

May 30: Patient received 7 c.c. serum from white goat.

May 31: Patient had chill. Temperature rose to 106 F. Patient received 7 c.c. serum white goat.

June 2: Patient had chill. Temperature reached 104.4 F. Patient received 7 c.c. serum from white goat.

June 4: Patient had chill. Temperature 103 F. Patient received 7 c.c. serum from white goat. A few parasites were found in blood.

June 6: No chill. Temperature rose to 99 F. No parasites were found in blood. No recurrence.

CASE 15.—Admitted May 28, 1906. Temperature 103.6 F.



May 29: Tertian parasites, one brood, were found in blood.  
 May 30: Patient had chill. Temperature rose to 103.8. Patient received 7 c.c. serum from white goat.  
 June 1: Chill occurred. Temperature rose to 102.4 F. Injection of 7 c.c. white goat serum.  
 June 3: Chill occurred. Temperature rose to 102 F.  
 June 5: Chill occurred. Temperature rose to 102.2 F. Parasites were demonstrated in blood. Quinin was ordered.  
 CASE 16.—Admitted June 5, 1906. Temperature 105 F. Blood examination same date showed double benign tertian infection, severe.  
 June 6: Chill occurred. Temperature rose to 105.4 F. Patient received 5 c.c. serum from white goat.  
 June 7: Chill occurred. Temperature rose to 104.2 F. Patient received 10 c.c. serum from white goat.  
 June 8: Patient had chill. Temperature rose to 103.8 F. Quinin was ordered. Recovery uneventful.  
 CASE 17.—Admitted June 6, 1906. Temperature 104.6 F. Blood examination showed presence of one brood of benign tertian parasites, moderately abundant.  
 June 7: Patient received 15 c.c. serum from black goat.  
 June 8: No chill. Temperature 99.4 F.  
 June 9: Temperature 98.8 F. No parasites were found in blood. No recurrence nor reappearance of parasites.  
 CASE 18.—Admitted June 21, 1906. Temperature 105.2 F. Blood examination showed severe double infection with benign tertian parasites.  
 June 22: Patient received 10 c.c. of defibrinated blood from black goat at 9 a. m. Chill occurred in afternoon. Temperature rose to 105.6 F.  
 June 23: No chill. Temperature rose to 99.6 F. No parasites were found in blood.  
 June 24: No chill. Temperature rose to 99.2 F.  
 June 25: No chill. Temperature normal. No recurrence.  
 CASE 19.—Admitted June 25, 1906. Temperature 103.8 F. Double benign tertian infection, parasites moderately abundant.  
 June 26: Patient received 15 c.c. defibrinated blood from black goat. Chill. Temperature rose to 103 F.  
 June 27: No chill. Temperature rose to 100.2 F. Parasites were found in blood.  
 June 28: No chill. Temperature was normal. Parasites were found in the blood.  
 June 29: No parasites were found in blood. No recurrence.  
 CASE 20.—Admitted June 28, 1906. Temperature 104.4 F. Blood examination revealed single brood of benign tertian parasites, moderately abundant.  
 June 29: Patient received 15 c.c. defibrinated blood from black goat.  
 June 30: A few parasites were found in blood. No chill. Temperature rose to 99.2 F.  
 July 1: Temperature rose to 99 F. No parasites were found in blood. No recurrence to date.  
 CASE 21.—Admitted July 6, 1906. Temperature 104 F. Blood examination showed double tertian infection, moderately severe.  
 July 7: Patient received at 9 a. m. 20 c.c. defibrinated blood of black goat. Chill occurred and temperature rose to 104.8 F. in the afternoon.  
 July 8: No chill. Temperature was normal. No parasites were found in the blood.  
 July 9: No chill. Temperature was normal. No parasites were found in blood.  
 July 10: No chill. Temperature was normal. No parasites were found in blood.  
 CASE 22.—Admitted July 4, 1906. Temperature 104.2 F. double infection, moderately severe. Benign tertian parasites.  
 July 5: Patient received 15 c.c. serum from black goat. Chill occurred and temperature rose to 103.8 F. during the afternoon.  
 July 6: Chill occurred. Temperature in afternoon was 104.6 F. Parasites were found in blood. Quinin was ordered. Recovery uneventful.

lated monkeys or goats, or by serum drawn from the latter animals, seventeen patients recovered without further medication, while three were apparently quite uninfluenced by this treatment. Also after the usage of goat's blood or serum, the abrupt disappearance of fever was not so marked as was that when monkey's blood was employed, but a slight fever persisted for several days thereafter. A repetition of the injections was necessary in three cases, in which the patients eventually recovered without other treatment. In two cases the parasites reappeared in the blood and symptoms recurred, in one case after an interval of nine days, and in another after an interval of forty-five days. In each case, however, they again disappeared after antitoxin treatment was instituted.

In the cases reported above appear two of quartan type, which were altogether uninfluenced in the slightest degree by antitoxin treatment. This result was quite disappointing, but later I have learned that it is in line with Koch's discovery that naturally acquired immunity against one type of the organisms does not confer immunity against another. This observation has a bearing on Saveran's contention that all types of the malarial organism are essentially identical.

To further test this conclusion, five cases of estivo-autumnal infection were treated by the injection of goat's serum used with success against tertian parasite. The quantity used in these cases was from 5 c.c. to 9 c.c., and was perhaps inadequate. In one case the fever disappeared for four days, but the parasites did not leave the peripheral blood; the other cases were quite uninfluenced. The persistence of the parasites in the peripheral blood, in some cases above recorded, after the fever had disappeared, is a phenomenon similar to that witnessed in partial natural immunity, and was noted in my former series.

Two series of control observations were conducted. The first of these comprised tertian cases, which received no treatment from a period of from eight to fourteen days. The second comprised those patients suffering with malaria, who received injections of serum or defibrinated blood drawn from the normal goat.

The former series comprised sixteen cases and was investigated in order to note what proportion of patients suffering from benign tertian infections would recover spontaneously if kept in bed on liquid diet. In nine of these cases the fever of the malarial paroxysms ranged from one to two and eight-tenths degrees lower after the patients had been in bed for several days (the period varying in different cases), but in only two cases did it disappear entirely and spontaneous recovery ensue. Both these patients were later admitted with a recurrence of the fever shortly after their discharge. This is a much smaller proportion of spontaneous recoveries than I have seen occur in another similar series of control cases at Fort Reno, O. T., already reported, and demonstrates the greater seriousness attending a case of malaria in this climate, where human vitality is depressed and protozoön virulence is enhanced.

In this connection attention is invited to the fact that in the tropics many cases in which a diagnosis of malaria is made, but is not confirmed by blood examinations, and in which spontaneous recovery occurs (usually) from three to five days, are in fact either cases of slight sun-traumatism or toxemia by the absorption of leucomains from the intestinal tract. Manson discusses these mistaken cases of sun-traumatism in his textbook, but the only discussion of autointoxication of intes-

An analysis of the foregoing cases will show that of twenty cases of benign tertian infections treated by the injection of defibrinated blood from repeatedly inocu-



tinal origin which may be mistaken for malaria, which I have encountered, was published by Ross, I believe, in an Indian medical journal in 1896.

The second series of control cases were treated with serum or defibrinated blood of the normal goat. This comprised eight cases of estivo-autumnal malaria, five cases of benign tertian malaria and one case of mixed infection of both these types; each patient received 15 c.c. of normal goat serum; two other patients with estivo-autumnal infection and two of benign tertian infection each received 10 c.c. of the defibrinated blood from the same animal. In no case did any amelioration of the symptoms occur.

From the cases here recorded it would appear that the successive inoculations of monkeys or goats with blood containing the *Plasmodium vivax* gives rise in those animals to an antitoxin which, when injected in adequate dosage into human beings, may be followed by disappearance of the parasites from the circulation and disappearance of the symptoms of malaria. This agent has no apparent influence on infections caused by a variety of the malarial parasite other than that from which it was developed.

The researches of Koch in Africa, James in India and Kendall in Panama indicate that a certain degree of natural immunity against malaria can be acquired. Craig in our own service has reported that this exists to a limited degree in the Philippines.

Last December, while working along these lines, I examined the blood of forty native children in the neighboring town of Malabang, and was able to demonstrate that susceptibility to malaria apparently diminished as age increased. Definite conclusions of scientific value, however, were not possible as the exact age of many children could not be learned, and size or other characteristics had to be accepted as the criteria of relative age.

In this connection, attention is directed to the report of the Pasteur Commission, Drs. Marchoux and Simond, appointed to study yellow fever. These observers found that serum drawn from a person convalescent from that disease, when injected into another person, will confer relative temporary immunity to it. On *a priori* grounds it would appear that a suitable animal, successfully inoculated with the organism causing yellow fever, could develop higher immunizing powers than a human being who had been infected but once, and that serum from such an animal would have definite therapeutic value. From a consideration of the character of yellow fever, as compared with that of malaria, to which in many respects it is so similar, it would appear that an antitoxin would be of even more definite value in the former disease than in the latter, as natural immunity is usually developed quickly by one brief attack in yellow fever, whereas in malaria it develops much more slowly and with much less certitude.

Inasmuch as we have no remedies which give in yellow fever such satisfactory results as do quinin, arsenic, etc., in malaria, and as the mortality of the former disease is relatively high, especially in epidemics, it is apparent that investigations conducted with a view of securing a specific remedy for it, are expedient. It is suggested that it may be discovered along lines similar to those here followed, i. e., by successive injections of human serum containing the organisms into a suitable animal. Such a remedy should have protective as well as curative properties. It is believed indeed that an antitoxin against malaria, when better developed than has

heretofore been feasible, will be of practical value as a prophylactic rather than as a curative agent.

It is a pleasure to express my appreciation of assistance rendered me in this research by my official superiors in the medical department, and to acknowledge my obligations to First Lieutenant Henry L. Brown, Assistant-Surgeon, U. S. Army, who has rendered me much valuable aid in many ways, and to Contract-Surgeon Edward E. Lamkin, who procured for me many of the animals used in these experiments and assisted me in obtaining blood specimens from the native population of Malabang.

### Clinical Notes

#### INOPERABLE AND DEEP-SEATED CARCINOMAS AND THEIR TREATMENT WITH ROENTGEN RAYS AND RADIUM.\*

J. RUDIS-JICINSKY, M.D.

CEDAR RAPIDS, IA.

Radiotherapy, being comparatively new and in its developing stage, so to say, like every other science, suffers more or less from men who meddle with it without mastering it, and from those who think carelessly, generalize rapidly, rashly, and, as Sumner says, make concessions hastily without proper investigations, experimentation and progressive study, which is the only path for repression of ignorance and charlatanism. A host of writers have been busy for the last few years introducing conflicting and baseless notions which, for want of competent criticism, found their believers on the one side while on the other some of our best men made a boast of turning their backs on the real scientific method of new treatments, which in many hopeless cases gave not only relief but prolonged the life of those who were suffering and beyond help. To use the Roentgen rays, the rays of radium, or any other rays in every chronic case, in every lesion of different character, would be a nonsense, and it is just as bad a mistake not to apply the new method of treatment in suitable individual cases.

In all our work in this peculiar branch we are forced to investigate ratios at the limit or other features of limiting cases and analyze their processes sufficiently to classify them according to their individualities and to treat them individually. We know that the Roentgen ray and even radium will cure some superficial and malignant lesions, but we also know that the deeper growths and lesions are more doubtful in their prognosis, because we have to obviate here the difficulty of bringing as much as possible of the best rays of sufficient energy to destroy the cells of the lesion proper without destroying the cells of healthy overlying tissues. And, as has been stated many times before in the study of the effects of the Roentgen rays on the tissues and blood, the action itself seems to be of electrochemical character with selective power for the pathologic tissues.

If we expose a photographic plate to these peculiar rays, the emulsion will be altered chemically by the rearrangement of the atomic structure of the molecules, or the Roentgen rays will produce a change in the absorbing material. The same process will follow the exposure of living tissues, where the radiant energy, in the form of light, will make certain changes in metabolism and in the vitality according to whether it produces stimulation or irritation and will have also some effect on the blood. If that is the case, we can understand why

\*Read before the Iowa Union Medical Society, July, 1906.



the bombardment of particles or division of an electrical spark in a vacuum tube and the motion of certain rays of light demonstrate the evidence of chemical action of so-called chemical rays. These chemical rays are found more abundantly in the Roentgen ray than in any other form of light and affect cells, glands, nerves and vessels in the deeper tissues with selective power for pathologic tissues, as stated above—the cells of which in the atomic arrangements are more complex than the cells of normal tissue. To attain results in deeper lesions we must remember that the rays must have the proper energy, must be of proper quality and in proper quantity, to suit each individual case exposed, with all the individual factors of tube and apparatus. To depend in these and similar cases on measuring devices of whatever make would not do at all. Observe the behavior of your tube and then ray the whole tumor, especially its periphery, where there is the most rapid growth and action of the diseased cells, and do not forget that the distance of the tube here also plays its important part with the greater penetration of the rays, which if concentrated may not only shorten the duration of the exposure proper but give some positive results. If we take in consideration the painless procedure or possible combination of this method with radical operation and the chance to destroy, to remove or to absorb the malignant cells several inches from the surface, we will at once grasp the opportunity of this treatment, especially in all malignant cases, in which all other methods failed and in which the surgery needs a coadjutor in inoperable cases. The following results are the best proofs of it.

**CASE 1.**—Inoperable intra-abdominal carcinoma involving mesentery, mesenteric glands and a portion of the small intestine.

*History.*—Mrs. McK. was operated on April 6, 1903, for abdominal tumor. It was thought to be connected with the right ovary, but an infiltration into the small intestine was found and a growth as large as the closed fist in the posterior peritoneal part of the mesentery. The growth being malignant and so extensive was not removed. Pathologic examination proved the lesion to be carcinoma.

*Roentgen Therapy.*—I placed her under the mixed toxin and x-ray treatment, given every day in the beginning, regulating the dosage according to the individual characteristics of the patient, and of the regulating Mueller's tube, which in about 90 minutes is required to produce an erythema on the surface 10 inches from the tube of medium penetration, a spark-gap of 4 inches, equivalent to the resistance in the secondary circuit and the milliamperemeter reading three-quarters of a milliampere. The tumor entirely disappeared within six months' time. At present the patient is still under observation and feeling well. No opiates, pain, nor recurrence.

**CASE 2.**—Inoperable carcinoma involving the abdominal wall on the left with mesentery and mesenteric glands and also the spleen.

*History.*—On Jan. 20, 1903, I learned from Dr. Whitmore, that his patient, Mrs. C., had noticed a large tumor in the upper part of the abdomen and that all symptoms of malignancy were present. The tumor was firmly fixed and seemed to involve the abdominal wall. Small nodules in and under the skin could be felt very easily.

*Roentgen Therapy.*—The patient was then referred to me and I placed her under x-ray treatment at once; at first a high vacuum tube was used every day at a distance of about 5 inches from the abdomen; used my own cylinder for concentration of the best rays right against the tumor. In the incredibly short space of three months the patient was free from pain and returned home. No opiates.

*Subsequent History.*—The improvement was very temporary, however. The tumor soon began to grow again; the patient complained of the pain in the stomach, but remained otherwise

fairly comfortable. X-ray treatments were again given, fearing only toxemia and internal metastases.

On May 22, 1903, I made an examination and detected on deep pressure a very slight enlargement of few abdominal deep glands in the region of the recurring tumor, extending from the posterior wall of the stomach to the spleen.

After three months of vigorous treatment she had several attacks of fever lasting for a few days at a time, with symptoms of toxemia, probably from absorption. Her general health, however, improved considerably and a marked decrease in the size of the tumor followed after 236 days' treatment. She had gained ten pounds since the beginning of the second series of treatments, and was better. The entire period of treatment extended over 848 days, during which time the growth disappeared. There was absolutely no pain, no sign of recurrence, and she was able to do her own housework at home. Treatments were given again in June, 1906; autointoxication developed after a few exposures and the patient died 4 weeks later without pain. No opiates.

**CASE 3.**—Inoperable case of carcinoma of the cecum.

*History.*—Miss R. was operated on in July, 1905, by Drs. Ristine, Ruml and Littig, for abdominal tumor. The growth was so extensive and so suspicious in appearance that no attempt was made to remove it. Pathologic examination made later proved its malignancy beyond doubt.

*Roentgen Therapy.*—The patient was then referred to me and I placed her under the x-ray treatment, the surgeons using Alexander's serum besides.

X-ray treatments and the injections were given daily. Later when the scar from the incision was a little erythematous radium bromid (50 milligrams) of 7,000 activity, in an aluminum tube, was used to prevent infiltration superficially.

*Course of Disease.*—In December the patient developed high temperature with acute abdominal symptoms, pointing to local peritonitis. She was seriously ill and it was thought she would not survive the attack. An abscess formed in the original scar, which had to be opened and drained. On account of her general condition the x-rays and radium treatment had to be stopped.

On Jan. 15, 1906, microscopic examination of the discharge was made; it showed pus mixed with blood, and the debris of carcinomatous tissue sloughing away with fibrous tissue predominating; no feces.

On the left thigh an abscess formed, due, perhaps, to the injections of the serum, which also had to be stopped. The nodules and enlarged iliac glands almost entirely disappeared with the four weeks' rest and general treatment at home and the original tumor showed considerable decrease in size.

The patient remained well until March 12, when it was again necessary to give the x-ray treatments. At present, they are being given three times a week, the general health of the patient being comparatively good. She has gained 15 pounds. The disease seems to have been arrested and life prolonged without pain and without any opiates, as yet. A fecal fistula developed and closed and she slowly recovered from a few attacks of marked toxemia, but remained free from recurrence. The glands to date are not infiltrated. There is, though, a small mass over the cecum at the site of the original tumor.

Beside these three very interesting cases, I have had about ten others since 1903. Two of the remaining patients in whom the tumor completely disappeared have since died, one of internal, the other of general metastasis; in two other cases a fatal issue is expected at any moment. One patient is still living with recurrence that has not yielded to the combined x-ray, toxin and radium treatment, with observation of the rules of hygiene, proper nourishment and exercise, although there has been improvement.

These facts show beyond doubt that in these and similar cases we must not delay with our operative procedures, but if possible make an exploratory incision to find out the real status of the lesion in every inoperable and deep-seated case of carcinoma, and then ray the growth as soon as possible to save the patient from suffering



and to make him free from a local or general recurrence. In primary operable malignant tumors it is well, perhaps, to ray the field for about ten days before the operation, and at once after the operation, particularly in carcinoma and sarcoma, to prevent recurrence or infiltration into the glandular tissue. An area three or four inches larger than that of the original tumor is exposed to a hard tube; in fact, the harder and deeper the lesion the harder should be the tube.

## HYSTERO-EPILEPSY IN A CHILD.\*

THEODORE LE BOUTILLIER, M.D.

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PHILADELPHIA.

As there are comparatively few recorded cases of hystero-epilepsy in children, it was thought worth while to record this instance.

*History.*—Beatrice L., aged 15, was first seen in consultation in New York, Aug. 8, 1906. Parents are healthy and have five other children of normal health. The patient is the second child, the oldest being a boy, aged 18. One child died when four months old of some intestinal disorder. There was a miscarriage ten years ago. There is no history on either side of venereal disease, hysteria, epilepsy or insanity. On the maternal side two sisters died of phthisis before reaching adult life; the grandfather of pneumonia at 53 years of age and the grandmother at 42 years of age of unknown causes. On the paternal side, the grandfather died of lead poisoning at 55 years of age, while the grandmother is in good health at 67 years.

The patient's birth was normal, but for the first six months she was sickly, owing to digestive disturbance. Following the eruption of her first tooth at seven months her health steadily improved. There was little or no disturbance during dentition, and she had no eclamptic attack during infancy. She had none of the diseases of childhood, although exposed to measles and pertussis at home, and had never been under medical supervision until 13 years old. It is said that she has always been quick in her actions and impulsive, but not quick tempered or morose. She was not bright at school, yet until the present attack was able to keep up with the classes of girls of her own age, whose companionship she enjoyed. Since the attack attendance at school has been irregular and ceased altogether during the past year.

In June, 1904, while playing see-saw she fell from about the height of 3 feet, striking the lower part of her back across a log. She had pain over seat of injury for a few days. A month after her fall, when just 13 years old, and during the ordeal of her first communion and confirmation, the strain of which endured for some hours, she fainted. She was carried into the priest's house and put to bed. There was complete loss of consciousness; no rigidity or tonic movements, but she turned constantly from side to side. In about 10 minutes she became conscious but was very weak; in an hour, she was able to walk home. These fainting attacks were repeated every two or three weeks for the next six months. There was loss of consciousness with restlessness on regaining consciousness and a peculiar feeling of the hands which was relieved by rubbing them together. There was no aura or premonition of the approach of the attack, which appeared not to be induced by excitement or strain.

In January, 1905, she had a severe attack. She fell suddenly unconscious to the floor, rolled from side to side with kicking movements, and twitching of arms and face, and emitted cries and shrieks of laughter. There was no frothing at the mouth, no biting of the tongue and no relaxation of the sphincters. These severe attacks continued every week

or so until after her first menstrual period, which occurred in April, 1905, and was apparently normal. During this month and also May there were no attacks. The second menstruation was normal.

Menstruation did not occur in June, and since then the periods have been irregular, painful and with an increase in the severity of the convulsive seizures before and during the flow. Attacks were frequent until February, 1906, when they were less severe and she had none during March. In April, however, they were so severe and frequent (two or three a day for two weeks) as to confine her to her bed, she being unable to stand or walk, though the muscular power of her legs seemed normal while on her back. This condition is precisely that termed by the French *astasia-abasia*. She complained of much pain in the lumbar spine and is said to have been delirious about half the time. At times there were intense photophobia and loss of vision; much twitching of the facial muscles, and loss of speech for an hour or so.

Attacks continued at irregular intervals of from three to ten days until the patient was first seen, and had the following general characteristics: They occurred suddenly, without warning except in four or five instances, when they were preceded by a feeling of intense weakness. Nine-tenths of them occurred in the evening between 8 and 9 o'clock. Two occurred later, about 11 o'clock, following an evening's musical entertainment, showing the relation of nervous excitement to the convulsion in these two instances, and so apparently differentiating them from the usual seizures.

The first objective symptom was the falling to the floor on her back, the period of unconsciousness being variable. On revival she moaned, the respiration was stertorous; she complained of pain in the region of the heart and later in the frontal or the occipital regions, at times in the throat, back, abdomen, arms or legs, the convulsions being distinctly clonic in type, rarely have they passed through the tonic stage. At times she was delirious, speaking at random and again shrieking and laughing. Just before regaining consciousness the least noise in the room caused marked opisthotonos. Following the convulsion at times she fell into a deep sleep while again on regaining consciousness she felt very weak, but on taking nourishment soon recovered her ordinary strength.

It is to be noted that there were no foaming at the mouth, no tonic spasm, no relaxation of sphincters. She has never bitten her tongue or injured herself when falling, although in one attack she jumped over the foot of the bed, landing on her back on the floor. The average duration of the convulsions was about one hour, some not longer than fifteen minutes, others lasting three hours and over. There have never been more than three attacks in one day and the interval between has in one instance been two months. As a rule not more than one week intervened.

*Examination.*—The patient's eyes were examined at the Brooklyn Eye and Ear Hospital, June, 1906, when she was told that there was no ocular trouble. Eyes had been examined twice before with the same result.

Examination showed a well-developed girl with good muscular strength, tall for her age; forehead slightly protruding, eyes deep set, and the face somewhat wedge-shaped; expression rather dull. Conjunctivæ and mucous membranes pale, neck thick, with some enlargement of the lateral lobes of the thyroid gland, especially that of the left side; position slightly stooping; chest inclined to be flat; abdomen prominent.

Lungs on examination were found normal. There was no enlargement or displacement of the heart. In the recumbent posture a loud late systolic murmur was heard in the pulmonary region, downward to the fourth left interspace and outward to the mitral area; but best heard in the pulmonary area; not heard in the upright position. No hum was heard over the vessels of the neck or over the thyroid gland. The abdomen was normal to palpation. There was no pain over bladder region or in the iliac fossæ. Examination of the back showed prominence of the spines of the third, fourth and fifth lumbar vertebræ, with marked tenderness on moderate pressure over them; no tenderness elsewhere. No areas of anesthesia were demonstrable.

\* Read at the meeting of the Philadelphia Pediatric Society, November 13, 1906.



Hyperesthesia was present both on August 8 and August 22, the slightest touch with finger or pin causing pain over the coccyx and gluteal regions above the gluteal fold, extending upward along the posterior axillary line to the seventh rib, around which it passes to the midclavicular line, from there dropping to the costal margin and crossing to the opposite side. The entire abdomen was hyperesthetic and down the thigh to six inches below the anterior iliac spine passing obliquely to the inner side of the thigh. The knee-jerks were found to be slightly more than normally active. There was no ankle clonus and the Babinski reflex was not present. The external genitals were normal. There was no vaginal discharge.

**Later History.**—The patient had five slight attacks between August 8 and August 16, and only one convulsion lasting five minutes on August 20, since that time she has had no return of the convulsions. On September 9, the third day of menstruation, she passed a uterine cast without any nervous disturbance or pain. On September 26 the patient showed marked change; her expression was brighter and she looked more intelligent; the headaches had almost disappeared; she complained of no more backache or pain in the extremities; all areas of hyperesthesia had disappeared, and there was no pain on moderate or firm pressure over the lumbar vertebrae. Knee-jerks normal.

**Treatment.**—This has been entirely hygienic, the only drugs used being veronal and syrup of the iodid of iron combined with syrup of hypophosphites. The veronal was given in five grain doses for three days when it was discontinued owing to the deep sleep with stertorous breathing which occurred within half an hour after taking. General measures employed have been a strict attention to diet, with the elimination of meats, to a great extent, all highly seasoned food, stimulants, tea, coffee, sweets, and fried food. Only three meals daily have been allowed, the evening one composed of cereal, milk, bread and butter and stewed fruit. The patient is put to bed at 8 o'clock every night and takes a rest during the day. She lives an outdoor life as far as possible and has plenty of fresh air in her room at night. In the morning on awakening she is given an alternate hot and cold spinal douche, put back to bed for half an hour and then given a friction rub along the spine with cold cream for twenty minutes.

A report received November 13 states that the patient has just passed her third menstrual period without any return of the convulsive attacks or any nervous manifestation.

It is to be noted that heredity bears no relation to the etiology of this case. This is contrary to emphasized observations of Mills, Sachs, Saint-Philippe and others, who have found it most frequently in the children of degenerate parents. It seems that the spinal injury has been a factor in the cause of the disease, while undoubtedly the nervous strain attendant on the religious ceremonies precipitated the first acute manifestation. Had the first menstrual period followed closely on the seizure, it would have been regarded as a contributing cause, but the fact that it did not occur until 8 months after seems to eliminate this presumption.

Of the specific epileptic symptoms we have: unconsciousness, no distinct cause for each attack, the sudden onset, brevity of some attacks, and after the cessation of movements the occasional stupor or somnolence. In contradistinction there are the following purely hysterical manifestations: no aura preceding the attack, but occasionally some emotional excitement being the direct cause; noises of various sorts being made during the attack; no impairment of vesical and rectal reflexes; no biting of the tongue; and the rapid regaining of consciousness after cessation of clonic movements.

216 South Twentieth Street.

**Chloroform in Labor.**—W. Gillespie, in the *Cincinnati Lancet-Clinic*, states that there is a positive element of danger in the administration of chloroform after labor as it increases the chances of postpartum hemorrhage.

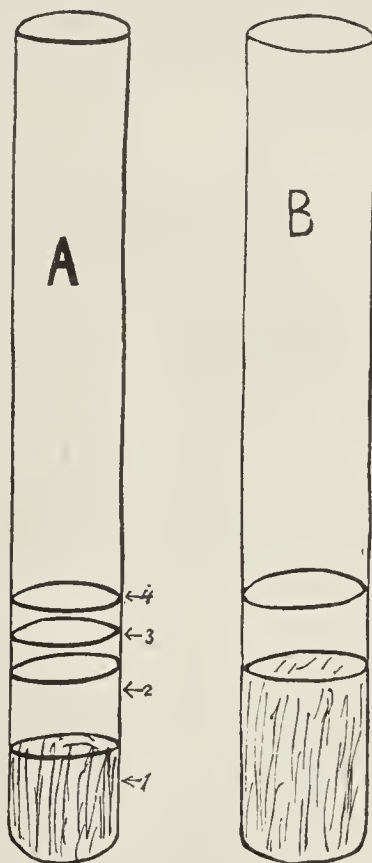
## THE BENEDICT MODIFICATION OF THE BOAS TEST FOR OCCULT BLOOD IN THE FECES.

A. L. BENEDICT, M.D.

BUFFALO, N. Y.

This method was presented by title to the 1906 meeting of the Medical Society of the State of New York and published in the *New York State Journal of Medicine*, May, 1906. So many inquiries have been received regarding the test that it may be pardonable to repeat the substance of the original paper in diagrammatic form. The test is, of course, the same in principle as the original Boas test, which likewise is merely an adaptation to feces of the time-honored guaiac test for hemoglobin. The present modification avoids the delay and

spurting of feces incident to extraction of fats which are inevitable when gasoline is not used. It seems to me neither more nor less delicate than the original Boas test. The guaiac test is not especially sensitive and nearly 10 per cent. of blood must be present in the feces



A.—Diagram showing the order and approximate quantity of ingredients of the test for occult blood. 1. Feces reduced if necessary to diarrheal consistency by addition of water. 2. Gasoline, which rises above Nos. 3 and 4 as they are added. 3. Fresh tincture of guaiac. 4. C. P. turpentine, exposed to air for from 4 to 8 weeks until greenish-yellow in color.

B.—Diagram showing the result after the test tube has been shaken and allowed to stand for a minute or two. 1. Emulsion of feces, guaiac and turpentine. 2. Gasoline ring colored greenish or bluish according to amount of hemoglobin.

## THE PERCENTAGE INDEX VERSUS THE BACILLARY INDEX IN THE ESTIMATION OF THE OPSONINS.

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Professor of Clinical Diagnosis at Baltimore Medical College.  
BALTIMORE.

In a previous communication<sup>1</sup> I have drawn attention to certain fallacies which attach to Wright's method of estimating the opsonic content of the blood, and have shown that more accurate results can be obtained by estimating the percentage of phagocytizing leucocytes. By comparing the figure thus obtained with the figure corresponding to a specimen of pooled normal blood serum, terming the latter value 1, an index is obtained which is directly comparable to Wright's index. For routine work this method will be found more convenient than Wright's method of counting the organisms pro leucocyte and comparing the resulting figure with the corresponding one obtained with normal blood.

If for any reason, however, Wright's method is to be used, I should recommend that the percentage index be calculated at the same time; it will be found a useful check on the former and readily shows up errors that may have been made in counting, depending on clumping of the organisms, etc. As the percentage of phagocytizing

1. Jour. Exper. Med., viii, page 651.



cells is to a certain extent dependent on the number of organisms present, it is advantageous to work with an emulsion which, with normal blood serum, should not give a higher percentage than 50. This will allow for an increase of the index in the patient's blood to at least 2, which is sufficient for all practical purposes.

I have also shown that, working with non-diluted blood serum, neither the phagocytic index (number of organisms pro cell), nor the percentage value of phagocytizing leucocytes gives an adequate idea in all cases of the amount of opsonin present, if we are willing to admit that the amount is greater, the more the serum can be diluted, without extinction of phagocytosis (corresponding to the usual method of estimating the amount of agglutinins). For this reason I suggest that the usual determinations (by percentage index) be controlled by corresponding examinations of the blood in dilutions of 1:20 or even 1:40.

1302 Madison Avenue.

## CASE OF GASTRIC AND OMENTAL HERNIA.

F. E. WALKER, M.D.

Surgeon to Our Lady of Lourdes Hospital.

HOT SPRINGS, S. D.

Mrs. S., widow, aged 63, with negative family and personal history, had, in years past, performed the usual duties of a housewife, and in addition served as farm helper during the harvest season. At the age of 36, in an attempt to lift a heavy forkful of hay on a wagon, she was suddenly stricken with excruciating pain in the middle of the epigastric region and immediately fell to the ground unconscious. She soon recovered, but felt as if she "had been torn to pieces." The pain and weakness persisted for several days and no medical advice was sought. At variable intervals the pain was felt, but on lying down and having hot applications applied to that region the attacks seemed to be aborted.

This state of affairs continued for several years and apparently grew no worse. About five years ago, however, she experienced a severe spell, similar to the first, but accompanied with retching and straining, vomiting of bile and some blood. A physician was called and pronounced the trouble hepatic calculi.

From that time her condition did not improve and she was advised to have the stones removed. She did not give her consent until September 15 last, when after a more severe and prolonged attack than usual, she called for my services and was taken to Our Lady of Lourdes Hospital, where I performed a laparotomy two days later. I had confidently corroborated the previous diagnosis and was very much surprised to find the liver, gall bladder and duct, not only normal in every respect, but without hyperemia or any adhesions. An attempt to bring the stomach into the field was then made and met with failure, as many adhesions were noted at the pylorus, and on making tension at this point the organ appeared to be firmly adherent below and to the left. The incision was then prolonged in an elliptical and upward, as well as in an inward, direction, and, in sweeping the finger snugly up and immediately beneath the parietal peritoneum, I was surprised to find that neither the stomach nor any adhesions were encountered.

Grasping the gastric pouch firmly at its upper margin and making traction in an upward direction, I easily brought into view the stomach and the greater omentum, the latter being folded and refolded on itself. A distinct rent was found, with pouching of the peritoneum; into this the stomach had escaped, drawing with it the omentum. The stomach was freed from many adhesions, the omentum removed *en masse* and the laceration of several inches of the peritoneum repaired.

Recovery was uneventful, the patient returning home on the seventeenth day. A letter from her dated November 20 says:

"I am entirely free from pain and have been ever since the operation. My appetite is good, I have not vomited and have gained 25 pounds."

## NASAL SCISSORS FOR OPERATING ON THE MIDDLE TURBINATE.

C. M. WATSON, M.D.

ALLEGHENY, PA.

In the treatment of nasal hypertrophies, it not infrequently is found advisable to remove a portion or all of the middle turbinate, either to restore free nasal respiration or to obtain unobstructed sinus drainage. To accomplish this, I have found the instruments usually employed defective, as they are apt to damage the openings into the ethmoidal cells, thereby interfering with their proper drainage.

Seeing the advantage of an instrument with which a portion or all of the turbinate may be removed by a clean section through all the tissues—mucous membrane and bone—I have devised the shears herewith illustrated. The shaft and handles are placed at such an angle as not

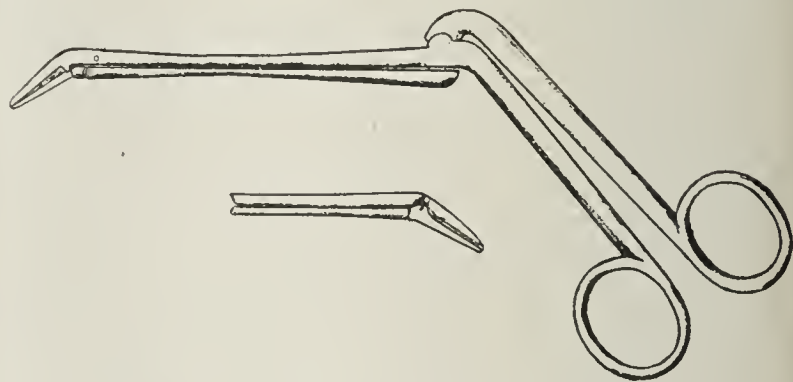


Fig. 1.—View of both sides of scissors closed.

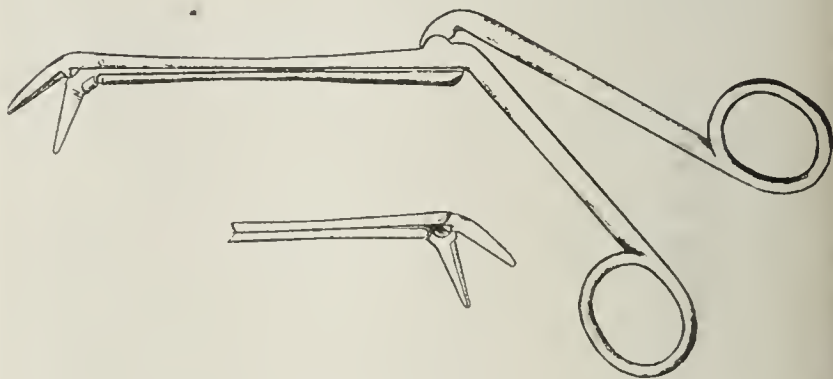


Fig. 2.—View of both sides of scissors open.

to interfere with observation, while the shears are placed at the angle best adapted to follow the line of attachment of the middle turbinate.

I have used these shears for some time, the operations being done quickly and without pain or excessive hemorrhage under local anesthesia. The cut being clean with no injury to adjacent parts, the wound heals promptly, with complete renewal of mucous membrane, consequently with a minimum of cicatricial or scar tissue.

**Railroad Accidents.**—The slaughter on American railroads is terrific and terrifying. In our happy-go-lucky way of running railroads not much regard is paid to protection of human lives if it interferes with the economy of management, says the *Medical Times*. We hold human life too cheap in this country; we read with no sense of responsibility of these railroad accidents and we thank our good fortune that we escaped, but this is a problem which should interest even the most selfish individual, for he will never know when he stands in its shadow. This slaughter is of to-day. It did not occur in ancient Rome or in the Middle Ages, but is going on now.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 51.)

### TRIPHENIN.

#### PROPIONYL-PHENETIDIN.

Triphenin,  $C_6H_4(OC_2H_5)NH(CH_3CH_2CO) = C_{11}H_{16}NO_2$ , is a derivative of parphenetidin, differing from acetphenetidin (phenacetin),  $C_6H_4(OC_2H_5)NH(CH_3CO)$ , in that the acetic acid residue,  $(CH_3.CO)$ , has been replaced by the propanoic acid residue,  $(CH_3.CH_2.CO)$ .

It is prepared by heating parphenetidin with propionic acid and crystallizing the product.

It is a white, shining, crystalline powder, melting at  $120^\circ C.$  ( $248^\circ F.$ ), odorless and faintly bitter. It is practically insoluble in water, requiring 2,000 parts, but soluble in alcohol and in ether.

In general it responds to the pharmacopoeial tests for acetphenetidin (phenacetin). From this it may be distinguished by its melting point and by identifying the propanoic acid evolved when heated with 50 per cent. sulphuric acid.

Its incompatibilities are those of acetphenetidin (phenacetin).

**Actions and Uses.**—Triphenin is antipyretic, analgesic and hypnotic; its action is slower and milder than that of phenacetin, because it is less soluble, and it is said to be free from by- or after-effects.

It has been recommended in typhoid, pneumonia, pleurisy, influenza, erysipelas and tuberculosis; also in neuralgia, sciatica, migraine, tabetic pains, etc.

**Dosage.**—As an antipyretic, 0.25 to 0.6 Gm. (4 to 10 grains); as an antineuralgie, 1 to 1.3 Gm. (15 to 20 grains), preferably in wafers.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 535,846. U. S. trademark.

### TROPACOCAINE HYDROCHLORIDE.

#### BENZOYL PSEUDOTROPEINE HYDROCHLORIDE. TROPEINE.

Tropaeocaine hydrochloride,  $C_8H_{14}NO(C_7H_5O).HCl = C_{15}H_{19}NO_2.HCl$ , is the hydrochloride of synthetic tropacocaine.

Pseudotropin-Lieberman is obtained from tropinon or from tropin by electrolytic reduction and from this the benzoyl derivative is obtained and this is converted to the hydrochloride.

It forms colorless, needle shaped crystals, melting at  $271^\circ C.$  ( $519.8^\circ F.$ ). It is readily soluble in water, and its solution keeps well for several months. Heated in the presence of hydrochloric acid it is split into benzoic acid and tropine.

Its incompatibilities are the same as those of the alkaloids in general.

**Actions and Uses.**—Tropacocaine hydrochloride is a local anesthetic, resembling cocaine very closely in its general action, but only half as poisonous. It is reported that anesthesia sets in more rapidly and lasts longer than with cocaine. It produces less dilatation of the pupil, sometimes none at all.

It is recommended as a local anesthetic.

**Dosage.**—It is applied in 3 to 10 per cent. aqueous solutions containing 0.6 per cent. sodium chloride.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 628,293.

### TUMENOL.

#### TUMENOL VENALE.

Tumenol is a crude mixture of tumenol sulphone and tumenol sulphonic acid derived from bituminous shale.

It is prepared by sulphonating the mineral oil obtained by the distillation of bituminous shale quarried in the Mossel mine.

It is a dark oil of syrupy consistency, almost insoluble in water, but easily soluble in fats.

**Actions and Uses.**—It is said to be a non-toxic and non-irritant protective and palliative to the skin.

It is recommended in eczema, excoriations, erosions, superficial ulcerations and burns as a palliative and protective covering, etc.

**Dosage.**—As 5 to 20 per cent. ointment or 10 per cent. solution in water or glycerin and in the form of soap plaster (with salicylic acid).

Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patent No. 56,401.

### TUMENOL SULPHONE.

#### TUMENOL OIL.

Tumenol sulphone is a mixture of the sulphonated constituents of tumenol venale which are non-combina-ble with alkali.

It is prepared by treating tumenol venale with sodium hydroxide solution, extracting the alkaline mixture with ether, and distilling the ether from the solution obtained.

It is a dark-colored, thick, oily fluid, insoluble in water, but easily soluble in ether, petroleum, benzine, etc.

**Actions and Uses.**—These are described under Tumenol, which see.

**Dosage.**—It is used undiluted for pencillings on squamous and vesiculous eczemas.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

### TUMENOL SULPHONIC ACID.

#### TUMENOL POWDER.

Tumenol sulphonic acid consists of the sulphonated constituents of tumenol venale, capable of combining with caustic alkalies.

It is prepared by treating tumenol venale with sodium hydroxide solution, shaking out the mixture with ether, decomposing the residual sodium compound with hydrochloric acid, and collecting and drying the precipitate.

It is a dark-colored powder, sparingly soluble in cold water, but readily soluble in hot water and in dilute ammonia water.

The aqueous solution should not turn Congo paper blue. When acidified with hydrochloric acid and filtered, the filtrate should give no reaction with barium chloride, nor should the aqueous solution (1 to 20), acidified with nitric acid and filtered, become more than opalescent on the addition of silver nitrate.

**Actions and Uses.**—See Tumenol.

**Dosage.**—It is used in substance, finely powdered, as a 5 to 10 per cent. paste with or without zinc oxide, and in 2 to 5 per cent. aqueous solutions as fomentations.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

(To be continued.)

**Influence of Baths on Temperature in Typhoid as Aid to Prognosis.**—The *Bulletin de la Soc. Méd. d. Hôp. de Paris* for November 23 states that Marchand's experience indicates that a drop in the peripheral temperature after a cold bath in typhoid is a bad sign. Marchand ordered fifteen-minute baths at  $26^\circ C.$  ( $78^\circ F.$ ), in treatment of a number of typhoid patients during a recent epidemic. The temperature in the axilla was determined in every case before and after the bath. It was found that in every case terminating in recovery the temperature in the axilla was only slightly lower after the bath than before, merely by a few tenths of a degree Centigrade; it was even higher than before the bath in a few patients. In the unfavorable cases, on the other hand, the temperature in the axilla was lower by one or two degrees than before the bath, and in one instance it was 3.1 degrees lower. He ascribes the lower temperature to weakness of the heart, requiring energetic measures to modify its unfavorable significance.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, JANUARY 12, 1907.

## FANTASTIC THEORIES OF THE CAUSE OF APPENDICITIS.

It would be strange if a disease which is so widespread and so well known among the laity as appendicitis should have escaped the notice of the daily press. In fact, it has been of late years a frequent topic of discussion, and only recently the newspapers were commenting on an article which appeared in the London *Lancet* suggesting a connection between appendicitis and the prevalent use of boric acid as a food preservative. The article admitted that little had been shown beyond the fact that the use of boric acid and the increase in appendicitis had occurred during the same period, and that boric acid in exceptionally large quantities could cause a condition favorable to appendicitis.

More recently we have received a little brochure<sup>1</sup> by F. A. Pond, M.R.C.S., L.R.C.P., entitled "Is Red Antimonial Rubber the Cause of Appendicitis?" In this pamphlet the author attempts to prove that appendicitis is frequently the result of chronic antimony poisoning, the antimony being derived from the red rubber that is used in the rings about the stoppers of beer and soda-water bottles. Although it is shown in his own paper that subjecting red rubber containing 16 per cent. of penta-sulphid of antimony to beer and carbonated water over a period of days will not cause a solution of the antimony, the author persists in his view that people who indulge in these drinks suffer from chronic antimonial poisoning due to the swallowing of small particles of detached rubber. His main argument, as was the case with the advocate of boric acid poisoning, is that there has been a marked increase in the incidence of appendicitis in late years, and that this has gone hand in hand with the increase in the use of red rubber on bottles used for beverages.

The late Sir William Gull had a saying to the effect that "savages explain, science investigates." A desire to explain all sorts of phenomena, natural and otherwise, seems to be an inherent human trait, but physicians are supposed to be not only human but also scientific. Their natural desire to explain should be tempered with a spirit of investigation, but the latter is sometimes very feebly developed. The two theories propounded above are both founded on the same premises.

1. Pond, (F. A.): Liverpool: Edward Howell, Church Street, 1906.

Both authors believe that appendicitis has increased in incidence in recent years, and each author claims his particular poison as the cause of the phenomenon because its increase has been synchronous with the increase of the disease. As we recently pointed out, the supposed increase in the incidence of appendicitis is far from being proved, and even if it is granted that appendicitis is increasing in frequency the fact that the use of borated food or of red rubber rings is also on the increase would not indicate any necessary connection between the two. It is unlikely that any one will claim that the general use of the telephone has aught to do with appendicitis, yet it has occurred during the same period in which the recognition of appendicitis has become common.

We are moved to observe that a great deal of nonsense has been written on the causation of appendicitis in the last ten or twelve years. Many theories have been brought forward, and their short existence has usually been an accurate indication of their value. We need but recall the foreign-body theory in its exaggerated form (a very small percentage of cases are, of course, due to foreign bodies) which led to the wholesale eschewal by the faddists and the phobiacs of grapes, small fruits and cherries, and even caused suspicion to be cast on the homely but useful toothbrush. Then there was the rheumatic theory which compared the appendix to the tonsil, and the influenza theory which assumed an increase in appendicitis going hand in hand with a similar increase in influenza. There have been other theories just as fantastic, but less popular. It would be well if the theorists kept in mind the aphorism mentioned above: "savages explain, science investigates."

## THE FOOD VALUE OF VEGETABLE "GELATINS."

The use of jellies derived from lichens and marine algæ has been much less extensive in America than in many other countries; in Japan especially they form a staple article of diet. Iceland moss and Irish moss are occasionally employed in this country, and at one time they had a decided reputation as being suitable for the use of invalids and convalescents. With the vegetarians vegetable gelatins have occupied a prominent place among the substitutes for animal food. The clear moss jellies which "do not reek of the stockyards and the abattoir" have been so highly extolled for their supposedly great nutritive value, as well as for their esthetic advantage, that some such "vegetable gelatins" have found a considerable sale.

The view that these vegetable jellies are highly nutritious seems to have passed almost unchallenged, the chemical investigations which have been made having been generally inadequate and, as is often the case, quite misleading. We are too much accustomed to rate the nutritive value of a food substance by its percentage composition of carbon, hydrogen and nitrogen, without considering the availability of these constituents for



human metabolism. A substance may be edible and have a high nitrogen content, yet this by no means proves that the nitrogen is in the form of proteid or that it can be utilized in place of proteid nitrogen. Perhaps the best example of this fact is afforded by mushrooms. Early analyses of foodstuffs sought particularly to ascertain the amount of nitrogen present, for, under the influence of Liebig's teaching, only nitrogenous foods were considered of value; and so when it was found that edible mushrooms contained a good proportion of this element they were given a high place among foods. Yet the more recent investigations of Mendel<sup>1</sup> showed that the nitrogen of mushrooms is chiefly in a non-proteid form, which can not be utilized by the animal organism.

The same is true of the vegetable jellies. Analysis shows them to be carbohydrates, and on decomposition with acids they yield sugars, such as glucose, levulose and pentose. But this is no proof of dietetic value; for example, cellulose is also a carbohydrate which yields glucose on cleavage, yet it has practically no food value in the human economy because of the absence in the gastrointestinal tract of enzymes capable of breaking down the cellulose molecule into utilizable sugars. A study of the nutritive value of the vegetable jellies has recently been made, under the direction of Prof. Mendel, by T. Saiki,<sup>2</sup> and he has shown them to occupy much the same place as cellulose among the foodstuffs. The jellies studied were Iceland moss, Irish moss and the Japanese jellies kombu, wakame and nori, as well as the familiar agar-agar of the bacteriologic laboratory. None of these substances is affected in the least by saliva, intestinal juice or pancreatic juice, and they are not affected by colon bacilli which might possibly break down carbohydrates that the digestive juice can not attack.

As was to be expected from the results of the laboratory experiments, it was found that these substances when given in the food either of man or animals could be recovered unchanged in the feces. On account of their marked property of holding large quantities of water, relatively small quantities of vegetable jellies cause the elimination of copious watery feces. As they form agreeable articles of diet when used like gelatin as a vehicle for fruit juices and other flavors, it is suggested that agar-agar or the moss jellies may be of value in certain cases of constipation.<sup>3</sup>

Concerning their value as a food, therefore, the most that can be said for the lichen and algæ jellies is that they are harmless, but non-nutritious. They may be used as a thickening for soups or as a basis for jellies when, for any reason, animal gelatin is not desired. It is interesting to compare these facts with the statements made by the promoters of "vegetable gelatins." For

example, printed on every box of a certain preparation of this kind, which comes from the Michigan headquarters of health "foods," is the statement: "Its food value is more than double that of an equal weight of eggs or beefsteak." This particular preparation is simply agar-agar in a form recognizable by anyone familiar with the bacteriologic laboratory, and just about as nutritious as a corresponding quantity of newspaper pulp, although far more edible.

#### EDGE TOOLS.

In discussing the reported presence of a large number of cases of a gastric form of influenza in London, an editorial writer in the *New York Herald*, December 31, ventures to outline the treatment for this form of the disease. His suggestions include the use of certain drugs, some of which are extremely depressing, and yet he gives not only the names, but the doses that should be used. This is the sort of editorial that is likely to be widely copied. With what can not but seem imprudence, considering the serious character of the malady he is discussing, the editorial writer says:

"Antipyrin and pyramidon are also much used. In a general way pyramidon is preferable to antipyrin, the latter being too depressing in its action. The best thing to do in those forms in which the fever rises a great deal is to take, once or twice a day, thirty centigrams of bichlorhydrate of quinin. This association of medicines, in addition to the fact that it greatly diminishes severe headache and the sensation of an aching lassitude in the limbs which is felt when one has influenza, causes abundant perspirations which facilitate an elimination of poisons and diminish the duration of the illness."

It is unnecessary to say that such an editorial is likely to do much harm and it is surprising that the writer, who is evidently a physician, did not realize this. The drugs advised are not simple remedies of which it may be said, in popular parlance, that if they do no good at least they can do no harm. On the contrary, they are examples of the most depressing coal-tar products which should always be taken with due caution since they have proved to be extremely dangerous drugs. There is a definite conviction in the minds of most physicians that these drugs have been the cause of a number of fatal terminations in influenza which would not otherwise have occurred. They are recommended as if they were curative. Any such idea is, of course, contrary to our knowledge of their effects. The only reason for their administration ordinarily is that they lessen the fever and thus make the patient more comfortable. They are given as the lesser of two evils; often the physician concludes that it is better to have a depressed than a restless patient. On the influenza itself they have no effect, unless, indeed, the depression produced by them should lower resistive vitality and so make the patient less able to throw off the infection, which would, therefore,

1. Amer. Jour. of Physiology, 1896, vol. 1, p. 225.

2. Jour. of Biol. Chem., 1906, vol. II, p. 251

3. A similar suggestion has been made by Schmidt (Münch. med. Wochschr., 1905, p. 1970), without, however, experimental evidence.



run a more chronic and exhausting course. The physician must judge in each case just how far the use of these drugs may be permitted.

Just what the quinin is recommended for is not clear. Those who think that quinin is a direct antipyretic are growing fewer every year. Quinin reduces fever in malaria, but does so by its action on the plasmodium. It was formerly recommended for fevers generally in the hope that it would affect them favorably as it does malaria, but this was before its antiparasitic action was known. Quinin is only a reasonably good tonic and is no more directly curative than would be any other tonic of corresponding properties. With the stomach already irritated by the influenzal process it is almost sure to do more harm than good.

Most people who read the editorial in question will receive the impression that when influenza with stomach symptoms occurs all that is necessary is to procure some pyramidon and quinin and to take them in the doses advised. As a matter of fact, no case of influenza is ever so simple as this. It is the patient who must be treated and not the disease. Every individual responds differently to the invasion of the influenza bacillus and many affections that are called influenza are really manifestations of other pathologic conditions with which "colds" happen to be associated. It has become more and more clear in recent years that many supposed stomach symptoms have their origin in heart trouble. Indiscretions of diet when combined with the disturbed circulation of the stomach wall consequent on a weak or diseased heart are almost sure to give severe gastric symptoms. The administration of such drugs as antipyrin and pyramidon in these cases would be eminently improper. Doubtless many persons will consider themselves justified in taking these remedies themselves and others will dare to give them to friends, and if they do there will be many more death certificates to be signed than would otherwise have been the case. Gastric influenza is not so easily diagnosed, and to diagnose it and to exclude affections of other organs will require the skill of the most expert of physicians.

#### DR. GRENFELL OF LABRADOR.

When we referred,<sup>1</sup> not long ago, to the excellent work being done in Labrador by Dr. Wilfred Grenfell, we spoke with pleased anticipation of his expected visit to the United States. An interesting summary of some of the medical aspects of his work is given elsewhere in this issue,<sup>2</sup> in the report of Dr. Grenfell's address before the New York Academy of Medicine. Our profession and the public are now tolerably familiar with his work, but it would greatly aid one to grasp its significance if one might see and hear this simple, prayerful, achieving man. These traits are correlated with regard to all notable personalities. For the strong man is invariably the simple man, and there is practically no task for which the praying man is not potential; even the angry

and tempestuous elements find such an one invincible. The inspiration of such a personality is of benefit to all who come under its influence. It is certainly gratifying that the profession of our country, and the public as well, have taken such an interest in him and his work.

#### THE TRADING-STAMP SYSTEM IN MEDICINE.

The physician who is looking for dishonest ways of making a living, like the one who is seeking a gold brick, only finds it necessary to glance through his mail to obtain what he covets. In an instance before us, both types are appealed to. The Converse Chemical Company of St. Louis, in a form letter, after calling attention to the fact that "our complete and exact formula is printed on every bottle," goes on to make the following proposition: "If you . . . will agree to use our preparations where indicated . . . we will sell you some stock at a price that will be attractive." On further inquiry we find that the company is even more liberal than its letter indicates, for in a later epistle—printed this time—they propose to give the stock away. "For every bottle of either one of our preparations you purchase for \$1.00 per bottle delivered to you, we will give you one share of stock in our company, which has a par value of \$10.00 per share." (sic) To prevent any avaricious physician from buying up the entire plant they put in a proviso that each individual is limited to 100 shares and state that they have only 5,000 shares of stock for this purpose. The pathos of the whole business is that a class of men, of presumably superior intelligence and high ideals, can be caught on a proposition of this kind. But evidently many are. We have always felt a degree of pity for the poor dupes who buy their groceries where they get a "chromo" with every pound of tea, but what shall we say of physicians who will allow themselves to be caught by such a bait as that offered by this St. Louis concern. The company evidently realizes that some of those who swallow the bait may have a vestige of self-respect left, for it offers to "have the stock put in the name of any member of your family," and promises not to divulge the names of its stockholders. The whole scheme of course is to get physicians financially interested in the preparations so that they will prescribe them, recommend them, and, in short, use and advertise them purely from the viewpoint of the almighty dollar. No man's judgment is likely to remain unbiased and impartial where his pocket-book is concerned—it is not human nature; no physician can have an eye single to his patient's best interests if he is to receive financial benefit by prescribing one remedy rather than another. What kind of a decision would be expected of a judge who himself was financially interested in the suit he is called on to decide? The case is parallel except that with the judge the decision affects only dollars and cents; with the physician it concerns the health, even the life sometimes, of a human being. No casuistic reasoning can change the fact that it is wrong in principle and vicious in practice for physicians to participate in the profits accruing from the exploitation of particular remedies.

1. THE JOURNAL A. M. A., Oct. 20, 1906, p. 1306.  
2. General News: Infection in Labrador, p. 149.



## THE ALLEGED DECREASING LONGEVITY.

An item is going the round of the newspapers based on certain statistics found in the United States Census of 1900, in which it is inferred that human longevity in this country is becoming impaired owing to the lack of the "simple life" in our modern civilization. Because the death rate in persons above 60, and especially in those over 70, has apparently increased, the magazine and newspaper writers see a national deterioration, and to use the language of one of them, the figures show that, "notwithstanding improved medical knowledge and the benefits of modern sanitation, we are dying earlier than our grandparents did." The reason advanced for this state of affairs is that our life is more complex and luxurious than was that of our forbears. Allowing for deficiencies in the earlier censuses and the still imperfect registration methods over a large portion of our country, there is nothing particularly alarming in the fact that our later figures show an increased rate of mortality in individuals over 60 years of age, and it should not of itself require an explanation to medical men. It would seem, however, that the conditions are not thoroughly appreciated by all, since a German physician is reported to have made a rather disadvantageous comparison between German and American longevity based on the same line of argument. It is admitted that the general average of human life has increased and infant mortality particularly has diminished, being lower in this country at the present time than in any of the principal industrial countries except, perhaps, France. The survival of so many infants naturally increases the death rate in later ages, and that this increase can be put off till after the active period of life is past is a very favorable showing for medical science. Under the older conditions it took an originally robust constitution to survive the perils of infancy and middle age, and therefore there were perhaps more of these specially endowed individuals to survive at more advanced ages, and the ratio of persons past the age of efficient work might be somewhat greater. It is not necessary to emphasize the economic value of the saving of human life during the working period. There is a hope, and not an unreasonable one, that sanitary science may enable us still further to increase the average longevity, but it would be rash to say that there is any immediate prospect of increasing it beyond the Scriptural limits of three score and ten, and, only exceptionally, four score. The simple life, however desirable, is not in sight, and patriarchal longevity still less so.

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"OPERATED."

Concerning the careless use of certain words, such as "case," "no temperature," etc., letters pro and con recently appeared in THE JOURNAL. Another word should be mentioned, and if the new way of using it is to be accepted as correct, then it should be so understood. We refer to the word "operate." This word is both transitive and intransitive. We may operate a mine or a linotype machine, but we do not usually "operate" a patient. The verb "to operate" (*operari*, to work, and *opus*, work) has the same meaning as the verb "to work"

and is used in the same way. It is a creditable thing "to work" a mine, and once in a while it is paying business; "to work" a linotype machine is not the hardest nor the least paying trade, and is an honorable calling. But "to work" a patient! That, however remunerative, is certainly not an honorable thing to do. Yet it is what some surgeons are doing every day—or at least what they say they are doing. When a surgeon says he "operated a patient" he does not want to be taken literally; he does not mean to have us infer that he "worked a patient." He may operate a manikin or a skeleton to demonstrate a point, and in a like manner he may operate a man, using the man as he would use a manikin or a skeleton. Those who a year or two ago were using "operate" as a transitive verb are now making it serve as an adjective and telling us about "operated" patients. Some one has said that "there is a misuse of words which can be justified by no authority however great, by no usage however general."

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**Medical News****DISTRICT OF COLUMBIA:**

**Personal.**—Dr. J. Ford Thompson, who recently underwent a serious operation in London, has returned to his home in Washington greatly improved in health.—As the result of a competitive examination, Dr. William R. Dear has been made a member of the resident staff of the Emergency Hospital. Dr. Glenn Jones has resigned his position on the staff and will enter private practice in Washington.—Dr. James C. McGuire suffered a dislocation of the elbow and several fingers, and severe scalp wounds while attempting to board a car, December 24.

**Field Crematories for Excreta.**—A new form of incinerator for the disposal of excreta of troops in the field, invented by James S. McCall, Huntingdon, Tenn., has been given a thorough trial in the Army under service conditions during the past year, and has been approved by the medical department of the Army. The feces are received directly into pans which are suspended over the firebox. When the pans are full the fires are started, and after the cremation of the contents is completed the urine, which has been received separately, in a fly-proof receptacle, is admitted to the pans through a pipe supplied with a valve, and quickly evaporated. A second fire at the base of the smokestack consumes the smoke and fumes, so that the operation is practically odorless. This device, it is hoped, may solve the heretofore vexed question of the disposal of excreta in camps not provided with sewage facilities.

**ILLINOIS.**

**Resolutions of Respect.**—The Wabash County Medical Society, at its recent meeting, passed resolutions laudatory of the late Dr. Jacob Schneck, Mount Carmel, and expressive of sorrow at his death.

**Psychopathologist to be Appointed.**—An examination will be held in Chicago, January 22, under the direction of the Civil Service Commission, by a board of examiners composed of Drs. Hugh T. Patrick and W. A. Evans, Chicago, and Dr. Vaclav H. Podstata, Elgin, to select a psychopathologist for the Cook County Insane Hospital, Dunning. The salary is fixed at \$2,400, in addition to living expenses and an excellent opportunity for original research is furnished.

**Communicable Diseases.**—The epidemic of scarlet fever at De Kalb is believed to be checked, but as a precautionary measure the schools will remain closed for another week.—The village of Rossville and its vicinity are reported to be suffering from an epidemic of scarlet fever. All schools in the township are closed.—Dr. J. C. Westervelt, inspector for the State Board of Health, reports that the diphtheria situation in the southern and western part of Iroquois County is much improved.—Dr. E. F. Baker, inspector of the state board, reports that several deaths from scarlet fever have occurred in Knox County, due primarily to failure to observe the quarantine regulations.

**Personal.**—Dr. Frank Billings, Chicago, has been elected chairman of the consulting staff of Cook County Hospital,



vice Dr. Henrotin, deceased.—Dr. Constantine H. Murphy, Chesterfield, is reported to be seriously ill at his home.—Dr. Clinton Helm, dean of the medical profession at Rockford, announces that he will retire from active practice February 25, on the fifty-fifth anniversary of his graduation from the University of Iowa.—Dr. William A. Noyes, editor of the *Journal of the American Chemical Society*, and chief chemist of the bureau of standards at Washington, D. C., has accepted the position of professor of chemistry and director of the chemical laboratory in the University of Illinois, Urbana.—Drs. Jeremiah H. Stealy, Freeport, and Dr. D. Carson Smith, Stockton, had a narrow escape from drowning while crossing a frozen creek early on the morning of December 30.—Dr. Charles A. Allen, Virden, has returned from St. Louis, where he recently underwent operation.—Dr. and Mrs. S. M. Parker, Aviston, have gone to Redlands, Cal., to spend the winter.

#### Chicago.

**December Deaths.**—December, 1906, furnished the highest mortality rate of the decade, with two exceptions, as 2,678 deaths were reported. The five chief causes of death were: Pneumonia, 450; consumption, 264; heart disease, 227; violence (including suicide), 213, and Bright's disease, 202.

**Fenger Memorial.**—Plans for establishing a fund in memory of the late Dr. Christian Fenger, from which will be awarded annual cash prizes for original research in bacteriology, surgery and pathology, resulted on December 26 in the incorporation of the Fenger Memorial Association. The incorporators are Drs. Frank Billings, Ludwig Hektoen, Karl Doepfner, George W. Webster, Charles S. Bacon, William T. Belfield and John B. Murphy.

**Chicago Deaths.**—During the last week of 1906, 575 deaths were reported to the department of health, equivalent to an annual rate of 14.63 per 1,000. Of these deaths 101 were due to pneumonia, 59 to consumption, 51 to heart disease, and 37 to violence, including suicide.—During the week ended January 5 there was a great increase in mortality, the number being 673, as compared with 575 for the previous week and 562 for the corresponding week of 1906. This is equivalent to an annual rate per 1,000 of 16.65. Pneumonia caused 137 deaths; consumption, 63; violence (including suicide), 62; Bright's disease, 54, and heart disease, 47.

**Deaths of the Year.**—The total number of deaths from all causes in Chicago during 1906 was 29,048, an increase of 1,836 over the previous year, or 3.7 per cent., equivalent to an annual death rate per 1,000 of 14.18 and 13.67 respectively. The greatest number of deaths in the year was caused by pneumonia, with 4,047; consumption caused 3,222 deaths; acute intestinal diseases, 2,709; heart disease, 2,190; violence (including suicide), 2,174; Bright's disease, 2,129; cancer, 1,334; nervous diseases, 1,158. Diphtheria caused 549 deaths; scarlet fever, 493; typhoid fever, 370; whooping-cough, 167; measles, 128, and influenza, 118. No deaths from smallpox were reported during the year.

#### KENTUCKY.

**Must Report Tuberculosis.**—Dr. Maverell K. Allen, health officer of Louisville, threatens to issue warrants for the arrest of physicians who fail to report cases of tuberculosis to the health officer, as required by the city ordinance.

**Tuberculosis Board Appointed.**—The mayor of Louisville has appointed a board of ten trustees for the local Tuberculosis Hospital, which contains the following medical members: Drs. Thomas H. Baker, George S. Coon, Eugene Y. Johnson and Sidney J. Meyers. This board was appointed under "An act to provide for the establishment and maintenance in counties which contain a city of the first class of a hospital for the treatment of persons afflicted with tuberculosis." As the city is to build a tuberculosis hospital, the directors of the Kentucky Anti-tuberculosis Association have decided to abandon the idea of erecting a hospital for the present, and will devote the money which was raised for that purpose to the establishment of a free dispensary.

**Personal.**—Dr. John G. Puryear of Wingo had a narrow escape from drowning in a flooded creek recently. He lost his instruments and medicines.—Dr. Malcolm H. Yeaman, superintendent of the Central Kentucky Hospital for the Insane, Lakeland, has resigned, to take charge of the Beechhurst Sanitarium, near Louisville.—Dr. A. D. James, Penrod, recently elected a member of Congress, is reported to be seriously ill with pneumonia.—Dr. John D. Smith, Paducah, is reported to be critically ill at his home.—Dr. C. J. Walton, Munfordville, was thrown from his horse December 12 and seriously injured.—Dr. John W. Crenshaw, Versailles, has been made

the first physician-in-chief of the Woodford County Hospital, and Dr. Samuel M. Worthington, alternate.—Dr. A. K. Purdy, Kuttawa, who was severely wounded several months ago, has fully recovered.—Dr. Joseph Halton, interne at the Speers Hospital at Dayton, has resigned, to accept the position of superintendent of a sanitarium at Sarasota, Fla.—Dr. Charles S. Helman, city physician of Ludlow, is reported to be seriously ill.—Dr. Edward L. Carpenter, Louisville, is reported to be seriously ill with rheumatism.

**Crusade Against Criminal Physicians and Drunkards.**—The State Board of Health, through its secretary, Dr. J. N. McCormack, has issued the following circular:

*To the Medical Profession and People of Kentucky.*—The infamous, practice of criminal abortion, infantile murder, to speak plainly, dangerous to the health and lives of women to an extent not generally realized, and a constant encouragement to immorality, has become so common in recent years, even with married women in the higher works of life, often church members and otherwise respectable, that the General Assembly has made it the solemn duty of the board to revoke the license to practice of any physician proved guilty of this horrible crime. After full consideration the board has decided to take up this work in a systematic way and to discharge the solemn duty imposed on it without fear or favor. In the very nature of things this is one of the most difficult of crimes to prove, and for this reason it has been decided earnestly to invoke the aid of the county medical societies, boards of health, court and other officials and the people. We promise to make a prompt investigation of every case reported to us, and to cite physicians, high or low, to appear before the board for trial whenever the evidence warrants it. We appeal to the medical profession in its organized capacity, and to all officials and good citizens, to aid us in the enforcement of this wise and timely law.

It is also made the duty of the board to revoke the license of any physician who becomes addicted to the liquor or drug habit to a degree which disqualifies him to practice with safety to the people. No drunkard or opium or cocaine habitue is fit to practice a vocation where health and life are constantly dependent on acuteness of intellect or correctness of judgment. This is a mild offense compared with the cowardly murder involved in every criminal abortion, and this phase of the law will be used to secure reformation wherever this is possible. Copies of this letter will be sent to every newspaper, physician and official in Kentucky, and we ask the assistance of all good people in the work.

#### MASSACHUSETTS.

**A Good Record.**—Newton Hospital treated 90 cases of diphtheria and 79 of scarlet fever last year without a fatality.

**Money for Hospital.**—The Lawrence General Hospital is to receive \$25,000 by the will of Helen G. Coburn under a decision recently rendered by Justice Morton.

**Report of Diet Kitchen.**—The South End diet kitchen, Boston, during 1906 distributed to 8,432 applicants, 9,898 quarts of milk, 18,877 eggs, 71 portions of beef tea and 162 portions of mutton broth. Each applicant gave about one cent a day or \$98.60 toward the expenses which for the year amounted to \$2,017.47.

**Inspection of Minor Employés.**—Last year the legislature passed a law requiring the medical inspection of schools. A further step in the same line is urged by the governor this year, namely, medical inspection of all minors engaged in industrial pursuits as is already in operation in England.

**Labrador Missionary in Boston.**—Dr. Wilfred T. Grenfell of the Labrador coast mission hospitals has been speaking frequently in regard to his work in and about Boston. Besides hospitals, he is trying to introduce among the people of Labrador various industrial and economic factors for their development.

**Douglas' Good Work.**—Ex-governor W. L. Douglas made a New Year's gift of \$1,000 to start the work of a new organization in Brockton which is to combat tuberculosis. Moreover, he has posted in his factories advice regarding the first signs of consumption. The new society, whose president, Mrs. B. B. Russell, is a trustee of the Rutland Sanatorium, will assist poor consumptives with medical care and nursing, medicines, food, etc., and will specially promote modern home treatment similar to that obtained in sanatoria.

#### MICHIGAN.

**Joint Membership.**—By the joint action of the Wayne County Medical Society and the Defense League, Dec. 3, 1906, membership in the Wayne County Medical Society, beginning January 1, involves membership also in the Defense League. Previous to this year the Defense League was an independent organization composed of those members of the county society who paid, in addition to the dues of the county society, \$5 per year for self-protection against the annoyance and expense of threatened and actual litigation in civil and malpractice suits. During the two years of its existence as an independent body 10 suits have been threatened against its members, but none brought to trial, thus corroborating the belief of the promoters of the league that such an organization of local physicians banded together for mutual protection, with a regularly re-



tained, efficient firm of attorneys, would frighten off most claimants and make the actual trial of a civil malpractice suit rare. At the close of 1906 the league had about 125 members and a substantial surplus in its treasury. To provide for the expense of protecting all its members, after merging the Defense League at the beginning of this year, the Wayne County Medical Society has raised its annual dues from \$4 to \$5. This pays for membership in the state and county societies and in the Defense League. No one can now be a member of the Wayne County Medical Society without being a member of the Defense League.

**Do Honor to Herdman.**—At the funeral of the late Dr. William J. Herdman, December 17, court was adjourned as a mark of respect to Dr. Herdman's memory. The medical faculty were present. Dr. J. Mills Gelson conducted the services and President Angell of the university delivered the first address.—A suggestion has been made by Dean Vaughan of the medical department, that the psychopathic hospital at Ann Arbor be named after the late Dr. William J. Herdman. Dr. Herdman was the chief promoter of the psychopathic hospital idea in the university, and founded and developed the department for the treatment of nervous diseases. The suggestion of Dean Vaughan would, therefore, seem to be timely.

#### NEW HAMPSHIRE.

**Surgical Club Meeting.**—At the eleventh annual meeting of the New Hampshire Surgical Club, held at the Mary Hitchcock Hospital, Hanover, the president, Dr. William T. Smith, Hanover, spoke on the requirements of specialized education and the increased qualifications for the practice of medicine and surgery, and urged the profession in its organized capacity to support with all possible interest the bill brought before Congress in its last session to increase the efficiency of the medical department of the Army. At the annual banquet Dr. Herbert L. Smith, Nashua, presided as toastmaster. Dr. Frank Blaisdell, Goffstown, was elected president; Dr. Nelson W. McMurphy, Gilmanton, vice-president, and Dr. George D. Owen, Manchester, secretary and treasurer.

#### NEW MEXICO.

**Personal.**—Dr. P. W. Kirkpatrick, Alamogordo, has been elected institute physician to the New Mexico Institute for the Blind.

**Hospital Notes.**—A contract has been awarded for a brick and stone building to cost \$25,000, containing a power plant, laundry, heating and water plants for the St. Joseph's Sanitarium, Albuquerque.—A hospital has been established at Silver City, with nine rooms, open to the general public.—The Miners' Hospital, Albuquerque, built by the territorial government as a home for indigent miners, was opened as a hospital November 10, under the charge of Dr. T. B. Hart.

#### NEW YORK.

**Harvey Society Lecture.**—At the sixth lecture in the Harvey Society course, January 12, by Prof. Francis G. Benedict of Wesleyan University on "Metabolism During Fasting," Succi, the professional faster, who has been the subject of so many experiments on metabolism, will be present.

**Personal.**—Dr. Joseph B. Ringland, Oswego, has been appointed jail physician.—Dr. William B. Reid has been appointed chief of staff of the Rome City Hospital, vice Dr. Henry C. Sutton, resigned.—Dr. Paull R. Abell, Sidney, will make a trip this winter up the Amazon, returning by way of England.—Dr. Virgil C. Kinney, superintendent of the Willsville Sanitarium, has started on a trip to the West Indies.

**Wende Again Health Officer.**—Dr. Earnest Wende began his third term of office as health commissioner of Buffalo, January 1, succeeding Dr. Walter D. Greenc.—Dr. Francis C. Fronczak was appointed at the same time to succeed Dr. Edward Clark as assistant health commissioner.—Employees of the health department presented to the retiring health commissioner a handsome mahogany leather-upholstered rocking-chair as a parting remembrance.—Dr. Edward Clark, the retiring assistant health commissioner, was given a pair of diamond-studded cuff-buttons.

#### New York City.

**Personal.**—Dr. Allan McLane Hamilton arrived from Europe in the *Caronia*, December 30.—Drs. Henry G. Webster and Thomas A. McGoldrick of Brooklyn have been appointed police surgeons at a salary of \$3,500 per annum.—Dr. Charles S. Benedict, on his retirement from the health department after 10 years of service in the division of contagious diseases, was presented a silver service by 30 of the men who had served

in this department with him. Dr. Benedict did valuable service during the epidemics of cholera in 1889, of typhoid in 1891, and of smallpox in 1901.—At a meeting of the Berlin Laryngologic Society, December 13, Dr. Emil Mayer was elected corresponding fellow.—Dr. Frederick Albers, Auburn, ambulance physician at Kings County Hospital, Brooklyn, was thrown from an ambulance in a collision with a trolley car, December 13, and seriously injured.—Dr. Joseph H. Raymond, Brooklyn, is convalescent from his recent operation for appendicitis.

**Cocain Habit Spreading.**—Two youthful victims of the cocain habit were arraigned in one police court recently, charged with disorderly conduct due to the influence of cocain. This made four cases within a few days, and in three instances the mothers of the boys testified that they had second sons addicted to the same habit. The magistrates say that these cases are becoming more common in the police courts every year, especially in the "tenderloin" district. The growth of the habit is shown by the increased number of patients brought to Bellevue Hospital suffering from the habit, and only those in the last stages come there. The records of the hospital show that there were 13 cases of insanity and 9 cases of delirium from cocain poisoning. Dr. Gregory of the psychopathic ward is of the opinion that unless something is done to restrict the sale of the drug the time is approaching when as many patients will be sent to the hospitals suffering from the effects of cocain as now are sent there by alcohol.

**Lectures on Insanity.**—The Psychiatric Society of New York has arranged a series of four lectures on problems of insanity, to be held under the auspices of the Academy of Medicine, at 17 West Forty-third Street, Saturdays, January 19, February 2, February 16 and March 2, at 8:30 p. m. The purpose is to put before the medical profession and others a program of work and facts for orientation with a view to the organization of a movement toward prophylaxis and the development of sound interests in this eminently important topic. The first lecture will be given by Dr. Adolf Meyer on "Modern Psychiatry, Its Possibilities and Opportunities;" the second, by Dr. August Hoch, on "The Manageable Causes of Insanity, Exclusive of Heredity;" the third by Dr. C. L. Dana on "The Data of Heredity and Their Application in Psychiatry," and the fourth lecture by Dr. Allan McLane Hamilton on "The Development of the Legal Regulations Concerning the Insane." The medical profession and others interested are cordially invited.

#### OHIO.

**Physician Freed.**—Dr. Alfred C. Ball, Alliance, who has been on trial at Canton for the alleged performance of an unlawful operation, was acquitted by the jury, December 24.

**Academy Election.**—At the annual meeting of the Columbus Academy of Medicine, December 18, the following officers were elected: Dr. William D. Deuschle, president; Dr. T. Alfred Fletcher, vice-president; Dr. Charles J. Shepard, secretary; Dr. Yeatman, censor, and Drs. John D. Dunham and Wells Teachnor, delegates to the state medical association.

**Communicable Diseases.**—Rossford reports 15 cases of typhoid fever.—In Cincinnati, 1,448 cases of typhoid fever have been reported since June 1.—Diphtheria has broken out afresh in Niles and an epidemic is feared.—The Windsor school, Walnut Hills, Cincinnati, has been closed and fumigated on account of diphtheria.—The city health department of Toledo reports measles prevalent in the city.

**Personal.**—Dr. John W. N. Vogt, Delaware, was thrown from his carriage December 12, dislocating his left shoulder.—Dr. John C. Martin, Findlay, who has been seriously ill with typhoid fever, has recovered.—Dr. John H. Ramy, Rock Camp, is reported convalescent from an attack of typhoid fever.—Dr. Henry K. Spooner is reported to be very ill at his home in Republic.—Dr. Charles Collins, Lima, is reported to be improving.—Dr. George M. Waters, Columbus, has returned from Vienna.—Dr. S. R. Klein, Columbus, has been made third assistant physician and pathologist of the State Hospital for the Insane at Clarinda, Iowa.—Dr. E. Bertram Holst, Rossford, is reported to be seriously ill with typhoid fever.—Dr. Thomas B. Norris, Alton, who has been seriously ill with pneumonia, is convalescent.—Dr. W. S. Patterson, Hillsboro, was stricken with paralysis, December 21.—Dr. Belle J. Allen, Bellefontaine, sailed for India January 11.

#### PENNSYLVANIA.

**Hospital Saturday and Sunday.**—At the annual meeting of the Hospital Saturday and Sunday Association of Pittsburgh, receipts for the year of \$8,156.76 and disbursements of \$7,649.21 were reported.



**Epidemic Diseases.**—Rossiter, a mining town near Punxsutawney, is reported to have an epidemic of smallpox. A squad of state police is on duty to enforce quarantine. Warren suffered from an epidemic of vomiting and diarrhea, on December 8, attributed by the physicians to the city water. One hundred and twenty acute cases were reported. South Sharon reports at least 25 cases of diphtheria.

**Appropriation for State Institutions.**—The State Board of Charities has filed with Governor Pennypacker its recommendations of appropriations for the various institutions receiving state aid. It is understood that the state hospitals for the insane were recommended for largely increased appropriations, most of the increase being for buildings for the proper housing of patients and for nurses' quarters.

**Personal.**—Dr. Arthur F. Ash, Duke Center, has recovered from his recent illness. Dr. Aliee Rogers Early, Media, and her husband, sailed for Spain November 29. Dr. Gilbert T. Smith, formerly assistant physician at the State Hospital for the Insane, Danville, has been appointed assistant medical superintendent of a sanitarium at Stamford, Conn. Dr. Gustav T. Fox, Bath, has returned from Europe. Dr. and Mrs. Martin J. Sweeney, Kane, are taking a trip to the Pacific Coast. Dr. Cornelius Bartholomew, Allentown, was assaulted in his office by an unknown assailant, November 28. Dr. John B. Groh, health officer of Lebanon, has been appointed sanitary agent to the county medical inspector over the territory outside of Lebanon. Dr. Samuel G. Burkholder has been elected treasurer of the Reading Medical Society, vice Dr. Thomas H. Mackin, deceased. Dr. Fred W. Bell, Sharon, who has been seriously ill with typhoid fever, is reported convalescent. Dr. Henry W. Saul, Kutztown, has been appointed deputy coroner of Berks County. Dr. Lewis H. Taylor, Wilkesbarre, is making an extended tour of the West. Dr. Charles L. Templeton, resident physician of the Reading Hospital, has resigned and will practice in Seattle, Ore. Dr. Joseph P. Kennedy, Columbia, has been appointed surgeon on the Philadelphia division of the Pennsylvania Railroad, vice Dr. Alexander R. Craig, resigned. Dr. A. Arthur Barton, Plains, was thrown from his carriage recently and sustained a fracture of a rib. Dr. Arthur P. Hitchens succeeds Dr. J. J. Kinyoun as director of the biologic laboratories of the H. K. Mulford Company. Dr. E. D. Reed, Ann Arbor, Mich., has been engaged to direct research work, particularly in pharmacology and physiologic chemistry.

**Typhoid News.**—At a meeting of the Lackawanna County Medical Society, held in Scranton, December 29, the newspapers were criticised for disseminating unreliable information concerning the typhoid fever epidemic, and the following resolution was adopted by the society: "That it is the sense of the meeting that much harm has been done by the publication of irresponsible and unwise statements in the public press, and that the press is hereby requested for the benefit of the community not to publish any articles concerning the present epidemic except what may come officially from the department of public safety, from the Scranton Homeopathic Medical Society or from the Lackawanna County Medical Society." The typhoid situation, according to the reports, remains unchanged. On December 29, 50 new cases were reported, making a total of 751 cases reported till noon of that date. The infection is believed to have its origin in the city's water supply, and the epidemic present is in a severe type and accompanied with increased mortality. A report on January 6 states that only 5 new cases were reported on that day, making a total of 975, and that 21 days have elapsed since the water from the Elmhurst reservoir was shut off. On January 5 and 6 11 deaths were reported. Typhoid fever is reported to be epidemic at Greengburg. Up to December 15 nearly 5,400 cases of typhoid fever had been reported in Pittsburgh, a greater number than ever before on record. The superintendent of the board of health believes that with the opening of spring the greatest and most disastrous epidemic of typhoid fever in the history of Pittsburgh will be witnessed. Newfoundland is threatened with an epidemic of scarlet fever. Several cases have been reported and the schools have been ordered closed.

#### Philadelphia.

**To Aid Chinese.**—The medical students of the University of Pennsylvania are attempting to raise \$2,000 of the \$20,000 fund required to maintain a branch medical school in Canton, China.

**Hebrew Charities.**—The Society of United Hebrew Charities dedicated its new building at 516 North Fourth Street on New Year's Day. The building contains offices for physicians and a large dispensary.

**Hospital Report.**—The close of the fiscal year of Stetson Hospital, November 1, shows a total of 22,276 cases treated, of which 7,445 were surgical, 4,765 in the ear, nose and throat department, 4,198 in the eye department, 1,794 in the department of skin diseases, and 3,151 medical cases.

**Professor Keen Resigns.**—Dr. William W. Keen has resigned as professor of surgery in Jefferson Medical College, with which institution he has been connected for 27 years. The trustees have elected him professor emeritus of surgery and he is going abroad in March for a vacation and rest of about a year. For 13 years Dr. Keen was professor of artistic anatomy at the Academy of Fine Arts, and for seven years professor of surgery at the Woman's Medical College. He is also on the staffs of many hospitals as consulting surgeon.

**Contingent Donation from Carnegie.**—It is announced that Andrew Carnegie will contribute \$100,000 toward the building of a new home for the College of Physicians. The contribution is made on condition that the members of the society raise an equal amount. Three years ago Mr. Carnegie offered to contribute \$50,000 if an equal amount could be raised in subscriptions. After the fulfillment of the society's part of the contract, finding that \$100,000 was inadequate to furnish a suitable home for the society, he made his second offer of \$50,000. At present \$30,000 has been raised in subscriptions from the medical profession toward the additional \$50,000 required.

**Personal.**—Drs. Ernest M. Dorsett and Milton F. Percival have passed the examination for the position of resident physician at the Municipal Hospital. Dr. W. W. Richardson has been elected resident physician at the State Hospital for the Insane, Norristown, vice Dr. D. D. Richardson, deceased. Dr. William L. Rodman was the guest of honor at the annual smoker and luncheon of the W. L. Rodman Surgical Society, held at the University Club, December 18. Dr. William W. Trinkle, common councilman, has resigned as district physician. Dr. Joseph W. Hearn is reported to be securely convalescent. Dr. Henry Sykes was recently appointed chief resident physician of the Philadelphia Hospital.

**Quarantine Notes.**—The authorities of the state quarantine station, Marcus Hook, have taken 22 men suffering with beriberi from the *Spithead*, a vessel from India. The ship is under surveillance, has been carefully fumigated, and the Lascar patients are being treated at the quarantine station. The German steamship *Kybfels*, from Calcutta, with a crew of 48 Lascars, has been held in quarantine at Reedy Island, since December 23, with what is believed to be bubonic plague on board. One sailor died on the voyage and was buried at sea, and one sailor is ill and is isolated from other members of the crew. After examination by government experts the steamer has been allowed to enter port. One of the sailors having smallpox, the crew of the British steamship *Oswestry* was transferred to the Marine Hospital for observation.

#### VIRGINIA.

**Personal.**—Dr. J. McCaw Tompkins has been appointed chief interne of the Memorial Hospital, Richmond, vice Dr. Samuel Bowen. Dr. Charles W. P. Brock, police surgeon of Richmond, fell December 4 and sprained his right ankle. Dr. Charles McCulloch, Howardsville, lost his hand and a portion of his right forearm in a machinery accident December 10. With the assistance of his wife he dressed the wound and went to Lynchburg, where a second amputation was made above the elbow.

**Medical Association Meets.**—At the eighth session of the Southside Virginia Medical Association at Emporia, December 13, an interesting case of elephantiasis was reported by Dr. Lucien Lofton of Emporia, and the following officers were elected: President, Dr. Thomas J. Taylor, Cochran; vice-presidents, Drs. J. H. Halligan, Smoky Ordinary; H. B. Mahood, Belfield; R. T. McNair, Emporia, and E. Leavenworth McGill, Petersburg; secretary, Dr. R. T. McNair, Emporia, and treasurer, Dr. Otho C. Wright, Jarrett.

#### WEST VIRGINIA.

**Resolutions of Respect.**—At a special meeting of the Monongalia County Medical Society, resolutions of respect were adopted regarding the death of Dr. Edward L. Naret, Morgantown, and extending sympathy to his bereaved wife and friends.

#### GENERAL.

**Western Tuberculosis Conference at Minneapolis.**—The Western Conference on Tuberculosis is to be held February 1 at Minneapolis in connection with the National Tuberculosis Exhibit, which will be shown in that city from February 2 to 13 inclusive. This conference, which was organized at Chicago



in January, 1906, is expected to embrace the states of Ohio, Michigan, Indiana, Missouri, Iowa, Wisconsin, Minnesota, North Dakota and South Dakota. The Minnesota State Association for the Prevention and Relief of Tuberculosis will hold a meeting on February 6.

**Infection in Labrador.**—Dr. Wilfred Grenfell, whose work is referred to editorially in this issue, made an address before the New York Academy of Medicine, Dec. 29, 1906, concerning his work on the Labrador coast. He has observed that there are, in general terms, no endemic diseases along the Labrador coast. It is an excellent field for the study of incubation periods. Those infections which its natives have contracted have in his experience, been transmitted, along with other blessings of civilization, from Halifax and other parts foreign to this region. And, in accordance with the natural history of infections, those Laboradoreans who have been stricken have suffered to a much greater degree than peoples among whom such infections have existed for many generations, and which have become a matter of course. It is the same in Labrador as it was among the Fijians, to whom measles, so comparatively innocuous among us, was brought for the first time in their history in 1875; among the 150,000 inhabitants of the Fiji islands, 40,000 perished by this disease. Thus, in one little Labrador settlement which was for the first time invaded by typhoid, Dr. Grenfell, when he arrived on his healing mission, found the frozen bodies of some eighty who had succumbed speedily and most miserably. Of course many of these lives might have been spared had the people known the peculiar manner in which the typhoid infection is to be met; but undoubtedly most of the deaths were because of the unusual malignancy of an infection, when invading a community which had theretofore been spared. Beriberi was unknown among these good folk until a Norwegian sailor introduced it. Leprosy seems to be unknown among them, although fish is pre-eminently the food consumed. Measles, scarlet fever and diphtheria have among them a much graver prognosis than among us. Pulmonary tuberculosis is almost invariably fatal, notwithstanding that one essential to its cure—cold, germ-free air—is ideally abundant. But of this curative agency they seem to make no use. The house, or rather hut of a consumptive is, like their dwellings in general, hermetically sealed during the cold months. And as in typhoid, the principles of prevention are either unknown or not grasped by them. The consumptive spits promiscuously, and the bacteria as is usual when finding a soil quite altogether fresh, are uncommonly virulent. This high death rate is unquestionably due to these things, but mostly to the fact that tuberculosis has until recent years been almost quite unknown in "Dr. Grenfell's parish." They have no natural immunity to it. Like the negroes and the Indians, they must acquire such an immunity through the sad experiences of many generations of their people.

#### CANADA.

**Personal.**—Dr. R. S. Price, St. John N. B., has accepted the professorship of clinical surgery and physiology in Kansas City University. —Dr. P. C. Woodworth, Wolfville, N. S., has moved to Arizona. —Surgeon-Colonel G. Carleton Jones, Halifax, N. S., has been appointed to succeed Colonel Fiset as director-general of the militia at Ottawa, Can. —Dr. J. O. Todd, Winnipeg, Man., is visiting the hospitals of Chicago and New York, after which he will proceed to London, Eng.

**Hospital News.**—During the past few weeks every hospital in Montreal has been crowded and nearly all have been refusing patients. It is estimated that 10 per cent. of the patients are suffering from typhoid fever. Hospital abuse seems to be rampant, as it is stated that almost daily female patients drive up to the hospitals in cabs to receive charity treatment. —The Toronto Provincial Hospital for the Insane has recently made a new departure by appointing as resident pathologist, Dr. J. H. Fitzgerald, who has just spent two years at Baltimore in neurologic and physiologic clinics.

**Professor Osler's Visit to Toronto.**—When in Toronto recently to attend the centenary birthday anniversary of his mother, Dr. Osler was entertained December 15 by Dr. R. A. Reeve, dean of the Medical Faculty of Toronto University. On December 18 Dr. Osler unveiled a portrait of the late Dr. J. E. Graham, formerly professor of medicine in Toronto University, a gift by the widow and son, Dr. J. S. Graham, to the Ontario Medical Library. December 19 Dr. Osler addressed the profession of Toronto at the regular meeting of the Toronto Medical Society on the advantages of an academy of medicine for Toronto, advocating the amalgamation of the Toronto Clinical, the Toronto Medical and the Toronto Pathological societies for the purpose of a nucleus.

#### FOREIGN.

**Italian Congress in Aid of the Blind.**—A national "congress of typhology" was recently held at Rome to discuss measures in relation to the blind. There was a large attendance, including many members from Germany, France and England, and a number of important resolutions were adopted.

**The Schaudinn Memorial Fund.**—The subscription list for the Schaudinn endowment has been closed, the total received having been nearly \$21,500. Professor Nocht is the chairman of the committee in charge of the endowment, for which he is responsible to the mayor of Hamburg. Among the purposes of the endowment is the awarding of a medal every two years for the best work in the domain of microbiology, to be given irrespective of nationality.

**Seventieth Birthday of E. von Bergmann.**—The name of E. von Bergmann of Berlin is most widely known as a pioneer in military surgery, but he has a special claim on the gratitude of the profession in Germany as to him is due the present system of free courses of postgraduate instruction at numerous points throughout Prussia. Although only six years have passed since the idea was first suggested, yet the system is now in complete working order with its own central building in Berlin for loan collections, exhibitions, etc., of everything connected with the practice of medicine in its latest flowering. The *Ztschr. f. aerztl. Fortbildung*, the organ of the postgraduate system, devotes most of its issue for December 15 to a biographical sketch of von Bergmann, with a fine portrait. Among the festivities on the occasion of his recent seventieth birthday was a banquet tendered to him and Waldeyer December 13, and another banquet, tendered by the profession, with 475 guests, on his birthday proper, December 16. He was born in Russia, has taught in six university medical departments in Russia and Germany, and was called to Langenbeck's vacant chair of surgery at Berlin in 1882. He continued the *Archiv. f. klin. Chirurgie* founded by the latter, and, with König and Richter, publishes the *Centrbl. f. Chir.* He has been president of the Berlin Medical Society since Virchow's death.

**Koch Finds a Preparation of Arsenic the Specific for Sleeping Sickness.**—Robert Koch has reported officially to the secretary of the interior at Berlin that he has found atoxyl, a preparation of arsenic, as truly a specific for sleeping sickness as quinin is for malaria. His party is located on one of the islands in the Lake Victoria Nyanza, in the heart of Africa, and he writes exultingly that experience with hundreds of cases shows that the trypanosomes vanish from the glands by the eighth hour after subcutaneous injection of the remedy. The trypanosomes are apparently uninfluenced by the drug up to the sixth hour, but they then rapidly vanish and none is to be found by the eighth hour. As they vanish the patients feel immeasurably improved, and this improvement persists and is progressive. The natives are flocking to the party for relief and they now have about 900 under treatment. Instead of giving the drug according to the usual technique for arsenic, Koch follows the rules for quinin, giving 0.5 gm. on two consecutive days. No by-effects were ever noted, and the dose might be increased, but this is not necessary, as the desired results are obtained with this amount. The expedition took a supply of atoxyl and trypan red with them, the two drugs, he states, known to date to be effectual against trypanosomes. The report is published in full in the *Deutsche med. Wochschr.* for December 20. It describes the flies which convey the trypanosomes and reviews their habits of life, etc. Koch states that he has found the same trypanosomes in other animals, predominantly in the crocodile. Among 1,497 tsetse flies examined, 177 were found with freshly sucked blood in their digestive organs. In 66 the blood was recognized as coming from a mammal and probably from man. In the other 111 the blood corpuscles were oval and nucleated and were probably derived from the crocodile, especially as with the blood were frequently encountered specimens of the blood parasite peculiar to the crocodile. He thinks it highly probable that the blood of the crocodile is one of the most important conditions for the existence of the *Glossina palpalis*, at least in the locality where he is conducting his research. The natives say that the crocodiles are often bitten by the flies. Experiments with crocodiles are now under way. The *Trypanosoma gambiense*, assumed to be the cause of sleeping sickness, was found in only one of the 96 flies containing trypanosomes. The *Glossina palpalis* has long infested the regions recently invaded by sleeping sickness, although it seems to be confined to the shores of waterways and lakes. The comparatively peaceful conditions now prevailing in the interior of Africa have promoted intertribal relations and allowed the inland people to take advantage of the fishing in the lake from which they were formerly



debarred by a warlike tribe. This tribe has been nearly exterminated by sleeping sickness in the last four years, and the influx of outsiders has contributed to spread the disease. It seems to affect the men most, many of the villages having no inhabitants left except women and children. The missionaries estimate that the population of the islands, which was about 30,000 four years ago, is now less than 12,000. In one village where there used to be 200 people there are now only 55, and Koch found the trypanosome in 17 of these. Examination of the blood is frequently negative, but excision of a scrap of the tumefied glands in the neck always gave positive findings in case of trypanosomiasis. The injected atoxyl seems to act on all the infected glands of the body at once, as they all return to normal size almost simultaneously after the injection of atoxyl. This drug is one of the cacodylates and has been used for some time in cases indicating arsenic. It is the anilid of meta-arsenous acid, and is said to be less toxic than the ordinary arsenical compounds and free from the garlicky odor which the cacodylates impart to the breath and perspiration.

### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Dec. 24, 1906.

#### King Edward's Hospital Fund for London.

At a recent meeting of the general council of King Edward's Hospital Fund, presided over by the prince of Wales, the executive committee recommended the distribution of \$550,000 to the London hospitals. The number of hospitals applying for grants was 105. The committee was pleased to learn that arrangements are being made for the amalgamation of the City Orthopedic and National Orthopedic hospitals. In regard to the throat, nose and ear hospitals, negotiations are also proceeding for amalgamation. A satisfactory reduction in hospital expenditure was reported as a result of the investigations on expenditure previously published by the committee, those hospitals in which the expenditure is greatest having taken advantage of the information supplied as to the others. Thus in 1903 the average cost of maintenance per bed in the 16 large general hospitals of London was \$472; in 1904, \$470, and in 1905, \$438. The total effect has been a saving of \$105,000 in expenditure.

#### New Premises for the British Medical Association.

An important block of buildings is to take the place of the existing premises of the British Medical Association at the corner of the Strand and Agar Street. Additional houses have been acquired for the site on the Agar Street side. On the ground floor will be shops and possibly a bank at the corner. All above this will be the offices and rooms of the association. There will be a spacious entrance hall, with staircase and elevator leading to the upper floors. On the first floor will be the large library and council room and the general offices. On the second floor will be the medical secretary's department. On the third floor will be rooms for officers of the association, chairmen of committees, a general conversation room, and rooms for extension. On the fourth floor will be the editorial department, and on the fifth the printing department. The lower part of the two frontages will be of gray granite, the upper part of Portland stone. The roofs will be covered with Westmoreland green slates. A feature is made in the elevations of the wide windows.

#### Fatalities Due to Motor Carriages.

The recent development of motor traffic in London has added a new terror to the streets and has been attended with a number of accidents. An inquest has been held on a man killed by a motor omnibus. The roadway was very slippery and the driver said that when he applied the brakes the omnibus skidded. Moreover, it had been skidding all the way down the road. However experienced a driver was he could not avoid skidding. The coroner asked, "How is it that such vehicles are allowed in the streets of London?" In his summing up he said that during August and September 21 persons had been killed by motor cars, motor omnibuses and mechanically driven tram-cars, and 797 accidents had occurred in which 149 persons were injured. During the same period there were only three deaths due to horse-drawn vehicles. The jury returned a verdict of accidental death, and added a rider that some efficient guard should be fitted round the wheels in order to prevent similar accidents in the future. The solicitors for the company said that their clients would do what they could to meet the views of the jury. Up to the present nothing had been invented to prevent skidding, and the police regulations contain no reference to this danger.

### A Physician's Bequests.

Dr. Schorstein, physician to the London Hospital, whose untimely death was recently announced in THE JOURNAL, bequeathed \$2,500 to the regius professor of medicine at the University of Oxford for the pathologic department of the medical school, \$2,500 to the London Hospital, and a sum which will probably amount to some \$50,000 in trust to the University of Oxford, subject to certain life interests, for disposal as that body shall think fit.

### The Regulation of Milk Supply.

A deputation on this subject has been received by the board of agriculture. Prof. W. R. Smith of King's College, principal of the Royal Institute of Public Health, headed the deputation. He emphasized a report by the committee of the institute, which stated that the time had arrived in the interest of the public when vigorous steps should be taken to safeguard consumers of milk against infectious organisms. Tuberculosis can be conveyed from the cow or from the milker. The deputation recommended that the orders as to cowsheds should be made compulsory instead of permissive, that the registration of dairies should imply a license, that more stringent regulations should be made for controlling the sale of milk in small shops, that specially constructed milk cans should be utilized for the conveyance of the milk from the farms to the city or bottles such as those used in America and Denmark, and that the county councils should be empowered to appoint veterinary inspectors to examine the cows. Replying to the deputation, Sir E. Strachey, parliamentary secretary to the board of agriculture, said that the board is of the opinion that every possible precaution will be taken to protect the public, and that anything reasonable, which will not harass the trade, will be done.

### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Dec. 10, 1906.

#### Junior Physicians Make Organized Protest.

The disagreeable conditions under which the junior doctors of our hospitals are serving have led recently to an unusual outcome. As a means of protest against the present methods of administration, the entire staff of one of the largest hospitals refused the meals served them at the hospital, and for a few days the portions of all the doctors were returned unanimously with the comment "unfit for eating." The matter was brought to the knowledge of the public in the daily papers, with the result that numerous former patients of that hospital confirmed the statements of the doctors by their own experiences. The quality of the food was improved and the conditions pertaining to the appointment and pay of the medical staff were made the object of a thorough examination. In consideration of some recent cases of blunders in the hospitals due to the overburdening of the medical men, a better arrangement as to service and payment has been widely demanded by the press, with the result that the requested reforms have been promised. Unless the promise is kept before February a general hospital strike is planned.

#### Pharmacists Against Dispensing Doctors.

The organized officially recognized pharmacists are advocating legislation forbidding the country practitioner to dispense the medicines he prescribes. Pharmacists are threatening to strike if their plea is not heeded by the authorities. A mass meeting of the country doctors has taken place to discuss the question, and a resolution was unanimously adopted binding all practitioners to stop practicing on a given day if the clause depriving them of their right to dispense medicines should be incorporated in the pending legislation. In many villages there is no official pharmacy.

#### "Nicotin Free" Cigars and Cigarettes.

The imperial government tobacco factory has recently brought out a new variety of cigars and cigarettes called "nicotin free." They ought rather to be called "nicotin poor," as they are not absolutely free from that poison. The main procedure which renders the tobacco leaves less poisonous is by moistening them with a 1 per cent. solution of sodium chlorid and potassium hydroxid. In this way the amount of the alkaloid is reduced from 30 to 40 per cent. Chemical tests of the smoke produced by such tobacco resulted in confirmation of the assertions of the factory; nevertheless, the smoking of 30 cigars produced on all the experimenting men a sense of oppression, nausea and tingling in the ears, due to the presence of traces of nicotin and of pyridin substances. Physicians are recommending these cigars to inveterate smokers exhibiting the effects of nicotin poisoning, such as tobacco amblyopia and affections of the auditory nerves, but yet unable to give up the use of tobacco.



## Correspondence

### The One-Year Clause in Reciprocity.

CRAWFORDSVILLE, IND., Jan. 2, 1907.

*To the Editor:*—When the basis for establishing medical reciprocity was adopted by the American Confederation of Reciprocating, Examining and Licensing Boards, it was deemed wise that a clause be incorporated requiring applicants to have lived and been in active practice for at least one year or more in the state of last residence. The purpose of this requirement being for a two-fold reason, first, that an applicant might have time to establish a professional and ethical character to which men with due regard for truth could certify; second, the prevention of the traveling itinerant, without responsibility, and with no settled or fixed place of residence, from securing license in the various states entering into the reciprocity compact.

We are well aware of the fact that the one year clause in reciprocity is a little hard on state examining boards desiring to extend the "courtesy" of an examination to the entire prospective output of the medical colleges of its own state, before students are graduated. Dr. Webster of the Illinois Board of Health asserts that by "granting the courtesy of a conditional examination at least one month before graduation," the graduates of Illinois medical colleges are "thus ready to engage in practice with the least possible expenditure of time and money in securing the requisite license." I am unable to understand the process of reasoning by which Dr. Webster reaches this conclusion.

As to the expenditure of time, I submit that it takes no longer to answer one hundred questions in Indiana than it does in Illinois. As to the question of expense, I am sure that it costs the graduate of an Illinois medical college who intends to locate and practice in another state more money by fifteen dollars to accept the "courtesy" extended by the Illinois board, than it would by going directly to the state where he expects to locate, for his examination.

It is perhaps unnecessary to say that young men just out of medical college, graduating after four years of work, are not overburdened with surplus funds, and it is passing strange that they should be willing to pay the fee and take the examination in a state in which they have no intention of locating and practicing, and immediately after receiving a certificate apply for license in another state and pay another fee. It is no hardship to the recent graduate, who has not yet entered practice, to elect to take his examination test of qualification in the state where he intends to locate, and it is reasonable to presume that if uninfluenced, he will do so.

For business reasons, or on account of ill health of family, it often becomes necessary for good and well qualified men, licensed to practice in one state, to move to another. It is an unnecessary hardship to compel this class of physicians to submit again to the examination test if they are able to satisfy the state examining authorities that they have complied, in the state where the original license was issued, with substantially the same requirements which obtained on the same date in the state where license by reciprocity is sought. It is for this class of physicians that reciprocity was established.

I submit that reciprocity is entirely unnecessary for the recent graduate who has not yet entered the practice of medicine, and it was never intended to apply to such. Applicants holding the certificate of another licensing board, and who have never practiced under the said certificate, should be refused a license by reciprocity until they have practiced at least one year under such a certificate, thereby showing their good faith in obtaining said certificate as well as establishing a professional standing for which good men will vouch. It may reasonably be stated that some of the recent graduates have not at the time of graduation chosen a location. Permit me to suggest to such, that it will be a less complicated and expensive procedure to wait until a location is chosen,

and then proceed at once to make application for license to the examining board in whose jurisdiction they have decided to locate.

Dr. Webster, president of the Illinois board, makes the following statements, "the Illinois State Board of Health is desirous of doing nothing that will interfere with interstate reciprocity on a fair, rational basis." I wish to say that the State Board of Medical Registration and Examination of Indiana is also desirous of not doing anything that will interfere with interstate reciprocity on a "fair, rational, legal basis," and the Indiana board strenuously insists that nothing is being required of applicants for license by reciprocity now, which was not required of them at the time Indiana began to reciprocate with Illinois under the Webster schedule of one hundred questions. The one year residence clause was required then, is required now, and will continue to be required by the Indiana board until convinced that it does not accomplish the purposes for which it was intended, viz., the prevention of the roving itinerant from obtaining license in all reciprocating states, or at least making it difficult for him to do so, and the removal of the chief commercial incentive to state boards which in the future might be appointed. (Of course none are now in existence.) The practical application of this rule by the Indiana board has demonstrated that it is the best safeguard yet devised to prevent abuses of licensing by reciprocity indorsement.

Under the title of "Reciprocity in Illinois," THE JOURNAL in July last, published the following: "The State Board of Health withdrew from the American Confederation of Reciprocating State Medical Examining and Licensing Boards at the meeting held in Chicago, June 20, 1906, and by unanimous resolution declined to reciprocate after Jan. 1, 1907, with any state board which exacts a supplemental examination of an applicant who has passed an examination before another board, or which requires that the applicant shall have practiced one year in the state in which he was licensed, or requires that the license issued to said applicant, be dated one year previous."

The above compels the conclusion that sister states desiring to reciprocate with the Illinois State Board must accede to views relative to rules governing reciprocity, which are in accord with opinions held by the said board. There can be no misunderstanding concerning the attitude of the said board on the "one year's residence requirement in reciprocity." The licentiates of state boards not concurring in opinion held by the Illinois Board of Health, need not apply for license in Illinois on a reciprocity basis, if the said resolution is to be enforced.

The Indiana State Board of Medical Registration and Examination is willing and expects that her licentiates seeking license by reciprocity in other states shall comply strictly with the rules governing reciprocity in the state where license is sought, provided the said state does not discriminate in the application of its rules, and in return we insist that applicants coming from other states seeking license by reciprocity in Indiana, comply with rules governing reciprocity in this state, in short, we are trying to apply the "golden rule." We have no objection to the State Board of Health of Illinois admitting applicants for license to Illinois, requiring or not requiring the one year's residence, as she may choose. We insist however, that other states shall be accorded the same privilege, by requiring or not requiring, as they may choose. The failure on the part of the Illinois board to concede this seems unreasonable, if not dictatorial. No state is enforcing any rule against the licentiates of Illinois that is not being required of the licentiates of every other state. The president of the Illinois board is therefore in error when he complains that the licentiates of that state are being discriminated against.

W. T. GOTT,

Secretary Indiana State Board of Medical Registration and Examination.



## Medical Organizations and Appointments on Health Boards.

ANN ARBOR, MICH., Dec. 30, 1906.

To the Editor:—In reply to a letter of inquiry written by Dr. C. G. Parnall of Jackson, Mich., and published in THE JOURNAL under date of December 29, I would say that here at Ann Arbor the matter of appointment of health officer and members of the local board of health was first taken up by the local profession about four years ago when the Ann Arbor Medical Club voted to recommend Dr. Thomas B. Cooley for health officer and Mr. Henry J. Brown for member of the local board of health. A committee was appointed to "wait" on the mayor, who very promptly made the appointments. When Dr. Cooley removed to Detroit, I became his successor, very largely through the same influence. Politics must not enter into the affairs of the board of health at Ann Arbor. As to the honesty and efficiency of our board, we are ready to abide by the verdict of our professional colleagues. It is only during the last two years that physicians in Ann Arbor, who have been called on to determine the nature of certain contagions in behalf of the public health, have received remuneration in full for such services. Previous to this the physicians usually accepted a most liberal discount. As a member auxiliary, to the Michigan member of our National Legislative Council, I shall strive most strenuously to bring about such municipal legislation as that any physician who may be called on to render service in behalf of the public health shall be assured of a just and liberal remuneration. This all means work for somebody, but it can be done. Gentlemen of the medical profession! You are to blame if you permit politics to control the affairs of your local boards of health. Let the cities of Michigan and the cities of other states emulate our example.

JOHN A. WESSINGER, Health Officer.

## Priority in Use of Atoxyl.

LIVERPOOL, Dec. 21, 1906.

To the Editor:—Reports have been repeatedly published of late which ascribe to Dr. Koch the discovery of a drug, atoxyl, which has a curative action in the treatment of human trypanosomiasis. The London Times has copied an article to this effect from the Cologne Gazette, and the London Standard has printed a similar article from its Berlin correspondent. These articles have been widely circulated and they lead the public to believe that Dr. Koch was the first to use this remedy in trypanosomiasis. It may be of interest to your readers to know that the beneficial action of atoxyl in experimental trypanosomiasis was discovered by the Liverpool School of Tropical Medicine and that its use has been steadily and publicly advocated by the staff of this school for the past year and a half. The first work of Dr. Thomas on this use of atoxyl was received by the Royal Society in April, 1905, and was published in their Proceedings in November of the same year. Dr. Thomas' next article was published in the British Medical Journal, May, 1905. An account of the experiments carried on by Thomas and Breinl in regard to the action of the drug in trypanosomiasis can be found in *Memoir XVI* of the Liverpool School of Tropical Medicine, 1905.

The use of atoxyl as a practical remedy in conjunction with the use of gland palpation and puncture as a diagnostic method was advocated by Todd in his official report (unpublished) to the government of the Congo Free State. These recommendations were adopted and are incorporated in the "Mesures coordonnées concernant la maladie du sommeil" drawn up by Dr. Van Campenhout for the use of medical and other officers of the Congo Free State.

The use of atoxyl in sleeping sickness was again recommended by members of the staff of the Liverpool School of Tropical Medicine in the following publications: Dutton and Todd, *Memoir XVIII*, Liverpool School of Tropical Medicine; and Todd, *British Medical Journal*, May 5, 1906.

It will be seen, therefore, that the whole credit for the introduction of atoxyl in the treatment of trypanosomiasis belongs to the Liverpool School of Tropical Medicine.

E. N. TOBEY, A.M., M.D.

## Medical Legislation

## CONFERENCE OF THE COMMITTEE ON MEDICAL LEGISLATION AND THE NATIONAL LEGISLATIVE COUNCIL.\*

Annual Meeting, held in Washington, D. C., Dec. 13-15, 1906.

The Chairman, DR. CHARLES A. L. REED, Cincinnati, presiding.

The Conference of the Committee on Medical Legislation with the National Legislative Council of the American Medical Association, for the Fifty-ninth Congress, second session, was held at the New Willard Hotel, Washington, D. C., Dec. 13-15, 1906. The attendance was as follows:

## COMMITTEE ON MEDICAL LEGISLATION.

CHARLES A. L. REED, CHAIRMAN, CINCINNATI.

WILLIAM L. RODMAN, PHILADELPHIA.

WILLIAM H. WELCH, BALTIMORE.

## NATIONAL LEGISLATIVE COUNCIL.

NAME.	RESIDENCE.
Dr. S. D. Van Meter.....	1723 Tremont Street, Denver, Colo.
Dr. H. R. Burton, M.C.....	Delaware.
Dr. George N. Acker.....	913 Sixteenth Street, Washington, D. C.
Dr. W. A. Spurgeon.....	Marion, Ind.
Dr. J. T. Percy.....	Galesburg, Ill.
Dr. E. J. Lutz.....	Kansas City, Kan.
Dr. C. Z. Aude.....	Cecilian, Ky.
Dr. W. L. Cousins.....	Portland, Maine.
Dr. John S. Fulton.....	1925 St. Paul Street, Baltimore, Md.
Dr. S. D. Presbrey.....	Taunton, Mass.
Dr. A. S. von Mansfelde.....	Ashland, Neb.
Dr. L. M. Halsey.....	Williamstown, N. J.
Dr. Charles A. L. Reed.....	60 "The Groton," Cincinnati, Ohio.
Dr. A. J. Barchfeld.....	Pittsburg, Pa.
Dr. W. P. Goff.....	Clarksburg, W. Va.
Surg.-Gen. Walter Wyman, U. S. M.-H. Service,	Washington, D. C.
Surg.-Gen. R. A. Marmion, U. S. N. Med. Service,	Washington, D. C.
Surg.-Gen. R. M. O'Reilly, U. S. A., Med Service,	Washington, D. C.
Dr. E. W. Samuel, member of Congress for the Sixteenth Pennsylvania District, was made a member by courtesy.	
Dr. H. L. E. Johnson, special committeeman, by request in the Hammond and Canteen bills, was extended a similar courtesy.	

NEW WILLARD HOTEL, WASHINGTON, D. C., DEC. 13, 10 O'CLOCK.

Dr. Charles A. L. Reed, chairman, on calling the Conference to order, spoke in part as follows:

## Change of Policy.

It has seemed wise to the Committee on Medical Legislation to suggest a departure from the usual custom of considering all of these questions practically in executive session. We have accordingly, arranged to have several of the most important questions discussed by prominent members of Congress, by distinguished scientists and publicists and by the representatives of the profession and the public, all of whom are invited to participate in the series of public meetings. In this way we ought to be able to arrive at a conclusion from all of the various standpoints concerned, and therefore place ourselves in position to act with more wisdom on the questions which naturally come before this conference.

## A DEPARTMENT OF PUBLIC HEALTH.

It is a hopeful sign of the times that the general public, through a great national scientific organization is demanding the organization of a National Department of Public Health, with representation in the Cabinet of the President. I will not go into the details of this movement, which will be fully discussed by several distinguished speakers. It is equally gratifying to be able to state that this great movement has staunch friends in both branches of Congress. The general provisions of a bill creating such a department were discussed and tentatively agreed on at our last conference. It is hoped that our special committee then appointed to consider this subject will be able to avail themselves of the counsel and advice of the distinguished legislators and publicists who are interested in the question, with the result that a bill will be formulated for presentation to Congress. Whether it will be wise or expedient to present the bill to the present short session, crowded as is the calendar with important emergency bills, is a question to be determined in conference.

## MEASURE FOR THE RELIEF OF DR. JAMES CARROLL.

The ultimate completion of the Panama Canal, the present salubrity of Cuba, the safety of our southern seaboard against periodic invasion by epidemics, the maintenance of life and health of our citizens in that great section, and the stability

\* The complete record of the conference (from which this report is an abstract) has been published in book form and can be obtained on application to the American Medical Association, Bureau of Legislation, 103 Dearborn Avenue, Chicago.



of our national commerce against disturbance from the same cause, all are made possible by the discovery that the mosquito is the carrier of the contagion of yellow fever. That fact was established by the labors of three men, two of whom in the interests of humanity and science subjected themselves to inoculation by infected mosquitoes. As a result of that experiment, one of them, Mr. Jesse W. Lazear, within the next few days, died a martyr's death, the other, Dr. James Carroll, survived to live a martyr's life. The only reward that he has thus far received is a disease of the heart that occurred as a result of the yellow fever, that he voluntarily contracted for the welfare of his race. This man, this hero, after risking his life to give this priceless boon to the world, after incurring a permanent invalidism in that cause, after having spent 34 years in the faithful service of his country is permitted to remain only an assistant surgeon with the rank of first lieutenant in the United States army, with the paltry salary of an officer of this grade. And with broken health this man far past the meridian of life is supposed to meet the obligations resting upon a husband, the father of seven children, and to provide against the requirements of old age. A bill for his relief, endorsed by this council at its last conference, was introduced in the Senate but has never been reported out of committee. This is a shame. Surely if Congress understood the facts of the case the bill would pass within an hour by concurrent action of both houses. To permit it longer to slumber will be to bring the blush of humiliation to the cheek of every intelligent and grateful citizen of the Republic.

#### ARMY MEDICAL REORGANIZATION BILL.

When, a few months back, rumors of war with Cuba filled the country, the surgeon-general of the army, prompted by a laudable desire to be in a state of preparedness for any obligation that might rest upon his department, wrote to personal friends in various states, requesting the names of first-class men to be appointed as contract surgeons. The result was both instructive and significant. With but few exceptions, first-class young men could not be prevailed upon to consider such a service. In explanation of this attitude on the part of the medical profession it was ascertained that the melancholy lessons taught by the Spanish-American war, had been all too well learned by American physicians. They had come to understand that, as contract surgeons, they had no definite status in the service; that they were without authority to enforce their orders; or, in other words, being without military rank of any character whatever there was no subaltern but that could snap his finger in their faces and place their orders at defiance. Self-respecting men of a learned profession, except in a national extremity calling for service on the altar of patriotism, will not place themselves in this humiliating position. But a few weeks have elapsed and the country is again filled with rumors, however ill-founded, of possible war, this time with Japan. If such a calamity were to befall us the present state of legislation relating to the medical department of the army would place our soldiers at the mercy of preventable disease, such as brought lasting disgrace on our country during the Spanish-American war, a disgrace for which Congress alone was responsible. The pending bill before the Congress, while far from furnishing the full measure of relief, would still do much to strengthen this important arm of the service. This bill has been before two Congresses; at the last session it passed the Senate and was reported out of committee in the House. We are convinced by assurances communicated by members of Congress to their respective constituents, that, if this bill were given a chance, it would pass the House within an hour. In the last Congress it was arbitrarily excluded from consideration by the Speaker. Responsibility for its hearing at the present session lies with the Speaker and with the Committee on Rules. It is earnestly to be wished that this committee will issue a rule on behalf of this very important measure, the passage of which has been urged by the President and Secretary of War, and by the Surgeon General of the Army and which, on referendum, has been asked for by the organized profession of the United States. It is to be hoped that the passage of this measure will be an assured fact before the adjournment of the present Congress and the council is again urged to use every proper means to this end.

After discussing the importance of anti-tuberculosis legislation, Dr. Reed continued:

#### THE OSTEOPATH BILL FOR THE DISTRICT OF COLUMBIA.

Any bill the object of which is to lower educational standards by creating, recognizing or in any way perpetuating any sect in medicine, whether allopathic, homeopathic, electro-

pathic or osteopathic, is pernicious. Any such legislation, based upon assumed dogmas of practice are equally offensive to real physicians and when, as in the present instance, the primary object is to lower the standard of education, are even more damaging in their efforts upon society. And any tendency to segregate physicians into groups or cults, is to be recognized as a blow at the unity and solidarity of the profession and, consequently, an effort to diminish its aggregate efficiency. Practically all of the efforts to establish peculiar groups with eccentric names devoted to the healing art are prompted by the basest considerations of commercialism. They are purely speculative enterprises undertaken for the purpose of furnishing a trade mark to some alleged educational enterprise, or to individuals devoted to the exploitation of a confiding clientele. Where these commercial enterprises have any foundation whatever in educational qualifications, as this one has not, they gain strength and impetus by anything that smacks of exclusion or ostracism. The medical profession made a fatal blunder a half a century ago in the attitude of ostracism it then assumed toward the then embryonic sects of homeopathy and eclecticism. These cults flourished by the distinction thus conferred upon them. But when, in 1900, this error was corrected by abandoning the proscriptive policy these sects began to disintegrate and the time is not far distant when their last representatives will disappear through absorption into the great medical profession. All the sects of medicine have sprung into existence because of some pretended mastery of some pretended trick of cure. Their investigators have never yet been sufficiently presumptuous at least in modern times to assume that there was a homeopathic anatomy, an eclectic physiology, or an osteopathic chemistry; or, indeed, that there were any decided differences of opinion upon such remaining fundamental branches as obstetrics or the various branches of surgical practice. The trouble has always arisen from the efforts, through some sort of legislation, statutory or conventional, to impose some dogma of cure upon somebody who either did not believe in that particular dogma or dogmas in general. Efforts to put dogmas of cure into the laws of the land are in direct antagonism with the historic fact that in a progressive science like medicine the accepted truth of yesterday is in large part the demonstrated error of to-day. This has always been true; let us hope it will always remain true. The dogmatist in medicine in a way is the enemy of progress and any attempt to give him individuality or standing in law should be opposed by every honorable means.

What is the remedy for this class of legislation, illustrated not only in the osteopath bill which passed the Senate at the last session and is now pending in the House, but in the various medical practice acts now in force in the District of Columbia. I bring all of these facts into the same category because each one of them, as I understand the situation, seeks virtually to enact into law, the dogmas to which the various cults make pretension.

The remedy that I venture to suggest is founded on the principle that any man who, after the proper preliminary education and after a proper course of study in a properly equipped medical college, has become conversant with anatomy, chemistry, pathology, bacteriology, and with the various recognized surgical specialties, can be relied upon to furnish his own therapeutics. It follows, therefore, that these fundamental branches should be made the only required branches upon which state examination should be based, and that conditions of entrance to such examination should be based upon study in any school whatever. If the Legislature will take this stand existing sectarianism will dwindle into insignificance and future sectarianism will have no excuse for emerging from the womb of venality. The remedy that I suggest is no mere theoretical deduction. At least two states in the union, namely, Alabama and Colorado, have had such laws upon their statute books for a number of years. As a result, sectarianism as a trade mark in medicine as a speculative commodity in the hands of medical adventurers has no existence in those states.

These observations are submitted to the council on my individual responsibility simply for what they are worth. Whether they are taken into serious account or not, whether they become the basis of any recognition by Congress or not, something ought to be done to stop the multiplication of the evil that would come from the passage of the Osteopath Bill. Whether this measure shall be stopped in its passage by the amendment to existing medical practice acts along the lines that I have suggested, or whether the effort should be made to defeat its passage by protest to Congress based upon a



general referendum to the medical profession I leave entirely to the discretion of the council.

#### UNIFORM STATE LAWS RELATING TO PURE FOOD AND DRUGS.

The National Congress at its last session passed what we all believe will prove to be a most salutary law, calculated to insure the purity of foods and drugs. This law is, naturally enough, limited in its operation to such articles of food and to such drugs as find their way into interstate commerce. But when foods or medicine are exposed for sale in the state in which they are grown or manufactured they do not come within the purview of the national law. They do, however, fall within the police power reserved to the different states under the constitution. In the exercise of this police power by different states, local laws have been enacted that are widely at variance with each other in their provisions. The result is and must necessarily be that, a state failing to regulate foods and drugs in harmony with the national law, the executors of such national law must find an increased difficulty in dealing with these articles when they are found as commodities in interstate commerce. It is perfectly evident, therefore, that in the interests of the highest efficiency in the regulation of food and drugs, such state laws should be made essentially uniform and should be framed as nearly as possible in harmony with national legislation on the subject. This question will be brought before the council by the report of the special committee appointed at our last session to report upon this problem and I ask that careful consideration be given the subject.

#### UNIFORM MEDICAL LEGISLATION.

This brings us to the question of uniform medical legislation, a topic that is becoming an acute one all over the country. Reciprocity in licensure, the absence of which between the states is an anomaly in a nation that calls itself a nation, is now in effect between a number of the states of the union. The tendency seems to be to extend the principle which extension has been accepted by the insertion of reciprocity clauses in a majority of the laws that have been enacted by the different states. In some instances this reciprocity exists on what is called the double basis, that is both practitioners who have been licensed by virtue of their previous status as practitioners, together with others who have been licensed by virtue of examination, are recognized by other states. But in the majority of instances where reciprocal recognition exists it is limited to licentiates upon examination. There has been a tendency to draw the line against those who have been licensed to practice because at the time of the enactment of the licensing laws they were already practitioners. This latter condition is indefensible whether viewed from the standpoint of the comity of states or of the public welfare. The theory seems to be that a state that has been forced to license some undesirable and but partially qualified medical practitioners has enough of that sort of timber and does not want any more to come in from other states. But it should be remembered that migration is in both directions; that probably as many go out of a state as come into it; and that, consequently, unrestrained reciprocation in licensure will after all, amount to nothing more or less than a fair exchange. The licensed practitioners, that is to say, those that are licensed without examination, are liable to be about as good a lot in one state as in another. I mention these facts to urge upon the council the importance of taking into serious consideration the initiative of a movement which shall have for its object the actual nationalization of our medical profession by removing unnecessary limitations of practice from every individual member of that profession who occupies a position of responsibility in the eyes of the law.

#### UNIFORM LAWS WITH REFERENCE TO QUACKERY AND CHARLATANS

One of the most important signs of the times is the fact that the fight against quackery and charlatanism, a fight that has been waged for years and for generations by the medical profession, has at last been taken up by the general public. During the past 18 months influential magazines and newspapers have exposed many frauds connected with this thoroughly venal practice.

Recently in the state of New York a convention attended by representatives not only of the three learned professions, but journalists, educators and delegates from more than 100 educational, benevolent, philanthropic and humanitarian organizations, met in convention and effected a national organization for the purpose of waging war upon this consciousness curse of society. The program of this new association, known as The National Public Health Defense League, has not yet been promulgated, aside from the fact that it is a lay movement

which contemplates effective organization for this specific purpose in every state in the Union. Whatever that program may be the effective coöperation of the medical profession as represented in and by this Council can be relied upon. But here again we are brought face to face with the necessity for uniform state laws, dealing with this great problem. For as soon as these vampires are dislodged from one state they immediately begin to ply their vocation in a neighboring state where laws are more "generous." Our national government has assumed a sound attitude on the subject by excluding much of the literature of these people from the mails. The next logical step is similarly to exclude from the mails all newspapers or other periodicals that carry their advertisements, for such advertisements are distinctly a part and a most effective part of their "literature." I urge upon the Council the importance of memorializing Congress on this important question.

#### PUBLIC MEETINGS FOR THE DISCUSSION OF MEDICO-POLITICAL SUBJECTS.

The American Medical Association has inaugurated the policy of holding meetings attended by the general public for the discussion of questions of joint interest to the medical profession and the public. These meetings have already been productive of much good and when they become more general a better understanding and a more effective coöperation will result. It is urged that every member of this Council through his auxiliary committeemen in each county have meetings of this character called for the purpose of discussing with the public—and actual discussions—not formal one-sided speeches should be encouraged on such subjects, for example, as those that will engage the attention of this conference. In this way, better than in any other yet adopted, the public will be put in a position intelligently to demand such popular health legislation as will best subserve the general welfare.

DR. H. R. BURTON (M. C. from Delaware), expressed his appreciation of the movement outlined in the chairman's address.

DR. A. S. BARCHFELD (M. C., 32 Penn. Dist.), on speaking of the Chairman's address, confined his remarks chiefly to the question of the proposed Department of Public Health. He said in part:

Our government last year appropriated \$59,000,000 for the maintenance and the upbuilding of our army. It appropriated \$113,000,000 for the preservation and upbuilding of our navy. It appropriated \$138,000,000 for pensions for soldiers of the Spanish-American war, of the Civil war, of the Mexican war and I think for a few survivors of the War of 1812. If this government is good enough to appropriate large sums along those lines, it should certainly be ready, anxious and willing to appropriate some money for the proper maintenance of an efficient health department, carrying with it a secretary of health to look after the health and the lives and the quarantine of this great and mighty nation. We are too progressive to be caught napping. We must keep moving and we must move in the right and proper direction. The people of the great American nation care absolutely nothing for expense. What they want is results and action. The last Congress appropriated the sum total of \$880,000,000 and practically not one dollar directly in the interests of the health of the people of this nation.

If you will draw a proper bill, and you are medical men—you are not lawyers, nor am I—give us the right kind of a bill, one that will stand the test of the United States, and of the respective states, and I promise you that the people upon that hill will pass such a bill. (Applause.)

It is true that the subject, as far as the people of the United States are concerned, is practically embryonic. Its limitations are not even confined to that magnificent address delivered by your president just a few moments ago. He practically covered every subject in the scope of medicine, surgery, pathology, diagnosis, therapeutics and every other branch. But I want to say to you that there is no limit to the work that this mighty department of health can do for the betterment of the health and the lives of the people of this government.

About 11 months ago, I placed myself in communication with Dr. Reed, shortly after your last meeting on your Council. I was here last winter during your session. I did not know anything about it, although I had attended the National Medical Association at Portland, Ore. It is true that I did not read a paper. Had I done so, I might have introduced myself more to the members of this Council. But, I drew up a bill in my humble capacity as a practical layman, a physician, but a layman as far as understanding the laws of this nation are concerned.



I am going to ask you to take my bill under discussion. Help me get up a perfect bill, and I want the assistance of my very good friend, Surgeon-General Wyman, along those lines; and his very good colleagues of the Army and the Navy Departments to help you and to help me to formulate such a bill. I would like to read, for the benefit of this Council, a few of the provisions of my bill:

BILL ON DEPARTMENT OF PUBLIC HEALTH.

"Be it enacted, etc.,

"That there shall be at the seat of government an executive department to be known as the Department of Public Health and a Secretary of Public Health who shall be at the head thereof, who shall be appointed by the President, by and with the advice and consent of the Senate, who shall receive a salary of eight thousand dollars per annum, and whose term and tenure of office shall be like that of the heads of the other Executive Departments; and Section one hundred and fifty-eight of the Revised Statutes is hereby amended to include such Department, and the provisions of title four of the Revised Statutes, including all amendments, thereto, is hereby made applicable to said Department. The said Secretary shall cause a seal of office to be made for the said Department of such device as the President shall approve, and judicial notice shall be taken of said seal.

"There shall be in said Department an Assistant Secretary and a Second Assistant Secretary, who shall be appointed by the President, by and with the advice and consent of the Senate. They shall receive a salary of five thousand and four thousand and five hundred dollars, respectively, and shall perform such duties as shall be prescribed by the Secretary or required by law.

"There shall be also one chief clerk and a disbursing clerk and such other clerical assistants as may from time to time be authorized by Congress; and the Auditor for the State and other Departments shall receive and examine all accounts of salaries and incidental expenses of the office of the Secretary of Public Health and of all bureaus and offices under his direction all accounts relating to the business within the jurisdiction of the Department of Public Health; and certify the balances arising thereon to the Division of Bookkeeping and Warrants and send forthwith a copy of such certificate to the Secretary of Public Health.

"There shall be vested in the Secretary of Public Health the power to absolutely control the quarantine of the United States and its possessions; the power to prevent and eliminate, so far as may be possible, all epidemic, endemic and zymotic diseases; the power to insure to the people the pureness of all foods, drugs, alcoholic liquors and patent medicines; the power of experimental research along every line of modern medicine, surgery and chemistry, and the following named offices, bureaus, divisions and branches of the public service shall be, and hereby are, transferred to the Department of Public Health, and the same shall hereafter remain under the jurisdiction and supervision of said Department of Public Health: Public Health and Marine-Hospital Service, and Division of Chemistry of the office of the Commissioner of Internal Revenue, heretofore under the jurisdiction of the Department of the Treasury; Office of the Surgeon-General of the Army, heretofore under the jurisdiction of the Secretary of War; Bureau of Medicine and Surgery, heretofore under the jurisdiction of the Secretary of the Navy; Government Hospital for the Insane, Freeman's Hospital, Columbia Hospital for the Deaf and Dumb, and Medical Examining Boards of the Bureau of Pensions, heretofore under the jurisdiction of the Secretary of the Interior. And the Secretary of Public Health shall have control of gathering and distributing such information as he may deem necessary which naturally relate to the subjects confided to his Department; and the said Secretary of Public Health is hereby given the power and authority to arrange the work of the bureaus confided to his Department, and to consolidate any of the bureaus and offices transferred to his Department, and said Secretary shall also have authority to call upon other Departments of the Government for statistical data and results obtained by them; and the Secretary of Public Health may collate, arrange and publish such information and in such manner as to him may seem wise.

"That the official records and papers now on file in and pertaining exclusively to the business of any bureau, office, department or branch of the public service transferred by this act to the Department of Public Health, together with the furniture now in use in such bureau, office, department or branch of the public service, shall be, and hereby are, transferred to the Department of Public Health.

"All unexpected appropriations, which shall be available at the time this act takes effect in relation to the various offices, bureaus, departments and other branches of the public service, which shall, by this act, be transferred or included in the Department of Public Health, shall become available from the time of such transfer for expenditure in and by the Department of Public Health, and shall be treated the same as though said branches of the public services had been directly named in the laws making said appropriation as parts of the Department of Public Health, under the direction of the Secretary of said Department.

"The Secretary of Public Health shall have charge of the buildings or premises occupied by or appropriated to the Department of Public Health, of the library, furniture, fixtures, records and other property pertaining to it or hereafter acquired for use in its business, and he shall be allowed to expend for periodicals and the purposes of the library, and for rental of appropriate quarters for the accommodation of the Department of Public Health within the District of Columbia and for all other incidental expenses, such sums as Congress may provide from time to time. Provided, however, that where any office, bureau, or branch of the public service transferred by this act to the Department of Public Health is occupying rented buildings or premises, it may still continue to do so until suitable quarters are provided for its use; and provided further, that all officers, clerks and employes now employed in or by any of the bureaus, offices, departments or branches of the public service transferred by this act to the Department of Public Health be each and all transferred to said Department at their present grades and salaries, except where otherwise provided in this act; and provided further, that all laws prescribing the work and defin-

ing the duties of the several bureaus, offices, departments and branches of the public service by this act transferred to and made a part of the Department of Public Health, so far as the same are in conflict with the provisions of this act, remain in full force and effect until otherwise provided by law.

"All duties performed and all power and authority now possessed or exercised by the head of any executive department in and over any bureau, office, department or branch of the public service by this act transferred to the Department of Public Health, or any business arising therefrom or pertaining thereto, or in relation to the duties performed by and authority conferred by law upon such bureau, office, officer, board, branch or division of the public service, whether of an appellate or advisory character or otherwise, shall hereafter be vested in and exercised by the head of the said Department of Public Health.

"That there shall be in the Department of Public Health a bureau to be designated as the Bureau of Medicine, Surgery and Chemistry, and chief of said bureau, who shall be appointed by the President, and who shall receive a salary of four thousand dollars per annum. There shall also be in said bureau such clerical assistants as may from time to time be authorized by Congress. It shall be the province and duty of said bureau, under the direction of the Secretary, to

"The Secretary of the Public Health shall have authority to call on the diplomatic and consular offices of the United States, through the Secretary of State, for reports upon—

"It shall be unlawful for any person to advertise in any newspaper, magazine or other periodical any quack nostrum and anything concerning a quack doctor, and, on conviction, such person or persons shall pay a penalty of—

"It shall be a misdemeanor to offer for sale or to manufacture any food, drug, alcoholic liquor or medicine; and upon conviction of each and every offense the person or persons shall be—

"That there shall be in the Department of Public Health a bureau to be designated as the Bureau of—, and a chief of said bureau, who shall be appointed by the President and who shall receive a salary of— dollars per annum. There shall also be in said bureau such clerical assistants as may from time to time be authorized by Congress. It shall be the province and duty of said bureau, under the direction of the Secretary, to exercise control of the treatment of consumptives at military posts; to—."

Now, my friends, I want to say this to you. That was about the very best bill that I, in my humble capacity as a physician, could draw. Last year I understand that when this Council met, you ordered two attorneys to get you up a bill. But I am told that the Trustees of the American Medical Association would not stand for the same. The expenses were too much. That is very unfortunate. You as practical professional men know that when one is sick they appeal to you; when they need clothing they go to a clothier, and when they are in trouble legally they consult a lawyer. It is too bad that the American Medical Association, through its Council, should not be in position to pay for legal talent to draw up a constitutional bill that would meet the approval of the Supreme Court of the United States, if necessary.

My friends, I want to advise you at this time to get your bill ready. We will take care of your bill, and if we can not hope to pass it at this session, the advertisement, the discussion that will ensue between now and the first session of the Sixtieth Congress, which shall be this time one year hence, will all inure and act to our credit and will assist us materially in bringing to our plans certain people who might otherwise stand in opposition to us.

I want to say to you that I thank you for this little hearing. I thank you for this reception. I am proud of you as a profession. I am proud as a member of your profession to be in a position, on the floor of the House, to carry into execution such legislation as you advise, such as well inure to the benefit of the great and mighty nation, of which nation you are no common part.

(To be continued.)

Sanitation at Panama.

The following from the *Citizens' Bulletin*, Cincinnati, shows that the efforts of Dr. Charles A. L. Reed, Cincinnati, chairman of the Committee on Legislation of the American Medical Association, to bring about better hygienic conditions at Panama, are being appreciated by the public. Few outside of our profession know that it was through the publication of his report that the radical changes were made.

The promise made by President Roosevelt, in his message on Panama, that Col. W. C. Gorgas, Chief Sanitary Officer of the Canal Zone, is to be made a member of the Isthmian Canal Commission, will be received with satisfaction, not only by the public in general, but by the medical profession in particular.

It will be remembered that at the time the organization of the original commission was pending, now more than three years ago, Dr. Gorgas was urged for appointment as a member of that body by the entire medical profession. The movement was conducted by Dr. Charles A. L. Reed, of Cincinnati, as chairman of the Legislative Committee of the American Medical Association, and was based on the contention that sanitation, being of fundamental importance on the Isthmus, it ought not to be given a subordinate position, but was entitled to the privilege of protecting its own interests by actual representation on the executive commission.



The application was ignored by the President, who, however, compromised by appointing Dr. Gorgas as Chief Sanitary Officer, "under the direction of the Governor of the Zone, who was under the direction of a special committee of the commission, which was under the direction of the commission itself, which was under the direction of the Secretary of War, who was under the direction of the President"—precisely the condition against which practically every physician in America had been protesting. But the President mentioned sanitation as being worthy of attention when he assembled the seven commissioners, whom he did select and whom he told then and there that he would dismiss if their services did not prove to the highest interest of the enterprise.

It so happened, a year or so later, that Dr. Reed was asked by the Government to go to the Isthmus on some business not connected with sanitation. On his return he made his formal report, and was about to take his departure, when he was asked, as a matter of courtesy, to make a statement of conditions in general, particularly in relation to sanitation, as he had observed it in progress. He complied with the request and told in very plain language just what he had seen. Names, dates and places, with detailed circumstances, were given with a freedom and precision foreign to the circumlocution methods usually employed in government reports. He gave instances showing how the sanitary administration was being hampered by superior officers, who turned down requisitions for necessary supplies; how important policies formulated by Dr. Gorgas were being embarrassed by the bumptious meddlesomeness of the same superiors; how the work in detail was encumbered by a marvelous complexity of red tape. He suggested remedies for each condition, and showed how the commission had been responsible for many blunders. Then he proceeded to quote the President's own language and to call on him to keep his word by demanding the resignations of the commissioners. Then, proceeding on the theory that his statement was not an official report, and, having the courage to stand for what he said, Dr. Reed gave it to the country.

The revelation startled everybody, but probably nobody more than President Roosevelt himself, who proceeded to reprimand Dr. Reed for having taken the public, as well as the administration, into his confidence. The publication was denounced as an "impropriety" and the report itself as being "controversial."

No sooner was the reprimand issued, however, than President Roosevelt demanded the resignation of the commissioners; Colonel Gorgas was given a free hand in ordering supplies; transportation was accelerated; supervision by bumptious "superiors", who were ignorant of sanitary problems, was interdicted, and the red tape was cut away with delightful celerity—in short, everything that Dr. Reed had recommended was promptly granted, even to details. Now, after two years, it seems that the last point in the "controversy" has been conceded by the appointment of Dr. Gorgas as a member of the commission.

If it is indeed true that Dr. Reed has been engaged in a controversy during all of this time, it would seem that he has been reasonably successful.

## Marriages

FRANK P. LORD, M.D., to Miss Wood, both of Athens, Ohio, December 26.

MILTON L. MARTIN, M.D., to Miss Alsie Forrester, both of Denton, Texas, December 24.

HENRY G. RADCLIFFE, M.D., to Mrs. Annie G. Lohmiller, at Liberty, Md., December 20.

ROLANDO KUEHN, M.D., to Miss Ida May Miller, both of Philadelphia, Oct. 15, 1906.

JOHN WOOD MARCHILDON, M.D., to Miss Frances Gerber, both of St. Louis, December 24.

CARL BITTER, M.D., St. Charles, Mo., to Mrs. H. H. Vinke of Davenport, Iowa, December 25.

JOSEPH E. MORR, M.D., Orland, Ind., to Miss Mary Moore of Kendallville, Ind., December 28.

ELMER A. ELDER, M.D., Pueblo, Colo., to Miss Florence Gray of Cincinnati, Ohio, December 25.

SHIRLEY D. BARRY, M.D., Mercur, Utah, to Miss Frances B. Mills of Tacoma, Wash., recently.

CHARLES T. WALL, M.D., Washington, Ind., to Miss Minnie Murphy, at Louisville, Ky., December 22.

WILLIAM HENRY MINCHNER, M.D., Troy, Ala., to Miss Alice Kate Parlette, at Baltimore, December 25.

JAMES WILLIAM WOOD, M.D., Oak Lawn, Pa., to Miss Sara Crosby Black of Chester, Pa., December 27.

LEONARD J. TURLINGTON, M.D., Baltimore, to Miss Carrie B. Tittle of Washington, D. C., December 23.

HALFORD A. WATSON, M.D., Chicago, to Miss Mary Virginia Hagermann of Lexington, Ky., December 29.

MARSHALL C. TWITCHELL, M.D., to Miss Mary Vaughn Buell, both of Burlington, Vt., December 27.

DONARELL RHEA GREEN, M.D., to Miss Harrietta Margaret Landrum, both of Atlanta, Ga., December 26.

MARY E. PARKER, M.D., Portland, Ore., to James T. White of Bridgeport, Cal., at Reno, Nev., December 19.

WILLIAM B. WHERRY, M.D., River Forest, Ill., to MARIE ELEANOR NAST, M.D., at Cincinnati, December 29.

CHARLES W. KOLLOCK, M.D., Charleston, S. C., to Miss Sara Elizabeth Irvin of Washington, Ga., December 11.

WILLIAM C. BARKER, M.D., Alma, Neb., to Miss Grace Clarissa Sturdevant of Tecumseh, Neb., December 26.

WILLIAM ELBERT BURT, M.D., Row Landing, La., to Miss Jessie Erma Hicks of Talladega, Ala., December 27.

LEO HAROLD JOYCE, M.D., Passaic, N. J., to Miss Margaret Ce Celia Kennedy of Waterbury, Conn., November 27.

CHARLES HENRY A. STELLING, M.D., Wheatland, Iowa, to Miss Lillian Mae Meyer of Iowa City, Iowa, December 25.

J. HENRY CARVER, M.D., New York City, to Miss Marguerite Lafeuille of Paris, France, in New York City, December 24.

EDWARD WHARTON SPRAGUE, M.D., Newark, N. J., to Miss Harriett Thorne Newman of Jersey City, N. J., December 27.

SAMUEL C. SLOCUM, M.D., Portland, Ore., to Miss Virginia De Lano of Tacoma, Wash., at Harrisburg, Ore., December 15.

WILLIAM MARSHALL VARBLE, M.D., to Miss Dove Frances Myers, both of Jeffersonville, Ind., at Louisville, December 23.

GEORGE BENJAMIN GILMORE, M.D., Colorado City, Colo., to Miss Mary Chaplain Lawton, at Colorado Springs, Colo., December 25.

JOHN M. FRANKENBURGER, M.D., Kansas City, Mo., to Miss Otella Chandler of Pierce City, Mo., in Kansas City, Mo., December 24.

## Deaths

Cyrus K. Bartlett, M.D. Harvard University Medical School, Boston, Mass., 1852; for a time assistant superintendent of the Northampton (Mass.) Insane Hospital; from 1868 to 1893 superintendent of St. Peter (Minn.) State Hospital for the Insane; from 1893 to 1905 professor of mental diseases in the Medical Department of Hamline University, Minneapolis, and then made professor emeritus; from 1897 to 1904 associate editor of the *Medical Dial*; a well-known alienist and frequent contributor to the literature of that subject, died at his home in Minneapolis, December 26, aged 77.

Jacob Lindemuth Ziegler, M.D. Jefferson Medical College, Philadelphia, 1844; twice president of the Lancaster County Medical Society; vice-president in 1879 and president in 1881 of the Medical Society of the State of Pennsylvania; one of the oldest practitioners of Lancaster County, Pa.; at one time burgess of Mount Joy borough, and a surgeon during the Civil War, died suddenly from cerebral hemorrhage at his home in Mount Joy, December 26, aged 84.

Frank Edwin Beckwith, M.D. College of Physicians and Surgeons in the City of New York, 1871; professor of obstetrics and diseases of women at Yale Medical School, New Haven, from 1880 to 1885; a member of the local county and state medical societies; director and for many years attending physician to the New Haven Hospital, died at his home in New Haven, December 27, from cerebral hemorrhage, after an illness of two days, aged 59.

Charles L. Culpeper, M.D. College of Physicians and Surgeons in the City of New York, 1885; supreme medical examiner of the Modern Puritans; supreme medical examiner for Virginia of the Royal Arcanum, and surgeon of the Norfolk & Portsmouth Traction Company, who had been in ill health for about two years, shot and killed himself in his office in Portsmouth, December 28, aged 43.

William Moore, M.D. Miami Medical College, Cincinnati, 1857; a member of the American Medical Association; for many years a member of the Columbiana County board of visitors, and one of the oldest practitioners of Columbiana County, died at his home in Lisbon, Ohio, December 24, from malignant disease of the stomach, after an illness of several years, aged 80.

Jeannette C. Welch, M.D. College of Physicians and Surgeons of Chicago, 1902; of Grand Rapids, Mich.; a member of the medical staff of the Union Benevolent Hospital Association; a member of the Grand Rapids Academy of Medicine and Kent County Medical Society; one of the organizers of the University Club, died at the U. B. A. Hospital, Grand Rapids, from tubercular meningitis, aged 39.

John N. Wright, M.D. Albany (N. Y.) Medical College, 1868; a veteran of the Civil War; a practitioner of Grand



Gorge, N. Y., for 36 years; five times coroner of Delaware County, and justice of the peace of the town, and postmaster during three administrations, died at his home, December 21, from asthma, from which he had suffered for many years, aged 66.

Charles Griswold, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1880; of North St. Paul, Minn.; a veteran of the Civil War; a member of the Minnesota legislature in 1865; died at the City Hospital, St. Paul, December 25, from senile debility, aged 74.

Lawrence Smith, M.D. Medical College of Georgia, Augusta, 1852; a surgeon in the Confederate service during the Civil War, and for more than half a century a practitioner of Tusseta, Ala., died at his home in that city, December 22, after an illness of 10 months.

Frank H. De Camp, M.D. New York Homeopathic Medical College and Hospital, New York City, 1892; formerly of Horseheads, N. Y., died at his home in Elmira, N. Y., December 22, from uremia, following pneumonia, after an illness of two weeks, aged 38.

William C. Jones, M.D. Bellevue Hospital Medical College, New York City, 1886; chief surgeon of the Texas Central Railway for nearly 20 years; a member of the American Medical Association, died at his home in Walnut Springs, Texas, December 26.

George A. Garries, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1881; a veteran of the Civil War; for many years a practitioner of Erie, Pa., died at his home in that city, December 25, after an illness of several weeks, aged 60.

Timothy Huggins Bishop, M.D. Medical Institution of Yale College, New Haven, Conn., 1860; for 25 years secretary and for a long time consulting physician to the New Haven Hospital, died at his home in New Haven, December 26, from pneumonia, aged 70.

Joseph M. Fort, M.D. Jefferson Medical College, Philadelphia, 1851; a prominent citizen of Paris, Texas, and for many years a member of the North Texas Medical Association, died at his home, December 21, after an illness of several years, aged 78.

Jacob G. Wolf, M.D. Medical College of Ohio, Cincinnati, 1849; a surgeon during the Civil War, died December 27 at his home in Morristown, Ind., where he had practiced for more than half a century, from pneumonia, aged 83.

Benjamin F. Davis, M.D. Starling Medical College, Columbus, Ohio, 1863; a veteran of the Civil War, and one of the oldest practitioners of Wood County, Ohio, died at his home in Montogony, Ohio, December 19, aged 69.

Benjamin F. Forrey, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1882; died at his home in Bath, Ind., December 26, from acute gastritis, after an illness of only a few hours, aged 46.

John W. Franklin, M.D. Kentucky School of Medicine, Louisville, 1865; one of the oldest practitioners of Coles County, Ill., died suddenly at his home in Diona, Ill., from rheumatism of the heart, December 19, aged 67.

George W. Huebner, M.D. Jefferson Medical College, Philadelphia, 1893; of Johnstown, Pa.; died at the home of his mother in Johnstown, December 21, from pneumonia, after an illness of four days, aged 40.

James Henderson, M.D. McGill University, Medical Department, Montreal, 1892; of Coborg, Ont.; while returning from a call on a sick patient, December 21, was struck by a train and instantly killed, aged 40.

Edward S. Horner, M.D. Medico-Chirurgical College of Philadelphia, 1899; died at his home in Turbotville, Pa., from the effects of an overdose of morphin taken to relieve neuralgia, December 21, aged 40.

John W. Younge, M.D. Medical College of Fort Wayne, Ind., 1879; a veteran of the Civil War, died at his home in Fort Wayne, December 31, from nephritis, after an illness of two weeks, aged 66.

James E. Price, M.D. Medical Department of the University of Tennessee, Nashville, 1899; died at his home in Pricville, Tenn., December 20, from dropsy, after an illness of several months, aged 45.

Columbus Richards Giles, M.D. Kansas City Hospital College of Medicine, Kansas City, Mo., 1885; died at his home in Atlanta, Ga., after an illness of six weeks, December 26, aged 58.

James W. Standley, M.D. Rush Medical College, Chicago, 1872; died at his home in Alexis, Ill., December 23, from angina pectoris, after an illness of two weeks, aged 48.

Isaac Benson Ennis, M.D. Kentucky School of Medicine, Louisville, Ky., 1893; died at his home in Chebanse, Ill., December 25, after an illness of 10 days, aged 36.

W. Clemmit Williams, M.D. University College of Medicine, Richmond, Va., 1897; of Scottsville, Va., died December 23, and was buried in Richmond, December 25.

## Association News

### NEW MEMBERS.

List of new members of the American Medical Association for the month of December, 1906:

#### ALABAMA.

Bell, A. W., Woodlawn.  
Garrison, J. E., Quinton.  
James, A. D., York.  
Tam, Silas S., Mobile.

#### ARKANSAS.

Brewer, John F., Kerrs.  
Frey, J. J., Park Place.  
Garner, T. J., Washington.  
Horner, Joseph Smith, Hot Springs.  
Leali, Chas., Kingsland.  
Morrow, J. J., Cotter.

#### CALIFORNIA.

Balley, F. J., Red Bluff.  
Gordon, Frank H., Los Angeles.  
Spencer, J. F., Gardena.  
Taylor, Oscar N., San Francisco.  
Teubner, Charles, Saticoy.

#### COLORADO.

Barney, Lucius, Denver.  
McGiffin, M. N., Denver.  
Roosevelt, G. F., Denver.  
Thorp, R. L., Denver.  
Upson, Wilbur O., Fort Collins.

#### CONNECTICUT.

Brainard, I. E., Wallingford.  
Deles-Derniers, H. W., Meriden.  
O'Loughlin, T. F., Rockville.  
Winship, E. O., Rockville.

#### FLORIDA.

Boring, J. M., Waldo.

#### GEORGIA.

Shields, J. A., Villanow.

#### IDAHO.

Shawhan, Glenn E., Boise.  
Woodburn, John M., Boise.

#### ILLINOIS.

Asay, J. E., Rock Island.  
Boynton, L. V., Vermont.  
Carr, O. N., Verona.  
DeRoulet, Alfred, Chicago.  
Dixon, W. A., Decatur.  
Dollear, A. H., Watertown.  
Dunn, B. B., Perry.  
Evinger, J. W., Paris.  
Griffith, B. A., Swan Creek.  
Hansen, O. A., Chicago.  
Knewitz, O. W., E. St. Louis.  
Leach, R. B., Joliet.  
Millard, H. A., Mlnonk.  
Napheys, W. D., Jr., Chicago.  
O'Brien, C. L., Chicago.  
Renwick, J. C., Warren.  
Rosenblumm, S. M., Chicago.  
Rosenstiel, Mary L., Freeport.  
Steely, Geo., Danville.  
Stockdale, Frank A., Coal City.  
Stolp, Rufus B., Kenilworth.  
Tremblay, J. J., Moline.  
Vandervort, Franklin C., Bloomington.  
Wynekoop, G. H., Chicago.  
Young, C. S., Genesee.

#### INDIANA.

Bowles, H. S., Muncie.  
Hyde, L. A., Elnton.  
Rothchild, C. J., Fort Wayne.  
Suverkrup, L. A., Columbus.

#### INDIAN TERRITORY.

Cagle, T. J., Wetumka.  
Tye, R. P., Chickasha.  
Williams, H. E., McAlester.

#### IOWA.

Cover, O. A., Seymour.  
Donahue, Julia M., Burlington.  
Driver, F. J., Shenandoah.

Frisbie, C. B., Des Moines.  
Green, W. H., Farnhamville.  
Hills, H. M., Denmark.  
Huckins, H. S., Dallas Center.  
Milligan, W. W., Burlington.

#### KANSAS.

Blewett, W. F., Caney.  
Buckles, J. H., W. Mineral.  
Bushong, L. B., Admire.  
Haskins, H. E., Kingman.  
Haynes, W. A., Sabetha.  
Hoover, W. F., Climax.  
Horner, R. C., Green.  
Horner, T. E., Severance.  
Kanavel, E. J., Sedgwick.  
Maddox, C. W., Longton.  
May, A. J., New Cambria.  
McDonald, S. F., Severy.  
Metcalf, E. T., Colony.  
Palmer, J. A., Erie.  
Smith, J. C., Greeley.

#### KENTUCKY.

Blair, A. L., Morehead.  
Flexner, J. A., Louisville.  
Francis, W. A., Bowling Green.  
Henry, O. C., Sylva.  
Matthews, J. E., Westview.  
Scaggs, Alex., Morehead.  
Smith, H. A., Paducah.

#### LOUISIANA.

Gardner, C. A., Sunset.  
Smith, H. H., Cotton Valley.

#### MARYLAND.

Spragins, Melchiah, Baltimore.  
Tyndall, I. C., Whaleyville.

#### MASSACHUSETTS.

Abbott, H. D., Danvers.  
Bonnar, J. M., New Bedford.  
Borden, G. E., Fall River.  
Brindisi, R., Boston.  
Crane, C. C., Norwood.  
Easton, C. D., Boston.  
Field, H. M., Norwood.  
Fox, Horace, Bath.  
Holmes, G. W., Boston.  
Hosley, W. A., Newton.  
Johnson, F. W., Boston.  
Leary, Timothy, Boston.  
Ober, Marlon Helena, Wellesley.  
O'Brien, T. J., Boston.  
O'Brien, D. P., New Bedford.  
Rockwell, G. E. P., Worcester.  
Thayer, N. P., Boston.

#### MICHIGAN.

Balley, E. H., Corunna.  
Gardner, C. B., Riverdale.  
Goodfellow, Abram, Clio.  
Kelley, E. W., Temperance.  
Nelson, Andrew, Escanaba.  
Scott, T. B. H., Owosso.  
Wolford, C. T., Grand Rapids.

#### MINNESOTA.

Bomberger, F. J., Mapleton.  
Brooks, G. F., Stevenson.  
Campbell, E. P., St. Paul.  
Casseday, F. F., Rosemount.  
Chambers, W. C., Owatonna.  
Chase, E. F., Adams.  
Froehlich, H. W., Pine City.  
Henderson, Andrew, Scanlon.  
Lalonde, Edmond, Torah.  
Millet, M. C., Rochester.  
Owre, Oscar, Minneapolis.

#### MISSISSIPPI.

Brown, P. R., West Point.  
Clark, J. A., Ruleville.  
Dye, T. M., Sherard.  
Horton, W. H., Bogue Chitto.  
Hunt, D. R., Myrick.  
McDevitt, J. A., Shubuta.  
Turrentine, A. E., Chaney.



## MISSOURI.

Alexander, G. W., Chula.  
Baird, W. C., Bogard.  
Baker, W. L., Salisbury.  
Bradley, U. S., Harris.  
Brunner, E. E., Carrollton.  
Burch, E. J., Doerun.  
Callihan, R. G., Luray.  
Cochran, F. B., Brookfield.  
Duffie, W. M., Millard.  
Durham, U. S., Clarence.  
Ewing, E. W., Modena.  
Foster, G. F., Memphis.  
Greene, Luther D., Richmond.  
Herlington, Warner, Green City.  
Hinch, F. E., Ste. Genevieve.  
Hollday, J. W., Tarkio.  
Hollday, S. J., Pollock.  
Johnson, G. A., Hollday.  
Jurgens, L. C., Kirksville.  
Kenney, W. L., St. Joe.  
Kimberlin, J. W., Kansas City.  
Lanning, R. W., Ste. Genevieve.  
Lawrence, W. S., St. Louis.  
Munn, W. E., Pure Air.  
Norman, J. B., California.  
Pickett, C. P., Mercer.  
Poole, A. R., Milan.  
Polson, J. T., Laclede.  
Roberts, I. M., Green City.  
Robinson, J. L., Kansas City.  
Sheldon, Samuel, Trenton.  
Simpson, A. J., Chillicothe.  
Shepler, R. H., Green City.  
Smith, A. A., Pacific.  
Taylor, W. L., Greencastle.  
Tidwell, G. W., De Soto.  
Topping, M. H., Flat River.  
Tull, H. W., Carrollton.  
Van Hoefen, S. A., St. Louis.  
Wallace, G. R., Bertrand.  
Wlegers, T. L., Flint Hill.  
Williams, D. B., Osceola.  
Wright, J. B., Trenton.

## NEBRASKA.

Ireland, G. A., St. Edward.  
Morris, G. H., Creston.  
Neal, W. T., Nebraska City.

## NEVADA.

Bowen, F. P., Rhyolite.  
Harper, T. H., Silver Peak.

## NEW HAMPSHIRE.

Chesley, A. P., Concord.  
Keay, F. L., Rochester.

## NEW JERSEY.

Cobb, G. H., South Orange.  
Hance, I. H., Lakewood.  
Langdon, R. M., Englewood Cliffs.  
Mander, A. J., Millville.  
McVay, J. C. F., Atlantic City.  
Muta, S. A., West Orange.  
Rosensohn, William, East Orange.  
Runyan, Mefford, South Orange.  
Scheppach, H. A., Newark.  
Van Syckle, A. C., Hackettstown.

## NEW YORK.

Bates, G. W., Schenectady.  
Bond, G. F. M., Yonkers.  
Brown, C. Anna J., Seneca Falls.  
Combes, Frank, New York.  
Dillon, William, Brooklyn.  
Elseline, D. A., Shortsville.  
Flinch, L. H., Broadalbin.  
Gillespie, D. H. M., New York.  
Goodall, H. S., Lake Kushaqua.  
Haskin, W. H., New York.  
Healy, W. P., New York.  
Hinkel, F. W., Buffalo.  
Hogan, D. D., Ft. Schuyler.  
Hoole, L. P., Brooklyn.  
Ives, R. F., Brooklyn.  
Kinsley, A. B., Buffalo.  
McGrath, W. J., Rotterdam Junction.  
McMurtry, C. W., New York.  
Packard, Maurice, New York.  
Quigley, J. K., Rochester.  
O'Meara, Mark, Kingston.  
Resseque, F. J., Saratoga Springs.  
Rice, F. C., Ripley.  
Roberts, C. S., Syracuse.  
Rouse, J. B., Leeds.  
Shields, N. J., New York.  
Taggart, J. A., Salamanca.  
Williams, H. U., Buffalo.  
Zimmer, F. W., Rochester.

## NORTH CAROLINA.

Anderson, T. E., Statesville.  
Chapin, H. T., Pittsboro.  
Meadows, N. J., Greensboro.  
Pope, H. T., Lumberton.  
Street, M. E., Glendon.  
Taylor, W. L., Stovall.  
Wilson, F. G., Gastonia.

## NORTH DAKOTA.

Stribling, J. W., Jamestown.

## OHIO.

Christy, S. K., Willshire.  
Gaver, E. E., Columbus.  
Heyn, L. G., Cincinnati.

## OKLAHOMA.

Bell, Allen, Maud.  
Pierson, O. A., Woodward.

## OREGON.

Koljonan, Helkki, Astoria.  
Roth, J. B., Portland.  
Williams, C. L., Junction City.

## PENNSYLVANIA.

Alburger, H. R., Philadelphia.  
Deckard, P. E., Harrisburg.  
Deiber, H. W., Wilkesbarre.  
Dougherty, E. S., Ashley.  
Down, H. C., Dalton.  
Fretz, A. E., Sellersville.  
Grimes, R. B., Philadelphia.  
Merrill, B. E., Dents Run.  
Miller, J. B., Sligo.  
Pike, C. P., Philadelphia.  
Plymire, I. S., Doylestown.  
Register, H. C., Philadelphia.  
Schill, J. J., Pittsburgh.  
Walker, James, Mendenhall.  
Walker, R. A., West Monterey.  
Wenzel, Mary, Philadelphia.  
White, J. N., Scranton.

## RHODE ISLAND.

Brackett, E. S., Providence.

## SOUTH CAROLINA.

Henslee, C., Dillon.  
Kell, T. B., Fort Lawn.  
Woodruff, W. A., Catechee.

## SOUTH DAKOTA.

Haberman, Emil, Bancroft.  
Johnston, M. C., Aberdeen.

## TENNESSEE.

Alexander, L. L., Paris.  
Brower, Chas., Nashville.  
Cobleigh, C. A., Chattanooga.  
Graham, W. W., Arno.  
Mooney, C. F., Knoxville.  
Nelson, J. E., Briceville.  
Porter, W. W., Springfield.  
Slford, W. R., Nashville.  
West, W. J., Knoxville.

## TEXAS.

Boyd, D. T., Bonham.  
Coffey, A., Ft. Worth.  
Davies, R. P., Petty.  
Feemster, M. B., Omega.  
Foscoe, G. B., Waco.  
Shepperd, F. D., Liberty Hill.  
Trott, G. A., Georgetown.

## UTAH.

Anderson, Ross, Salt Lake City.  
Behle, A. C., Salt Lake City.  
Laker, L. B., Eureka.  
Morton, J. E., Heber City.

## VERMONT.

Lazell, W. E., Barre.

## VIRGINIA.

Grice, Jos., Portsmouth.  
Lyell, R. O., Warsaw.  
Mc'aw, David, Richmond.  
Seward, W. W., Surry.  
Storie, J. G., Hurley.

## WASHINGTON.

Boyd, G. T., Palouse.  
Buchanan, C. M., Tulallip Indian Agency.  
Stone, D. M., Black Diamond.  
Stryker, R. S., Ridgefield.  
Vall, H. D., Quincy.

## WEST VIRGINIA.

Wyatt, G. L., White Silver Springs.

## WISCONSIN.

Baasen, J. M., Mt. Calvary.  
Cottington, Robert, Bloomer.  
Hill, W. B., Milwaukee.  
Hinman, F. L., Rhinelander.  
Hughes, T. H., Dodgeville.  
Johnson, W. H., Mattoon.  
Lee, J. H., Iola.  
Pomalville, G. J., Waumandee.  
Pretts, W. W., Platteville.  
Rogers, A. W., Milwaukee.  
Toby, E. A., River Falls.

## WYOMING.

Cooper, A. H., Superior.

## FOREIGN.

Flannagan, L. E., Nicaragua. C. A.  
Grant, A. F., Assiout, Egypt.

## Queries and Minor Notes

## TREATMENT OF TUBERCULAR ADENITIS.

ADIN, CAL., Dec. 14, 1906.

*To the Editor:*—I desire information on the treatment of tubercular adenitis of the cervical glands. I have a patient, male, aged 27, American-born Portuguese, who has enlarged glands, which were first noticed at the age of 14. Aside from this condition there is no better man physically in northern California. He has had eight operations on the neck, the first at the age of 15. The first four operations removed all the glands on the left side of the neck, then glands on the right side began to enlarge. He has had four operations on that side, the last two of which I performed. Last April I removed a tumor the size of a large lemon, which was attached to the inferior maxillary for one and a half inches, to floor of the mouth, root of the tongue, and larynx, surrounded the internal and external carotids and extended down to midway between the jaw and the clavicle. It required 52 ligatures and one pair of artery forceps to control the hemorrhage. Knowing the case to be tuberculous, I left the wound open at the lower half and packed with 10 per cent. iodoform gauze. It healed rapidly and kindly. In September the man noticed two small lumps at the border of the sterno-cleidomastoid, about one-half inch below the lower angle of the first incision. These lumps enlarged rapidly and on September 11, I removed them, leaving the wound open and packing it with iodoform and iodoform gauze 5 per cent. I have been giving internally, calcium chlorid and sulphid, cod liver oil etc.

I saw in the last volume of the Year-Book an article on the use of 30 per cent. iodoform emulsion, hypodermatically. Can it be recommended? If so, what kind of syringe should be used, how often should it be injected, in what part of body and what doses? There is tuberculous adenitis on the mother's side, the father's side, so far as they know, is healthy; brothers and sisters are all alive and healthy. The man's mother died two years ago with pneumonia, so far as known he has, on the mother's side, four consins, affected like himself, two in one family and one each in two other families. The patient has been treated by at least ten different physicians and has taken medicine by mouth the greater part of the time since he was fourteen years old. Any information from those who are competent to give it on such a condition will be gladly received.

C. M. TINSMAN.

*ANSWER.*—The surgical removal of tuberculous lymphatic glands appears to be successful under two conditions: First, when the focus of the disease is completely removed in a subject with good resisting powers and no germs are left behind to cause a renewal of tuberculous formation; second, when the operation sets free a moderate amount of tuberculous toxin which is followed by such a reaction on the part of the system that healing of the remaining tuberculous foci occurs from the bactericidal action of the system. When these conditions are lacking it is possible that surgical interference may contribute to the spread of the disease by scattering the bacilli. Healing of the tuberculous lesion requires the existence in the blood of bactericidal and antitoxic power and the free circulation of such blood through the diseased part. Local methods of treatment have as their basic principle the excitation of hyperemia in the part which is the seat of the disease. For such purpose the injection of iodoform emulsion is well suited. Probably the passive congestion method of Bier might be found serviceable. Other applications, such as iodine, serve the same purpose. This treatment will be of no avail, and may be harmful so long as the blood is lacking in bactericidal power, that is, when the opsonic index is low. General measures of treatment are serviceable by increasing this power in the blood. For this purpose ordinary hygienic measures, fresh air, particularly sea air, good food, largely albuminous, etc., are especially to be recommended. The presence of bactericidal power in the blood may be ascertained by determining the opsonic index according to the method of Wright. If this is found to be below normal, local measures or surgical intervention are risky and are likely to fail on account of the lack of bactericidal power in the blood. If the opsonic index is normal or above it would indicate that no general measures other than ordinary hygiene are demanded. If the opsonic index is too low attempts may be made to raise it by the cautious administration of tuberculin, a decided reaction being carefully avoided.

## THE USE AND ABUSE OF ADRENALIN.

FALLS CITY, TEXAS, Dec. 20, 1906.

*To the Editor:*—Two articles of recent appearance in THE JOURNAL, when taken together, are significant with a lesson. Cases of rattlesnake bite are very frequent in this section, and the treatment, invariably successful, when the patient is seen within a few hours after the bite, is the same in every detail as that outlined by Dr. Lewis in THE JOURNAL A. M. A., Dec. 15, 1906, p. 1012, with the exception, as far as I know that the adrenalin is never given! Now take the case of Dr. Bennett in THE JOURNAL, Nov. 17, 1906, page 1655. It seems in his case that 30 minims of adrenalin nearly killed a strong adult in good condition, who was apparently saved by the timely use of morphin, atropin, nitro



glycerin, etc. Dr. Lewis' case, referred to above, was only a child of 14, and suffering from snake poison. He got 25 minims of adrenalin the same strength as that used in the other case. Note the similarity of some of the symptoms in the two cases. After the boy had improved he got worse again. It is open to question if the adrenalin was not responsible for the loss of the snake bite case. At least, why use the adrenalin when the treatment as detailed is successful and satisfactory without it?

G. W. SIMS, M.D.

ANSWER.—The question raised by our correspondent is pertinent. Theoretically adrenalin may be given in snake poisoning for two reasons: First, for its local effect in delaying the absorption of the poison; second, to counteract the tendency to falling blood pressure in consequence of the general poisoning. In Dr. Lewis' case it was apparently used for the latter purpose. Considering the uncertain action of this substance it might be wiser to resort to better known vasoconstrictors. From the history, however, it does not appear that Dr. Lewis' patient exhibited any of the symptoms of adrenalin poisoning shown in the case related by Dr. Bennett. The patient held his own for two hours and died apparently from the toxic action of the snake venom.

#### STATUS OF SCOPOLAMIN-MORPHIN ANESTHESIA.

DEESON, MISS., Dec. 21, 1906.

To the Editor:—Will you kindly give the status of scopolamin anesthesia? In the last edition of Wood's Therapeutics it is stated that from the reports of nearly 2,000 cases collected by L. C. Wood, Jr., the mortality was 9, or 1 in 221; and that in 9 per cent. of the cases ether or chloroform had to be given to complete the operation. In this work this method of producing anesthesia as a routine measure is very strongly condemned. In THE JOURNAL, Aug. 25, 1906, advertising page 25, appears an advertisement of the Abbott Alkaloidal Co., in which the morphin-scopolamin method of producing anesthesia is extolled in extravagant and alluring language, making use of the following expressions: "Painless surgical practice without chloroform or ether and without nausea or post-operative emesis accomplished with hyoscin-morphin and cactin comp. (A.A.Co.). No anesthetist required. Not a failure or unpleasant symptom has been reported. It is a powerful and efficient combination, and is indicated in major surgical and gynecological operations in lieu of the common general anesthetics." No one but a country physician, practicing in sections remote from efficient aid, can appreciate the enticing persuasions of this advertisement. Either Prof. Wood is in error or the alkaloidal people are in error. I am all at sea, because, living among our "colored brethren" as I do, my emergency work at this season of the year is considerable; and if I could feel safe in the employment of this method it would indeed be a great boon.

THOMAS J. RAY.

ANSWER.—This letter was submitted to Dr. Wood, who made the following reply:

"While it is not flattering to a pharmacologist to have his conclusions called in question on account of the extravagant language of the advertisements of drug manufacturers, as the question is of some importance I am pleased to have an opportunity of asserting my convictions as to the danger of scopolamin-morphin anesthesia, and the reasons for my belief. In the first place, it must be remembered that scopolamin is simply a new name for hyoscin. It has been asserted that although there is no chemical distinction between the two alkaloids they are obtained from different plants. This, however, is a mistake. The definition of the

U. S. Pharmacopoeia admits of either hyoscin or scopolamin being made from any plant belonging to the family of *Solanaceae*, provided answers to certain chemical tests, which tests are precisely the same for scopolamin as for hyoscin. The German Pharmacopoeia no longer recognizes the name of hyoscin. The recognition of the two names for one substance by the U. S. Pharmacopoeia is unfortunate, as likely to lead to confusion. If the physician who is editing the comparative value of the hypodermic anesthesia will bear in mind that the two agencies employed are morphin and hyoscin he will be able to gauge the effect which may be expected. Hyoscin has practically no power as an analgesic, and differs from the other mydriatic alkaloids in being depressant and not stimulant to the respiratory center. The addition of hyoscin to the morphin, therefore, can not greatly increase the insensibility to pain, but must distinctly augment the liability to respiratory failure.

"The statement quoted that: 'Not one failure or unpleasant symptom has been reported,' is separated from falsehood only by the width of the advertiser's license. In *American Medicine*, 1906, page 546, I have considered in some detail the reported cases in which this method of anesthesia has been employed. In 1988 cases there were reported 23 deaths, of which after careful study of the original records at least 9 seem to me may be fairly attributable to the anesthetic. There were also 868 cases in which the anesthesia was unsatisfactory, and in a number of cases besides no attempt was made to produce complete anesthesia without the use of ether or chloroform. There is little room for doubt that the previous hypodermic administration of morphin will lessen the

quantity of ether or chloroform necessary to produce anesthesia, and in many cases also lessen the unpleasant symptoms of the anesthesia; but that the danger of the narcosis is in any way diminished by this practice I think is exceedingly questionable, and the admission of sufficient quantity of morphin to produce complete anesthesia under ordinary circumstances seems to me inadmissible. The rôle of the hyoscin or scopolamin in the anesthesia is entirely subsidiary to that of the morphin. When one considers that in 2,000 cases of this form of anesthesia 9 deaths have occurred and compares these figures to 1 death in 16,000 for ether he will hardly dare weigh the question of convenience against this frightful mortality."

#### DISINFECTION BY FORMALDEHYD.

MUSKOGEE, I. T., Dec. 14, 1906.

To the Editor:—Please state the best method of disinfecting rooms after scarlet fever. Please also give the proportions and quantities of formaldehyd and solution of permanganate of potash for 1,000 cubic feet of air space.

J. W.

ANSWER.—For each 1,000 cubic feet of air space five or six ounces of crystals of potassium permanganate should be placed in the container. Over it should be poured one pint of 40 per cent. solution of formaldehyd. The air in the room must be moistened, or disinfection will not be complete. The air may be moistened by wet sheets, hung about the room, before the disinfection takes place. This method of disinfecting was described in THE JOURNAL, July 14, 1906, page 139. In a letter published July 28, page 288, Dr. Henry Albert, Iowa City, Iowa, discusses the proportions of the ingredients, a subject which he further takes up in a recent issue of the *Iowa Health Bulletin*. Dr. James A. Egan, Springfield, Illinois, discusses the matter further, August 18, page 523. A report of a detailed comparison of the various means of disinfecting was reviewed in THE JOURNAL, September 22, page 952. The objection most commonly raised against formaldehyd as a disinfectant is that it has little or no penetrating power. In the experiments of the Illinois State Board of Health, however, it has been shown that when the gas is generated by the formaldehyd-permanganate method this objection does not hold. It destroyed micro-organisms through four layers of flannel and two layers of sheets, but the disinfection failed when cultures were enclosed between the leaves of books and was not satisfactory when placed beneath a carpet. The inside of a closed drawer was disinfected, even though it was a dead space, there being no artificial means of putting the air in motion. To ensure penetration the gas should be generated in an approved manner so as to secure a large volume of gas and a long exposure. Some experiments made in the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service indicate that the effectiveness of formaldehyd depends largely on the temperature and the degree of humidity. The experimenter, T. B. McClintic, concludes that this gas is not to be relied on if the temperature is below 60 degrees F, and if the relative humidity of the atmosphere is less than 65 per cent. The *Bulletin of the Illinois State Board of Health* (November-December, 1906) criticizes these conclusions on the ground that the apparatus used was not the best, the pail having straight sides instead of a flaring top and not being covered with asbestos, the amount of gas evolved being too small and being allowed to escape, as the room was not sealed. Experiments instituted by the Illinois board showed that the disinfection can be made effective in cold and dry weather by attending to these details.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 5, 1907:

Raymond, Henry L., surgeon, left Columbus Barracks, Ohio, with recruits en route to Vancouver Barracks, Washington.

Hall, James F., asst.-surgeon, granted thirty days' leave of absence about Dec. 26, 1906.

Huggins, John B., asst.-surgeon, ordered to proceed from San Francisco, Cal., to Washington Barracks, D. C., and report to the commanding officer of the Army General Hospital at that post, for assignment to duty with Co. C, Hospital Corps.

Ekwurzel, Geo. M., asst.-surgeon; relieved from duty at Fort Keogh, Montana, and ordered to Fort Meade, S. D., for duty.

Hansell, H. S., asst.-surgeon, reports arrival in the United States on three months' leave of absence.

Lyster, Theo. C., asst.-surgeon, left Ancon, Canal Zone, on special leave of absence.

Morris, Samuel J., asst.-surgeon, leave of absence extended to include Jan. 15, 1907.

Heard, Geo. P., asst.-surgeon, leave of absence extended one month.

Lyster, Wm. J. L., asst.-surgeon, leave of absence extended four days.



Wing, Franklin F., dental surgeon, left Fort D. A. Russell, Wyo., on leave of absence for one month.

Wolven, F. Homer, dental surgeon, left Fort Monroe, Va., on leave of absence.

Jackson, Thomas W., contract surgeon, ordered from Philadelphia, to Manila, P. I., for Philippine service.

Hereford, John R., contract surgeon, relieved from treatment at Hot Springs, Ark., and further duty at Fort Moultrie, S. C.; ordered to Fort McPherson, Ga., for duty.

Allen, Ira A., contract surgeon, granted an extension of one month to his sick leave of absence.

Leeper, John F., contract surgeon, granted leave of absence for ten days.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 5, 1907:

Wright, B. L., surgeon, when discharged from treatment at the Naval Hospital, New York, N. Y., ordered to treatment at the Naval Hospital, New Fort Lyon, Colo.

Field, J. G., surgeon, detached from duty at the Naval Hospital, New Fort Lyon, Colo., and ordered to duty with the Marine Recruiting Party, Dallas, Texas.

Hart, G. G., acting asst.-surgeon, detached from duty with Marine Recruiting Party, Dallas, Texas, and ordered to the Naval Training Station, San Francisco.

Marshall, E. R., asst.-surgeon, detached from the Naval Station, Guantanamo, Cuba, and from duty on the *Monongahela*, and resignation accepted, to take effect Jan. 11, 1907.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 2, 1907:

Williams, L. L., surgeon, directed to proceed to Baltimore local quarantine stations for special duty, on completion of which to rejoin station.

Oakley, J. H., P. A. surgeon, leave of absence granted Dec. 13, 1906, for three days, revoked.

Wickes, H. W., P. A. surgeon, granted leave of absence for two days under Paragraph 191 of the Service Regulations.

Anderson, J. F., P. A. surgeon, directed to proceed to Reedy island Quarantine for special temporary duty, on completion of which to rejoin station.

Robinson, D. E., P. A. surgeon, relieved from duty on Revenue Cutter *Manning* and directed to proceed to San Francisco, reporting arrival by wire.

King, W. W., P. A. surgeon, granted leave of absence for ten days from Dec. 17, 1906, on account of sickness.

Fox, Carroll, P. A. Surgeon, relieved from duty in the Philippine Islands, and directed to proceed to San Francisco, reporting arrival by wire.

Fox, Carroll, P. A. Surgeon, granted leave of absence for fourteen days en route to United States.

Glover, M. W., P. A. surgeon, granted leave of absence for one month from Jan. 12, 1907.

Long, J. D., P. A. surgeon, directed to report to medical officer in command, San Francisco, for temporary duty and assignment to quarters.

McKeon, F. H., asst.-surgeon, relieved from duty at San Francisco, and directed to proceed to Manila, P. I., reporting to chief quarantine officer for duty.

Frost, W. H., asst.-surgeon, granted leave of absence for five days from Dec. 22, 1906.

Hunter, W. R., acting asst.-surgeon, granted leave of absence for three days, from Dec. 31, 1906.

McCormac, J. T., acting asst.-surgeon, granted leave of absence for thirty days from Jan. 10, 1906.

Rodman, J. C., acting asst.-surgeon, granted seven days leave from Dec. 28, 1906.

Royster, W. L., acting asst.-surgeon, granted leave of absence for three days from Dec. 25, 1906, under Paragraph 210 of the Service Regulations.

Brinckerhoff, W. R., director, Leprosy Hospital, Honolulu, granted leave of absence for thirty days from Jan. 1, 1907.

Brown, F. L., pharmacist, granted leave of absence for twenty days from Jan. 4, 1906.

Goodman, F. S., pharmacist, granted leave of absence for four days from Dec. 25, 1906, under Paragraph 210 of the Service Regulations.

Miller, Charles, pharmacist, granted leave of absence for seven days from Dec. 24, 1906, under Paragraph 210 of the Service Regulations.

Hall, L. P., pharmacist, granted leave of absence Dec. 11 and 19 under Paragraph 210 of the Service Regulations.

Thomas, A. M., pharmacist, granted leave of absence for six days from Dec. 21, 1906, under Paragraph 210 of the Service Regulations.

### APPOINTMENTS.

Dr. Arthur H. Wise appointed an acting assistant surgeon for duty at Port Huron, Mich.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Jan. 4, 1907:

#### SMALLPOX—UNITED STATES.

California: San Francisco: Dec. 15-2, 1 case.

Illinois: Danville, Dec. 20-27, 1 case, imported; Galesburg, Dec. 15-22, 2 cases.

Indiana: Elkhart, Dec. 15-22, 1 case; Indianapolis, Dec. 16-30, 1 case, 1 death; South Bend, Dec. 15-29, 6 cases.

Kansas: Topeka, Dec. 15-22, 1 case.

Louisiana: New Orleans, Dec. 22-29, 4 cases; Shreveport, 2 cases.

Michigan: Detroit, Dec. 22-29, 11 cases.

New York: New York, Dec. 15-22, 6 cases.

North Carolina: Greensboro, Dec. 15-29, 2 cases.

Ohio: Toledo, Dec. 15-22, 1 case.

Washington: Spokane, Dec. 15-22, 4 cases.

Wisconsin: Appleton, Dec. 22-29, 1 case; La Crosse, Dec. 15-22, 1 case.

#### SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, Nov. 18-25, 2 cases.

Canada: New Brunswick, Kent County, Dec. 16-22, present; Nova Scotia, Colchester County, present, Cumberland County, present.

Chile: Coquimbo, Nov. 2-16, 23 cases, 1 death; Iquique, Nov. 2, present.

Ecuador: Guayaquil, Nov. 1-30, 36 deaths.

France: Paris, Dec. 8-15, 5 cases.

Great Britain: Cardiff, Dec. 9-15, 5 cases, imported; Hull, Dec. 1-15, 7 cases, 3 deaths.

India: Calcutta, Nov. 10-24, 3 deaths; Madras, Nov. 10-30, deaths.

Persia: Hamadan, Oct. 1-31, Kerman, Kermanshah, Meshed, Shiraz, Teheran and vicinity, Yazd, present.

Russia: Moscow, Nov. 17-24, 1 death; Odessa, Dec. 8-15, cases, 2 deaths.

Spain: Barcelona, Dec. 10-20, 5 deaths.

#### YELLOW FEVER.

Brazil: Rio de Janeiro, Nov. 18-25, 1 case.

Cuba: Habana, Dec. 31, 1 case.

Ecuador: Guayaquil, Nov. 1-30, 14 deaths.

#### CHOLERA.

India: Calcutta: Nov. 10-24, 159 deaths; Madras, Nov. 10-30, 5 deaths.

#### PLAGUE.

Brazil: Bahia, Nov. 10-17, 4 cases, 1 death; Rio de Janeiro, Nov. 18-25, 11 cases, 4 deaths; Sao Paulo, Nov. 11-18, 1 death.

Chile: Antofagasta, Nov. 22, 2 cases.

Egypt: Alexandria, Nov. 17, 6 cases, 2 deaths; Garbieh, 2 cases, 1 death; Guerga, Nov. 22-29, 25 cases, 11 deaths; Kenh, Nov. 22, 11 cases, 7 deaths; Nenchfeh, Nov. 30, 1 case, 1 death.

India: General, Nov. 3-17, 12,759 cases, 9,481 deaths; Bombay, Nov. 13-27, 27 deaths; Calcutta, Nov. 10-24, 33 deaths.

Peru: Catacaos, Oct. 19, 3 cases; Lima, 2 cases; Mollendo, case; Trujillo, 9 cases.

## Society Proceedings

### COMING MEETING.

Med. Society of State of New York, Albany, Jan. 29, 1907.

### SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, held at Baltimore, Dec. 11-13, 1906.  
(Continued from page 72.)

#### Cholecystectomy; Indications and Some Sequelæ.

DR. I. S. STONE, Washington, D. C., said that cholecystectomy has become popular because cholecystotomy has frequently failed to cure patients with gallstone disease. An important question, therefore, naturally arises, Under what circumstances should the gall bladder be removed? This question can not be answered until the possibility of a definite knowledge of the hepatic and common ducts is considered, especially their patency and contents, and if they are the seat of an infection. Stone is convinced that however popular this operation has become, the bad results have not as yet been reported as generally as would appear desirable. Nearly all of those who favor cholecystectomy as an operation of choice agree to operate when the gall bladder has, by reason of trauma, infection or malignant disease, become either useless or dangerous. The Mayos perform a cholecystectomy when stones are lodged in the cystic duct, the removal of which would leave a permanent interference with drainage; when the disease is confined to the gall bladder, and when it is filled with any fluid which has undergone septic change; when the gall bladder has become greatly thickened or has lost its function, or is the seat of inflammation without stone in which the liver ducts are not involved, or in malignant disease. Nearly all authors practically agree with the Mayos.

The contraindications to cholecystectomy are not numerous but are of great importance. All the authors agree on one point, namely, the propriety of leaving the gall bladder for drainage purposes in pancreatitis, especially the chronic interstitial variety. The same opinion is expressed by most authors regarding the propriety of leaving a gall bladder when cholecystenterostomy may be needed, as in certain common duct obstructions.



Stone's experience with cholecystectomy has been satisfactory in some particulars, and he finds it especially useful in those cases where the gall bladder has been out of use for a long time. In contracted bladder with an open choledochus, in obstructions of the cystic duct, whether due to stone or other causes which have resulted in permanent alteration of either bladder or duct, he finds the very best indications which will assure perfect cure. In cholelithiasis he has had two unfortunate results, because stones continued to pass at intervals after the removal of the gall bladder.

#### DISCUSSION.

DR. ROBERT T. MORRIS believes that surgeons will get better results if they include all gallstone and cholecystitis cases under one heading, and call them cholecystitis cases and adhesion cases. Adhesions in the region of the gall bladder and bile ducts will produce the same symptoms as gallstones, whether gallstones are present or not. With increased experience he inclines more and more toward the complete removal of the gall bladder, for the reason that in many patients there is a chronic infection going on all the while.

DR. W. P. CARR, Washington, D. C., thinks surgeons should consider these cases more as instances of cholecystitis and the gallstones as incidental, because gallstones do not cause any symptoms until they produce cholecystitis or obstruction of the common bile duct. It is really a cholecystitis or an obstruction of the bile ducts that leads to the diagnosis of gallstones. He thinks that the gall bladder should be left unless there are positive indications for its removal.

DR. SAMUEL LLOYD, New York, said the possibility of an occlusion of the duodenal opening in gallstone cases is not infrequent. He has operated once for congenital closure of the opening from the ampulla of Vater into the duodenum. In a number of gallstone cases surgeons find a very much dilated common duct, that is, the duct is distinctly larger than usual, and one should suspect occlusion at the ampulla of Vater, the stone coming down and acting as a ball-valve, pushing against the duodenal opening, producing an inflammatory condition, and finally contraction. Choledochoduodenostomy offers the only hope of recovery in such cases.

DR. HENRY O. MARCY, Boston, said that 18 years ago he operated on a woman for the removal of a gallstone in the common duct. A few weeks ago he operated on the same person for the purpose of releasing adhesions which had caused biliary obstruction. The woman has recovered from the operation.

DR. J. M. BALDY, Philadelphia, said that in many cases a diagnosis of gallstones or gall bladder disease is made, yet at the operation nothing is found, yet the patient may have undoubted symptoms of long standing gallstone trouble. On the other hand, in other cases operations have disclosed gross disease of the gall bladder; the patient has been relieved apparently, but after leaving the hospital there has been a return of the symptoms, even after a secondary operation, or cholecystectomy.

DR. JOSEPH PRICE, Philadelphia, reported 4 recent cases, and said that in two, when he opened the abdomen, he had to sidestep to get out of the way of the filth of gallstones. These patients were dying, and he was called to operate on them because they were dying. They were not suitable cases for the removal of the gall bladder. He believes he would have lost them on the table had he attempted to remove their gall bladders. He drained, put in cofferdams and the patients are now well.

DR. FRANK MARTIN, Baltimore, resorted to cholecystectomy in 14 cases out of 60. In most of the 14 cases there was a chronic cholecystitis, with disorganized gall bladder and acute gangrenous infection. In two or three of them there was an acute gangrenous inflammation of the gall bladder. In these cholecystectomy was followed by excellent results. He has had no deaths or serious shock following the operation.

DR. HOWARD A. KELLY, Baltimore, said that when he operates for any intra-abdominal pathologic condition, it is his practice to examine the gall bladder, among other organs, to determine whether it is diseased or whether gallstones are present or not. He believes in cholecystectomy where the gall

bladder is grossly diseased, although one can not always do an ideal operation. He recalled 2 cases in which an ideal operation could not be done on account of the great density of the adhesions.

DR. CHARLES H. MAYO, Rochester, Minn., has operated occasionally after having made a thorough examination and thinking he had a case of gallstones, but found no stones. It is rare, however, for them to diagnose gallstones or disease of the bile ducts, even though no gallstones are found, without finding some abdominal condition which would have made it necessary to operate. He does not think a patient cares whether he has gallstones, duodenal ulcer or ulcer of the pylorus, if he can be relieved. Some years ago he operated and found a blue gall bladder, which is ordinarily considered a healthy gall bladder, but covered with adhesions. He drains such gall bladders and tries to relieve the adhesions. Two of these cases were reoperated, one a year afterward, the other two years thereafter, for the same condition, and at that time they found that a duodenal ulcer was the cause, which was overlooked at the first operation.

#### Hodgkin's Disease—A Type of Sarcoma.

DR. WILLIAM B. COLEY, New York, said that the theory which at the present time receives the greatest support is that Hodgkin's disease is a separate entity, in the nature of an infective process.

The only other theory that has received much consideration is that Hodgkin's disease is of the nature of a malignant tumor or a variety of sarcoma. Coley believes in the malignant nature of Hodgkin's disease. His observation has been that fever is not an infrequent occurrence in malignant disease, especially in sarcoma, if generalization has taken place.

As to the neck being the frequent starting point of Hodgkin's disease, suggesting the possibility of infection, he states that he has observed 70 cases of sarcoma of the neck in a total of 615 cases. As another reason for regarding the process of the nature of a sarcoma, Coley cites several cases in which the clinical diagnosis was sarcoma, while the pathologic report read Hodgkin's disease. Cases of Hodgkin's disease pursue a clinical course identical with that of sarcoma, infiltrating the surrounding tissue and causing death in precisely the same way.

Coley's conclusions, based on a study of upward of 600 cases of sarcoma, of which 70 originated in the lymph glands of the neck, are that Hodgkin's disease is merely a special variety of sarcoma, representing a fairly definite clinical pathologic type, but in many cases shading off into other types that correspond most closely with that of an ordinary round-celled sarcoma.

#### Management of Laparotomy Patients and Their Modified After-Treatment.

DR. HERMAN J. BOLDT, New York, said that no particular preparatory treatment is necessary for patients on whom it is intended to do an abdominal operation, unless the operation involves the opening of the stomach or the bowels. Stomach lavage is of benefit at the conclusion of the operation. Patients should not be kept unnecessarily under an anesthetic. The application of a tight bandage around the upper part of the thighs, to keep a blood reservoir in the lower extremities, in exsanguinated and very weak patients, is excellent. The same may in exceptional cases be done with one of the upper extremities. These bandages are taken off as soon as the operation has been completed, and thus more blood is thrown into the trunk. Strychnin during and after an operation should be used with more care than is usually done. The intravenous infusion of a 0.9 per cent. saline solution should not be too long delayed when the condition of the patient makes it evident that its employment may be of benefit. In instances of large myomata, where the patient has been much exsanguinated by hemorrhage, it is desirable that the infusion be begun as soon as the patient is fully under an anesthetic, so that by the time the operation has been completed about 1,000 to 1,500 c.c. may have been infused.

The application of a very simple dressing over the wound, and the adjustment of a snugly fitting Scultetus bandage of oxid of zinc plaster, are made. The administration



of a dose of morphin is desirable if there is restlessness or pain, the medication acting clinically as a heart stimulant. The author allows regular diet and unrestricted mobility within 24 hours after the operation, unless specially contra-indicated. The patients are allowed to get out of bed as soon as possible after an operation. He avoids forced catharsis before the first four or five days after an operation unless there is a special indication for it.

In cases where resort to vaginal drainage is had, or where it is evident that there will be some secretions intraperitoneally after an operation (as in purulent cases and oozing from torn adhesions), trunk elevation is employed as soon as the patient is put into bed. For this the employment of a bed lifter, or the placing of high blocks or chairs under the head of the bed, is preferable to back rests.

#### Treatment of Senile Gangrene.

DR. EDWARD H. OCHSNER, Chicago, called attention to the fact that there are two distinct types of senile gangrene, the first occurring in cases with only moderately generalized arteriosclerosis, but in which there is a distinct mural thrombus. In this class of cases there is an early formation of a distinct line of demarcation, and it is best to delay operation until this line of demarcation has become well established, and then to amputate directly through the line. In the second class of cases there is a marked generalized arteriosclerosis, the whole affected extremity is markedly involved, there is no tendency to the formation of a line of demarcation, and an early high amputation is indicated.

(To be continued.)

### OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Regular Meeting, held Oct. 4, 1906.*

The President, DR. WILMER KRUSEN, in the Chair.

#### The Non-Absorbable Ligature in Pelvic Surgery.

DR. FRANK C. HAMMOND thought it should not be considered sound surgical practice to tie masses of tissue with heavy non-absorbable silk if catgut can be obtained. The ideal ligature should consist of material capable of keeping the tissues in contact, sufficiently strong to enable the tissues to proliferate and effect a living union of the parts, and that after the accomplishment of this the material ought to become eliminated without disturbance of the parts.

#### DISCUSSION.

DR. E. E. MONTGOMERY has been using both animal ligatures and sutures for a number of years, all buried sutures being of chromic catgut. So long as three years subsequent to an apparently aseptic operation he has seen abscess develop. In some suppurative conditions the removal of all pyogenic material is impossible and, no matter how aseptic the operation might be, infection of the silk ligature is probable.

DR. F. H. MAIER compared the present work with that of some years ago when in the dispensaries it was not unusual to have apparently entirely successful cases return months or years afterward with abscesses, inflammatory masses of the broad ligament or sinuses, for secondary operation.

DR. L. J. HAMMOND thought the ideal ligature has not yet been found. Catgut in the abdominal cavity might form one of the most fruitful culture mediums, and he hesitates to use it when all pyogenic conditions have not been removed. In the presence of pyogenic conditions, should further suppurative processes develop, an insoluble substance like fine silk furnishes a sort of drain; and its presence as a foreign body might produce sufficient irritation to be quickly walled off. Another advantage is its greater security against slipping.

DR. A. B. BAIRD has used both silk and catgut, with probably better results in the use of the animal tissue. He thinks, however, that there are well founded objections against the catgut which have not yet been overcome.

DR. BARTON COOKE HIRST has twice changed his practice in regard to suture material; at first using nothing but silk; then nothing but catgut. Except in suspension of the uterus and in intestinal work, for which Pagenstecher's thread is employed, he uses catgut exclusively, since it is now possible to

make it absolutely sterile and also to preserve its tensile strength. It does not break nor does he have abdominal sinuses from its use.

DR. H. D. BEYEA agreed in part in the advantages claimed for catgut, but believes it had the disadvantage, as compared with silk, in greatly increasing the danger of hemorrhage. He pointed out that the ties can never be as sure as silk, and the necessity of making two ties or more on important blood vessels constricts a large area of tissue. Silk, No. 4 Tait, has given him practically no trouble. He does, however, see cases of persistent fistulae caused by silk ligatures. He attributes much of his success with silk to the method of preparation. This is by sterilization by the fractional method, and at the time of operation it is allowed to soak for several minutes in a 1 to 500 mercuric chlorid solution. In puerperal or acute infection he uses catgut.

DR. CHARLES P. NOBLE abandoned silk in abdominal surgery 10 years ago, but he still uses silk in intestinal surgery and in hysterorrhaphy, although he believes that catgut could well be substituted in most of these operations. In sinuses resulting from the use of silk he does not operate, but uses a hook of his own device, similar to a crochet hook with a long handle, with which he fishes for the ligature and withdraws it. He has had no trouble with the catgut, which is sterilized by the eumol method. To prevent too ready absorption of the catgut it is first chromicized and then sterilized by the eumol method. He has not had secondary hemorrhage from the use of catgut, and has had no reason to believe that it has ever caused infection.

DR. BROOKE M. ANSPACH stated that at the University Hospital formaldehyd-cumol catgut is used, the gut being soaked in 10 per cent. formaldehyd solution for 24 hours, washed and dried, and then cumolized in the usual way. The plan has been adopted of storing the rings of catgut in a double envelope. The catgut is placed in the envelope before being cumolized and the entire package is subjected to the eumol process. At the time of operation the nurse tears off the outer envelope and the inner one is removed by an assistant. This provides an easy method of transportation and protection against contamination.

#### Relaxation and Atony of the Non-Puerperal Uterus Incident to Dilatation and Curettement.

DR. F. H. MAIER cited a number of cases of complete loss of tone in non-puerperal uteri during the performance of this operation and pointed out the increased danger of perforation at this time. Mention was also made of the injustice that may be done to the patient when atony is mistaken for perforation, if an operation commenced for the relief of a definite train of symptoms were left unfinished. The author is in accord with Kossman, Schaeffer and Van Tussenbroek as to the possibility of the occurrence of atony in a non-puerperal uterus, and is inclined to think that it only takes place in the presence of some pathologic condition of the walls.

#### DISCUSSION.

DR. CHARLES P. NOBLE thought that if the non-puerperal uterus can relax, knowledge of the fact is important. It has happened in his practice a number of times that the curette passed through the external os to the length of some inches, which led to the belief that the uterus had been perforated, and he thought it possible that such an explanation is not always correct. A case was mentioned in which this happened and in which at a subsequent hysterorrhaphy no evidence of perforation could be found. It was suggested that the relaxation of the uterus is responsible for the incident.

DR. JOHN M. FISHER recalled a case in which he had dilated the uterus with bougies and subsequently curetted, when he felt that the curette entered the uterus at a greater depth than he thought it should. Abdominal section did not reveal perforation of the uterus and he concluded that the case was one of relaxed uterus incident to the curettement.

DR. E. E. MONTGOMERY said that this explained several cases in which he had dilated the uterus and in which, although the curette had passed to a greater depth than apparently was justifiable, no perforation was found.



## Book Notices

**SURGERY, Its Principles and Practice.** By Various Authors. Edited by W. W. Keen, M.D., LL.D., Professor of Principles of Surgery and of Chemical Surgery, Jefferson Medical College, Philadelphia. Vol. I. With 261 Illustrations and 117 Colored Plates. Cloth. Pp. 983. Price, \$7.00 net. Philadelphia: W. B. Saunders Company, 1906.

The opening chapter of this great system of surgery is entitled, "A Narrative of Surgery." Herein is found a brief sketch of the lives of the great builders of surgery from Hippocrates to Lister, together, with their deeds recorded in a most entertaining and instructive manner, by James G. Mumford.

Chapter 2 is by George W. Crile, on "Surgical Physiology." This title includes "such laws and factors as are used in surgical practice, which rest largely on altered physiologic actions," and is a direct outgrowth of the immense amount of experimental work which has been done by surgeons on living animals as well as of observations during operations on man. The great amount of experimental work done by Crile has particularly suited him to write this somewhat novel though instructive chapter.

Chapter 3 by John C. DaCosta, Jr., is on the "Examination of the Blood." Technical methods of blood examination are not considered but the clinical significance of the blood findings are carefully discussed. The writer is justly conservative regarding the value to be placed on many of the blood findings, both positive and negative, in the light of our present knowledge and states it as a maxim that if the surgeon "would derive from this method of research, reliable information of diagnostic and prognostic application," he must "correlate the blood report with the other clinical symptoms."

Chapter 4 is on "Infection and Immunity" by Ludvig Hektoen. The nature of the infecting agents, the manner in which they produce disease, and the means by which the living body is able to resist or overcome infection, are all clearly set forth. No more convincing argument could possibly be presented of the utter futility of the promiscuous "drugging" which is constantly going on, than a careful perusal of this chapter on the natural means of defense of the body against infections.

Chapter 5 is on "Inflammation," by John George Adami. There is perhaps no subject so difficult to write on satisfactorily as is inflammation. It constitutes the very essence of pathology, yet is but a modified expression of the normal or physiologic activities of living cells. A correct understanding of its nature is essential to a clear comprehension of what constitutes disease. The subject has been well handled and by one whose extensive studies along that line have enabled him to write with authority.

Chapter 6 on "Process of Repair" by Francis Carter Wood, is the logical sequel to the chapters immediately preceding. In attempting to define "repair" there is considerable encroachment on the subject of inflammation, which, perhaps, is not altogether unavoidable, yet leads to a repetition of much that is found elaborated under the proper head. The repair of the various tissues is taken up and finally that of the different organs separately.

Chapter 10 on "Thrombosis and Embolism," 11 on "Erysipelas," 12 on "Tetanus," 13 on "Diseases Caused by Special Infections," 14 on "Diseases Directly Derived from Animals, Insects and Reptiles," and 16 on "Scurvy," are by Charles Hanson Frazier. Under the treatment of tetanus the subdural injection of a solution of magnesium sulphate is mentioned, but the dangers of repeating the injections are not sufficiently emphasized, nor is the strength of the solution mentioned. The great value of the prophylactic injections of tetanus antitoxin is well shown and its use in every suspected case strongly recommended.

Chapter 15 on "The Traumatic Fevers" is by Eugene Alfred Smith. It deals in a general way with the various surgical infections, septicemia, pyemia, etc. Great stress is laid on the needs of a more concise nomenclature. Many of the older terms are discarded entirely, while those which are retained are used with more precision to define clinical entities.

Chapter 17 on "Rickets" by Edward Hall Nichols, is rather short, and details, particularly in regard to treatment, are wanting.

Chapter 18 on "Surgical Tuberculosis" is by John Chalmers DaCosta. The general subject of tuberculosis in regard to its etiology, modes of infection, histology, progress, etc., is well handled. Tuberculosis of special organs and tissues is but briefly touched on, as it more properly belong to the "Special Part" rather than the "General Part." However, the statements that "primary tuberculosis of the kidney is rare," and "the disease is far more common as a process secondary to tuberculosis of the prostate, bladder, or epididymis," is directly contrary to the experience of most modern operators, who find the disease primary in one kidney in at least 90 per cent. of the cases in the early stages.

Chapters 19 on "Chancroid" and 20 on "Syphilis" are by Edward Martin. Both of these are modern and up-to-date, but the author is conservative and does not commit himself as to specificity of the *Treponema pallidum*, although the organism has now been uniformly found in practically all syphilitic lesions, except late ones, and also in congenital syphilis.

Chapter 21 on "Tumors" is by John Bland-Sutton. The classification adopted is certainly commendable for its simplicity and until more is known concerning the true nature and cause of tumors it is very satisfactory. In regard to the origin of cancer, the author says: "The embryonic theory is now discarded as an explanation of the origin of cancer." The parasitic theory is clearly presented and while, in a manner, a parallelism is drawn between the method of development and extension of certain infections and cancer, the author frankly admits that "up to the present no micro-organism has been found which will satisfy even one of Koch's postulates." A very interesting part of the chapter is that on "Teratomata and Dermoids," concerning which we have gained so much knowledge during the past few years.

Chapter 22, the last, on "Wounds and Contusions," including "Shock and Collapse," is by George W. Crile. As is well-known, the author has done a large amount of experimental work on shock, which has been of great value in leading to a clearer understanding of this condition. The results of his work are epitomized in this chapter. On account of the arterial changes which have been produced by the experimental use of adrenalin chlorid even in single doses is shown by recent studies, a word of caution is necessary on the indiscriminate use of this agent in shock.

The volume contains 983 pages, with 261 text illustrations and 17 colored plates, and is well gotten up. After each chapter is a bibliography, which, while not pretending in any sense to be complete, contains a list of the chief articles. Should the succeeding volumes maintain the high character of the first one, the work is certain to be a most valuable one and a standard on surgery for some time to come.

**HEART DISEASE AND ANEURISM OF THE AORTA, with Special Reference to Prognosis and Treatment.** By Sir William H. Broadbent, Bart, K.C.V.O., Physician in Ordinary to H. M. the King, and to H. R. H. the Prince of Wales, etc., and J. F. H. Broadbent, M.A., M.D., F.R.C.P., Physician to Out-Patients, St. Mary's Hospital; Assistant Physician to the London Fever Hospital. Fourth Edition. Cloth. Pp. 479. Price, \$4.00. New York; William Wood & Company.

This book is made up largely of the rewritten lectures delivered by Sir William Broadbent before the Harveian Society in 1884 and also the Lumleian Lectures in 1891. These lectures dealt with "Prognosis in Diseases of the Heart." With the subject of prognosis as a nucleus, he has grouped enough pertaining to etiology, pathology, diagnosis and treatment to make a fairly complete manual of diseases of the heart. The subject of treatment in particular has been especially elaborated and is one of the strongest features of the book. The volume has grown materially since its first edition in 1897, by many additions, some of the new matter being added by the younger Broadbent so that one feels that it might have been better for the authors to have written a more nearly complete treatise and not one that is so much stronger in some parts than in others.

In a book, then, confessedly treating of pathology, diagnosis and symptomatology in a rather scanty manner, it is easy to find sins of omission, some of which even in a sketchy outline



seem serious. Thus in speaking of the diagnosis of pericarditis with effusion there is no mention made of the occurrence of bronchial breathing in the back (Ewart's sign), of the so-called Roteh's sign, of the importance of locating the apex impulse inside the outer left border of dullness, and of the occasional close resemblance between massive pericardial effusions and those in the pleura. Also under adhesive pericarditis the paradoxical pulse is not mentioned, nor the occasional recurrent paralysis, nor the pericarditic pseudocirrhosis of the liver (Pick). Under aortic regurgitation the auscultatory phenomena in the peripheral vessels are omitted. The discussion of right heart lesions is incomplete. X-ray as a diagnostic aid is, perhaps, not given enough importance.

Other chapters, e. g., the one on Dilatation, are far more complete. Sins of commission are comparatively rare.

It is, as has been said, in the chapters on prognosis and treatment, that the real strength of the book lies. Here the broad, common-sense views are admirable and show the result of years of experience and of close observation. We might cite the discussion of the study of the heart tones in mitral stenosis as illustrating this point. Emphasis is rightly laid on the importance of individualization in the matter of treatment and doing away with ironclad rules that must be put into operation the moment a diagnosis of disease of the heart is made. The proper value and the dangers of exercise are clearly brought out; the same is true of the use and abuse of digitalis. We are pleased to see one courageous enough to speak plainly about some of the extravagant claims made for the Schott plan of treatment. We quote (page 238): "It is difficult, therefore, to attach any real value to the remarkable diagrams of the cardiac dullness 'before and after' the bath, published in quantity by the enthusiastic advocates of this treatment, and one is compelled to question their accuracy if not their honesty." He does not entirely condemn this plan of treatment, but does condemn some of the methods of proclaiming the treatment as well as some of the conclusions reached by the Schott enthusiasts.

The make-up of the book is good; it is written in a clear, fluent style and is worthy of taking its place in the numerous company—not in the front rank, perhaps—of the English writers on the heart: Stokes, Walshe, Hope, Sibson, Latham, Gibson, Balfour, Ewart and others.

**TREATMENT OF SYPHILIS.** By A. Fournier, Professor at the Faculty of Medicine, Member of the Academy of Medicine, Physician to the St. Louis Hospital, Paris, English Translation, second edition revised and enlarged by C. F. Marshall, M.D. Cloth. Pp. 528. Price, \$5.00. New York: Rebman Company, 1906.

This is a translation of the second and revised edition of his well-known treatise on the Treatment of Syphilis. The book is an excellent epitome of the best methods of managing the disease, as well as the patients suffering from the disease, a distinction well emphasized in these pages.

Between the same covers is a translation of the work by the same author on the prophylaxis of syphilis, treating very fully of the sociologic questions concerned largely with the victim of syphilis, the progenitor, the wet-nurse, the vaccinator, the women who too often distribute the scourge by their immoral practice; as also of the societies for moral and sanitary prophylaxis, the regulation of prostitution by the state, the instruction of young men who are exposed to the common temptations of their age, and kindred topics. Each subject is discussed clearly and with a view chiefly to the instruction of the reader. Few if any works published in the English language cover more completely and satisfactorily the difficult themes here presented.

The faults of the book, if such they may be called, are of two orders. The first is the failure to reflect fully the great work done by Neisser and others in connection with the organisms supposed to be factors in syphilis, and their transmission to the anthropoid apes. The second is inevitable in a book written by a French author. The concise and incisive sentences of Allbutt, or Wood, or other English authors could scarcely be expected in a writer of Gallican instincts.

Here and there doctrines are enunciated which, in the

scrutiny of the experts, would scarcely pass unchallenged. For example, in the chapter devoted to treatment of the initial sclerosis by excision, after a just and comprehensive exposition of the arguments for and against the practice, the author (page 39) distinctly favors it, notwithstanding the frequent demonstrations of the futility of this method. Patients have been photographed with the scars of excision in evidence who were plentifully covered with a brilliant and in no way modified exanthem of systemic disease. As a matter of fact, the practice of excision should now be condemned as both futile and barbarous. In justice to the author, however, it is to be explained that in the note appended to his chapter on this subject (page 40) he explains that the method appears to have "spontaneously died out," though "nevertheless it should not be consigned to oblivion." Such is the longevity of a faulty method when stamped with the seal of a great name!

The book, as a whole, will find its most appreciative reader in the general practitioner. It is a safe and a useful guide, and while in value as a storehouse of fact it does not compare with the labors of the distinguished author in the field of the ravages of "late" syphilis in the second generation, and in the stress of its attacks on the nervous system, it is to be said in extenuation that the field here covered offers far less facilities for the play of the author's original observation and keen analysis.

The translation has been well done.

**OUTLINES OF HUMAN EMBRYOLOGY.** A Medical Student's Handbook of Embryology. By G. R. Satterlee, M.A., M.D. First Edition. Cloth. Pp. 173. Price, \$1.25 net. New York: John Wiley & Sons, 1906.

This work is intended for medical students and comprises an outline of the principal facts in human embryology with the omission of details and theories which would be likely to confuse the beginner without assisting him to a general understanding of the subject. An understanding of normal histology is taken for granted. The first three chapters treat of the genital glands, the fertilization of the ovum and the formation of the body from the primary germ layers. The remaining chapters give the details of the development of each organ separately. Special attention is given to the common congenital malformations and their causes. The illustrations, which are purposely made diagrammatic, are clear, and opposite each plate is inserted a blank page on which it is hoped the student will make his own drawings. The work ought to make an excellent text-book and is sufficient as a book of reference for the ordinary needs of the practitioner.

**EATING TO LIVE, with Some Advice to the Gouty, the Rheumatic, and the Diabetic; a Book for Everybody.** By J. J. Black, M.D., Member of the College of Physicians of Philadelphia; Member of the Delaware State Medical Society, etc., Cloth. Pp. 412. Price, \$1.50. Philadelphia: J. B. Lippincott Company, 1906.

It is difficult to say whether this work is intended for the physician or for the layman; it lacks the scientific accuracy and systematic presentation which would be demanded by the physician and it is too technical for the layman. The lesson which it teaches, however, is important for both, namely, moderation in the amount of food as the first principle of diet. The ordinary facts regarding the composition and office of foods are plainly set forth and a very good account of Professor Chittenden's experiments is given. Mixed with the strictly scientific we have much Epicurean gossip as to the varieties of wine and the customs of society. Such interpolations doubtless serve to relieve the tedium of a scientific discourse and indicate that the book must not be judged according to strict professional standards.

**A MANUAL OF PATHOLOGY.** By G. McConnell, M.D., Pathologist to St. Louis Skin and Cancer Hospital, etc. Flexible Leather. Pp. 523. Price, \$2.50. Philadelphia: W. B. Saunders Company, 1906.

Dr. McConnell's manual is a creditable work of its kind. So long as there is demand for books that present the knowledge of a subject in the form, more or less, of a catalogue of facts. Then we must be thankful when the material is clearly and orderly arranged and the facts correctly stated, which is the case in this instance.



## Miscellany

### Phthisis and Superstition Among the Maoris.

Dr. Edwin Chill, Ealing, England, in the *British Medical Journal* for August 18, relates some interesting observations made on a visit to New Zealand. Though physically a powerful race, the Maoris are slowly dying out, like many other native populations when brought in contact with European civilization.

Of old they were divided into a number of tribes perpetually at war with one another. Their villages were built and stockaded on hills as a protection against sudden raids and they only descended to the plains to cultivate the land during times of temporary peace. Their clothing, which consisted of woolen matting, was well suited to protect their bodies from cold and damp. Since the establishment of a settled government, the Maoris have abandoned the more salubrious hills and have built their stockades on low-lying damp land. They have partially adopted European clothing, and men and women may be seen lazily standing outside their poorly-constructed huts or roaming about the streets clad in insufficient garments. This altered condition of habitation and dress, no doubt, produces in them the soil necessary for the growth and multiplication of the tubercle bacilli.

Dr. Chill states that they have also adopted European education and religion, for in every Maori village is the schoolmaster, who combines in his person the duties of lawyer, doctor, pastor, schoolmaster and friend. There is always the church, for the Maoris are all Christians now, but close by is the native meeting house with its grotesque carvings and symbols of old cannibalistic days. After a visit to the wonders of Geyserland, Dr. Chill's party arrived at a village beautifully situated on the shores of Lake Taupo. There had been nine deaths the previous week among the small community of natives, and three others were then lying seriously ill. Dr. Chill was asked to see them as the nearest medical man lived some sixty miles away. Accordingly, he was conducted to the first case, an emaciated young woman of 25, with all the symptoms of acute phthisis. There was a large cavity in the left lung, and a patch of consolidation at the apex of the right. She was lying on a mat stretched on the ground in a tent some 8 by 6 feet.

The next case was that of a child who had had three attacks of hemoptysis, and, fearing a fatal termination, the parents had called in a native medicine man, who had employed charms and incantations, and then prophesied the recovery of the patient. Hearing voices as Dr. Chill and a friend approached, the mother inside the sick tent promptly extinguished the candle; however, with a little persuasion, she came out and explained that she was afraid of the presence of an English medical man, as it might break the spells of the native doctor, and her child might die. They left, but not before Dr. Chill heard the patient give the characteristic cough associated with the last stage of phthisis. He was curious to know what excuse the medicine man would make for the failure of his prophecy. The reply usually made is simple enough: "If it had been a Maori complaint, recovery would have been certain; but what could he do against a pakeha (European) disease?"

The third patient lived in an outlying settlement, to which there was no road. The schoolmaster acted as guide, and conducted Dr. Chill through bush and swamp till they reached the place, about a mile and a half away. On the way the schoolmaster gave an account of his work and of his difficulties in treating patients with the aid of an elementary medical book and a case of drugs supplied by the government, as well as an account of the Maori character in health and disease.

It is well known, Dr. Chill states, that when a Maori is taken ill, as observed in some other primitive races, he will make up his mind that he is going to die and dies. Accordingly, on the first symptoms of illness, the tent is quickly fitted up in the garden adjoining, and the patient hurried into it, for should he expire in the house that house would be

"tabu," after which no native would live in it. Thus it is that in various parts of the country deserted houses are seen. Superstition dies hard among primitive peoples.

This Maori settlement is situated among a number of hot springs strongly impregnated with sulphur. The whole village is enveloped in the rising steam. Some of the pools, formed by the springs, are used for bathing, some for washing clothes, and those of intense heat for boiling water in kettles and cooking food. The question arises whether the constant inhalation of this steam, both here and in other parts of Geyserland, acts injuriously on the pulmonary tissues and is the exciting cause of tuberculosis.

The Maoris now number about 40,000, compared with a population of nearly 900,000 colonists. In the South Island they are practically extinct. They are mentally and physically superior to all the other native inhabitants of Oceania and add considerably to the charm and interest of New Zealand as a tourist center. Surely they are a race worth preserving. A little outlay should procure them qualified and more accessible medical advice and a sanatorium for the treatment of tuberculosis in place of their miserable tents. The great stumbling block, one can conceive, is the inborn native superstition, but even this is not an insuperable difficulty.

**Recognition for Labors of the Yellow Fever Commission.**—H. H. Donnelly (*George Washington University Bulletin*, v, 3) gives a historical summary of the steps in the discovery of the mode of transmission of yellow fever, especially with reference to the work of Dr. James Carroll. The work of Sternberg, although inconclusive, is recognized as necessary in clearing the ground for subsequent investigations, although both his *Bacillus X* and Sanarelli's *Bacillus icteroides* have been proved to have nothing to do with the etiology of yellow fever. Dr. C. Finlay received recognition at the Pan-American Medical Congress in 1901 as the discoverer of the part played by the mosquito in the transmission of the disease. The practical demonstration of the truth of the theory, and its culmination in the control of the disease, are due to the four men constituting the yellow fever commission, Reed, Lazear, Carroll and Agramonte. Of these two are dead. Reed and Lazear, the last having perished as a martyr to the cause of science, in demonstrating on himself that yellow fever is transmissible by the mosquito. Carroll and Agramonte remain. Carroll has been advanced to the position of professor of bacteriology and pathology in the Columbian (now George Washington) University, a place left vacant by the death of Reed; he also succeeded to Reed's position in the Army Medical School and was made curator of the Medical Museum; and in 1902 he was commissioned first lieutenant. He has been commended to the government for special honors by the legislative council of the American Medical Association in resolutions published in *THE JOURNAL*, Jan. 20, 1906. The highest honor, however, is proposed by the *British Medical Journal*, which proposes editorially, in its issue of Sept. 6, 1906, that the Nobel prize be divided among the four members of the yellow fever commission. When it is remembered that to his scientific abilities shown in the research, is added the courage which made him the first to undertake to produce experimental yellow fever in his own person, it must be admitted that Dr. Carroll is well worthy of the honor proposed.

**Influence of District Medical Societies on Intellectual, Moral and Scientific Progress.**—Dr. G. Paquin delivered an address with this title at a meeting of the Portneuf Medical Society, September 13, summarized in the *Bulletin Méd. de Québec* for September. He cited evidence to prove that the district medical societies are raising the level of the profession mentally, morally and scientifically, and are conferring on the physician the social influence to which he is entitled. "The physician to-day," he said, "is regarded as the depository of the knowledges of the day, the adviser of the authorities, and the counselor of the public in the safeguard of its most precious capital—health. If the district medical societies will coördinate their efforts—and this can be done only by grouping themselves around the general medical association and working in concert with that association—they can accomplish six great



works: 1, They can diminish, if not entirely suppress alcoholism, that social gangrene; 2, diminish the ravages of tuberculosis, which carries off annually 3,000 victims in the province of Quebec; 3, force every municipality to have a board of public health composed of men devoted to progress; 4, dictate to life insurance companies and to lodges, etc., a reasonable tariff which they will be compelled to accept; 5, insist on the adoption of a law tending to a satisfactory regulation of the manufacture and sale of 'patent medicines,' and, 6, protect the medical profession against so-called irregulars who each year impose on the legislature and pound on the doors of the licensing boards until they manage to obtain licenses which, once obtained, enable them to give free course to their shameless quackery and to exploit the credulity of our rural population and to discredit our profession. Organization will thus enable us to comfort our families, to fortify the vitality of our race, to protect religion, and to contribute to raise the moral and mental level of the country at large."

**Importance of Early Diagnosis.**—Professor Monprofit of Angers, presiding at the Nineteenth French Congress of Surgery, held at Paris, October 1 to 6, devoted most of his presidential address to the question of how to diagnose morbid conditions earlier. He stated that at present surgeons might relax their efforts for perfecting of their technic, and should turn their attention more to the perfecting of the diagnosis. Early operations are almost invariably easy, harmless and effectual, while tardy operations are difficult, tedious, dangerous and frequently ineffectual. The best way to perfect the diagnosis is to train the young medical student from the start at the bedside, to initiate him thoroughly in the art of diagnosing on which depends the art of curing. From the very beginning the medical student should examine patients and learn how to treat them, for all his life is to be spent with "la clinique et la thérapeutique." "From the day that the young man decides to study medicine he should haunt the hospitals," Trousseau used to say, and Monprofit adds, "and also the dissecting room." The hospital is not only a school for diagnosis and treatment; it is there alone that the questions of pure science can be presented in a manner to impress the student's mind and fix them in his memory. Then the laboratory should intervene to throw light on the diagnosis, elucidate the pathogenesis and guide treatment. Surgeons can not hope to make any serious progress in the surgical treatment of internal affections, he continued, unless in co-operation with physicians trained to make the diagnosis in the early stages, from the functional disturbances, not waiting for self-evident signs to appear, showing that the affection has run its entire course.

**Glycosuria from Refrigeration.**—K. Glaeser, in the *Wien. Klin. Wochschr.*, July 26, 1906, reports some very interesting observations on the effect of cold in producing glycosuria. Such observations were made some years ago by Bamberger on persons who had attempted suicide by drowning, and Glaeser's investigations confirm these results. The glycosuria does not follow exposure to cold water in all cases, but he found it in four out of nine. Experiments on animals by Araki have shown that in these cases the glycosuria is accompanied by the excretion of lactic acid in the urine. Glaeser found the same to be true of man. The origin of the lactic acid is somewhat certain, but appears to be due to a splitting of the sugar molecule into two molecules of lactic acid in consequence of the lack of oxygen. The glycogen disappears from the liver, which is to be attributed to muscular exertion as animals exposed to cold pass into a state of tetanus before death. The author suggests that as lactic acid is not found in diabetes nor in alimentary glycosuria, it is probably characteristic for those conditions in which a temporary glycosuria is produced by a sudden diminution of oxidation in the system. Such conditions would include a variety of forms of poisoning in addition to sudden cooling of the body. The demonstration of sugar and lactic acid in the urine may become an important sign in forensic medicine as a means of determining whether, in the case of a body found immersed in water, the individual had died by drowning or had been placed in water after death. Some conclusion as to the time

of death might be drawn from the pathologic constituents of the urine.

**Endemic Cancer.**—At the recent international cancer conference at Heidelberg, Sticker of Berlin related that in a certain small town the vital statistics had been kept very carefully for 80 years. They show that out of the first 10 cases of cancer on record, 8 occurred in 6 houses on a certain street; in the next decade 7 out of the 10 cases were in this same street, and up to 1905, fully 25 of the total 41 had occurred in this street, and 23 of the cases in only 7 families. Prinzing exhibited maps showing the distribution of cancer through southern Germany and the adjoining districts in Austria and Switzerland. Cancer of the female genital organs is about evenly distributed, but cancer of the stomach and esophagus seems to occur in endemic foci. He suggests the possibility of different parasites for these two groups of cancers. Stralsund is said to be the most affected of all districts in Prussia, and Behla exhibited maps showing that the foci are to be found in low-lying, damp parts or in the vicinity of rivers and ponds, while cancer is comparatively rare on the dry, elevated plateaus. He called attention also to the frequency of cancer in the trout of certain ponds, while other ponds near by are entirely free from it. He thinks that the parasite of cancer should be sought in damp soil. Czerny is inclined to believe that there must be some intermediate host.

**Goat's Milk for Infants.**—Cahill, of London, in a letter to the *Lancet*, states that it is surprising that at this day and in spite of the work carried on for so many years by the British Goat Society and others, there should be any hesitancy in admitting the superiority over cow's milk for infant feeding. Goat's milk, he states, is primarily more digestible because its casein forms only a flocculent curd and the infant does not suffer from a tendency to accumulation of hard, cheesy masses, as with cow's milk. The goat, according to Cahill, is singularly resistant to tuberculosis, an important consideration in view of the wide dissemination of this disease among dairy cattle. The nourishing power of goat's milk is just as high as that of cow's milk, and the milk is very efficient as the sole food of an infant up to the age of six or eight months. The sole objection is the difficulty and expense usually entailed in obtaining goat's milk from a reliable source at the moment when it would be of value. Cahill declares that there is no unpleasant or peculiar smell or odor attached to the milk, provided that the goat be kept under cleanly conditions and apart from any association with the male of the species. He reports a case in which an infant was fed on goat's milk and remained entirely free from the digestive disturbances which generally fall to the lot of the bottle-fed baby.

**Moslem Table Etiquette.**—The *Lancet* gives the following rules as set down by old Moslem precept as to how to behave religiously and appropriately at meals:

Wash your hands and mouth before eating. When eating never put one leg on the other, nor put your elbows on the table as this hinders good digestion. Never be a slave of your repast and never touch any meal if you are not hungry. Be ever content with what you find before you and never give yourself great pains in preparing choice dishes. Be always, if possible, at the table in company with friends, as the Prophet never partook of his meals alone. Always begin and end your meal with thanksgiving to Allah. Always eat with your right hand and swallow, before and after food a little salt. It shows good upbringing and is pleasing to Allah ever to put into the mouth only small morsels and never to make any observations on the defective qualities of dishes. Never cut bread with a knife, but, as the Prophet did, break it. Never choose the fruit offered but take any *au hasard*. Never wipe your fingers with bread. Avoid blowing on a hot dish, but wait until it gets cool. Eat dates, apricots and other similar fruit one by one, remembering in eating them thus the unity of Allah. Avoid at the table drinking much water. Your meal finished, use attentively the toothpick, gather up the crumbs, and wash again your hands and mouth. Lastly, render thanks to Allah.

**Damages for Sickness in a Boarding House.**—A letter from Frankfurt in the *Med. Klinik* for October 21 states that the proprietor of a large boarding house recently sued for damages on account of injury sustained from the illness of one of the boarders, who had been taken with typhoid fever of such a severe type that the attending physician refused to consent to removal to a hospital. The courts decided against the plaintiff, saying that the boarder was liable for damages only in case she had entered the boarding house knowing that she had typhoid fever—which no one claimed.



## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

NEW YORK State Boards of Medical Examiners, Albany, January 29-February 1. Chief of Examining Division, Charles F. Wheelock, Albany.

NEVADA State Board of Medical Examiners, Carson City, February 4. Secretary, Dr. S. L. Lee, Carson City.

KANSAS State Board of Medical Registration and Examination, Topeka, February 12. Secretary, Dr. F. P. Hatfield, Grenola.

NEBRASKA State Board of Health, State House, Lincoln, February 13-14. Secretary, Dr. George H. Brash, Beatrice.

**Rules Governing Examinations in Louisiana.**—Dr. F. A. Larue, secretary of the State Board of Medical Examiners of Louisiana, writes that the following rules are announced at the beginning of regular examinations:

1. All candidates are on their honor not to crib or to give any information. If so caught, forfeiture of the paper is the penalty.
2. No one can leave the room for more than 3 minutes.
3. No one can leave the room before handing in his paper, or after taking questions for the next subject.
4. Only one candidate is allowed out at a time.
5. Each paper must be folded in such manner as to permit ready perusal.
6. The name of the candidate and the subject must be written on the outer fold of each paper.
7. Any applicant has the right to ask the board explanations on apparently ambiguous questions.

He states that these rules cover all the points that the board considers practicable and just.

**Rules Governing Examinations in South Carolina.**—Dr. W. M. Lester, secretary of the South Carolina State Board of Medical Examiners sends us the following rules governing examinations for license to practice medicine in that state.

1. An examination is required before a license is granted to practice medicine in South Carolina. The law requiring such procedure went into effect Jan. 4, 1894, and has been enforced since that date.
2. Each applicant is required to make an affidavit setting forth his age, place of residence, time and place of each course of lectures, date of graduation. The affidavit must be corroborated by the exhibition of his diploma and must present a certificate of preliminary education.
3. A fee of \$10.00 must accompany the application. Half of this fee is returned in case of failure.
4. Examinations are always in charge of some member of the Board of Examiners.
5. Each candidate is known by his number, which is arranged as follows: Envelopes are numbered and each contains a blank bearing the corresponding number, on which the applicant writes his name and address. This completed blank is returned by the applicant to the envelope and the envelope sealed by him.
6. Each candidate places on his answer papers the number given him and also the year of his graduation. No other marks of identification are allowed on the answer papers.
7. The answer papers are collected by the member of the board having charge of that subject. Such member examines the answer papers and marks each candidate by placing the marking opposite the candidate's number. These markings are sent to the secretary, who tabulates them. When the markings are completed the envelopes containing the names are opened and these names are placed opposite the corresponding numbers.
8. No dishonest methods are tolerated, and any candidate who disregards this rule is debarred from further examination. This rule includes the giving or obtaining aid.
9. Ten questions are given on each paper, and all subjects for examination are covered by the ten question papers given.
10. The time allowed for each examination paper shall not exceed three hours.
11. No candidate is allowed to leave the room after the question papers have been distributed, until he has completed his answers and delivered the same to the member in charge.
12. The examination is in writing and in the English language. If any candidate is unable to write in the English language, he will be allowed to write in his native language, provided he pays an extra fee of \$15.00, to cover the cost of translation.

13. A general average of 75 per cent. must be attained, and not less than 60 per cent. on any one branch.

14. Candidates who fail to receive a license at any examination must be re-examined in all branches on which he made less than 80 per cent.

15. Handwriting of candidates must be legible and orthography must not be such as will disgrace the medical profession.

16. The examinations of the State Board are divided into two sections: The first covering the junior or primary branches of medical education, hereafter to be designated as the Junior Curriculum. The second, covering the senior and clinical portion of medical education, hereafter to be designated as Senior Curriculum.

The Junior Curriculum comprises the following branches: 1. General anatomy; 2, physiology and histology; 3, materia medica and medical botany; 4, chemistry, organic and inorganic, and medical physics; 5, bacteriology and pathology.

The Senior Curriculum comprises: 1. Anatomy, regional or surgical; 2, practical hygiene and sanitary science, state medicine; 3, practical urinalysis, urinary microscopy; 4, therapeutics; 5, surgery, general and special; surgical procedure; 6, practical medicine and diseases of children; 7, practical obstetrics and gynecology; 8, medical jurisprudence and toxicology.

All applicants before the board, holding a diploma from a four year graduated medical college of established reputation, who have pursued a study of four separate courses, and have attained a mark of not less than seventy-five per cent. on each individual branch of their curriculum, as evidenced by certificate from the dean of their college, are exempted from examination in the Junior Curriculum, and are examined only on those subjects contained in the Senior Curriculum, as above outlined. All others must take both the Junior and Senior Curricula.

**Rules for Examinations in Missouri.**—Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, sends us the following statement of the method of examining applicants for license to practice medicine in that state:

There is nothing unique in the method of examining applicants for license to practice medicine in Missouri. An honest, square deal, that the board may determine the fitness of the applicant is all our law contemplates; but fitness as to character is taken into consideration as well as the requisite knowledge for answering a certain per cent. of the questions asked. The character of the applicant is ascertained in part by the same being vouched for by at least two reputable physicians in the application.

This admits the applicant to our examination rooms where general deportment completes the character records and this is watched closely. Cheating and grossness in the examination rooms make greatly against the applicant, for no one who is caught cheating is allowed a certificate; it matters not how his grades may run. Each applicant must rely wholly on his own knowledge of the questions asked. No one is permitted to help another in any way; applicants are arranged at tables with this in view, being separated so far that all temptation to communicate one with another is removed. No books or help of any kind are permitted in the examination room. After all are seated one set of questions is distributed to the applicants and no one is allowed to leave the room until the allotted time is up and the papers handed in.

Ten questions are selected from each of the twelve branches, anatomy, physiology, chemistry, bacteriology, surgery, practice of medicine, therapeutics, gynecology, obstetrics, pathology, hygiene and medical jurisprudence.

Our law permits under-graduates to take the examination; this is probably one reason that there is so large a per cent. of failures before the Missouri State Board of Health, yet as a whole those who take our examinations are honest, brainy, hard workers, worthy of any calling and this board is especially proud of its licentiates. It is always thought better to refuse a license to one who possesses sufficient knowledge to pass the examination if he is void of character than to grant a license on his technical knowledge and have to revoke the same for dishonorable and unprofessional conduct.

After the examination in the twelve branches has been completed, which requires three days, each member of the board (except the secretary), examines and grades his part of the papers; the time allowed for this is from two to six weeks, according to the number of applicants, after which the board meets at the appointed time and place to pass on these applicants seriatim. Those who make an average of 75 per cent. or above are granted a license to practice medicine in Missouri.



Old practitioners are given five points credit for five years' honorable practice since graduating from a reputable medical college and one point for each succeeding year thereafter. Of course it is expected of the old practitioner that he be well up in such branches as obstetrics, gynecology, therapeutics, surgery and practice of medicine.

**Rules Governing Examination in Virginia.**—Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, sends us the following rules governing examinations for license to practice medicine in that state:

1. So far as possible, but one applicant at a desk.
2. Applicants shall be seated by lot at each examination, signing their papers by the register number only.
3. No compend, notes, or text-books allowed in the examination room.
4. Conversation of any kind between the applicants will be considered as an attempt to either give or receive information, and the applicants so conversing will be thereby disqualified for that examination.
5. Applicants are not permitted to leave the room except when accompanied by an examiner, and then not within one hour from the time questions are announced.
6. No visitors allowed within examination hall during the progress of an examination.
7. For future examinations, plain paper must be used by applicants, and any reference by sign or expression which shall indicate the school of preparation or graduation, or any reference to a professor in same, shall disqualify the applicant making such reference or indications.
8. At the bottom of each examination paper, each applicant must write and sign, by his registered number only, the following pledge: I, No. \_\_\_\_\_, hereby swear that I have neither given nor received any assistance during this examination so help me God. No. \_\_\_\_\_
9. Questions will be given out, and answers collected, punctually at time specified for each section.

**Rules Governing Examinations in New York.**—Mr. Charles F. Wheelock, Chief Examinations Division, New York State Education Department, sends us the following rules and regulations governing the examinations for license to practice medicine in that state:

A candidate for license to practice medicine in New York State must furnish evidence that he

1. Is more than 21 years of age.

The candidate's affidavit is accepted as sufficient for this purpose.

2. Is of good moral character.

Evidence required under this head is the certificate of two physicians in good standing.

3. Has the general education required preliminary to receiving the degree of bachelor or doctor of medicine in this state.

The evidence required for this preliminary education is a formal certificate from the principal of a registered secondary school, covering four years of high school work and showing in detail the subjects pursued, with the number of weeks and hours a week and standing attained in each. In case candidates have attended college, a corresponding certificate for college work or the presentation of the evidence of a college degree. Candidates unable to furnish acceptable certificates may take regents' examinations instead.

4. Has studied medicine not less than four full school years in a registered medical school.

Evidence of this fact must be presented on a special blank to be signed by the proper authorities of the college, giving the years in which the work was done and the number of months in each year.

5. Has received either the degree of bachelor or doctor of medicine from a registered medical school, or a diploma or license conferring full right to practice medicine in some foreign country.

Either the diploma or a properly executed certificate from the medical school is accepted as evidence under this head.

A candidate who presents satisfactory evidence under these five heads and who in addition pays the fee of \$25 is admitted to the licensing examination. The question papers used at this licensing examination are prepared by the State Board of Medical Examiners, these examiners being appointed by the regents of the University from a list of nominees made by each of the three state medical societies.

Questions for the four examinations to be held each year are prepared and printed without date in advance of the examinations. Not even the members of the board who pre-

pared the questions know what questions are to be used at any given examination.

The examinations are supervised by representatives of the department other than the State Board of Medical Examiners. In fact, the members of the State Board of Medical Examiners do not meet the candidates face to face at all and prefer not to meet them. Each candidate at the opening of the examination is assigned a number, by which number alone his papers are known to the examiners. The papers are first sent to the office, where a record of them is made; after which they are distributed to the various examiners for rating, and after a report of the rating has been received at the office the candidates are notified of the results and licenses are issued to those who are entitled to them. Seventy-five per cent. in each subject is the minimum passing mark.

Each candidate must present at the examination a recent photograph of himself, which he must endorse in the presence of the proctor in charge of the examination. This photograph becomes a part of the permanent record of his case and may be used as evidence in case of any suspicion of an examination having been taken by proxy.

**Iowa Reciprocity Report.**—Dr. J. F. Kennedy, secretary of the State Board of Medical Examiners, sends us a report of physicians licensed through reciprocity since the beginning of the year. The following colleges were represented:

College.	Year Grad.	Reciprocity with.
College of P. and S., Chicago, (1900), (1901), (2, 1905)	(2, 1906)	Illinois
College of P. and S., Chicago	(1905)	Wisconsin
Chicago Homeopathic Med. Coll.	(1879)	Nebraska
Northwestern University	(1903), (1904), (9, 1906)	Illinois
Hahnemann Med. Coll., Chicago	(1904) (4, 1906)	Illinois
Bennett Coll. of Eclectic Med. and Surg.	(1903) (1904)	
	(2, 1906)	Illinois
Rush Med. Coll., (1897), (3, 1900), (1902), (1904)	(1905)	Illinois
College of P. and S., Keokuk	(1878)	Missouri
Baltimore Med. Coll.	(1905)	Delaware
University of Michigan	(1906)	Michigan
Michigan Coll. of Med. and Surg.	(1906)	Michigan
St. Louis Coll. of P. and S.	(2, 1906)	Illinois
Barnes Med. Coll., (1905) Illinois; (1905) Nebraska; 1898 North Carolina	(2, 1906)	Missouri
Ensworth Central Med. Coll.	(1906) Kansas; (1906)	Missouri
University of Missouri	(1906)	Missouri
Lincoln Med. Coll.	(1906)	Nebraska
Omaha Med. Coll.	(1894), (1901)	Nebraska
University of Nebraska	(1904), (1905)	Nebraska
Creighton Med. Coll., (1895) Kansas; (1904), (1905)	(1905)	Nebraska
Pulte Med. Coll., Cincinnati	(1897)	Michigan
Eclectic Med. Inst., Cincinnati	(1903)	Illinois
Medical Coll. of Ohio	(1879), (1882)	Indiana
University of Vermont	(1899)	New Jersey
Wisconsin Coll. of P. and S.	(1898)	Wisconsin

**District of Columbia October Report.**—Dr. George C. Ober, secretary of the Board of Supervisors in Medicine, reports the written examination held at Washington, Oct. 11, 1906. The number of subjects examined in was 17; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 27, of whom 14 passed and 13 failed. The following colleges were represented:

College.	PASSED.	Number and year of grad.
George Washington University	(1, 1905)	(6, 1906)
Georgetown University	(1, 1905)	(3, 1906)
Hahnemann Med. Coll., Philadelphia	(2, 1906)	
University of Virginia	(1, 1902)	
	FAILED.	
George Washington University	(1, 1905)	(5, 1906)
Howard University		(3, 1906)
Georgetown University	(1, 1903)	(1, 1905)
Maryland Med. Coll.		(1, 1905)
Southern Homeo. Med. Coll.		(1, 1906)

**Michigan October Report.**—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Lansing, Oct. 9-11, 1906. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 9, of whom 7 passed and 2 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Northwestern University	(1875)		75.4
Johns Hopkins University	(1906)		92.2
Harvard Med. School	(1905)		82.9
University of Michigan, Homeo. Dept.	(1906)		90.2
Hahnemann Med. Coll., Chicago	(1905)		91.5
Jefferson Med. Coll.	(1905)		83.8
Imperial Alexandria Univ., Helsingfors, Finland	(1906)		80.5
	FAILED.		
Detroit Homeo. Med. Coll.	(1876)		53
Meharry Med. Coll.	(1905)		69.7



## Medical Organization

### ORGANIZATION WORK IN ILLINOIS.

By J. N. McCormack, M.D.

Chairman of the Committee on Organization of the American Medical Association.

BOWLING GREEN, KY.

I have been delayed in making a report on conditions in Illinois, as they appeared during an extended itinerary there in the month of April last, partly because of absence from the country and the pressure of other duties, and still more on account of the complexity of these conditions, and the difficulty of suggesting such modifications in plans and methods as might lead to better results without injustice or offense to any interest or individual involved in the suggestions.

The plans for the itinerary were made with much care by the council and president of the Illinois State Medical Society. I spoke not less than twice a day—often three times, and once four times—during the entire month. Both the profession and public were advised as fully as was possible of the purposes of the meetings, and the attendance was fair at most and large at several places. A meeting for the profession in the afternoon and for the public in the evening was the usual order of procedure, and this arrangement was always attended by the best results. At several places the meeting for the profession was held in the hall after the one for the public, laymen being invited to remain always, and often the subjects for special inquiry and discussion were so numerous and interesting as to continue the meetings well into the middle of the night.

The councilor, or some one selected by him, went with me over each district, the county society officers were always on hand with conveyances to take us from and to the trains, and in every way my work was made as easy and pleasant as could be done by forethought and the utmost courtesy. As the meetings were so arranged as to make at least one of them accessible to the profession of every county, and, as full notice was given to the profession in advance, it was not the fault of the councilors if every physician in the state did not get to at least one meeting. We made a complete failure in the appointment at Rock Island. With about 250 physicians within a radius of a few miles, the councilor was unable to arouse any interest in the work and no meeting was held.

Naturally I came in contact with the best elements of the profession in Illinois, but as this is the case everywhere it could not be misleading. I got the impression constantly that its personnel would bear most favorable comparison with that of any other state I have visited. While the society meetings in most counties had been too infrequent for the best results, and while apathy, frictions and misunderstandings were still only too common, the uplift following the reorganization was very generally recognized and appreciated. While it can not yet be called an organized state in the modern sense, at least enough had been done in most counties to create a desire for better things, and my suggestion for weekly meetings, and systematic postgraduate instruction, as the fixed program for all county societies, was received with evident interest.

Although great inequality exists in different localities, and much remains to be done by the discussion and adoption of better business methods, the profession is better supported here than in most states, the average fees being about double what they are in Pennsylvania, for instance. The plan for joint meetings with the bar, teachers, ministerial, press and other lay associations, legislators, city and county officials and the public generally, in each county, for the discussion of public health problems, the suppression of quackery, the "patent-medicine" evil, and other matters of similar import, was new but met with almost universal favor. This was even more pronounced with the laity than the profession, as thoughtful members of the latter realized the labor and responsibility they would assume in leading such an important and far-reaching reform.

To an extent which I have not observed elsewhere a strong antagonism to the health and medical laws was found very general among lawyers. It developed in the discussions, as well as in private conversation, that these laws, especially the medical laws, and the ethics of our profession, probably not so rigid or so well enforced as theirs, but having the same common purposes in view, are often looked on as needless and as selfishly devised infringements on the rights of the citizen. In the frank discussions which followed my talks everywhere it was encouraging to find how anxious were the members of this great profession for practical information in regard to all these matters, and how readily misunderstandings were dis-

pelled by candid face-to-face explanations. As this work goes on I am more and more convinced that in the past we have not been frank enough with the public about our affairs, and that the time has come for frequent, systematic, open meetings, in every county where the profession is capable of leading such a movement, for the discussion of all questions of common interest to the profession and the people.

As a part of my official duty I undertook a systematic inquiry to ascertain why the medical laws of Illinois are not so administered as to eradicate or at least greatly to minimize quackery. Under the leadership of Rauch, from whom I received my first lessons in this work, this was the pioneer state in this field, at once an example and an inspiration to all the others. It is the home of THE JOURNAL, and in a sense the headquarters of the profession. The laws are strong and need to be perfected only in detail, the officials charged with their administration are most excellent men personally and professionally, as I know from a long and pleasant acquaintance with them, and yet ground has been steadily lost until, probably to an extent not true of any other state in the Union, it is a veritable paradise for quackery in every conceivable form.

As I came in close touch with the profession in every section of the state it was easy to gather information bearing directly on the reasons for this condition of affairs, and I became very much interested in it.

As the result of careful and protracted investigation I became convinced that the medical laws have been practically broken down and that the profession and people do not receive the protection from quackery to which they are entitled under the plain letter as well as the spirit of the laws, because the organized profession and the State Board of Health do not coöperate in securing and enforcing legislation. This work is sufficiently difficult anywhere with all of these agencies united, and it is foredoomed to failure where they are divided. The secretary of the State Board of Health wrote me that he is sure that he has back of him the support of the rank and file of the profession, but I found constant evidence that he is mistaken on this point, and this opinion was confirmed by those to whom he referred me for information. The more or less open antagonism between the leaders of the state society and the board has begotten a spirit of apathy and hopelessness about improving and enforcing both the medical and health laws almost coextensive with the state, and with such a state of affairs it ought not to be surprising that the united forces of quackery have had an easy time of it.

And yet I got the impression that these evils were traceable to faults in the system, and the misconceptions and misunderstandings inseparable therefrom, rather than to the mistakes or wrongdoing of any individual or faction. A State Board of Health and a State Board of Medical Examiners, whether joint or separate, should in fact be the executive committee and mouthpiece of the state societies of the several schools of practice in all matters pertaining to their duties, and they can not hope to attain to any great degree of usefulness until this is practically realized. This is often done by a tacit understanding between the appointing power and the profession, under which the societies suggest and practically nominate their representatives as vacancies occur, but more frequently under express provision of law. This takes the board out of politics, except of the right kind, makes each school of practice responsible for the selection and conduct of its representatives, and, probably more important than all, gives the board the support of the united profession of every school, not only in securing and enforcing legislation, but in so educating public sentiment as to make all of its work effective. This is the more important because there is the same need for the coördination of all of these forces in securing and enforcing health legislation for cities, towns and country districts.

With the exercise of a little tact, good judgment and personal tolerance on the part of all concerned I am almost certain that all of this could be brought about without any change of personnel in the board. My idea would be for the presidents of the State Medical Society and the State Board of Health to get together and call a joint conference of the council and board for such a full, frank and dispassionate discussion as would enable them to wash off the slate and begin over. Existing conditions should be considered intolerable, and, in view of the importance of a union of all available forces in bringing about a better state of affairs, if there be any in either body not big enough and broad enough to lay aside petty personal prejudices and apparent interests and look to the future in this spirit, resignations should be requested and accepted without hesitation until this can be accomplished. The Board should be given representation in the House of



Delegates of the State Society through its president and secretary for the encouragement of cordial relations, and the constitution and by-laws should be so amended.

The office of secretary and editor of the State Society should be combined in one person, and, in such a state as Illinois, he should devote his entire time to the duties of the office. It is important also that the closest relations should exist between this office and that of the State Board of Health. The *Illinois State Medical Journal* can, and should, give constant support and publicity to the work of the board, and the two interests be considered in every way inseparable. I am satisfied, too, that the councilor districts should be made smaller and that more young men should be put in this work. The older men were the most active, and their advice seemed invaluable in the meetings of the council, but I was constantly impressed with the injustice of asking these men, covered with years and honor, to do a kind of labor which was intended for young men who have their spurs to win.

It is made my duty when I visit a state to report conditions and to make suggestions, kindly, considerately, helpfully. I found a great profession in this state, to which anything is possible, favorably situated in many respects, and yet with so many of the best men working at cross purposes, or not working at all, as to retard the progress all are anxious to make. Nearly all of them are my personal friends, but so sensitive to criticism, as all doctors are, that my task has been beset with many difficulties, especially when I know that to give offense to any of them is likely to defeat the conciliation essential to the ends I have in view. But if what I advise can be taken by all concerned in the spirit in which it is written, and a real attempt made to put the suggestions into operation, it can not but mean the dawn of a new day for the power and influence of the profession of Illinois.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Diseases of the Respiratory System.

LARYNGITIS.

In the treatment of laryngitis Colbeck and Chapin state that the local treatment consists in the employment of vapors, insufflations and sprays.

In the form of vapors the following are recommended:

R. Tinct. benzoini co. . . . . 3i 30|  
Sig.: One teaspoonful to be floated on a pint of hot water and the steam inhaled. Or:

R. Olei eucalypti. . . . . m. xl 2|65  
Magnesii carb. . . . . gr. xxiv 1|50  
Aquæ dest. . . . . f3i 30|

M. One teaspoonful to be floated on a pint of hot water and the steam inhaled. Or:

R. Terebeni . . . . . m. xl 2|65  
Magnesii carb. . . . . gr. xxv 1|65  
Aquæ dest. . . . . f. 3i 30|

M. Sig.: One teaspoonful to be floated on a pint of hot water and the steam inhaled.

The object of adding the magnesium carbonate in the foregoing combinations is to suspend the oil.

INSUFFLATIONS.

As insufflations the authors recommend the following:

R. Iodoformi  
Acidi borici  
Bismuthi subnit., āā. . . . . gr. i 06

M. Ft. insufflatis. To be used occasionally. Or:

R. Glycerini acidi tannici. . . . . f3i 4|  
Aquæ dest. . . . . f3i 30|

M. Sig.: To be used occasionally. Or:

R. Sodii bicarb. . . . . gr. xv 1|  
Sodii chloridi. . . . . gr. x 65  
Glycerini boracis . . . . . f3iss 6|  
Glycerini acidi carbol. . . . . f3ss 2|  
Aquæ dest. q. s. ad. . . . . f3i 30|

M. Ft. Nebula. Sig.: To be used as a spray as directed. Sometimes a spray containing cocain may be required. In

such instances, the following combination is recommended, used under the physician's personal directions:

R. Cocainæ hydrochlor. . . . . gr. x 65  
Thymolis . . . . . gr. ss 03  
Aquæ . . . . . f3i 30|

M. Sig.: Use as a spray under the physicians directions.

BRONCHITIS.

In the treatment of acute bronchitis the most important preparations are ipecacuanha, antimony and alkalies:

R. Vini antimonialis. . . . . m. x 65  
Potass. nitratis. . . . . gr. v 30  
Spts. etheris nitrosi. . . . . f3ss 2|  
Liq. ammon. acetatis. . . . . f3ii 8|  
Syr. aurantii . . . . . f3iss 6|  
Aquæ camphoræ q. s. ad. . . . . f3i 30|

M. Ft. mistura. Sig.: Two tablespoonsful to be taken every four hours in water. Or:

R. Liq. ammon. acetatis. . . . . f3ii 8|  
Vini ipecacuanhæ. . . . . m. x 65  
Syr. aurantii . . . . . f3ss 2|  
Aquæ camphoræ q. s. ad. . . . . f3i 30|

Ft. mistura. Sig.: Two tablespoonsful every six hours.

When the secretion has become more abundant a more stimulating expectorant must be employed. In the transitional stage the following is of value:

R. Vini antimonialis . . . . . m. xv 1|  
Ammon. chloridi. . . . . gr. vii 50  
Spts. chloroformi. . . . . m. x 65  
Syr. aurantii . . . . . f3i 4|  
Aquæ camphoræ q. s. ad. . . . . f3i 30|

M. Ft. mistura. Sig.: Two tablespoonsful to be taken three times a day in water. Or:

R. Ammon. carb. . . . . gr. v 30  
Vini ipecacuanhæ. . . . . m. x 65  
Syr. aurantii . . . . . f3i 4|  
Aquæ camphoræ q. s. ad. . . . . f3i 30|

M. Ft. mistura. Sig.: Two tablespoonsful t. i. d. in water.

When the attack is purely chronic and attended with profuse expectoration, stimulating expectorants are indicated:

R. Ammon. carb. . . . . gr. v 30  
Spts. chloroformi. . . . . m. xv 1|  
Tinct. nucis vomicæ. . . . . m. iv 25  
Syr. simplicis q. s. ad. . . . . f3i 30|

M. Ft. mistura. Sig.: Two tablespoonsful three times a day in water. Or:

R. Acti scillæ  
Tinct. opii camphoratæ. āā. . . . . m. xx 1|30  
Infusi cascarillæ q. s. ad. . . . . f3i 30|

M. Sig.: Two tablespoonsful t. i. d. in water. Or:

R. Potassii iodidi. . . . . gr. iv 25  
Potassii bicarb. . . . . gr. xv 1|  
Ammon. carb. . . . . gr. iii 20  
Aquæ camphoratæ q. s. ad. . . . . f3i 30|

M. Sig.: Two tablespoonsful three times a day in water. Or:

R. Vini ipecacuanhæ. . . . . m. x 65  
Tinct. opii. . . . . m. v 30  
Potassii nitratis. . . . . gr. v 30  
Fld. ext. glycyrrhizæ. . . . . f3ss 2|  
Aquæ dest. q. s. ad. . . . . f3i 30|

Ft. mistura. Sig.: Two tablespoonsful t. i. d. in water.

BRONCHIECTASIS.

This condition can not be treated with any marked success by drugs. The fetor may be controlled by installations on a piece of sponge in an ordinary respirator as follows:

R. Thymolis  
Camphoræ, āā . . . . . gr. ii 12  
Acidi carbol. . . . . m. ii 12  
Spts. rectificati. . . . . m. xx 1|30

M. Ft. instillatio. Sig.: A few drops to be placed on a sponge and inhaled. Or:

R. Olei pini  
Alcoholis absoluti, āā. . . . . f3i 4|

M. Ft. instillatio. Sig.: A few drops to be placed on a sponge and the vapor inhaled. Or:

R. Iodoformi . . . . . gr. i 06  
Olei eucalypti  
Spts. vini rectific., āā. . . . . m. x 65

M. Ft. instillatio. Sig.: To be inhaled from a sponge.



Mixtures containing aromatic balsams are also recommended by the authors in some cases:

- R. Tinct. benzoini co.  
Tinct. toluani  
Tinct. camph. comp., āā.....m. xx 1 30  
Misturæ amygdalæ q. s. ad.....f3i 30
- M. Ft. mistura. Sig.: Two tablespoonsful to be taken three times a day in water. Or:
- R. Morphinae hydrochlor.....gr. 1/4 015  
Bismuthi subnit.  
Pulv. amyli, āā.....gr. i 06
- M. Ft. insufflatio. Sig.: To be used only as directed by the physician.

SPRAYS.

Sprays, when properly applied, are of great value in the treatment of laryngitis. For this purpose the following combinations are recommended:

- R. Acidi earboliei.....gr. iii 20  
Aquæ dest. ....f3i 30
- M. Sig.: To be used as a spray when necessary.

Common Secondary Symptoms of Diabetes.

A. C. Croftan in an abstract in *Medicine*, states that the complications of diabetes as a rule disappear with the lessening of the glycosuria.

Among the most distressing complications are those connected with the mouth and teeth. For this reason, all diabetics should be instructed to cleanse the mouth thoroughly after each meal. This may be done by using a 3 per cent. sodium carbonate solution in warm water to which a few drops of the tincture of eucalyptus is added. Most diabetics have an excessively fetid breath and to correct this Croftan recommends the following combination as a mouth wash:

- R. Betanaphthol .....gr. iii 20  
Sodii biboratis .....3iiss 10  
Aquæ menthæ pip.....f3iv 120  
Aquæ dest., q. s. ad.....Oi 500
- M. Sig.: Use as a mouth wash.
- If the gums are painful and bleeding the following combination is recommended:
- R. Tinct. opii.....m. xv 1  
Potass. chloratis.  
Sodii biboratis, āā.....3i 4  
Decoctio althææ rad., q. s. ad.....Oi 500
- M. Sig.: Use as a mouth wash.

Pruritus which may be general or local around the genitals may be relieved by the application of anodyne powders or ointments.

When dyspeptic symptoms arise, with vomiting, Croftan recommends the withdrawal of all foods and the administration of cerium oxalate in one grain doses, oft repeated, or small doses of cocain. In many cases, teaspoonful doses of a 2 per cent chloroform water frequently gives relief, as do hot or cold applications to the epigastric region.

Catarrh of the bowel is a serious complication of diabetes and should be met promptly and treated energetically. For this purpose he advises such preparations as bismuth, extract of opium and tannic acid until the diarrhea has been checked.

If constipation arises it may hasten the onset of a comatose condition. It can be overcome by fat feeding, saline waters, or the following combination:

- R. Glycerini .....f. 3iiss 6  
Acidi citrici .....3ii 8  
Aquæ ..... Oi 500
- M. Sig.: Use as a beverage.

Gangrene is perhaps the most distressing condition that may arise in the course of diabetes and Croftan states that the diet should never be free from carbohydrates after this symptom has arisen, and that from 50 to 100 grams of white bread should be given at proper intervals.

In individuals having a marked arteriosclerosis with continuous pain, tingling or hyperesthesia in the extremities, a hot foot bath and massage should be given in order to stimulate the return of fluid and in this way prevent the onset of gangrene.

Medicolegal

Routine for Bills Incurred by Public in Epidemic.

The Supreme Court of Michigan says, in the mandamus case of Dawe vs. the Board of Health of the City of Monroe, brought by a physician, that, in January, 1906, an epidemic of diphtheria and scarlet fever broke out in St. Francis Home, a charitable institution for the care of boys in Monroe. The physician, claiming to have been employed by the board of health, presented his bill for services, amounting to \$372.50. It was admitted that this bill was ordered by the board of health certified to the board of supervisors; that it was certified, but the board of supervisors, refusing to accept the form of the certificate, referred the bill back to the board of health. The board of health subsequently, on March 16, rescinded its resolution and ordered the bill sent back to the board of supervisors, with the statement that the services were not rendered in pursuance of an order of the board of health. A new board of health was elected in April. May 20 the physician applied for a mandamus to compel the board of health to audit, allow, and certify his bill for such sum as should be reasonable, to the board of supervisors.

Under Act No. 7 of the Public Acts of Michigan of 1903, the Supreme Court goes on to say, the auditing of bills incurred by the public in case of infectious and dangerous communicable diseases is lodged in the board of supervisors of the county. The local board of health is required by said act to keep an itemized and separate statement of expenses and render the same to the board of supervisors by filing the same with the county clerk. The entire responsibility then rests on the board of supervisors to pass on the necessity of such expenses, the services performed, the justice and reasonableness thereof, and to allow such parts thereof as the board shall deem just. It appears that the itemized bill of this physician was presented to the board of health and by the latter filed with the clerk of the circuit court, as the law requires. The certificate to which the board of supervisors objected is not found in the record, and this court cannot therefore determine its sufficiency. The statute does not in terms require any certificate.

The action of the board of health is not affected by the fact of a change in its members; and such change is no objection to this proceeding on the part of the physician. If his itemized statement was rendered to the board of supervisors by the authority of the board of health, it was the duty of the board of supervisors to proceed to audit the account. If the employment of the physician by the board of health was denied, an issue of fact is presented for the determination of the board of supervisors, and it is the duty of the latter board to determine whether the board of health made a contract for the physician's services. Act No. 7 refers all such issues of fact to the board of supervisors. The court has not before it a case where a board of health denies a contract, and for that reason refuses to make the statement to the board of supervisors. An itemized statement was rendered. On this record the physician's account is properly before the board of supervisors for action, and they should proceed to hear it.

The order of the circuit court refusing to frame issues between the physician and the board of health as to whether (1) he was employed to render the services for which he charged, and (2), if so, what was a reasonable compensation for such services, is therefore affirmed.

Power to Revoke Certificate for Fraud Antedating Law.

The Supreme Court of Wisconsin says of State vs. Schaeffer that this was an action commenced Dec. 21, 1905, to revoke and annul the certificate of registration issued to the defendant by the Wisconsin Board of Medical Examiners Sept. 25, 1899, pursuant to Chapter 87 of the Laws of 1899. The action was based on a verified complaint in writing made by the secretary of said board, charging the defendant with having procured such certificate by fraud and perjury and through error, as prescribed by Chapter 422 of the Laws of 1905. This was met with the contention that the circuit court had no power to revoke or annul the certificate, although obtained by fraud, perjury and misrepresentation, as alleged, for the sim-



ple reason that it was issued prior to the passage of the Act of 1905.

Chapter 422 of the Laws of 1905, which went into effect June 23, 1905, among other things, declares that: "The circuit courts of this state are hereby vested with jurisdiction and power to revoke and annul any license or certificate of registration which has been heretofore or which may be hereafter issued to any person to practice medicine or surgery, or osteopathy in this state, who is guilty of immoral, dishonorable or unprofessional conduct, after the passage of this act or who has procured such license or certificate of registration by fraud or perjury, or where the same was obtained through error." It was contended that the act is not retroactive, and therefore that the complaint did not state a cause of action. This was based on the claim that the words, "after the passage of this act," in the portion of the act above quoted, qualify the entire clause so quoted. And so it was claimed that, not only must the dishonorable and unprofessional conduct therein mentioned occur after the passage of the act, but also that the fraud, perjury or error for which it is sought to annul the certificate must also have occurred after the passage of the act.

The Supreme Court answers that it should be slow to hold that the circuit court has no jurisdiction or power to set aside a certificate of registration thus obtained, even in the absence of the act in question. But it is unnecessary to consider that question here, since the act declares, in effect, that such court may "revoke and annul any license or certificate of registration which has been . . . procured . . . by fraud or perjury, or where the same has been obtained through error." The word "heretofore," in the portion of the act quoted, manifestly refers to "any license or certificate of registration" issued prior to the passage of the act. So the act declares, in effect, that such practitioner "who is guilty of immoral, dishonorable or unprofessional conduct," as defined therein, "after the passage of the act," may have his license or certificate of registration revoked or annulled, even though it was obtained without fraud or perjury or misrepresentation. The manifest purpose of the act is to prevent any incompetent or unfit person from practicing medicine or surgery or osteopathy, and thus protect the public from the injuries which might otherwise be incurred. The court must hold that the act is retroactive to the extent indicated. Nor does the court think that with such construction Chapter 422 is unconstitutional and void.

This not being an action to enforce a penalty or forfeiture, but a civil action to set aside a certificate of registration for the reasons stated, the court says that it perceives no ground for the claim that the action is barred by the two years' statute of limitation, or the three years' statute of limitation, or any other statute of limitation.

Lastly, this action was brought in the name of the State of Wisconsin, and the Wisconsin State Board of Medical Examiners was not a party, but the court perceives no ground for claiming that there was a defect of parties.

#### Allowing Physician to Testify Authorizes It in New Trial.

The Supreme Court of Missouri, Division No. 2, holds, on the appeal after the third trial in the personal injury case of Mollie Elliott and another vs. Kansas City, that a physician having been allowed to testify in the first two trials without any objections on the part of the plaintiffs, Mrs. Elliott had waived her right to forbid the repetition of the physician's testimony in the third trial to substantially the same facts with regard to his treatment of her previous to the accident complained of. The court says that the expressions by the courts having the question in judgment before them, are almost uniform that the purpose sought by the prohibition contained in the statute against disclosing professional information is for the purpose of allowing greater freedom between physician and patient, and was enacted as a matter of public policy to confer on persons seeking the services of a physician a personal privilege, and closing the door to the sickroom, and of preventing the publishing to the world their infirmities. That this privilege may be waived all the authorities agree. It is equally well settled, as was said in *Fox vs. Turnpike Co.*,

59 App. Div. 363, 69 N. Y. Supp. 551, that "when a patient voluntarily opens the door of the consultation room and gives a view that may have been specially arranged for the purpose, it would not be in accordance with the spirit of the statute or the interest of truth to shut the door against a view to be described by the physician." With respect to the contention that a distinction was to be made in this case for the reason that in the former trials the plaintiff did not introduce the physician, the court declares it sufficient to say of that contention that the purpose of judicial investigation is, and should be, to ascertain the truth surrounding the transaction to be judicially determined, and that it is unable to make any distinction as to the application of the doctrine of waiver, where the patient herself opens the door to the sickroom, and where she consents and acquiesces in some one else opening such door. In principle there is no difference. In this case the physician's testimony could have only been introduced on the two former trials with the plaintiff's consent and acquiescence, and the presumption must be indulged, having made no objections to his testimony in the former trials and having testified without any objections, that such testimony was given with her full consent and acquiescence. The physician having testified in the former trials without any objections, the reason for the enforcement of the rule in respect to the privilege conferred by the statute ceased to exist; and while this court has uniformly granted this personal privilege when timely invoked, it is unwilling to approve of the action of the trial court in excluding the testimony of the physician in the third trial, where such personal privilege has been so clearly waived in excluding relevant testimony, where such action can in no way tend to accomplish the purpose sought to be accomplished by the act conferring such personal privilege. It was error to exclude the testimony of the physician.

#### A Federal Court's View of Privileged Communications.

The United States Circuit Court of Appeals, Second Circuit, holds, in *Pennsylvania Railroad Co. vs. Durkee*, a personal injury case brought by the latter party, that there was no error in refusing to instruct the jury that they had a right to infer from the refusal of the plaintiff to permit a physician to testify as to what he treated her for and what he found her condition to be, that his testimony would be unfavorable to her, and in charging the jury, on the other hand, that it was her privilege and her right, awarded to her by the law, to object to her physician giving any evidence, and that the jury were not permitted to infer, because she exercised that right, that the physician would have given evidence in one way or the other, favorable or unfavorable; simply, the law boldly and wholly shut it out, except at her instigation; but that she was treated by the physician appeared according to his statement, and the jury had a right to consider that fact, and only that, as far as his evidence was concerned.

In explicit and peremptory language, Section 834 of the New York Code of Civil Procedure, the statute involved in this case, forbids the physician, the court says, from disclosing any information obtained in a professional capacity, and it is not apparent why such prohibition should not bind him, whether the plaintiff sits silent or raises an objection. Until the express waiver in open court, which section 836 provides for, it is the duty of the witness to refuse to betray the confidence reposed in him as a professional man, and the trial judge would no doubt of his own motion prevent any disclosures which the statute forbids. Had it been the intention of the legislature that the prohibition of the statute should be operative only when the patient took affirmative action to exclude the testimony by interposing an objection, presumably it would have used language appropriate to indicate such an intention. On the contrary, it has placed the prohibition on the statute book, to be lifted only on the taking of express affirmative action by the patient to obtain a disclosure by the physician. The situation is very different from that arising when a party to a civil action, who apparently must be cognizant of the fact of some controverted issue, avoids cross-examination by not going on the witness stand, or persuades some witness to remain out of reach of a subpoena, or destroys documentary evidence. The prohibition against disclosure of professional



secrets is manifestly an exercise of public policy. It secures a right to every individual which he is under no obligations to waive or abandon. To hold that, because the patient does not waive or abandon the prohibition, inferences adverse to his side of the controversy may be drawn by the jury, would be to fritter away the protection it was intended to afford. When it is the legal right of a party not to have some specific piece of testimony marshaled against him, he may exercise that right without making it the subject of comment for the jury.

The above discussion the court introduces with the statement that it was asserted that the privilege accorded to the patient under Section 834 may be waived by failure to object, and cannot be rendered effectual except by the interposition of an objection, but that no cases were cited in support of this proposition, and in the absence of any controlling decision the court would be inclined to hold the converse. On a petition for rehearing, which it denies, it says that authorities were then cited which were not on the original briefs, indicating that in the state courts the privileged testimony is admitted unless objection is interposed, but that circumstance does not modify the conclusion expressed in the opinion disposing of the cause, namely, that the trial judge correctly instructed the jury because the rule as to drawing unfavorable inferences from failure to produce testimony is not to be applied where the law, on grounds of public policy, has established privileges against being compelled to produce it.

#### Public Buildings and Cars to Be Disinfected.

Chapter 112 of the Laws of Mississippi of 1906, provides that it shall be the duty of the State Board of Health to prepare rules and regulations governing the proper disinfection and sanitation of public buildings, railroad depots, and all railway coaches and sleeping cars operating in that state. The board shall prescribe a sanitary code, which shall contain and provide rules and regulations of a general nature for the improvement and amelioration of the hygienic and sanitary condition of said public buildings, railroad depots, railway coaches and sleeping-cars. Then, every person having control of any public building, railroad depot, railway company, sleeping car company, or other corporation, company, or individual, or the receiver thereof, engaged in the carrying of passengers in the state, shall at their own expense, within a prescribed time after receiving notice from the state board of health of the promulgation of the above mentioned rules and regulations, carry the same into effect.

## Current Medical Literature

### AMERICAN.

#### Medical Record, New York.

December 22.

- 1 \*Diagnosis and Result of Surgical Treatment of Cerebellar Tumors. B. Sachs, New York.
  - 2 \*Chronic Urethritis and an Improved Method of Applying Medication to the Urethra. J. A. Gardner, Buffalo.
  - 3 \*Gelatin Method of Preserving Specimens. W. H. Watters, Boston.
  - 4 Treatment of La Grippe. C. E. Nammack, New York.
  - 5 \*Value of the Differential Leucocyte Count in Gynecology and Abdominal Surgery. F. E. Sondern, New York.
  - 6 Psychiatric Clinic at Munich, with Notes on Some Clinical Psychologic Methods. G. H. Kirby, New York.
  - 7 \*Pruritus Ani. T. C. Hill, Boston.
- December 29.
- 8 \*Sensibility of Abdominal Organs and the Influence on It of Injections of Cocain. L. Kast and S. J. Meltzer, New York.
  - 9 \*Schlösser's Treatment for Trigeminal Neuralgia. O. Killiani, New York.
  - 10 \*X-Ray vs. Surgery in Sarcoma. A. Judd, New York.
  - 11 \*Notes on Fevers in the Tropics. E. S. Goodhue, Honolulu, Kona, Hawaii.
  - 12 Bursting of the Standardization Bubble. W. J. Robinson, New York.
  - 13 \*A Plea for the Simple Round Ligament Ventrosuspension. B. S. Talmey, New York.

1. **Diagnosis and Surgical Treatment of Cerebellar Tumors.**—Sachs declares that other things being equal, rapidly advancing optic neuritis may serve as a symptom pointing to cerebellar tumor. The early development of unilateral or bilateral rectus externus palsy is to be given due weight. He regards this symptom as almost pathognomonic of cerebellar lesions

if it is associated with the general symptoms pointing to increased intracranial pressure. Sachs believes that when the diagnosis is made and when there is a fair degree of certainty as to the special part involved, a large trephine opening should be made over the suspected area. Even if the neoplasm is not found, much good will be done by the relief of pressure.

2. **Medication to Urethra in Chronic Urethritis.**—Gardner claims that the most rational method of forestalling a stricture is by packing the urethra. The medication is in close contact for hours with the follicles and depressions, where germs are protected from irrigations and injections. The exudate thrown out around these follicles is frequently the starting point of stricture. No other treatment combines so many beneficial factors, i. e., dilatation, massage and medication uniformly applied to the entire membrane and depressions for a considerable length of time.

3. **Gelatin Method of Preserving Specimens.**—Watters sums up the advantages of his method practically as follows: The permanency of the mounts is noticeable. The preparations are very compact and neat. They are easily adaptable to class demonstration. They are used both as hand specimens and in the reflectoscope. The specimens first mounted nearly six years ago and which have been almost continually in the light show no appreciable loss of color. These specimens show a wonderful resistance to exposure to both high and low temperatures. For a full description of this method the reader is referred to the original article. Its length prohibits any attempt at giving an abstract sufficiently brief to describe accurately the method.

5. **Value of Differential Leucocyte Count.**—Sondern says that his continued daily contact with cases in which the diagnostic aid of the differential leucocyte count is sought strengthens rather than weakens his belief in this valuable factor in surgical diagnosis. It presents diagnostic and prognostic data at a time when the clinical picture may be confusing.

7. **Pruritus Ani.**—Hill considers nitrate of silver and citrin ointment excellent applications in most cases. For delicate skins the following ointment may be substituted for the citrin: Red oxid of mercury, three drams; Venice turpentine, one ounce; lanolin, three ounces.

8. **Influence of Cocain on Sensibility of Abdominal Organs.**—Kast and Meltzer found in animal experimentation that the sense of pain is present in normal organs, and that it is considerably augmented in inflamed organs; and that a subcutaneous or intramuscular injection of cocain is capable of completely abolishing this sensation in normal as well as in inflamed organs. They suggest that the anesthesia of the internal abdominal organs observed by certain surgeons was due to the use of cocain. These investigators also found that the injection of a small dose of cocain has a calming influence on the excitation of the narcotized animals operated on. These new observations are capable of practical application in medicine.

9. **Schlösser's Treatment for Trigeminal Neuralgia.**—Killiani describes the technic of this treatment. The injection of alcohol is done without narcosis. When the injection has been successful there results for a minute or two a sharp, burning pain, similar to a mild attack. After an hour or so there is sometimes severe pain for one or two hours, interrupted by typical attacks. If skilfully executed the injection is said to be without danger, and its effect is excellent. The treatment is not limited to trigeminal neuralgia. Killiani states that he has not had a single failure in the use of this method.

10. **X-Ray vs. Surgery in Sarcoma.**—Judd says that the use of the x-ray in cases of sarcoma is still more or less an open question. In cases in which operation for any reason is not feasible, the surgeon is compelled to weigh the chances of radiology in effecting a cure. Of 14 cases reported by Judd, 5 patients are dead or unimproved, 5 have no further symptoms of malignancy and 2 are somewhat improved. The paper is not a plea for the use of the x-ray in sarcoma, but rather an effort to put this agent in its proper place.

11. **Fevers in the Tropics.**—In reference to Hawaiian fever, Goodhue says that while the morphologic findings are ex-



tremely interesting, they are far from conclusive; and the clinical differences are not so marked that they can not be included under some form of typhoid fever. In regard to malaria, it has been said that the amount of physical incapacity caused among laborers by this disease is far greater than that from all the other diseases combined. Malta fever deserves careful study because its early stages are easily confounded with malaria, while later it closely resembles chronic rheumatism. Among the other fevers which Goodhue discusses are yellow fever, dengue or breakbone fever, and "swollen-head" fever.

**13. Simple Round-Ligament Ventrosuspension.**—Talmey describes the method, which he has used for six years, of suspending the retrodisplaced uterus in women of child-bearing age, as follows: The abdominal incision of about 6 cm. is made in the linea alba, beginning immediately above the pubis. The recti muscles are separated, and the peritoneum is incised. The uterus is located and any adhesions are freed. The uterus is grasped at its posterior surface by a tenaculum and held in position. The round ligament is then located and is followed to the uterus. At this end the first suture of chromicized catgut is inserted and passed through the rectus muscle about 2 cm. from the abdominal incision and about 3 cm. above the symphysis. Another suture is inserted through the round ligament 1 cm. distally from the first, and in the same way it is passed through the rectus muscle. This procedure is repeated on the other side, and the sutures are all tied and the abdomen is closed. After the operation a pessary is placed in the vagina, where it remains until the patient leaves her bed. The chief advantage of this method is said to be that the operation is universally applicable and entirely satisfactory, and that the uterus is placed in the most physiologic position.

#### New York Medical Journal.

December 22.

- 14 Paralysis of the Peroneal Nerve Following Childbirth. J. H. Lloyd, Philadelphia.
- 15 \*Otology in Its Relation to the General Practitioner. G. Bacon, New York.
- 16 Rhinitis in Children, Including Recurrent Coryza, Due to Intestinal Autointoxication. L. Fischer, New York.
- 17 Disease in Manila. P. G. Woolley, Phrapatoom, Siam.
- 18 Tuboabdominal Pregnancy Secondary to an Incomplete Tubal Abortion. B. S. Talmey, New York.
- 19 \*Is the Supposed Efficacy of Quinin in Malaria More Apparent than Real? A. C. Jacobson, Brooklyn, N. Y.
- 20 The Senile State and Its Treatment. S. N. Leo, New York.
- 21 Peptic Ulcer of Jejunum, Following Gastroenterostomy, for Perforating Gastric Ulcer. W. G. Lyle, New York.
- 22 Scope of the Federal Food and Drugs Act. H. W. Wiley, Washington.

December 29.

- 23 \*Errors in the Treatment of Cutaneous Cancers. A. R. Robinson, New York.
- 24 Physiology of Language and Its Relation to the Treatment of Stammering. G. Hudson Makuen, Philadelphia.
- 25 Two Cases of Hepatic Abscess Treated by the Transpleural Operation. H. Taylor, Glenview, Llandovery, South Wales.
- 26 Mastoiditis and Temporo-sphenoidal Abscess. S. Oppenheimer, New York.
- 27 Surgical Treatment of Gastric Ulcer. M. R. Barker, Chicago.
- 28 \*Odds and Ends in a Series of Three Hundred Obstetrical Cases in Private Practice. P. Bisher, New York.
- 29 Eyestrain as a Factor in Headache. L. Emerson, Orange, N. J.
- 30 Diver's Paralysis with Scarlet Fever? R. Ellis, New York.

**15. Otology in Relation to the General Practitioner.**—Bacon claims that the graduate in medicine of to-day should be competent not only to recognize the drumhead in health and disease by means of the head mirror and speculum, but also to incise it in cases of emergency. He should make frequent and regular examinations of the ear during the acute exanthematous diseases and also in grippe, especially in the case of children, from the fact that the pain may be very slight and in some cases altogether absent. High temperature in children should always cause suspicion of an aural affection. In chronic otorrhoea the surgeon should distinguish between the operative and non-operative cases, and he should never unnecessarily alarm the patient by advising an immediate operation, until he has made a thorough examination and satisfied himself that the case is an urgent one, and can not be cured by conservative methods.

**19. Quinin in Malarial Fever.**—In Jacobson's opinion quinin will check or postpone malarial paroxysms, and, if its admin-

istration be long continued in moderate but very frequently repeated doses, the blood being kept more or less saturated with it, paroxysms will not, as a rule, occur. That is to say, the plasmodia will be driven out of the blood stream and kept out so long as sufficient quinin is administered and absorbed. On the withdrawal of the quinin the plasmodia re-enters the blood. Hence, he says, quinin is at best only a palliative; it is not curative, and it certainly is not a specific in any sense of the word. Jacobson says that the absolute withholding of quinin during acute malarial attacks will expedite ultimate cure. Instead of the disease process being merely held in check, the plasmodia at bay—a result attained at the cost of leucocytic paralysis—Nature is given a chance to fight her enemies in the open, unsubjected to a galling cross fire from her own alleged allies.

**23. Treatment of Skin Cancer.**—Robinson summarizes his paper as follows:

1. Every case of cutaneous cancer demands special consideration, special study, and special selective treatment.
2. No one method of treatment of cancer is best or most efficient for all cases of operable cancer.
3. All cases of multiple cutaneous cancer and all aged persons with cutaneous cancer require internal treatment in the form of diet and drugs in addition to local measures. A diet of milk and green vegetables and the avoidance of meats in general and of meats of such organs as liver and kidneys in particular, and the avoidance of alcohols, is advisable in all cases of cancer, whether external or internal. Thyroid extract should be given in as large doses as can be borne in all cases in which there is a senile condition of the skin and in most superficial epitheliomata.
4. A knowledge of the kind of cancer present, the pathologic anatomy, and the manner of extension of the disease in general and of the special variety of the case to be treated is necessary to a correct choice of method of treatment.
5. When possible all patients should be under observation at least one year after commencing treatment of any kind, in order to treat promptly any recurrence of the disease.
6. Early diagnosis and correct treatment place cutaneous cancers among that class of diseases which do not deserve the name of incurable diseases, as almost without exception they can be treated successfully if the method employed be the correct one.

**28. Statistics of Three Hundred Obstetric Cases.**—Of the 70 primiparae in Bisher's series, ranging in ages from 17 years up to 42 years, the use of forceps was resorted to in 18 cases, or in 27 per cent., as compared with the usual statistics of 40 to 50 per cent. forceps applications in primiparae. Laceration of the perineum of varying degree occurred in all the forceps cases, but none in the normal deliveries. In two of the forceps cases, though the patient was fully anesthetized, a spontaneous expulsion of the head was caused by a sudden pain, thus proving the importance of constant vigilance and hold on the instruments. The usual duration of labor prior to application of forceps was 20 hours, and the only cause for it was uterine inertia. The placenta was delivered by Credé's method soon after delivery of the child in order to prevent a postpartum hemorrhage and the better to control the uterus. In four primiparae an occiput posterior was the complicating feature, necessitating delivery by forceps with a resulting slight laceration of the perineum. In two of the primiparae the foot was the presenting part, and delivery was accomplished in the usual way. The average number of days the women were kept in bed was eight, though 2 women were up on the third day doing their housework, and one after a difficult forceps delivery was sitting up and combing her hair within 18 hours after delivery.

In none of the primiparae did the temperature at any time reach above 100 F., and none developed a mastitis, though sore nipples occurred in almost all. The same holds true in all of the 300 cases, except that the complication of sore nipples was less frequent in multiparae. After about 110 uncomplicated cases, barring forceps applications, 4 transverse presentations with a prolapse of an arm occurred successively within 10 days. Two more of the same nature followed within 3 months, or one case of this nature in 50, where statistics give one in 250.

As for complications in multiparae, first in order of frequency were twin pregnancies, numbering 11 cases, or one in 27 cases, where statistically there should be one in 90 cases. Among the positions, the first fetus in 7 cases presented head first, in the remaining 4 the breech was the presenting part. The second fetus in 5 cases presented transversely, necessitating version and podalic extraction. Six of the 22



children died within 2 days of delivery. The others remained alive up to the time of discharging the patient. There occurred two cases of placenta prævia, one in 150, statistically one in 573 cases, with recovery of mothers and children. One case of accidental hemorrhage in the ninth pregnancy; one case of face presentation and one of eclampsia were the other complicating features among the multiparæ. The absence of a prolapse of the cord among all the cases is worthy of notice. The use of forceps was resorted to in about 10 per cent. of the multiparæ, the main cause being uterine inertia. A very active postpartum hemorrhage was encountered in one patient in each of her consecutive deliveries. This woman has not menstruated for seven years, for her pregnancies followed in rapid succession at the end of the lactation period. An eclampsia occurring in the second pregnancy resulted in leaving the mother partially blind up to the present time, three years after the incident, the child surviving rapid delivery. The placenta required a manual delivery in 15 patients of the whole series after waiting for 45 minutes, and in each case an attachment somewhere to the uterine wall was the cause of it.

The fetal mortality of 4 in all of the 300 deliveries occurred from the following causes: One in the case of accidental hemorrhage due to partial separation of the placenta; one fetus was born dead after a breech delivery in a multipara; one in a patient who twice previously gave birth to a dead fetus, the cause was not ascertainable. One was born dead of a primipara whose husband is an epileptic. Ophthalmia occurred in none of the children though the instillation of silver nitrate has not been practiced by Bisher. His rule is to use a 2 per cent. warm boric acid solution as a wash for the eye and mouth immediately on the birth of the child.

#### Lancet-Clinic, Cincinnati.

December 22.

- 31 Diagnostic Eye Findings in Arteriosclerosis (Angiosclerosis). G. F. Suker, Chicago.  
32 Appendicitis Complicating Pregnancy. E. Ricketts, Cincinnati.

#### St. Louis Medical Review.

December 22.

- 33 A Case in Which Sinking Spells Thousands of Them—Sick Headache, Vomiting, Etc., Were Due to Eyestrain. G. M. Gould, Philadelphia.  
34 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.

#### Surgery, Gynecology and Obstetrics, Chicago.

December.

- 35 Senile Parenchymatous Hypertrophy of the Female Breast. J. C. Bloodgood, Baltimore.  
36 \*Peripheral Versus Intracranial Operations for Tic Douloureux. C. H. Mayo, Rochester, Minn.  
37 \*Tendon Tissue Versus Catgut Ligatures. N. Senn, Chicago.  
38 Vaccine Therapy and Passive Hyperemia in Surgery. J. C. Hollister, Chicago.  
39 \*Bloodless Methods of Artificial Dilatation of the Cervix Uteri at Full Term. H. F. Lewis, Chicago.  
40 \*Bloody Methods of Rapid Dilatation. R. W. Holmes, Chicago.  
41 \*A Review of Over Fourteen Thousand Surgical Anesthetics. A. Magaw, Rochester, Minn.  
42 Plastic Surgery of the Eyelids by the Use of Pedunculated Doubled Skin Flaps. H. Lelschner, Vienna, Austria.  
43 Amputation of the Cervix with the Aid of an Intrauterine Tenaculum. R. C. Coffey, Portland, Ore.  
44 Technic of the Chicago Lying-in Hospital and Dispensary. J. B. De Lee, Chicago.

36. Operations for Tic Douloureux.—After removing the infra-orbital nerve in an operative case in which this branch alone was involved, Mayo plugged the foramen of exit with silver. The patient remained entirely well for seven years, when he had a few twinges of pain, and within a few months recurring attacks became rather severe. Osmic acid was then injected about the foramen of exit, and this gave relief for six weeks, when a recurrence of pain brought him again to the operating table. Incision showed that the silver plug, being too smooth to be firmly fixed, had come out of the canal and rested at the side of the opening. The nerve was as large as at the first operation. It was again removed by Thiersch's windlass method, and the opening plugged with a silver screw, using an ordinary screw driver for the purpose. This patient has had no pain since, now over a year. No patient with the screw inserted has complained of the nerve blocked, and some have been thus obstructed several years. In some cases, but not extending over so long a period, the

inferior dental canal has been opened externally about the point where it passes from the ramus to the body of the bone, the nerve extracted, and the canal plugged with lead. Soft silver or amalgam could be used. In all cases Mayo removes the gustatory nerve, whether complained of or not, as he believes it is a possible source of reflex irritation on the branch causing the pain.

37. Tendon Tissue Versus Catgut Ligatures.—Senn is convinced that from a commercial, scientific, and practical point of view tendon tissue is destined to take the place of catgut in the armamentarium of the surgeon, and 'in the operating room of hospitals, both in military and civil practice.

39. Bloodless Methods of Artificial Dilatation.—Lewis claims that the advocates of the branching metallic dilators, especially the Bossi type, have not made out a case. All the branching instruments are complicated and composed of a very large number of parts. All are dangerous as carriers of infection, because all are difficult to clean. The great fault of all is that the intelligence of the operator has to pass through so much mechanism before it reaches the tissues. It is impossible, at the end of a complicated instrument worked by a finely threaded screw, to have any adequate idea of how much force is being exercised on the tissues of the os and cervix. Lewis says that the consistent and careful use of the bags, or, if more haste is demanded, the bimanual method, will overcome the rigidity about as quickly as the Bossi method, and always more safely.

40. Bloody Methods of Rapid Dilatation.—Holmes summarizes his views as follows: The adaptation of colpotomy and trachelotomy to obstetric surgery as vaginal Cesarean section is one of the greatest advances of recent times. Vaginal Cesarean section is almost indispensable in certain cases of true cervical rigidity. In the absence of complications, expectancy, aided by hystereuryesis, should be precursors of the major operations. In the presence of grave contributory complications, as eclampsia, heart disease, etc., complicated by cervical rigidity, the operation is indicated. We do not know when so-called operable carcinomas of the cervix have metastatic involvement of adjacent glands. If the carcinoma, limited to the infravaginal cervix, has glandular metastases, then the radical vaginal Cesarean section is only a temporizing measure; at a later very early moment, removal of the glands is indicated, after the technic of Ries and Wertheim. Evident encroachment of the cancer into contiguous tissues should be held a contraindication to the radical vaginal procedure. Rarely will vaginal Cesarean section be the operation of election in fibroids blocking the pelvis in labor. The abdominal route probably will continue to be the method of choice. Eclampsia, *per se*, is not an indication for vaginal Cesarean section. If the cervix is uneffaced, or if it is rigid, then the operation becomes a clinical necessity. So far, the results in general have not been any better by this new procedure than by means of the manual method or Bossi dilators.

Vaginal Cesarean section, Holmes declares, is an irrational procedure in placenta prævia, and nearly so in premature detachment of the placenta. A placenta prævia with the placental site on the posterior wall, with a rigid os, in the absence of hemorrhage, might be an indication for vaginal Cesarean section. The most approved technic includes anterior and posterior incisions, version, immediate removal of the placenta, repair, with tamponade if necessary. Vaginal Cesarean section demands hospital facilities, if it is to be done rightly. The dangers of the operation are real, and comprise injuries to the bladder, tearing of the uterus, and hemorrhage, both from the incision and from uterine atony. Probably time will prove that dystocia in subsequent labors is directly due to cicatricial contractions of the scar, or that rupture of the uterus is a sequential accident.

41. Surgical Anesthetics.—After having given 14,380 anesthetics, Magaw has yet to see a death directly from the anesthetic. The ether open method has been the method of choice. She uses a four-ounce ether-can and fits an ordinary cork with a groove on either side into its mouth, fills one groove with absorbent cotton and lets it extend out of the



can about one inch. She usually fixes two cans, one with a large dropper, and uses it until the patient is fully under the anesthetic, and then changes to the other can with the small dropper, and continues its use during the operation. Patients usually walk into the operating-room and mount the table without assistance. All foreign bodies, such as artificial teeth and chewing gum are removed. The hands are fastened loosely across the chest with a wide gauze bandage, to prevent the arms falling over the sharp edges of the table, an accident which so often causes musculospiral paralysis. A pad of moistened cotton is placed over the eyes to protect them from the anesthetic. If, during the course of administration, some of the anesthetic should fall into the eye a few drops of castor-oil dropped into the conjunctival sac, will prevent the conjunctivitis that would otherwise follow.

Magaw claims that it is a mistake to think that the same elevation of the head will do for all patients. The anesthesiologist should elevate the chin to such a position as not to bend the neck too far back or approximate the jaw too near the sternum. Proper elevation of the head will relax all tissues of the neck and give more freedom in breathing. This, also, can be said of the jaw. Holding the jaw up and forward, and keeping it in position so that the patient gets the greatest amount of air possible, is an important feature in giving an anesthetic. While too much emphasis can not be laid on this necessary requisite in giving an anesthetic, all jaws can not be handled in the same manner. When a patient has removed a double set of artificial teeth, the tongue will often cleave to the roof of the mouth during the administration, and raising the jawsets the gums so firmly together that most of the air is shut out, and this may not be noticed until the patient is cyanotic. Magaw has found, in this class of cases, that if the jaw is held but slightly up and forward, and the thumb of the same hand is inserted between the gums, thereby holding the tongue down, faulty respiration will be corrected at once and the color restored. This is one of the instances where the holding up of the jaw too firmly can be overdone.

The inhaler used is the improved Esmarch, with two thicknesses of stockinet (frame boiled and stockinet changed after each patient). The dropper described is used, dropping as slowly and carefully in giving the ether as though it were chloroform, until the patient's face is flushed, and then a few layers of surgeon's gauze are added, and the ether is given a trifle faster until the patient is surgically etherized; then return is made to the same covering as at the start, and the regular drop continued throughout the operation. Many valuable suggestions are made by Magaw for which the reader is referred to the original article as it is impossible in the limited space at our disposal to make a fuller abstract than this.

#### Vermont Medical Monthly, Burlington.

December 15.

- 45 Medicine in Shakespeare. F. A. L. Lockhart, Montreal.
- 46 Treatment of Fractures. E. S. Allbee, Bellows Falls, Vt.
- 47 \*A New Method of Staphylorrhaphy. C. D. Fillebrown, Boston.

47. New Method of Staphylorrhaphy.—Fillebrown believes that he has developed a method of operating for staphylorrhaphy which permits easy approximation and suturing of the palatal segments without the customary deep lateral incisions, and one which renders division of the muscles unnecessary. In principle this method consists in obtaining membranous flaps by splitting the soft palate into two layers and uniting the anterior or lingual portions across the fissure. The superficial incisions begin at a point somewhat in front of the apex of the fissure and extend to within a few lines of the posterior pillar. These incisions pass through the mucous membrane only and not through the entire thickness of the palate. They should curve outward, especially opposite the widest portion of the cleft. Having thus outlined the distal borders of the flaps, the knife is carried along the margins of the cleft in such a manner that the edges are split from the front almost to the pharyngeal edge of the soft palate. By carefully dissecting in the plane of the palate from the distal incisions inward so that the knife point will emerge in the split edge, two quadrangular flaps

of mucous membrane are formed, preserving attachments for nutrition. After paring the edges of the nodule, omitted in the splitting process, the flaps are drawn together across the cleft and sutured in the median line, with the opposing edges everted in order to bring two raw surfaces in contact. In order to guard against any opening through the velum the distal edges are secured to the raw surfaces by several sutures. In the course of healing these denuded parts granulate readily, leaving no dense scar tissue. In place of dividing muscles to insure immobility, fixation is accomplished by passing wires behind the palate from side to side, and securing them laterally by silver disks. This restricts all movement of the velum and sustains the pressure in swallowing, cleansing, etc. This method is adapted to the clefts of the soft palate only; but when the deformity extends into hard palate, it can be employed in conjunction with the usual method of closing anterior fissures.

#### The Ophthalmic Record, Chicago.

November.\*

- 48 Diaphanoscopy of the Eye. H. V. Würdemann, Milwaukee.
- 49 \*Erestrain and Crime. G. M. Case, Elmira, N. Y.
- 50 Observations on Due Perception. F. W. Eldridge-Green.
- 51 Double Rupture of the Sclera Due to the Blow of a Fist. E. A. Shumway, Philadelphia.
- 52 Two Cases of Intraocular Tumor in Which the Transillumination was Misleading. G. F. Suker, Chicago.
- 53 Case of Misleading Alcohol Amblyopia with Consecutive Atrophy. F. A. Phillips, Chicago.
- 54 Corneal Lesions in Snow Blindness. G. L. Strader, Cheyenne, Wyo.
- 55 Apparent Cure of a Case of Spring Catarrh. H. Gradle, Chicago.

49.—See THE JOURNAL, Sept. 22, 1906, page 960.

#### The Laryngoscope, St. Louis, Mo.

November.

- 56 Bernhard Fraenkel, Biography. A. Kuttner, Berlin.
- 57 American Exhibit in Berlin, in Honor of the 70th Birthday of Professor Bernhard Fraenkel. E. Mayer, New York.
- 58 Teaching of Laryngology, Then and Now. C. H. Knight, New York.
- 59 \*An Original Research on the Cause of Vocal Nodules. F. E. Miller, New York.
- 60 Submucous Resection Operation on the Nasal Septum. J. C. Beck, Chicago.
- 61 Results of Operation on the Nasal Septum and Means of Various Incisions. J. F. Barnhill, Indianapolis.
- 62 Treatment of Perforations of the Nasal Septum. M. A. Goldstein, St. Louis.
- 63 Teaching of Laryngology in the Harvard Medical School. H. P. Mosher, Boston.
- 64 Teaching of Laryngology and Rhinology in the Medical Department of the George Washington University, Washington. D. C. C. W. Richardson, Washington, D. C.
- 65 Method of Teaching Laryngology in the Jefferson Medical College. D. B. Kyle, Philadelphia.
- 66 Teaching of Laryngology and Rhinology in the New York University, University and Bellevue Hospital Medical College. C. G. Coakley, New York.
- 67 Teaching of Laryngology in Johns Hopkins University. J. N. Mackenzie, Baltimore.
- 68 Teaching of Rhinology and Laryngology, College of Physicians and Surgeons, Department of Medicine of the University of Illinois. W. L. Ballenger, Chicago.
- 69 Teaching of Laryngology and Rhinology in the Denver and Gross College of Medicine. R. Levy, Denver, Colo.
- 70 Teaching of Laryngology in the Medical Department of St. Louis University. W. M. C. Bryan, St. Louis.

59. Id.—July 21, 1906, page 230.

#### Illinois Medical Journal, Springfield.

November.

- 71 \*Medical Cooperation in Surgery of the Prostate. C. E. Black, Jacksonville.
- 72 Present Status of the Bottini Operation for the Relief of Prostatic Obstruction. F. Kreissl, Chicago.
- 73 Suprapubic Versus Perineal Prostatectomy. W. T. Belfield, Chicago.
- 74 Contribution to the Surgery of the Prostate. M. R. Barker, Chicago.
- 75 Macroscopic Agglutination of the Typhoid Bacilli as a Diagnostic Test for the General Practitioner. A. M. Stober, Chicago.
- 76 \*Treatment of the Opium Habit. G. F. Butler, Chicago.
- 77 Intestinal Disorders of Childhood Accompanied with Diarrhea. J. C. Cook, Chicago.
- 78 Uses of Citrate of Soda in Infant Feeding. J. W. Van Der-slice, Chicago.
- 79 Sociologic Duty of a Medical Society to Its Members. A. B. Keyes, Chicago.
- 80 Commercial Electricity and Its Dangers. G. de Tarnowsky, Chicago.
- 81 Partial Inferior Turbinatectomy as Performed with Myles' Nasal Forceps. J. M. Bick, Chicago.

71. Id.—June 23, 1906, page 1965.

76. Id.—June 9, 1906, page 1787.



**Pennsylvania Medical Journal, Athens.**

*November.*

- 82 \*Address on Medicine. D. W. Jeffries, Chester.
- 83 \*Some Causes of Inefficiency in Medical Practice. J. B. Roberts, Philadelphia.
- 84 New Features of the United States Pharmacopeia of 1900. A. Koenig, Pittsburg.
- 85 Cleft Palate. H. R. Wharton, Philadelphia.
- 86 Photographic Illustrations in Modern Medical and Surgical Literature. C. B. Longenecker, Philadelphia.
- 87 Irregular Regular in Public and Hospital Practice. J. Price, Philadelphia.
- 88 Case of Conjoined Twins Complicating Labor in a Patient with Multiple Uterine Fibromata, with Exhibition of Specimens. C. E. Ziegler, Pittsburg.
- 89 Value of the Roentgen Rays as a Therapeutic Agent. G. E. Pfahler, Philadelphia.
- 90 Results in Roentgen Therapy. C. L. Leonard, Philadelphia.
- 91 Roentgen Diagnosis in Gastroenterostomy. H. Hulst, Grand Rapids, Mich.

82, 83. Id.—Oct. 13, 1906, page 1220.

**Yale Medical Journal, New Haven, Conn.**

*November.*

- 92 Community of Interest of Medical School and Public. W. W. Keen, Philadelphia.
- 93 Address at Annual Banquet of Connecticut State Medical Society, Hartford, Conn., May, 1906. Oliver C. C. Smith.
- 94 Data on Proteid Metabolism. J. L. Buttner, New York.

*December.*

- 95 Serum Therapy, General Considerations. D. M. Lewis, New Haven.
- 96 Serum Treatment in Non-Bacterial Diseases. N. R. Hotchkiss, New Haven.
- 97 Recent Advances in Treatment of Bacterial Diseases. C. Engelke, Waterbury, Conn.

**Interstate Medical Journal, St. Louis, Mo.**

*December.*

- 98 Critical Analysis of the Expert Testimony in the Jack the Stabber Case. S. I. Schwab, St. Louis.
- 99 Practical Use of the Roentgen Ray in Examinations of the Chest. W. S. Newcomet, Philadelphia.
- 100 Healing by Faith. J. M. Bradley, St. Louis.

**The Medical Fortnightly, St. Louis.**

*December 25.*

- 101 Foreign Bodies in the Larynx and Tracheobronchial Tract. L. D. Brose, Evansville, Ind.
- 102 Some Faults of Physicians and Druggists. L. H. Behrens, St. Louis.
- 103 The United States Pharmacopeia. H. M. Whelpley, St. Louis.
- 104 The National Formulary and Its Elegant Preparations (with Exhibit of Preparations). F. Hemm, St. Louis.
- 105 The Prescribing of Proprietary Remedies. J. C. Falk, St. Louis.

**The Post-Graduate, New York.**

*December.*

- 106 Gastric Ulcer, Gastroenterostomy. E. W. Peterson, New York.
- 107 Surgical Treatment of Malignant Disease of the Stomach. R. T. Morris, New York.
- 108 Medical Treatment of Malignant Disease of the Stomach. M. Einhorn, New York.
- 109 Symptomatology and Diagnosis of Cancer of the Stomach. J. E. Mackenty, New York.
- 110 A New Gas-Ether Inhaler. H. D. Furniss, New York.
- 111 Indication for Forceps in Obstructed Labor. F. A. Dorman, New York.
- 112 Tropical Malaria. P. Horowitz, New York.

**Iowa Medical Journal, Des Moines.**

*December 15.*

- 113 Report of Chairman, Section on Surgery, Iowa State Medical Society. C. S. James, Centerville.
- 114 Prostatic Hypertrophy. A. J. Burge, Iowa City.
- 115 Car Wheel Injuries of the Extremities. F. M. Tombaugh, Burlington.
- 116 Treatment of Fracture of the Shaft of Femur. F. H. Hornbrook, Cherokee.
- 117 Unusual Injury to Penis. W. G. Morton, Marshalltown.
- 118 Diseases of the Biliary Tract. A. M. Pond, Dubuque.
- 119 The Medical Pretender and Impostor. J. F. Kennedy, Des Moines.
- 120 Medical and Surgical Progress. G. Cullen, Des Moines.

**Northwest Medicine, Seattle, Wash.**

*December.*

- 121 Puerperal Eclampsia. J. H. Lyons, Seattle.
- 122 Head Injuries and Indications for Surgical Interference. H. Power, Spokane.
- 123 Uterine Retroversion and Its Treatment. C. N. Suttner, Walla Walla.
- 124 Interdependence of Diagnosis and Treatment in Abdominal Diseases. R. C. Coffey, Portland, Ore.
- 125 Treatment of Amebic Dysentery. R. J. Smith, Smithfield, Utah.

**Maryland Medical Journal, Baltimore.**

*December.*

- 126 An Explosive Epidemic of Water-Borne Typhoid Fever. W. R. Stokes and M. L. Price, Baltimore.

**Therapeutic Gazette, Detroit.**

*December 15.*

- 127 Treatment of Hypertrophy of the Prostate. E. Fuller, New York.
- 128 Prostatic Hypertrophy. C. H. Chetwood, New York.
- 129 Indiscriminate Prostatectomy. E. Martin, Philadelphia.
- 130 Fifty Consecutive Cases of Perineal Prostatectomy Without a Death. H. H. Young, Baltimore.
- 131 Leucorrhœa—Its Treatment. F. C. Hammond, Philadelphia.
- 132 Cactus Grandiflorus. L. E. Sayre, Kansas City.
- 133 Treatment of Tuberculosis in Early Life. J. P. C. Griffith, Philadelphia.

**Colorado Medicine, Denver.**

*December.*

- 134 Mastoiditis in Chronic Suppurative Otitis Media. W. C. Bane, Denver.
- 135 Drop Method of Administering Ether. C. G. Parsons, Denver.
- 136 Fumigation of Private Houses After Contagious Diseases. H. R. McGraw, Denver.

**American Practitioner and News, Louisville.**

*December.*

- 137 The Epileptic. T. P. Satterwhite, Louisville.
- 138 Diagnosis and Treatment of Kidney Stone. J. R. Wathen, Louisville.
- 139 Cystitis. J. M. Schleicher, Seattle, Wash.

**Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.**

*December 1.*

- 140 Gastric Ulcer. M. C. Millet, Rochester.
- 141 The Medical Expert Witness. J. W. Andrews, Mankato.
- 142 Modern Therapy of Syphilis. S. E. Sweitzer, Minneapolis.
- 143 Some Features of Osteomyelitis. A. R. Colvin, St. Paul.

**California State Journal of Medicine, San Francisco.**

*December.*

- 144 Pronated Foot and Its Clinical Significance. S. T. Pope, Watsonville.
- 145 Diet in Disease. G. K. Abbott, Loma Linda.
- 146 Wilful Deception in a Case of Hysteria. E. W. Twitchell, Sacramento.
- 147 Report of the Seventeenth and Eighteenth Cases of Coccidioid Granuloma. P. K. Brown, San Francisco.

**Medical Examiner and Practitioner, New York.**

*December.*

- 148 Early Recognition of Predisposition To Tuberculosis. F. Martins, Berlin.
- 149 Early Recognition of Predisposition to Tuberculosis, Gottstein, Berlin.
- 150 Early Symptoms of Tuberculosis and How They May Be Developed when the Applicant Attempts to Conceal Them. W. Brinton, Philadelphia.
- 151 Examination of the Chest. W. B. Gossett, Louisville, Ky.
- 152 Diagnosis of Diseases of the Heart. P. F. Barbour, Louisville, Ky.

**FOREIGN.**

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**British Medical Journal.**

*December 15.*

- 1 \*Cancer, and Its Treatment by Modern Methods. E. Owen.
- 2 Acute Septic Peritonitis. C. J. Bond.
- 3 \*Appendicitis; Points in Diagnosis and Treatment Based on Over 600 Operations. H. A. Bruce.
- 4 Intestinal Obstruction in Association with the Appendix. G. G. Turner.
- 5 Valves of the Iliac Vein. J. P. McMurrich.
- 6 Arteriolæ Rectæ of the Mammalian Kidney. G. C. Huber.
- 7 Morphology of the Uriferous Tubule of the Reptilian Kidney. G. C. Huber.
- 8 Mechanical Supports of the Pelvic Viscera. A. M. Paterson.
- 9 Preliminary Communication on Some Features of the Brain and Skull in Mongolism. D. Waterston.
- 10 Morphology of the Hip Joint. G. J. Jenkins.
- 11 Experiments on the Developing Ear Vesicle of the Tadpole. G. L. Streeter.
- 12 Development of Ova of the Toad Fertilized by Spermatozoa Which Have Been Exposed to the Roentgen Rays. C. B. Bardeen.
- 13 Development of the Nerve Elements in Vertebrates. R. G. Harrison.
- 14 Early Development of *Geomys bursarius*. T. G. Lee.
- 15 Development of the Stria Vascularis. C. E. Shambaugh.
- 16 Chromaffine Characters of Certain Parietal Cells of the Stomach. B. C. H. Harvey.
- 17 \*An Unusual Peritoneal Anomaly Simulating Retroperitoneal Hernia. B. C. H. Harvey.
- 18 A Symclian Monster (*Sympus Dipus*). R. J. Gladstone.
- 19 Case of Innervation of the Nervus Lateralis Oculi by the Nervus Oculo-Motorius, with Absence of the Nervus Abducens. B. C. H. Harvey.
- 20 \*The Appendix in Relation to Pelvic Inflammation. T. A. Helme.
- 21 \*Antistreptococcus Serum in Puerperal Fever. M. Cameron.
- 22 \*Early Diagnosis of Infectious Diseases by the Recognition of the General Involvement of the Lymphatic Glandular System. A. E. Vipond.



- 23 Plague Procedure in Hong Kong. J. M. Atkinson.  
24 Prevention of Tuberculosis. S. G. Dixon.

**The Lancet, London.**

*December 15.*

- 25 \*Cancer, Its Treatment by Modern Methods. E. Owen.  
26 Observations on Paralysis of the Brachial Plexus. W. B. Warrington and R. Jones.  
27 Water Gas, Carburetted Water Gas, and Carbon Monoxide Poisoning. J. Glaister.  
28 Cases of Acute Leukemia Admitted into St. George's Hospital Between 1895 and 1905. L. B. Bailey.  
29 \*Case of Sprue Treated by Strawberries. M. F. Squire.

1 and 25. **Cancer.**—As is indicated in the title, Owens' paper is a general review of the present-day treatment of cancer, but his opening statement is a significant one. He says that in the present state of medical and surgical knowledge and experience, the only way in which the cure of a cancer can be attained is by its prompt and thorough removal by operation; and when a surgeon has made up his mind that a growth is malignant, and that it can and ought to be removed, he should lose no time.

3. **Appendicitis.**—Bruce emphasizes the point that the temperature and pulse are not to be relied on in the diagnosis of appendicitis, as in many severe cases there is very little elevation of temperature and little increase in the pulse rate. In all his acute cases there was rigidity of the right rectus muscle; in more than one-half the cases there was vomiting; and in practically all there was nausea. He insists on the necessity of very early operation in all cases of acute appendicitis. The paper closes with the report of 14 cases, some typical ones, others showing conditions closely simulating appendicitis.

17. **Unusual Peritoneal Anomaly Simulating Retroperitoneal Hernia.**—In the case reported by Harvey the position of the radix mesenterii was occupied by a fold of peritoneum with a free edge directed toward the left. This fold extended from above downward and to the right, and was continuous with the peritoneum on the posterior abdominal wall above, about the origin of the superior mesenteric artery, and below, along a line 3 cm. in length from the right margin of the body of the fifth lumbar vertebra to the brim of the pelvis. Between these extremities the fold was unattached, and behind its free border was an entrance toward the right into a large pouch containing all the small intestine. This pouch was bounded anteriorly by a double layer of peritoneum, being the continuation to the right of the fold above mentioned. On the right it was bounded by the attachment of this double layer to the posterior abdominal wall just at the medial side of the ascending colon. It was bounded behind by the peritoneum of the posterior abdominal wall. The duodenum did not cross the middle line, but entered this pouch from above and became continuous with the jejunum, remaining entirely on the right side.

20. **Appendix in Relation to Pelvic Inflammation.**—Helme summarizes his paper as follows: 1. The association of appendicular and pelvic disease is due to contiguity rather than continuity of structure. 2. The accidental inward direction or pelvic position of the appendix is the chief factor in this association. 3. The appendix or the pelvic organs may provide the primary source of disease. 4. Appendicitis is a frequent source of dysmenorrhea and its associated mucous colitis. 5. The association of appendicitis with pelvic disease is the exception and not the rule. 6. The appendix is not a vestigial structure but a highly differentiated portion of the intestinal tract and plays an important part in intestinal digestion. 7. The systematic removal of the appendix during laparotomy for pelvic disease in the absence of evident disease is not justifiable.

21. **Antistreptococcus Serum in Puerperal Fever.**—Cameron cites the histories of two patients who, he is convinced, would have died from puerperal fever had he not resorted to the use of antistreptococcal serum.

22. **Early Diagnosis of Infectious Diseases.**—Vipond makes it a practice to examine the lymph nodes in every child who suffers from elevation of temperature or other signs of acute illness without any local condition to account for the general symptoms. His findings lead him to draw the following conclusions: 1. The nodes are enlarged in infectious diseases. 2. They are enlarged some days before the development of the dis-

ease. He has found them to be enlarged and tender seven days before the rash of measles appeared. 3. The enlargement is most marked between the ages of from 3 to 18 years. 4. The enlargement is not produced by the irritation of the rash, but is due to the absorption of the poison or toxin. 5. As a rule nursing infants do not contract infectious diseases readily, as the tonsils are small and inactive. 6. The tendency to contract infectious disease is much lessened if the mouth and tonsils are in a healthy condition. 7. The enlargement of the nodes is more marked in certain infectious diseases than in others. For instance, they are larger in erysipelas, measles and rubella than in scarlet fever and whooping-cough. 8. They resolve more quickly in diphtheria under the influence of antitoxin than they do in measles and erysipelas. 9. In all infectious diseases (except those of local inoculation) the poison most likely enters the system through the tonsils. 10. Suppuration does not take place in the nodes unless we are dealing with a mixed infection.

29. **Sprue Treated by Strawberries.**—In the case reported by Squire, the patient, a boy aged 3 years, was ordered a strict milk diet, given frequently in small quantities, amounting to three pints a day and later increased to four pints, which seemed to be about as much as he could digest. He soon began to improve, the diarrhea diminished perceptibly, and after a fortnight the stools were not more than one or two a day; they were more formed, though still clay-colored and very offensive. The bared patches on the tongue healed and the patient seemed better in every way. By the middle of August the stools were not more frequent than one a day and were generally normal in appearance, though still rather offensive. The patient was of a gluttonous nature and difficult to manage as regards diet; he became very restive under the treatment and after much grumbling his diet was increased by the addition of bread and milk and subsequently bread and butter and an egg; but soon afterward his stools returned to their previously gray liquid and yeasty state, he rapidly lost flesh, and the ulcers reappeared on the tongue. He was again put on a strict milk diet with a similar result as regards the improvement, the grumbling as he got stronger, and the relapse on increasing the diet. Different drugs and food were tried, but with only temporary benefit. Finally Squire ordered one pound of strawberries a day in addition to the diet the patient was then taking. He began to improve at once, and the daily ration of strawberries was doubled until the patient made a complete recovery.

**Medical Press and Circular, London and Dublin.**

*November 21.*

- 30 \*Medicinal and Dietetic Treatment of Catarrhs of the Bladder and Pelvis of the Kidney. C. Edelssen.  
31 A Plea for the Study of the Intermedio-Lateral Tract of the Spinal Cord. A. Bruce and J. H. H. Pirie.  
32 Case of Ovarian Cystoma in Which Thyroid Tissue Occurred. J. H. Swanton.  
33 Medical Treatment of Uterine Hemorrhage. S. J. Aarons.

*November 28.*

- 34 \*Dechloridation Treatment in Cardiac and Renal Disease. F. Vidal.  
35 Treatment of Diabetes with Secretin. J. R. Charles.  
36 Appendico-Enterostomy. S. Pringle.

*December 5.*

- 37 Post-Traumatic Neuroses. T. G. Moorhead.  
38 Cerebral Syphilis. H. Dardenne.  
39 Causation and Treatment of Some Headaches. W. Harris.

*December 12.*

- 40 Cholelithiasis. W. Taylor.  
41 \*Two Cases of Esophageal Stricture. T. K. Monro and A. N. McGregor.  
42 Tuberculous Ulceration of the Tongue. A. Wylie and W. Wilmgrave.  
43 The Mouth as a Focus of Infection. F. Norman.

30. **Catarrh of Bladder.**—Although not opposed to the local treatment of vesical catarrh, Edelssen is of the opinion that it should be used in those cases only in which internal treatment fails. It should not be undertaken without necessity, and physicians, he states, would be much less frequently placed in a position of being obliged to wash out the bladder if they more frequently made use of the old, tried remedies for cystitis. For washing out, the milder remedies will generally be sufficient, and especially the 3 per cent. solution of chlorate of potash recommended by Boegehold; silver nitrate will only be



necessary in rare cases. Boric acid and resorcin, both in 2 to 3 per cent. solution, have also proved very useful. Washing out with permanganate of potash is not without danger, as the possibility is not quite excluded that the sediment caused may not in part adhere to the mucous surface of the bladder; and occasionally it may give origin to a concretment.

34. **Dechloridation.**—Widal says that it is not claimed for the dechloridation treatment that it can avert all the accidents to which the victims of chronic renal disease are liable, but it enables us to combat and to avert certain formidable complications which *per se* may cause the patient's death. In the subjects of chlorid retention there are two distinct indications: one is to rid the organism of the chlorid and water that clog the organism, the second is to draw up a regimen in which the quantity of chlorid ingested is proportioned to the permeability of the kidney for the salt.

41. **Esophageal Stricture.**—Monro and McGregor report one case each of malignant and cicatricial stricture of the esophagus treated successfully by gastrostomy.

#### The Clinical Journal, London.

November 21.

- 44 Varicose Veins. C. B. Lockwood.
- 45 \*Head-Rolling and Other Curious Movements in Children. G. F. Still.
- 46 Peritonitis in Children. H. S. Clogg.

November 28.

- 47 \*Cases Illustrating the Surgery of the Spleen. D. Power.
- 48 High Arterial Tension and Some of Its Consequences. L. Williams.
- 49 Some Complications of Tuberculous Infection of the Lymphatic Glands in Children. T. Fisher.

December 5.

- 50 Some Aspects of Drunkenness. C. Mercier.
- 51 \*Early Recognition of Cancer of the Rectum and Its Treatment. D. Drew.
- 52 High Arterial Tension and Some of Its Consequences. L. Williams.

December 12.

- 53 Malignant Endocarditis. J. R. Bradford.
- 54 Case of Functional Hemiplegia. C. O. Hawthorne.

45. **Head Rolling and Other Movements in Children.**—Still discusses head rolling, head banging, head nodding and body rocking. He says that the first point to be determined in treatment is the underlying cause; it may be possible to relieve a middle-ear catarrh; it may be advisable to give some drug, perhaps even in very rare cases to lance the gums to relieve the worry of dentition, but often it is impossible to find any cause, and we are driven to treat the symptoms.

47. **Surgery of Spleen.**—Power reports one case of successful removal of an enlarged and displaced spleen in a woman, aged 42; another of removal of the spleen for primary sarcoma from a woman, aged 49, who died six months afterward; and a case of ruptured spleen, the patient being a boy 16 years old, in which the hemorrhage was checked by packing the rupture with thymol gauze. The patient was lost sight of. Another patient who was treated in a similar manner for rupture of the spleen died.

51. **Cancer of Rectum.**—Drew lays stress on the following: 1. The importance of recognizing the disease at the earliest opportunity, and that, until the cases are obtained early, the results of excision of the rectum can not be expected to show the improvement that improved technic in operating deserves. 2. That partial operations for cancer of the rectum should be abandoned, and that, just as in the breast, the earlier the disease the better is the chance of effecting a cure if a thorough operation is performed. 3. The importance of exploration by the abdomen in all cases in which cancer of the rectum is at all advanced before proceeding to excision.

#### Bulletin de l'Académie de Médecine, Paris.

Last indexed XLVII, page 2041.

- 55 (LXX, Nos. 38-40, Pp. 391-478.) Focus of Bacillary Dysentery in well-to-do Paris Family. F. Widal. (Foyer de dysentérie mortelle. Contagion probable par des tissus exotiques.)
- 56 \*Cancer of the Tongue and Its Relation to Syphilis. Discussion. (Curabilité du cancer et traitement du cancer de la langue en particulier.)
- 57 Processes of Destruction and Repair in Caries of the Teeth. Coyne. (Réactions odontoclasique et odontoblastique au cours des infections dentaires.)
- 58 Aging of Vaccine Pulp. Kelsch and Tanon. (Vieillessement de la pulpe vaccinale.)

56. **Curability of Cancer and of Cancer of the Tongue in Particular.**—Berger states that the mortality has been 50 per cent. or more in his cases of cancer of the tongue in which he obtained access to the tumor through the lower jaw. When he operated by merely enlarging the orifice of the mouth, the mortality was only about 33 per cent. He reported the case of a woman cured for ten years to date after ablation of an epithelioma of the tongue, a man cured for the same length of time, 2 other men cured for six years, besides a number of others operated on more recently. He regards as absolute contraindications to operation extension of the cancer back to the base of the tongue and toward the epiglottis, involvement of the pillars, or tonsil, adhesions between the jaw and the ulceration or tumor, also the cases in which both halves of the tongue are involved beyond the horizontal portion or even the front part, and, finally, those in which the glands show inflammatory enlargement. When only one side of the tongue is involved he has never witnessed recurrence in the glands on the opposite side, and consequently he removes the glands on the affected side alone. In the discussion of the subject, Cornil and Hallopeau urged the importance of uniformity in classifying cancers, and pointed out the greater malignity of tumors of the same variety in different locations. Hallopeau has frequently noticed that leucoplasia developing in a syphilitic seems to behave like what he calls a "deuterothy," and is refractory to mercurial treatment, but that the syphiloma which initiates the leucoplasia is amenable to local measures as a rule, no matter how frequently it recurs. He generally cauterizes it with acid nitrate of mercury which transforms the syphiloma into an ordinary sore that soon heals. If too extensive for this treatment, he has his patients take from 15 to 20 tablets a day containing each 0.001 gm. of corrosive sublimate. As the tablet dissolves slowly in the mouth it keeps the lesion constantly bathed with the mercurial fluid. This has both a local and a general action. Potassium iodid may be given with it and the mouth cleansed with a soap containing sodium salicylate.

Fournier expatiated on this new iniquity traced to syphilis, its participation in the production of cancer of the tongue. He cited a case of cancer of the tongue in a syphilitic woman who had never smoked tobacco. Another argument in favor of incriminating syphilis is the fact that cancer of the tongue is extremely rare in non-syphilitic smokers. One of his patients was a man who had been an incessant smoker for thirty years without any lesion presenting in the mouth. Then he contracted syphilis and two years later exhibited severe leucoplasia of the tongue. Cancer very seldom develops on a healthy tongue; there is always an intermediary lesion—the leucoplasia. He declares that syphilis is almost always curable, while the parasymphilitic affections, of which the most serious are tabes, general paralysis and cancerogenic leucoplasia, are almost inevitably incurable. The full realization of this fact, he says, should revolutionize rational preventive treatment of syphilis. Rational treatment should aim to prevent the development of the parasymphilitic affections. In 184 cases of cancer of the mouth in his private practice, 155 of the patients had an unquestionable history of syphilis and no special inquiry was made as to syphilitic antecedents in the others. Even excluding the latter group as all free from syphilis, this leaves a proportion of from 84 to 96 per cent. syphilitic patients in his and in others'—non-specialists—experience.

#### Presse Médicale, Paris.

- 59 (XIV, No. 92, pp. 729-740.) History of Urinary Diseases. Albarran. (Maladies des voies Urinaires.)
- 60 \*Life of Semmelweis—History of Puerperal Fever. Pinard. (Ignace Philippe Semmelweis.)
- 61 Localization of Motor Aphasia. J. Dejerine. (Localisation de l'aphasie motrice.)
- 62 Pathologic Anatomy and Pathogenesis of Arteriosclerosis. O. Josué. (L'artério-sclérose.)
- 63 \*Plastic-orthopedic Improvement in Technic of Amputation of Arm. A. Ceci. (Amputations cinéplastiques des membres supérieurs.)

60. **History of Puerperal Fever.**—Pinard points to Semmelweis' career as another example of the baneful influence of dogma in medicine and the frequently retrograde force of the scholastic spirit, while observation should dominate everything else in medicine. He states that Semmelweis wrote to the Paris Académie des Sciences in 1849 setting forth his views



in regard to the prevention of puerperal fever, but no notice was taken of his communication. In 1851 a Vienna obstetrician sent a report of Semmelweis' work to the Académie de Médecine. It was referred to a committee, and nothing further was heard from it there, although the article was published in full in the *Annales d'hygiène publique*, XLV. The subject of the prevention of puerperal fever finally came up in the Académie in 1858, and the discussion was carried through eighteen sessions without further result than the final conclusion that lying-in hospitals should be suppressed. Tarnier recognized the truth in Semmelweis' views, but he was unable to convince others, and it was not until fifteen years later that he was able to realize them in practice, when he assumed charge of the Maternity in 1870. The mortality dropped at once from nearly 10 to 2.32 per cent.

**63. Improved Technic for Amputation of Arm.**—Ceci states that an Italian general practitioner, G. Vanghetti, has been proclaiming the advantages of retaining the tendons to make a ring below the stump after amputation of the arm. This ring serves as a hold for the artificial arm or hand, enabling much better control. Ceci has applied the idea in 3 cases, modifying the technic suggested by Vanghetti, which had been worked out on poultry, but following his principle of "cinematic prosthesis," "plastic amputation" or "plastic-orthopedic amputation," as it has been variously called. The illustrations accompanying the article show three patients thus operated on. In the first case a single ring was formed of the tendons and muscles, covered with skin, the lumen of the ring forming a tunnel through the stump of the arm below the end of the bone. Cords passed through this ring and fastened to the artificial hand allow a lamp to be grasped firmly, an axe to be used, etc. In another case two rings were made at right angles, and heavy weights are shown in the illustration suspended from these "traction rings." The tendons and muscles are left in their normal relations so far as possible. The technical details are described at length.

#### Semaine Médicale, Paris.

- 64 (XXVI, No. 49, Pp. 577-588.) Insignificant Results to Date of Vaccination Against Tuberculosis. G. Moussu. (Le bilan actuel de la vaccination antituberculeuse.)

#### Dermatologische Zeitschrift, Lassar's, Berlin.

Last indexed XLVII, page 1772.

- 65 (XIII, No. 6, Pp. 393-460.) Topography of Spirochetes in Papule. S. Ehrmann. (Zur Top. der Spirochaete pallida in der krustös werdenden Papel.)  
 66 Spirochaeta pallida. F. R. N. Berger.  
 67 \*Aspiration Treatment of Chronic Gonorrhea. H. Strebel. (Aspirationsbehandlung der chron. Gon.)  
 68 Technic of Roentgen Treatment. L. Görl. (Technisches zur R.-Therap.)  
 69 Lassar's Zinc Paste in Veterinary Medicine. Goldbeck (Zink-Paste in der Veterinär.-Med.)  
 70 Anatomic Changes in Skin with Neurotic Disease of Sweat Glands. W. A. Nestorowsky. (An. Veränderungen der Haut bei Dysidrosis.) Commenced in No. 3.  
 71 Prostitution in Poland in the XV Century. J. Lachs. (Krakauer Prostitutionswesen im XV Jahrhundert.)  
 72 (No. 7, Pp. 461-536.) Total Whitening of the Nails. S. Bettmann. (Leukonychia totalis.)  
 73 Multiple Cutaneous Myomata. C. Gutmann. (Dermatomyome.)  
 74 Xeroderma pigmentosum (Kaposi). O. Löw.  
 75 (No. 8, Pp. 537-612.) Giant Papilloma on the Genitalia. N. E. Aronstam. (Pap. gigantum der Genitalien.)  
 76 \*Hemorrhage from Female Genitalia in Syphilis. A. Dreyer. (Blutungen aus den weibl. Genitalien bei Syph.)  
 77 Isolated Pemphigus of the Mucosae. F. Callomon. ("Isol." Pemphigus der Schleimhäute.)  
 78 Biology of Heredity and Its Importance for Research on Syphilis. F. B. Solger. (Zur Biologie der Vererbung.)  
 79 Experimental Syphilis, the Pale Spirochete and Other Kinds of Spirochetes. E. Hoffmann. (Exp. Syph., Spirochaeta pallida und andere Spir.-Arten.)  
 80 Aspiration Treatment of Gonorrheal Urethritis. T. Mayer. (Asp.-Therap. gonorrhoeischer Urethritiden.) See abstract 67.  
 81 (No. 9, Pp. 613-676.) Rare Nail Disease. J. Heller. (Zur Kasuistik seltener Nagelerkrankung.)  
 82 Bibliography on Spirochaeta Pallida. H. Hübner.

**67. Aspiration Treatment of Chronic Gonorrhea.**—Strebel uses a catheter, closed at the end, but with numerous large openings, connected with a strong aspirating syringe or vacuum pump. The lining of the urethra is sucked into the openings of the catheter, and the secretions in the glands are aspirated by the strong negative pressure. After air has been let into the urethra again the secretions are readily rinsed out. This suction of the secretions is proving especially useful in

prostatitis and in gonorrhea of long standing. The vacuum treatment has further the advantage that it induces intense hyperemia in the parts. It is possible to obtain results with it like those from Oberländer's dilatation, laceration of the mucosa and bleeding. This hyperemia and solution of continuity have frequently induced a pronounced curative reaction with absorption of infiltrations. He has found that the curative action is promoted by first pricking the infiltrations with a fine needle. This opens passages into the glands and allows accumulated pus to be sucked out by the following aspiration. Strebel has been using this aspiration treatment of chronic gonorrhea for more than a year, with most excellent results, even with home-made instruments, but now a Leipsic firm has produced instruments which he says ideally answer the purpose. Mayer of Lassar's clinic reports in No. 8 equally favorable results from a somewhat similar technic.

**76. Syphilitic Genital Hemorrhage.**—Dreyer remarks that he has not been able to find in the German literature any reference to bleeding of syphilitic origin from the female genitalia. He summarizes 14 cases from French, Italian and Russian journals. In 2 instances the ovaries were removed as a last resort to arrest the hemorrhages. These uselessly mutilating operations served a good purpose, however, as they gave the clue for correct treatment in further experiences of the same kind. In 2 other cases the success of mercurial treatment was the only basis for the assumption of a syphilitic etiology. Enlargement of the ovaries was probably responsible for the bleeding in most of the cases; they subsided to normal size under mercurial treatment. The hemorrhages occurred almost exclusively during the tertiary period. The only exceptions were in a case of inherited syphilis and in his personal case in which they occurred during the secondary stage.

#### Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 83 (XXXII, No. 47, Pp. 1888-1936.) Acute, Anterior Poliomyelitis. W. Erb.  
 84 Angiosclerotic Disturbances in the Legs: Intermittent Claudication, etc. W. Erb. ("Intermittierendes Hinken," etc.)  
 85 \*The Heart in Case of Goiter. F. Kraus. (Kropfherz.)  
 86 \*Treatment of Gastric Ulcer. A. Schmidt. (Behandlung des Magengeschwürs.)  
 87 What Influence Have Roentgen Procedures Exerted on the Physician's Conduct in Cases of Fractures of Bones? F. König. (R.-Verfahren bei Knochenbrüchen.)  
 88 Physician's Certificate in Regard to Influence on Earning Capacity of Reduction of Visual Acuity. H. Schmidt-Rimpler. (Zur ärztlichen Begutachtung, etc.)  
 89 Test for Heterologous Albumin in Blood by Deviation of Complement not Practicable for General Use. Ganghofner and Langer. (Verwertbarkeit des Phänomens der Komplementablenkung zum Nachweise von artfremden Eiweiss im Blute.)  
 90 \*Box for Sending Specimens of Feces for Examination. I. Boas. (Eine portative Stuhlschale (Koprooskop) für Untersuchungszwecke.)

**85. The Heart in Case of Goiter.**—Kraus reviews the various cardiac disturbances liable to occur with goiter, especially the cardiovascular syndrome induced by abnormal functioning of the thyroid gland with the coöperation of the nerves controlling the heart action. According to his experience, both clinical and experimental, defective thyroid functioning is not necessarily attended by heart disturbances, certainly not progressive ones. Even the cretins are liable to have hearts that behave comparatively normally and are relatively of normal size. Excessive functioning of the thyroid gland entails the clinical pictures of exophthalmic goiter, "basedowified goiter," "thyrotoxic goiter heart," and artificially induced thyroidism. He thinks that the symptoms in these conditions are probably due to the action on the sympathetic system of the products generated in excess in the thyroid gland. The organism is flooded with these substances, and they have a peculiar affinity for the sympathetic nerve. He discusses a number of problems in regard to the "goiter heart" and the action of thyroid treatment, insisting especially on the difference between the action of thyroid preparations on the metabolism in myxedema and in exophthalmic goiter, on the nitrogen metabolism in particular. Those whom he calls "vasomotor individuals" are affected much more readily with cardiovascular disturbances under thyroid treatment than normal persons. This individual factor and the special conditions of the action of the thyroid preparations require further study. In differentiating between



the mild "secondary" cases of exophthalmic goiter and the serious "primary" cases, it is important to learn whether dyspnea was an initial symptom. Enlargement of the heart, especially of the right heart, suggests the secondary form. Cyanosis, signs of compression of the air passages, the visible findings in the throat, and the subjective symptoms are important as revealing dyspnea in its incipient stages. He does not accept Moebius' conception that the goiter disturbances form a chain commencing with simple goiter and ending in typical exophthalmic goiter—on the contrary, the facts indicate a considerable degree of independence between the various goiter syndromes. Typical exophthalmic goiter is rare in the countries where goiter is endemic. "Why," he asks, "does 'general thyroidism,' occurring in consequence of an ordinary goiter, cause such a comparatively mild syndrome in comparison with the extensive, progressive and serious syndrome of exophthalmic goiter? The cause for this must lie outside of the thyroid gland." Kocher has observed the typical syndrome of exophthalmic goiter develop in a patient without any apparent previous tendency, after removal of the thyroid gland. At the same time, it has been his repeated experience that the symptoms of exophthalmic goiter subside as the thyroid gland is resected.

**86. Treatment of Gastric Ulcer.**—Schmidt mentions among other points the importance of staying in bed.—It relieves the stomach from traction and pressure of other organs, rests the greater curvature and lifts the anterior wall of the stomach out of the stomach content. He insists on two or three weeks in bed. If there is any tendency to hemorrhage, the patient must avoid all unnecessary movement, even in bed. He applies moist heat, but advises suspension of the applications for an hour at frequent intervals, and sometimes substitutes the ice bag when patients are incommode by the moist heat. The diet should be nourishing, but meat should be given cautiously. With a tendency to severe hemorrhage, nothing should be given by the mouth and the physician should supervise the alimentary rectal injections as, if left to lay hands, they are liable to be so made as to irritate the mucosa. Food given by the mouth should be ice-cold, milk, meat jelly, etc. In diagnosing stomach affections the possibility of perigastric adhesions must be constantly borne in mind.

**90. Box for Sending Specimens of Feces.**—The receptacles in which specimens of stools are sent for examination generally leak and are otherwise unsuited for the purpose. Boas has devised a small box that works well. It is shown in an illustration and consists of two Petri dishes, 10 cm. in diameter, fitting into each other, with a rubber rim to close the junction air-tight. Half of the lower dish is painted black to facilitate examination of light colored particles. The two dishes are held together with a broad rubber band. A small glass spatula, held in a slit on the rubber band, is used in transferring the specimen of feces to the lower dish, and also in the examination later. The broad, shallow dish allows the specimen to be dissolved in water or otherwise prepared for chemical tests or for the microscope. He loans the box to the patient, bidding him return it the next day with the specimen of stool, labeled with the name, or the patient can buy one for himself, the firm making the coproscopes selling them for about 45 cents each.

#### Münchener medizinische Wochenschrift.

- 91 (LIII, No. 46, Pp. 2233-2280.) Aërobic Cultivation of So-called Obligatory Anaërobic Bacteria. P. Harrass. (Aerobe Züchtung sogen. obligatanaerob. Bakt.)
- 92 \*Influence of the German Legislation in Regard to Accident Insurance on the Course of Nervous and Mental Affections. R. Gaupp. (Einfluss der deutschen Unfallgesetzgebung auf den Verlauf der Nerven- und Geisteskrankheiten.)
- 93 \*Peripheral Trauma and Pulmonary Tuberculosis. P. Ewald. (Lungentub. und periph. Unfallverletzung.)
- 94 Instrument for Ligating Deep Vessels. A. Birch-Hirschfeld. (Ein neues Inst. zur Unterbindung tiefliegender Gefässe.)
- 95 Infantile Scurvy. E. Fraenkel. (Möller-Barlowsche Krankheit.)
- 96 Technic for Compulsory Notification and Disinfection in Infectious Diseases. F. Böhm. (Bekämpfung der Weiterverbreitung von Inf.-Kr. mittels Desinfektion.)
- 97 (No. 47, Pp. 2281-2328.) Diagnostic Importance of Typhoid Ulcerative Sore Throat. L. Blum. (Diag. Bedeutung der Angina ulcerativa typhosa.)
- 98 \*Cumulative Action of Digitalis. M. Cloetta. (Kumulativwirkung der Dig.)

- 99 \*Mechanism of Percussion Findings. F. Hamburger. (Oberflächenwirkung des Perkussionsstosses.)
- 100 \*Experimental Study of Pneumonia After General Anesthesia. A. v. Lichtenberg. (Entstehung der Pneumonie nach Narkosen.)
- 101 \*Cirrhosis of Pancreas. V. Schmieden. (Zirrhose des Pankreas.)
- 102 \*Remarkable Results of Examination of the Blood in 4 Neurasthenics. T. Goett. (Blutuntersuchung bei Nervösen.)
- 103 Isolation in Small Hospitals. L. W. Weber. (Das Isolierzimmer.)
- 104 Transparent Screen for Recording Orthodiagraphic Findings. P. G. Franze. (Technik der Orthodiagraphie; eine durchsichtige Zeichenebene.)
- 105 Psychoneuroses as Result of Psycho-sexual Trauma. C. G. Jung. (Die Hysterielehre Freuds.)
- 106 Macroscopic Asthma Spirals. M. Riehl. (Makr. Asthmaspiralen.)

**92. Influence of Accident Insurance on the Course of Nervous and Mental Affections.**—Gaupp emphasizes the facts that the traumatic nervous affections do not differ from the familiar neuroses, and that the traumatic neuroses develop after accidents of the most diverse kinds. The recent legislation regulating indemnities, etc., after accidents has been followed by an increase in the number of traumatic neuroses, and by their longer persistence. He analyzes the reasons for this and the means of preventing it in future. Much depends on the physician at the time of the first examination. Great harm is done by suggesting an unfavorable prognosis or hinting at simulation without positive proof. The latter impels the patient to exaggerate. The physician is too frequently inclined to certify to entire loss of earning capacity to ease his conscience of responsibility. He forgets that it is beneath his dignity to be philanthropic at another's expense. The prospects of treatment of a traumatic neurosis after considerable time has elapsed are not promising, and, if it fails, the patient is merely confirmed in his pessimistic frame of mind. Even medical examination after six months is to be deprecated on account of the suggestion on the patient. Gaupp advocates the introduction into Germany of the plan of paying damages in a lump sum as early as possible. The present conditions, he declares, are absolutely unbearable.

**93. Pulmonary Tuberculosis and Peripheral Trauma.**—Ewald discusses a case in which a healthy young man had his finger crushed in a factory and was in the hospital for six weeks. Soon after his dismissal he developed symptoms of pulmonary tuberculosis, to which he succumbed a year or so later. He claimed indemnity from the accident insurance company, affirming that his lung trouble was the direct result of the peripheral injury, and the courts sustained his plea. The company had, therefore, to pay him full indemnity and to pension his widow. Ewald comments that this decision might be applied with equal force to all cases of internal affections which develop after a peripheral injury requiring hospital treatment. The accident insurance companies would have to go out of business, he adds, if this view should be generally adopted. Physicians should be very guarded in making probability out of possibility in their estimate of such cases, as so many factors contribute to the final outcome.

**98. Cumulative Action of Digitalis.**—Cloetta has been making an experimental study of the cumulative action of digitalis. It is not observed with the fresh leaves, and he ascribes it to changes in the leaves.

**99. Mechanism of Percussion Findings.**—Hamburger strives to explain by the aid of diagrams the various features that make up the mechanism of the percussion findings over the thorax. The surface element is particularly marked in children owing to the greater elasticity of the child's thorax. This leads to error in the findings as the child is apt to cling to its mother or to lie so that one side of the thorax rests against some object. This interferes with its excursions, and modifies the percussion findings. Erroneous findings may also result if the physician applies percussion, using his fingers on one side and the palm of his hand on the other side of the thorax to support the child, thus altering the conditions for the two sides.

**100. Experimental Study of Postoperative Pneumonia.**—Lichtenberg anesthetized 22 rabbits with chloroform and found that it invariably induced severe injury of the alveolar epithelium. The epithelium softens and is thrown off, and



there is hemorrhage into the alveoles. This plugs up the bronchioles and tiny atelectatic foci result, scattered throughout the lungs. These foci are sterile, but they afford places of minor resistance to arriving infection. Snel noted a great reduction in the immunity of individuals under the influence of general anesthesia and daily clinical experience shows the manifold possibilities for infection after general anesthesia. The injurious action of the chloroform on the lungs must be regarded as a serious complication, probably responsible for the majority of the cases of postoperative pulmonary disturbances, although the results of experiments on animals are not conclusive for man. The rabbits invariably developed lobular pneumonia within forty-eight hours, and the severity of the lung complication was proportional to the length of the anesthesia. The experiments as a whole certainly suggest that the chloroform is a more important factor in the production of postoperative pneumonia than has been realized hitherto.

**101. Cirrhosis of the Pancreas.**—Schmieden reports from Bier's clinic at Bonn, a case of cirrhosis of the pancreas causing puzzling symptoms and leading to great debility. An exploratory laparotomy cleared up the diagnosis and allowed appropriate treatment which restored the patient to health. A painful, nobby tumor corresponding to the head of the pancreas was accompanied by typical pancreas colic and pronounced delay in the glutoid test. The patient was a woman of 24 with healthy children. Three weeks after the birth of the last child the first attack of colic came on; the pain was more in the median line than in case of gallstone colic, and radiated in the back to the shoulder, especially on the right side, with paroxysmal sweating. The patient could not bear to have her clothes buttoned, and frequently was obliged to stay in bed for a day or so, and was unable to stoop. The pains had no connection with the taking of food, but vomiting occurred two or three times a day, free from blood. All the organs except the pancreas were normal on palpation. The response to Sahli's glutoid capsules did not appear for twenty-one hours, showing abnormal delay. There was no fever; neither was there albumin or sugar in the urine. An exploratory laparotomy revealed the pancreas nobby and enlarged, and embedded in old, leathery, adhesions. A wedge-shaped piece was cut out of the head of the pancreas and a lymph node was also excised. No evidences of fat necrosis were discernible and the abdomen was sutured. The patient was treated with a pancreatic preparation and potassium iodid and soon recovered completely. The microscope revealed typical, severe cirrhosis of the pancreas, free from any tendency to tumor formation. Another woman presented absolutely the same clinical picture only the cachexia was less marked, but the microscope revealed alveolar carcinoma.

**102. Examination of the Blood of Neurasthenics.**—Goett mentions that in four young men with pronounced neurasthenic symptoms he found the proportion of hemoglobin from 82 to 100 per cent., while the reds numbered two and a half millions in each case. He presents arguments in favor of the assumption that the unstable nervous system allowed comparatively slight excitement to act excessively on the vasomotor center, with dilatation of the capillaries as the result, followed by diminished blood pressure. The pressure of the fluids outside of the capillaries then was greater than that within, and tissue fluids entered the capillaries and diluted the blood. He warns that examination of the blood of nervous individuals must always be done with great circumspection, and that the possible changes in the composition of the blood must not be accepted as necessarily an index of actual pathologic conditions.

#### Hospitaltidende, Copenhagen.

Last indexed XLVII, page 2129.

- 107 (XLIX, Nos. 35-39, Pp. 957-1080.) Influenza. V. Ellermann.  
108 \*Treatment of Hemorrhagic Gastric Ulcer. F. Vermehren. (Behandlingen af det blødende Mavesaar.)  
109 \*Edema without Albuminuria in the Course of Infantile Intestinal Catarrh. A. H. Meyer. (Edemer uden Alb. ved Tarmkatarr hos Børn.)  
110 (Nos. 40-42, Pp. 1081-1156.) Paratyfus. V. Ellermann.  
111 Early Diagnosis of Tuberculosis. M. Brammer. (Om tidlig Diag. af Tub., og om Anvendelse af diagnostiske Tuberkulin.)  
112 (Nos. 43-44, Pp. 1157-1204.) Identification. K. Pontoppidan. (Identificering.)

- 113 \*Hyperacid Stomach Content and Gastric Ulcer. V. Rubow. (Mavesaarets Patologi og Terapi.)  
114 \*Connection Between Affections of Nose and Eyes. E. Schmiegelow. (Forholdet mellem Sygdomme i Næsen og Øjet.)  
115 (No. 45, Pp. 1205-1228.) Chemical Rays in Treatment of Internal Affections. K. A. Hasselbach. (Det kemiske Lysbads Anvendelse mod Indre Sygdomme.)

**108. Diagnosis of Bleeding Gastric Ulcer.**—Vermehren states that a positive response to the test for occult blood can be expected only when at least 3 c.c. of blood are mixed with the feces under examination, if derived from above the pylorus. If the blood comes from a point lower down, a smaller amount will give a positive response. In 30 cases, Vermehren has tried Lenhartz' dietetic treatment of bleeding ulcer while 8 other patients were treated according to von Leube's more sparing diet. In 2 patients he was convinced of simulation from the constant absence of melena and of traces of occult blood in the feces after the alleged hemorrhage from the stomach. Another patient was a hard drinker. His hematemesis and melena were not accompanied by any signs of ascites, enlargement of spleen or stasis in the portal or venæ cavæ, and a hemorrhagic gastric ulcer was diagnosed by exclusion. He rapidly recuperated under the Lenhartz cure, but at his death from an intercurrent pneumonia later no signs of ulcer could be discovered. The hematemesis was traced to a ruptured varix in the esophagus. As a rule, the effects of the Lenhartz diet were most excellent. When there was little if any anemia the patients were allowed to get up on the thirtieth day, and 13 could be dismissed between the thirty-fourth and forty-fourth day. Anemic patients were kept in bed until the blood picture approximated normal. The after-history of the patients showed that the cure was complete. In only 5 cases was it found necessary to modify Lenhartz' directions. In one of these the gastric ulcer and a considerable degree of hour-glass contraction must have existed for eight years, without causing symptoms after the first few months. The ulcer was in the lesser curvature. The feces had shown blood but none had ever been found in the vomitus. This absence of blood in the vomitus in case of an unmistakable hemorrhagic ulcer should suggest the possibility of hour-glass contraction of the stomach. This case further shows the way in which anemia can be induced by hemorrhages imperceptible to the eye. In 27 days the hemoglobin dropped from normal to 85. The benefits of the test for occult hemorrhage were particularly striking in this case, as the positive findings were accepted as an indication for operative intervention. Raising the foot of the bed aids in combating the subjective symptoms of anemia, supplemented at need with bandaging of the legs. He was obliged to resort to these measures, with stimulants, saline infusion, etc., in only one case. The severest hemorrhage may stop spontaneously, and on the other hand, in case of persisting hemorrhage, the physician should not allow the moment for successful operative intervention to pass. The decision is most difficult in the moderately severe cases. Recent examination of 13 of his patients showed 10 still completely cured, 3 with slight dyspeptic symptoms, while 1 had a slight hematemesis not long after dismissal. In 4 of the 10 completely cured patients, the previous duration of the stomach affection was from 5 to 20 years. The 3 patients with recurrence had presented symptoms before treatment for 10 years, 2 years, and 3 months, respectively. As a rule, the best results are obtained in the more recent cases. There is now a record of 48 patients re-examined some time after a Lenhartz course of treatment, and 36, or 75 per cent., were found cured, while there had been recurrence in 12 cases, including 3 with hematemesis. These results encourage the further application of the Lenhartz principle of a more strengthening diet in case of gastric ulcer, using abundance of white of egg. Impending perforation is an absolute contraindication. Lenhartz regards the cases of recurring hemorrhage as giving the best prognosis under this diet, but Vermehren does not follow him so far, believing that the stomach should be kept quiet while the hematemesis persists and is recurring.

**109. Edema without Albuminuria in Case of Infantile Intestinal Catarrh.**—During the course of a subacute catarrh of the intestines in a child of 2, edema developed in the eyelids,



hands, arms, legs, etc., with cyanosis of the lower parts. Study of the metabolism in this and similar cases suggests the necessity for avoiding administration of salt in the food and refraining from saline infusion or rectal injection during the course of intestinal catarrh complicated with edema.

**113. Hyperacid Stomach Content and Diagnosis of Ulcer.**—Rubow refers to the finding of a hyperacid and abundant stomach content as pathognomonic for chronic gastric ulcer. He then presents evidence to show that if the amount of stomach content is small, even although it may be extremely acid, yet this can not be accepted as a sign of hypersecretion of acid. It indicates merely excessive motor functioning on the part of the stomach. Examining the stomach content of patients presenting this symptom of hyperacid but very small amount of stomach content, 45 minutes after an Ewald test meal, he found that the acidity of the stomach content was no higher than with normal conditions of stomach digestion. The motor function of the stomach, however, was exaggerated, and its contents were evacuated abnormally rapidly. Even a small amount of acid, secreted between the forty-fifth and sixtieth minutes after the test meal, would render extremely acid the small amount of stomach content remaining in the stomach, while it would have little effect on the amount of content normally in the stomach at this time. The small, hyperacid stomach content can not be regarded, therefore, as any indication of an anomaly in secretion, but only in the motor function.

**114. Connection Between Nose and Eye Affections.**—Schmiegelow reports 2 cases of retrobulbar optic neuritis developing secondary to sphenoidal or ethmoidal sinusitis.

#### Archivio per le Scienze Mediche, Turin.

*Last indexed XLVII, page 2130.*

- 116 (XXX, No. 2, Pp. 113-216.) Biologic Significance of Plastin. F. Micheil. (Significato biol. della plasteina.)
- 117 Resistance of Anthrax Spores. Changes Induced by Passage from Mother to Fetus. S. Sirena. (Resistenza delle spore del bacillo del carbonchio.)
- 118 \*Hemorrhagic Infarct in Liver. G. Sotti. (Infarto emorragico del fegato.)

**118. Hemorrhagic Infarct in the Liver.**—Sotti summarizes the accessible literature on this subject, written both from the clinical and experimental standpoint. Few cases present the dual alteration of the portal vein and hepatic arteries, which we have a right to expect from the results of experiments on animals. In a case personally observed the various factors were united, causing occlusion of both the portal vein and hepatic artery. The occlusion of the vein was not total and had evidently preceded the occlusion of the hepatic artery, as was indicated by the tunneling of some of the thrombi. The thrombosis of the hepatic artery was due to the grave condition of the heart and lungs, favored by an obliterating endarteritis in the branches of the hepatic artery. The special features of the circulation through the liver and the possibility of compensating circulation outside the liver, explain why hemorrhagic infarct in this organ may manifest itself both macroscopically and microscopically in an entirely different manner from the clinical picture observed when hemorrhagic infarct occurs in any other organ. The patient in the case reported was a woman of 67 and the liver was not enlarged.

#### Gazzetta degli Ospedali, Milan.

*Last indexed XLVII, page 2178.*

- 119 (XXVII, Nos. 126-132, Pp. 1331-1400.) The Blood in Influenza. G. Carli. (Ricerche ematologiche nell' influenza.)
- 120 \*Ligature of the Popliteal Vein for Varicose Ulcers. U. Dall'Acqua. (Legatura della vena poplitea nelle varici.)
- 121 \*Serum Treatment of Syphilis. A. Risso and A. Cipollina. (Risultati ottenuti col nostro siero antisifilitico.)
- 122 \*Ovarian Organ Therapy in Treatment of Vomiting of Pregnancy. G. Stella. (Nuova teoria sulla patogenesi e sulla cura dell' hyperemesis gravidarum.)
- 123 Bacilli Carriers in Etiology of Typhoid. D. Falcioni. (Il microbismo latente nella etiologia della febbre tifoidea.)
- 124 Atropin in Ilcus. E. Lupino. (Atropina nell' occlusione intestinale.)
- 125 \*Sign of Defect in Interventricular Septum. L. Giuffré. (Caso di morbo di Roger e nuovo segno dell' apertura del setto intervent.)
- 126 Favorable Results from Treatment of Erysipelas with Diphtheria Antitoxin Applied Locally and by Subcutaneous Injection. M. Chiadini. (Cura dell'erisipela col siero antidift.)

- 127 Permanent Cure of Six Cases of Incontinence of Urine with Suprarenal Extract by the Mouth. G. Zanoni. (Casi di incontinenza essenziale d'urina, guariti radicalmente colla opoterapie surrenale.)
- 128 \*Specific Treatment of Tuberculosis. S. Bernheim. (A proposito della Tulase di von Behring.)
- 129 (Nos. 134-141, Pp. 1417-1496.) Agglutinating Power of Blood Serum in Influenza. G. Ghedini. (L'attività agglutinante del siero di sangue degli influenzati sul bacillo di Pfeiffer.)
- 130 \*Specific Precipitins in Nephritis. E. Tedeschi. (Nuovo contributo alla patologia delle nefriti.)
- 131 Origin in Endothelium of Mononuclear Leucocytes. V. Patta. (Genesi endoteliale dei leucociti mononucleati del sangue.)
- 132 \*Influence of Artificially Induced Hyperemia on Pathologic Tendency of the Appendix. L. Mattioli. (Influenza della stasi artificialmente provocata su eventuali predisposizioni all' insorgenza di processi anatomo-patologici nell' app.)
- 133 Pseudotypoid and Paratyphoid Fever. L. Lucatello. (Pseudotifoidi e tifo simili.)
- 134 Differential Importance of Spirochetes in Extragenital Syphilides. F. Simonelli. (Spirochaete pallida nella diagnosi della sifilide extra-gen.)
- 135 \*Intestinal Helminths and Typhoid Fever. G. Quadri. (Ascariidiasi e febbre tifoidea.)
- 136 \*Roentgen Treatment and Leukemia. V. Maragliano. (Roentgentherapie e leucemia.)

**120. Ligature of Popliteal Vein for Varices.**—Dall'Acqua has been investigating the remote results in 19 patients in whom the popliteal vein had been ligated for leg ulcers. His total experience includes a much larger number and considerable research on the cadaver and experiments on animals. The ultimate outcome depends on whether or not the vein develops a new main trunk, in which case recurrence is inevitable. As it is impossible to determine the nature of the collaterals beforehand, the results of the method are no better, on the whole, than those of other technics, although in the really appropriate cases it seems to be ideal.

**121. Serum Treatment of Syphilis.**—Rossi and Cipollina review their total experience with serum treatment of 50 syphilitic patients to date. Among the striking examples of its curative action is the case of a man with gummatous osteoperiostitis of the skull with extensive necrosis and a purulent discharge. The process had persisted for three years, notwithstanding general and local mercurial treatment. Under serum treatment the lesion gradually healed; the patient gained nearly 13 pounds in weight, and the bone reformed over nearly the entire surface, only a small space remaining to date still unossified. Marked improvement, they state, was also obtained in cases of early tabes, the lancinating pains vanishing and the general condition showing great benefit.

**122. Ovarian Therapy of Vomiting of Pregnancy.**—Stella presents arguments to sustain his assumption that the uncontrollable vomiting of pregnancy is the result of insufficient functioning of the ovaries. He has treated patients with ovarian extract, and the results, he says, have realized his anticipations. He thinks that there is a field for ovarian opotherapy in the prevention of severe vomiting in pregnancy, not waiting until it is the last resort but whenever the nausea and vomiting seem inclined to become serious.

**125. Sign of Defect of the Interventricular Septum.**—Giuffré discusses the various features of a case of heart trouble from a probably congenital opening in the interventricular septum. There was no disturbance from it until after a serious accident to the patient which probably enlarged the opening. The sign to which he calls attention is a modification of the interventricular murmur during Valsalva's experiment. In health a deep inspiration followed by a strong expiratory effort with the mouth and nose closed, increasing the intrathoracic pressure, causes the pulse and the heart sounds to become weaker or scarcely perceptible. In case of a defect in the septum the blood is able to flow back from the right into the left ventricle and the arteries continue to pulsate during Valsalva's experiment as under normal conditions. The systolic murmur, instead of growing weaker becomes louder, and is heard over a broader area. The re-enforcement of the systolic murmur during Valsalva's experiment may thus be regarded, he claims, as a new and important specific sign of a defect in the interventricular septum.

**128. Specific Treatment of Tuberculosis.**—Maragliano announces in reply to numerous inquiries that his specific "bac-



teriolysin" is not a commercial product. (An account of it was published in *THE JOURNAL*, Dec. 8, 1906, page 1965.) He is ready to give it to physicians on demand under two strict conditions, namely, that the physician sends with his application the case history of the patient to whom he intends to administer it, and, further, promises formally to send in a report of the results observed.

**130. Pathology of Nephritis.**—Tedeschi reports the results of extensive experimental research which have shown that injection of rabbits with small and repeated doses of serum from individuals with nephritis affects the animals differently from injection of normal serum. The disturbances are most pronounced when the serum is derived from individuals with what he calls the dyscrasic form of nephritis, that is, those in whom the metabolism is most intensely and profoundly altered in consequence of their kidney trouble. He has further demonstrated the presence of specific precipitins in the serum of rabbits treated with serum from chronic nephritics, especially the dyscrasic, and these precipitins were never found in the serum of rabbits treated with serum from persons with acute nephritis, nor in the chronic cases except those of dyscrasic type.

**132. Influence of Artificially Induced Hyperemia on Predisposition to Appendicitis.**—Mattioli cites Edebohls' statement that he found appendicitis in the history of 90 per cent. of 135 women with movable right kidney. Mattioli's own experience shows a similar connection between movable kidney, with its inevitable disturbance in the circulation of the region, and the incidence of appendicitis. He here relates a number of experiments on rabbits, producing atresia or occlusion of the veins connected with the appendix. The results indicated that interference with the circulation induces changes similar to those of appendicitis in man, and enhances the predisposition of the appendix to infectious processes.

**135. Helminthiasis and Typhoid Fever.**—Quadri relates the details of 3 cases in which the patients expelled a number of ascarides during the course of typhoid. He believes that fever induces conditions unfavorable to helminths, but does not think that the worms alone are capable of inducing a syndrome suggesting typhoid. Their prolonged presence results in an accumulation of toxins and hemolysins which is liable to have a very debilitating action on the organism of the patient, reducing his resisting powers so that some occasional exaltation of the virulence of the intestinal flora may entail general infection. Vivaldi and Tonello found helminths in 80 per cent. of 50 patients with typhoid; in 42 per cent. of 50 persons with various other affections, and in 32 per cent. of 25 healthy persons, while in nearly every case of chlorosis the eggs of the ascaris were found in great numbers.

**136. Roentgen Treatment and Leukemia.**—Maragliano calls attention to the prompt subsidence of the enlarged glands at a distance from the parts exposed in a case of typical spleno-medullary leukemia with much enlargement of the glands. The spleen and the glands in the neck were exposed, not the bones nor the inguinal glands, and yet the latter glands retrogressed parallel with the retrogression of the exposed glands in the neck. This occurred before the favorable action of the *x*-rays on the blood had become manifest. The great benefit in this case has persisted unmodified for a year and a half to date. He thinks that this experience suggests the possibility of influencing leukemia more rapidly than has been thought practicable hitherto, by exposing larger areas, especially the neck, where glands are so numerous, or the liver, which is so abundantly supplied with blood, in addition to exposure of the spleen. Even if the glands in the neck show no pathologic changes, yet exposure of this region may be directly curative owing to the distant action of the *x*-rays. This may activate the curative processes by a kind of auto-serotherapy. He advises eliminating the non-penetrating rays, which have no curative action while they are liable to affect the skin injuriously. He accomplishes this by filtering the rays through diachylon, generally four layers, which adhere to the skin and shut out the injurious rays entirely. This allows more copious use of the really curative rays, freed from the danger of injury to the skin.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**ANATOMY, PHYSIOLOGY, PATHOLOGY, DICTIONARY.** Edited by W. A. Evans, M.S., M.D., A. Gehrman, M.D., and W. Healy, A.B., M.D., Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, under the editorial charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. IX. Series 1906. Price, \$1.25. Chicago: The Year-Book Publishers.

**DISEASES OF THE STOMACH AND INTESTINES**, with an Account of Their Relations to Other Diseases and of the Most Recent Methods Applicable to the Diagnosis and Treatment of Them in General. By B. Reed, M.D. Second Edition. Cloth. Pp. 1021. Price, \$5.00. New York: E. B. Treat & Co., 1907.

**TUMORS, INNOCENT AND MALIGNANT**, Their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S., Surgeon to and Member of the Cancer Investigation Committee of the Middlesex Hospital, etc. Fourth Edition. Cloth. Pp. 675. Price, \$5.00. Chicago: W. T. Keener & Co.

**A GUIDE TO DISEASES OF THE NOSE AND THROAT AND THEIR TREATMENT.** By C. A. Parker, F.R.C.S., Surgeon to the Throat Hospital, Golden Square, W., with 255 Illustrations. Cloth. Pp. 624. Price, \$5.00 net. New York: Longmans, Green & Co., 1906.

**HISTORY OF THE NEW HAMPSHIRE SURGEONS IN THE WAR OF THE REBELLION.** By C. P. Conn, A.M., M.D., Published by Order of the New Hampshire Association of Military Surgeons, 1906. Cloth. Pp. 558. Concord, N. H.: Ira C. Evans Co., Printers.

**TOXINS AND VENOMS**, and Their Antibodies. By Em. Pozzlescot. Authorized Translation by A. I. Cohn, Phar. D. First Edition. Cloth. Pp. 101. Price, \$1.00 net. New York: John Wiley & Sons, 1906.

**TRANSACTIONS OF THE INDIANA STATE MEDICAL ASSOCIATION**, 1906. Fifty-seventh Annual Session, held at Winona Lake, Indiana, May 23-25, 1906. Cloth. Pp. 586. Indianapolis: W. B. Burford, Printer, 1905.

## NEW PATENTS.

Recent patents of interest to physicians:

- 836175 Invalids' couch. John W. Bess, Brilliant, Ohio.
- 836367 Hypodermic syringe. Henry J. Detmers, Columbus, Ohio.
- 836442 Atomizer. Edward C. Dunning, Providence, R. I.
- 836397 Invalid bed. W. C. McGough, Wilmersburg, Pa.
- 836266 Corn and bunion cutter. Kuno Mels, Hoboken, N. J.
- 836523 Pocket inhaler. Calvin P. Moore, Akron, Ohio.
- 836334 Bed-pan. Isidore Newman, New York.
- 836603 Surgical instrument. Ernest J. Osgood, Oakland, Cal.
- 836414 Machine for making plaster-of-Paris bandages. Justin K. Toles, Chicago.
- 836914 Menthol compound. Rudolph Berendes, Elberfeld, Germany.
- 837196 Ear-drum. Frank E. Coulter, Sioux Falls, S. Dak.
- 837224 Medicine case. John L. Holcomb, Brown, O. T.
- 837083 Manufacture of glycolic acid. Otta Liebknecht, Frankfurt-on-the-Main, Germany.
- 837085 Vaginal syringe. George C. Loar, Ottumwa, Iowa.
- 837094 Sterilizer. Harold A. Miller, Pittsburg, Pa.
- 836889 Invalids' bed. Alice M. Parkhill, Chicago.
- 836781 Obtaining lithium salts. Camille Poulenc, Paris, France.
- 836726 Invalids' rest. John D. Wilson, Columbus, Ohio.
- 837171 Apparatus for administering anesthetics. Henry W. Wolfe, Baltimore.
- 837276 Sanitary belt buckle. Rose F. Bennett, Boston.
- 837378 Manufacturing boric acid. Otto Best, Daggett, Cal.
- 837459 Vaginal irrigator. Charles O. Farrington and T. Watson, Sealy, Texas.
- 837368 Apparatus for indicating defective eyesight. John J. Wood, Liverpool, England.
- 838383 Surgeons' needle holder. H. H. Clark, Santa Cruz, Cal.
- 838390 Water-purifying apparatus. Albert E. Dieterich, Washington, D. C.
- 838096 Massage machine. Christian G. Fenstermacher, Philadelphia.
- 838409 Liquid sterilizer. Daniel L. Holden, New York.
- 838334 Colotomy truss. E. E. Hyatt, Birkenshaw, near Bradford, Eng.
- 837947 Combined water-bag syringe and colonic irrigator. John W. McDowell, St. Louis.
- 837949 Thermometer case. M. D. McKelchan, Doncaster, Ontario, Canada.
- 838434 Respirator. James Morgan, Randfontein, Transvaal.
- 837979 Massage machine. George F. Trotter, St. Louis.
- 837993 Surgical instrument. T. W. Williams, Milwaukee, Wis.
- 838769 Formation of a lithophone having a sulfite of baryta base. Leon Brunet, Brionde, France.
- 838950 Therapeutic lamp. Harley E. Conger, Minneapolis, and J. B. Marshall, Chicago.
- 838959 Massage and manicure machine. Omar C. De Selms, Attica, Ind.
- 838960 Atomizer. Fairleigh S. Dickinson, New York.
- 839085 Atomizer and like instrument. Frank C. Dormont, Kalamazoo, Mich.
- 838527 Sanitary hair brush. Robert J. Ellis, San Francisco.
- 838779 Artificial leg. Gustaf A. Erickson, Minneapolis.
- 838969 Closure for ether-receptacles and the like. Robert H. Ferguson, East Orange, N. J.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII.

CHICAGO, ILLINOIS, JANUARY 19, 1907.

No. 3.

## Original Articles

### SOME BLOOD CULTURES IN CHILDREN AND THEIR SIGNIFICANCE.\*

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AND

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Although blood cultures in the living have for some time been extensively employed, and have assumed the position of an important modern diagnostic measure, yet very little has been done in this direction in early life, in cases in which the blood has been obtained and examined by modern technic. The earlier methods of procuring the blood, as by puncture of the ear or the finger, have proved to be so unreliable from contamination that such reports as that of Delestre's series of 40 cases of children under four years of age, and in which the blood was obtained from the ear in which bacteria were found in 14 cases, are of little value in the light of modern investigation.

Although Hektoen has reported blood cultures in 9 cases of scarlet fever in children, and Somers has reported streptococci in the blood of an infant six months old during a mild attack of icterus, and while Fischl found the pneumococcus in a child sick with pneumonia, nevertheless, a review of the literature relating to this subject in children shows that it is exceedingly meager.

So far as diagnosis and prognosis are concerned, it is probable that the knowledge which we require from blood cultures will be found to be the same in children as in adults. When, however, we consider how the same diseases in young children show such different phases and such a varied symptomatology in comparison with adults, there is no doubt that the detection of a specific organism in the blood will be of utmost importance in differentiating not only doubtful cases of typhoid, pneumonia and meningitis, but also the exanthemata, osteomyelitis and many obscure septic conditions.

It is with this idea that we have thought it worth while to place on record such a limited number of cases, as have come under our personal observation in hospital and private practice, with a view to encourage others to employ this method of investigation and thus by their reports of a large number of cases to add to our knowledge of the subject.

#### VALUE OF BLOOD CULTURES.

A complete review of what has been accomplished by the study of blood cultures in adults would hardly come within the scope of a paper of this kind, which is intended to deal with the earlier periods of life. A few words, however, regarding what has been done in adults

will indicate more clearly to what class of cases we can with profit turn our attention in children.

The value of blood cultures in children has been especially impressed on us in our hospital work in which many cases come under our care with such indefinite and misleading histories as to render any additional method of examination which we may offer as an exact means of diagnosis of the greatest practical importance. In addition to this, and according to our frequent personal observations, in many cases the clinical picture of sepsis is often present, and yet the cause of the sepsis is exceedingly doubtful. At another time we may have such a clinical picture and yet sepsis may not necessarily be present. In many cases of autointoxication, including often those known as acetonuria, the clinical symptoms are very suggestive of a severe septicemia, and though this apparent septic condition may be relieved by the administration of alkalies, it is nevertheless true that in the absence of a positive culture from the blood we are aided in the diagnosis of autointoxication.

In cases of this kind a blood culture is the only definite means by which we can determine whether sepsis is or is not present, and still further we may in this way establish the etiologic factor. This in itself constitutes a great advance in clinical diagnosis. In regard to treatment, the true value of serum therapy can never be attained until a bacteriologic examination of the blood has determined the special organism with which we have to deal.

Earlier observations on cultures of the blood were not only unreliable from a faulty technic by which the blood was allowed to become infected from external sources, but from the fact that the examinations were made with too small quantities of blood. Year by year, however, advances have been made in the technic, until now a large number of observations are undoubtedly reliable. This class of investigations has been made not only to ascertain whether a specific disease, such as typhoid fever, is present, but also if any organism may be found which could possibly be the etiologic factor of an otherwise obscure group of symptoms, also if in any of the diseases of unknown cause, but well known symptomatology, a causative organism can be found.

A large number of organisms have been found in the blood. Among these are: Many varieties of the streptococcus and staphylococcus, *Diplococcus lanceolatus*, *B. anthracis*, *B. pyocyaneus*, *B. proteus vulgaris*, *B. typhosis*, the bacillus of glanders, the spirillum of relapsing fever, Friedlander's bacillus, the bacillus of tuberculosis, the gonococcus, *Diplococcus intracellularis meningitidis*, and also the paratyphoid bacillus, the bacilli of the pest and of lepra, the vibrio of cholera, the colon and para-colon bacilli, and the bacillus of tetanus. Micro-organisms have also been found in the blood in such diseases as chorea, rheumatic fever, scorbutus and pertussis, but the specific organism in these cases has not yet been determined.

\* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.



Thus bacteriemia, occurring from microbic infection of the blood, explains in varied degrees the phenomena exhibited in many different diseases. Sometimes, as in gonorrhea, it is followed by an arthritis or an endocarditis. It is at the same time common in typhoid fever and rather rare in diphtheria.

In connection with this subject, relating to children, it is interesting that the acute infections which etiologically we know least about, and which are therefore especially important for research, occur most frequently in children and yet the previous investigations have been carried out almost entirely in adults. Is it not time, therefore, that the attention of investigators should be turned to this fact, and every encouragement given to make blood cultures in children?

#### ILLUSTRATIVE DISEASES.

*Typhoid Fever.*—Bacteriologic examination of the blood is especially valuable in typhoid fever, and even more in young children than in adults, as the early symptoms are so much more obscure and the whole course of the disease so mild that additional evidence is frequently needed even to differentiate the disease from an anemic debilitated condition. It is also generally the fact that typhoid can be distinguished from paratyphoid fever in the early stages of the disease only by blood cultures. It is significant that the bacillus of typhoid fever is not only found in the blood in a very large proportion of cases (it is probably present in all), but that which is of great importance is that it is found very early in the disease while the temperature is still rising, and often many days before a Widal reaction is obtained. Also when the Widal reaction is doubtful, the blood culture may show a positive result. We should consider also that in a number of cases of acute miliary tuberculosis the tubercle bacillus has been isolated in the blood, and that by thus changing a doubtful diagnosis to an exact one, the prognosis has at once become very grave. Schottmüller and others have found a positive blood culture in typhoid fever as early as the first and second days of the fever, and it often may persist to the end of the third week. After distinct intermissions of the fever the bacilli of typhoid have been cultivated in the first twenty-four hours of a relapse. Burton and Coleman in a report of 21 cases of relapse in typhoid fever, obtained a positive blood culture in all but three. In three cases in which the diagnosis was supposed to be scarlet fever, Hektoen found by blood cultures a bacillus of typhoid at a time when there were no typhoidal symptoms.

*Scarlet Fever.*—In a report of 100 cases of scarlet fever Hektoen found streptococci in 9 per cent. of the mild cases and 27 per cent. of the severe cases. Ten per cent. of the positive results occurred in the first five days. In 237 cases of scarlet fever taken from the combined results of Slawyk, Klein, LeMoyné, d'Espine, Mery, Hektoen and Seitz, streptococci were found in 10 per cent. Jochmann made cultures in 161 cases of scarlet fever and found streptococci in 25 cases. The clinical aspect of the children who had streptococci in the blood did not differ from those other cases which were very sick, but gave negative blood cultures. Of those cases showing scarlatinal nephritis during the fever, streptococci were present in the blood shortly before death in 50 per cent. Although Slawyk reports finding streptococci in the blood in measles in 32 per cent. of his cases, nothing of a definite character has appeared in the general work on this disease.

Many observers have reported different types of streptococci or diplococci more or less carefully differentiated as the etiologic factors in scarlet fever and measles, but as yet there have been no results which would justify us in considering that the true causes of these exanthemata has been discovered. The finding of streptococci in the blood in these cases may simply be the evidence of a secondary infection as it often occurs in diphtheria, along with a general infection by the true etiologic organism.

*Diseases Arising from Pneumococcus Sepsis.*—Owing to the common occurrence of otitis media in young children, it is of great interest to note that investigations have shown that otitis media and we may also add, pericarditis, may be due to a primary infection with the pneumococcus and that certain cases of lobar-pneumonia seem to be a secondary localization of the primary blood infection originating in some other place than the lung. The observations of Prochaska, Bruh and Fiessinger seem to show that a pneumococcus sepsis may occur without a true pneumonia and Herrick also found a general infection in a case of pneumococcic arthritis. According to Hektoen's work, pneumococci are present in the blood of nearly all patients sick with pneumonia. Pneumococcemia, therefore, does not necessarily mean a severe type of pneumonia, but in obscure cases its recognition will be valuable in diagnosis and also in treatment when serum therapy has been more fully developed.

*Cerebrospinal Meningitis.*—Since Gwyn in 1899 isolated the meningococcus from the blood in a case of cerebrospinal meningitis, and Warfield and Walker reported a positive culture of the meningococcus from the blood in a case of endocarditis, a number of observations such as Elser's 41 cases with 10 positive results have shown that the disease is often a bacteriemia in the same sense as is typhoid fever. So far, however, as the diagnosis is concerned, unless the blood culture will be found to show the organism at an earlier period than does the spinal fluid, it will not be of great value, because the examination of the fluid obtained by lumbar puncture is easier and just as constant in its results.

Although some of the recent observations of Gwyn, Andrewes and Walker have described a general blood invasion in the course of cerebrospinal meningitis, our observations both in cultures from the living and at autopsy, agree with the opinions of Netter, Councilman, Heubner and Weichselbaum, that this organism very rarely occurs in the circulating blood. Elser's observations showed that where one method failed, the other did also. Judging, however, from Elser's work, cases of cerebrospinal meningitis were most severe and offered the worst prognosis when the cocci were found in the blood.

#### PRACTICABILITY IN EXAMINATION OF YOUNG CHILDREN.

Many more illustrative diseases could be spoken of which would show that the clinical bacteriology of the blood should be more thoroughly studied, and will probably in the future be of greater value. At present, however, we are especially concerned with the practicability of this method in the examination of young children. Can it be done as frequently in children as in adults? Are there any objections to it? It has been so often stated that the proper technic could not be carried out in young children on account of anatomic difficulties that we have tried to determine whether this statement is correct by having the veins of many infants and children examined with reference to this point.

Our observations were made mostly at the Children's and Infants' Hospitals. The arms were examined in



680 cases and tabulated so as to show the percentage of cases of each age in which the technic could be carried out with a reasonable prospect of success. The youngest positive case is 6 months old but we have succeeded in obtaining sufficient blood for our cultures from the arm of a child even younger than this, and Hummell has succeeded in an infant 5 days old. It must be understood, however, that such a method of determination is only a provisional one and that an actual trial in the special case is necessary to prove whether the blood can be obtained or not. For instance, we have found that when apparently it would be impossible to introduce the needle successfully, it has been done easily, and sometimes, though much less commonly, the reverse has happened. Of the 680 cases under the age of 13 years, that were examined with regard to the possibility of easily obtaining sufficient blood for a culture, 39 per cent. were positive and 61 per cent. negative. In the first four years the positive cases were 21 per cent. and the negative 79 per cent. In the second four years the positive cases were 72 per cent. and the negative 28 per cent. And in the last group, which included the five years from 8 to 13, the positive cases were 86 per cent and the negative 14 per cent. This seems to show that though the younger the child, the less likely will a blood culture be possible; yet in a large number it is possible, and it should be attempted when any important information may be obtained.

As the number of diseases spoken of in this paper at any length in which blood cultures have been made is very small, and is merely mentioned for purposes of illustration, we have appended a list of the articles from which we have drawn our conclusions concerning the cultures made from living blood, and hope that this literature may be of service to those who are interested in the subject.

#### TECHNIC.

In reviewing the work that has been done in studying the bacteriology of the blood, we have seen many conflicting statements and often the etiologic importance of many organisms has been claimed without sufficient proof. Observers have undoubtedly been led by their enthusiasm to form conclusions with much too meager proof of their convictions. Through a lack of knowledge of bacteriology many have failed in their work, but probably the unreliability of most of the results and the little confidence that we can repose in them is due to a faulty technic in the taking of the blood and the growing of the cultures.

Sufficient quantity of blood may be procured by cupping (Petruschky), but the chance of contamination is great. Immediate animal inoculation with the blood from a patient is rather impractical and not necessary. The simple method of aspirating a superficial vein with a canula or syringe is satisfactory from nearly every point of view. In adults, except in extremely anemic cases, and a rare individual with a very anomalous venous system, one can always procure sufficient blood with little difficulty.

Our list of cases shows the probability of obtaining a good amount of blood in children and our practice has led us to believe that these percentages are rather low, for many of the cases in which the superficial examination of the veins gives little promise of success, turn out to be favorable when the attempt is made. After a careful examination of the superficial veins of many children it is clearly evident that at the bend of the elbow is offered the best opportunity for procuring blood. In

the groin or the popliteal space one may find superficial veins but the chance of causing a hematoma by wounding an artery is possibly greater. Though this may be considered, we know of no case in which it has occurred, and indeed as the vein itself is often pushed aside by the needle, the chances are that an artery would be in little danger of being injured. At all events, the only case in which we have seen any trouble from subsequent hemorrhage was in the aspiration of a child with hemophilia, after which a hematoma of considerable size formed, but under a bandage it quickly disappeared and no ill results followed. Generally, the needle enters the vein and the blood is slowly sucked into the syringe, and when this is removed the walls of the vein collapse, and there is no need of any dressing or bandage to stop the bleeding. Occasionally, the needle wounds or tears a vein or, entering it, slips out again before the blood is drawn, and in these cases we may obtain the blood from a small hematoma which immediately becomes visible. In such cases we have had little difficulty in obtaining the blood or in stopping the subsequent hemorrhage.

We know that there is nothing to fear and that there will be no ill results if this procedure of taking the blood is carefully followed. There is no danger of severe bleeding, and there should be no danger of infecting the patient because unless we can be sure of carrying out the whole process in a perfectly sterile manner, there is no use in making bacteriologic examinations of the blood. We all know, however, that it is rare that an extraneous infection results from the use of the hypodermic or antitoxin needle which often is not too carefully sterilized. Though we have yet to learn of the infection due to the taking of blood from a vein, we mention this fact because the question is often brought up.

#### METHODS.

The skin about the elbow should be scrubbed with soap and water and then with ether and alcohol and a corrosive pad tied on. No further precaution than this is necessary as there is little chance that the point of the needle will carry in any infectious organism.

Occasionally we have used ethyl chlorid but have found that it caused a superficial anemia and lessened the chances of obtaining sufficient blood. The pain of the needle is slight and short and in children it is the fear of what is going to be done rather than the act that hurts. An assistant places a gauze bandage, towel or rubber Esmarch strip about the arm a few inches above the elbow. This is passed around only once so that it can be loosened or tightened at will. By bending the elbow, rubbing the forearm and occasionally loosening and constricting the bandage, the distension of the veins may be accelerated. We have not found that a hot compress applied beforehand is of any advantage in causing greater distension of the veins.

A simple glass antitoxin syringe (holding 15 to 25 c.c.) with asbestos packing and the ordinary needle serves every purpose. This can be easily and thoroughly sterilized and the needle being attached by short rubber tube (the shorter the better) allows flexibility. The most important thing is to have a perfectly air-tight syringe. We have sometimes sterilized large test-tubes sealed with a cork stopper through which pass two small glass tubes plugged with cotton. One of these is connected with an aspirating syringe and the cotton is removed from the other, and the short rubber tube with the needle is attached. By this method one can keep up a continuous and perfect suction and the difficulties



experienced with a leaky syringe are obviated. This method is of especially great advantage in aspirating the heart after death when considerable suction is often needed.

The needle or canula is thrust into the skin in a line with the vein, which may be steadied between the thumb and finger to prevent its rolling to one side. The most prominent of the veins is chosen and this varies in different individuals. It is immaterial whether the needle be directed up or down the arm. If the first thrust does not strike the vein, the needle can be partly withdrawn and another attempt will generally find the vessel. Occasionally we have failed and subsequently tried a less prominent vein and been successful. Out of 42 cases attempted in children, sufficient blood has been obtained 36 times.

Often in surgical cases we have availed ourselves of the excellent opportunity offered at operation to obtain considerable blood in a syringe without using the needle. In cases in which the knowledge obtained by blood culture might be expected to be of great importance in diagnosis or treatment, and there is difficulty in obtaining the blood in the usual manner, a vein can be laid bare by open incision, and the blood easily secured. To insure a satisfactory examination one should take at least 5 c.c. of blood. In many cases we have easily obtained 15 to 20 c.c. and have often obtained positive cultures from less than 1 c.c.

The culture media should be immediately inoculated with the blood and this is best done by cutting the rubber tube with sterile scissors and squirting directly into the culture tubes. If it is attempted to do this through a needle, clots may have formed even in a minute or two, which will block the passage. If agar plates are to be used, of course, a media must be ready at the bedside at a temperature of about 44 C. In most of our cases we have used four agar plates, four bouillon tubes and two or three small flasks containing about 30 to 40 c.c. of bouillon. The bouillon has been both plain and glucose, made from lean beef and this has been also used as a basis for the agar. Blood serum tubes sometimes smeared with fresh human blood have also been used in certain cases. It has been our experience that bouillon is the most satisfactory for immediate inoculation and that agar plates can be made from this a few hours or a day later, either before or after a visible growth has appeared. In such case a media with extra high percentage of agar was used to make up for the bouillon added. We have found that the small flasks holding 30 to 50 c.c. of bouillon were most satisfactory as in these the blood was sufficiently diluted to lessen any bactericidal properties that it might possess. The ordinary tube or plate should be inoculated with 0.5 c.c. of the blood, but when any considerable quantity can be obtained we have inoculated the bouillon flasks with 2 to 3 c.c. These cultures have been placed in the thermostat at the body temperature and studied in the usual manner to determine the identities of the organisms.

The only cases that we mention of aspiration of the heart were done within a very short time after death. Canon and others have shown that even in removing the body from the ward a spread of the organisms may take place. But as these cases were done in children which are easily carried and in whom it is very simple to reach the heart with a needle, the results are probably quite reliable. In these cases the technic was in every way the same as in the others except that the long aspirating needle connected with the sterile test-tube and the aspi-

rating syringe were used. It was easy to reach the heart in the fourth intercostal space, either just to the right or the left of the sternum and there was little danger of infection from the pleural cavities.

#### LIST OF CASES.

- CASE 1.—Osteomyelitis. Patient 4½ years old. *Streptococcus pyogenes*. Died.  
CASE 2.—Unresolved pneumonia and empyema. Patient 6 years old. *Pneumococcus*. Recovered.  
CASE 3.—Bronchopneumonia and septic phlebitis. Patient 7 years old. *Streptococcus pyogenes*. Died.  
CASE 4.—Bronchopneumonia. Patient 7 years old. Negative result. Recovered.  
CASE 5.—Pneumonia with general septicemia (?). Patient 2½ years old. Negative result. Recovered.  
CASE 6.—Dermatitis medicamentosa (bromid). Patient 11 years old. Negative result. Recovered.  
CASE 7.—Acute lymphatic leukemia. Patient 9 years old. Negative result. Died.  
CASE 8.—Rheumatic pericarditis. Patient 9 years old. Negative result. Recovered.  
CASE 9.—Diabetes insipidus. Patient 3½ years old. Negative result. Died.  
CASE 10.—Hydrops articularis intermittens. Patient 8 years old. Negative result. Recovered.  
CASE 11.—Acute serous arthritis. Patient 6 years old. Negative result. Recovered.  
CASE 12.—Pneumonia (fifth day). Patient 5 years old. *Pneumococcus*. Recovered.  
CASE 13.—Endocarditis. Patient 6 years old. Negative result. Recovered.  
CASE 14.—Acute arthritis. Patient 7 years old. Negative result. Recovered.  
CASE 15.—Acute arthritis. Patient 6 years old. *Streptococcus*. Recovered.  
CASE 16.—Chronic and acute arthritis. Patient 9 years old. Negative result. Recovered.  
CASE 17.—Typhoid. Patient 6 years old. (Twelfth day.) Positive. Recovered.  
CASE 18.—Typhoid. Patient 10 years old. (Eighth day.) Positive. Recovered.  
CASE 19.—Typhoid. Patient 8 years old. (Fourth day.) Positive. Recovered.  
CASE 20.—Typhoid. Patient 9 years old. (Seventh day.) Negative. Recovered.  
CASE 21.—Typhoid. Patient 7 years old. (Fifth day.) Positive. Recovered.  
CASE 22.—Typhoid. Patient 10 years old. (Sixth day.) Negative. Recovered.  
CASE 23.—Typhoid. Patient 9 years old. (Seventh day.) Positive. Recovered.  
CASE 24.—Typhoid. Patient 6 years old. (Sixth day.) Positive. Recovered.  
CASE 25.—Acute endocarditis. Patient 7 years old. *Pneumococcus*. Recovered.  
CASE 26.—Chronic endocarditis, during acute attack. Patient 12 years old. Negative result. Died.  
CASE 27.—Rheumatism with functional heart murmur. Patient 9 years old. Negative result. Recovered.  
CASE 28.—Chorea. Patient 10 years old. Negative result.  
CASE 29.—Chorea. Patient 11 years old. Negative result.  
CASE 30.—Chorea. Patient 7 years old. Negative result.  
CASE 31.—Peritonitis. Patient's age not known. *Streptococcus pyogenes*. Died.  
CASE 32.—Acute idiopathic peritonitis. Patient 2 years old. *Pneumococcus*. Died.  
CASE 32.—Acute suppurative hip. Patient 9 years old. *Staphylococcus pyogenes aureus*. Died.  
CASE 34.—Cerebrospinal meningitis. Patient 6 years old. Negative. Died.  
CASE 35.—Cerebrospinal meningitis. Patient 3 years old. Negative. Died.  
CASE 36.—Cerebrospinal meningitis. Patient 3 years old. Negative. Died.

#### CULTURES MADE POSTMORTEM.

- CASE 37.—Endocarditis. Patient 5 years old. *Streptococcus*.  
CASE 38.—Peritonitis, after appendectomy. *Streptococcus*.  
CASE 39.—Osteomyelitis (hip), *Staphylococcus pyogenes aureus*.  
CASE 40.—Acute endocarditis. Patient 6 years old. *Pneumococcus*.  
CASE 41.—Chronic endocarditis. Patient 9 years old. Negative.  
CASE 42.—Cerebrospinal meningitis. Patient 4 years old. Negative.  
CASE 43.—Acute miliary tuberculosis. Patient 3 years old. Negative.  
CASE 44.—Tuberculous meningitis. Patient 5 years old. Negative.

Of the fifteen positive cases in this series, in all except those of typhoid fever, two cases of pneumonia, and one of arthritis, the patients died within a few days. There is too small a number of cases of any one disease to allow us to draw any very definite conclusions.

Case 1 is of sufficient importance to deserve a special notice.

*History.*—The child had suffered from an aural discharge for six months. Two weeks before admission the discharge increased and in the preceding five days the patient had vomited frequently, complained of frontal headache and tenderness in the left shoulder and right hip, and had a high fever



at night. The child was fretful and extremely hyperesthetic. The enlargement of the right thigh, the x-ray examinations and other general symptoms all pointed to osteomyelitis. Later the pain in this thigh and knee became extreme, and the leg was swollen and glossy. The leucocytosis was only 16,000.

*Operation.*—An operation just above the right internal condyle showed only edema and no purulent affection of the bone or periosteum.

*Blood Cultures.*—On the eighth day 18 c.c. of blood were taken from the arm and 20 plants made in various media. Of these 14 showed a profuse growth of streptococci in long chains. Throughout many replants this organism did not change in form, and in every way coincided with *Streptococcus pyogenes*, except that it proved to be only very slightly pathogenic to guinea-pigs. Of six inoculations the only one that died was when a very large amount of the culture was inoculated. A later blood culture gave the same organism. The child grew gradually worse and died eight days later.

*Autopsy.*—At autopsy thick yellow pus was found in the right and left hip joints, right knee joint, the right sternoclavicular joint, the left shoulder joint and the right middle ear. These all showed pure cultures of streptococcus except the right hip and the right ear, in which *Staphylococcus pyogenes aureus* was also present. There was also an acute serofibrinous pericarditis from which pure cultures of the streptococcus were obtained.

Antistreptococcus serum was given in this case after blood cultures were made. Here was a case which appeared to be clinically either an osteomyelitis or possibly meningitis, and the blood culture determined the general septicemia. Considering the length of time that this child combated a general blood infection with the streptococcus, the organism was probably of very low virulence and if blood culture had been made sooner, serum treatment might have been successful.

Some of the other cases were of value in suggesting treatment, but many only aided in determining the diagnosis. The cases of typhoid fever showed a Widal reaction in all but one instance and the positive blood cultures were thus only confirmative. In one old case of empyema the presence of the pneumococcus was interesting. The value of the recognition of this organism in the blood in pneumonia is evidently in the prognosis and can be of but little aid at present in the treatment. With a better knowledge of the antitoxic sera the value of blood examinations may be increased. These cases have been examined not with any idea of studying one disease or group of diseases, but to obtain some statistics relative to the practicability and value of blood cultures in children. Few of our patients have died and so the percentage of positive results is quite small, and of course in many there was a very slight chance of finding any organisms present. Many of these cases have been obscure as to diagnosis or etiology, and the cultures have served a little in clearing the field of possibilities.

We believe that with our present technic, a negative culture is of value in prognosis, if not in diagnosis and treatment. The early results of many observers who used too little blood and others who found *Staphylococcus albus* as a factor in many cases of septicemia must be doubted. In these early observations many organisms were found and now with more careful and thorough technic investigators have fewer positive results. One is led to doubt the value of the work done by those who claim to find new causative organisms constantly in the blood, especially as they have been reported in scarlet fever and various rheumatic or arthritic conditions. In making bacteriologic examinations of the blood or fluid from the joints or spinal canal, too much care can not be exercised to prevent contamination.

In the later stages of chronic diseases as phthisis, various organisms have been reported in the blood which are probably secondary invasions, similar to the so-called "agonal invasions of the blood" which occur in debilitated conditions when the weakened resistance of the individual fails to overcome the invading organism. The value of blood cultures in which the results are positive is generally recognized, and in children their value is probably greater than in adults. In spite of the difficulties of obtaining the blood in some cases the percentage of practical results in children may prove to be greater than in adults.

The cases in which bacteriologic examination of the blood promises much help are those obscure conditions of so-called "cryptogenetic septicemia" and autointoxication. The great number of cases of endocarditis, chorea, arthritis, and obscure septic infections which occur in children uncomplicated by other chronic disease, offers a large field for the application of this means of diagnosis with a view to the treatment, prognosis and interpretation of the cause of the disease.

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## DISCUSSION.

DR. E. E. GRAHAM, Philadelphia, said that often a physician is confronted by a case in which the differential diagnosis of a septic and a non-septic condition is difficult. Blood cultures are of distinctive value whether or not a special organism is found. If the case is suspected of being tuberculous it is possible to find the tubercle bacillus, but not finding it does not necessarily prove that the case is not tuberculous. Many cases of concealed pneumonia are cleared up by finding pneumococci. Many cases of typhoid fever in which it would be practically impossible to arrive at a positive diagnosis have been immediately cleared up by blood cultures.

DR. T. R. ROTCH, Boston, emphasized the fact that merely finding the pneumococcus in the blood does not show the patient to have pneumonia. Especially in very young children, with symptoms pointing to pneumonia, is this true, because the symptom of this disease may be of reflex origin and the source of the pneumococcus infection may be outside the lungs. There may be a pneumococcemia and pneumonia not present. Very often a pneumococcus otitis media may cause the presence of the micro-organism in the blood. In acute lobar pneumonia the pneumococcus is almost universally found.

A PHYSICIAN'S CREED, PAST AND PRESENT,  
AS TO THE PHYSIOLOGY OF THE HEART.\*

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When honored by the American Medical Association with an invitation to become its guest and to contribute to its program, I cast about to consider in what way I could be of most use to those who might do me the further honor to read my paper when published.

In my opinion, physiologists and physicians have stood too much apart. Although the American Physiological Society has held meetings for a great many years in the different great centers of the country, but few physicians ever attend those meetings or even read the reports of the papers presented, probably because they are usually published in periodicals other than medical.

In most instances teachers of physiology to-day are not men in active medical practice, while many never were doctors, except academically. This has its advantages, but also some disadvantages. Physiology as such, even yet, it is to be feared, is only occasionally brought before the student in the wards of the hospital or elsewhere when once he has passed the examinations on the primary subjects; while the medical investigator has been so occupied with morbid anatomy and bacteriology that a physiologic medicine in the sense of one pervaded through and through with the conception that disease is altered function and the whole of medicine a study of this changed function, can not be said to be the dominant state of mind even yet, though one sees hopeful signs that progress is being made toward it.

Holding these views, I felt the desire to make some contribution that might be directly helpful to the practicing physician and surgeon; for the latter, still more than the former, is apt to indulge in the belief that physiology is somewhat superfluous for his purpose, though I may point out that the surgeon who in our time has contributed most to the advancement of his art, Sir Joseph Lister, was himself a practical investigating physiologist, a fact which has made itself felt throughout his whole career.

\* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



Having lived through 25 years of the development of physiology, I propose to discuss or, at least, to indicate some of the movements which seem to me to have marked its evolution in one of the departments with which I am most familiar by reason of actual practical work, viz., the development of the physiology of the heart; and you will understand that my paper is intended for the practitioner rather than the physiological specialist, for whom such an exposition might seem a work of supererogation.

I think that the history of the whole of physiology will show that its development has been determined to a large extent by the fact that, till comparatively recently, its very existence was dependent on and limited to study in connection with medicine. As a separate and independent branch studied, as geology or zoology, for its own sake, it was practically non-existent. There were consequent limitations from which the science suffers to a certain extent to the present hour. But that all-fertilizing conception of evolution at length began to tell and the result was the investigation of physiology in a comparative way, though it must be confessed that even yet progress has been but moderate. I know of nothing that would so advance medicine to-day as the establishment of some vast institution for the study of comparative physiology and pathology. In this direction there is room for some Carnegie to do for science and the race a service surpassed by few, if any, of the large undertakings of recent years.

#### HISTORICAL REVIEW.

The first great school of modern physiology was that of Leipzig under Ludwig. It was the Mecca to which every physiologist of 25 or 30 years ago made his pilgrimage and for a time worked under the master. Questions of blood pressure were so new and so fascinating that physiology tended to become somewhat mechanical. The text-books of physiology of 25 years ago, including that of the head of the best school for the science in England, that of Cambridge, held before the student the ideal of physiology as the physics and chemistry of the animal body and taught that vital processes were largely determined by blood pressure. As a natural consequence students and doctors turned to mechanical explanations to meet a large portion of cases of cardiac aberration.

As stimulation of the vagus arrested the heart's action, what more natural than to believe that the beating of the heart also was in some way dependent on nervous influence, such influence being closely akin to that of a motor nerve over its muscle?

But about that date a notable change came over cardiac physiology by reason of an extension of its field. Till then physiologists had been accustomed to work on certain of the domestic animals, notably the rabbit, the cat and dog, together with the frog, which might be counted for the physiologist almost as one of the domestic animals; certainly they did not for long at one time part company. A new era was begun when, leaving the frog, Gaskell began to study the heart of the land tortoise. He showed that the vagus in the tortoise can not alter the force of the ventricular contractions as in the frog. But the great contribution by Gaskell consisted in the wholly changed views he prepared as a result of his work in regard to the nature of the heart-beat. Up till then the beat had been thought to be of nervous origin; Gaskell maintained that it was wholly of muscular origin; a myogenic was substituted for a neurogenic theory.

The beat was seen to begin in the sinus venosus and was believed to be conducted wholly by muscular fibers on to the ventricles. It followed from this that if there were any independent rhythm of each part of the heart beyond the sinus, it must be of muscular origin. Gaskell thought he had showed conclusively not only that the ventricle of the tortoise had the power of spontaneous independent rhythmicity, but that even strips of the same, if suspended in a moist chamber, would also contract rhythmically. Here, then, was a complete change of view and from then till now physiologists have almost with one accord the world over believed in a myogenic theory of the heart beat.

Gaskell had been the leader in England, with his views fully accepted in America, perhaps in part due to the influence of Newell Martin of the Johns Hopkins University, who was himself of the Cambridge school of physiology. Engelmann has held a somewhat similar position in Germany. From the first I was myself one who could not wholly accept the new views, and I shall show that many years later others came to question some of them.

The successful physiologic and anatomic isolation of the mammalian heart by Newell Martin in 1881 permitted the testing of many principles and was regarded at the time as an astounding achievement, largely because of the views then prevalent as to the neurogenic origin of the heart-beat, etc. This work and that of Gaskell more especially prepared the way for other important researches.

More than 20 years ago Ransom carried out interesting and important researches on the hearts of certain invertebrates, notably on that of the poulp (*Octopus vulgaris*). He maintained that no ganglion cells could be found in the walls of the heart of this animal, a fact then rightly deemed of great significance because ganglia had almost till then been regarded as essential to the beat, while the doctrine of independent rhythm for each part of the heart was strengthened by the demonstration that in the poulp the auricles and ventricles were "physiologically isolated."

One of Gaskell's contributions drew attention to the profound modifications of the nutrition of the heart of the tortoise under vagus stimulation. He denominated the vagus the "trophic" nerve of the heart. Although these views have been somewhat lost sight of since, they appealed to myself long ago because by independent work I had been brought in the most convincing way to the same conclusion. Indeed, this view of vagus action I regard as perhaps Gaskell's most permanent and valuable contribution to heart physiology, for it is likely applicable in all animals that have a vagus heart supply.

It was natural that physiologists should wish to learn whether the new views on the hearts of cold-blooded animals were applicable to the hearts of mammals. Accordingly we find that McWilliam, about 18 years ago, published important papers on the mammalian heart. He does not seem to have been so carried away by the brilliant researches of the Cambridge school as the majority of his physiologic colleagues. He deemed conduction by nerves as at least possible if not proven. His researches showed, on the whole, that the heart of the mammal was much more like the hearts of the cold-blooded animals than had been suspected, and this marked one of the great advances to which he and Newell Martin had been chief contributors.

McWilliam had shown that in the fish there is an extraordinary susceptibility to reflex cardiac inhibition



and especially in some fishes to reversed action, reminding one of reversed intestinal peristalsis. He showed that this was also possible in the mammalian heart. He demonstrated the existence of an independent ventricular rhythm in the mammal and thought it was myogenic in some instances; but he also reminded us that what may be and what is are two different things, a fact which, I think myself, has been too frequently forgotten by physiologists and other laboratory workers. McWilliam also drew attention to the profoundly altered condition of the heart under vagus stimulation, pointing out that its excitability was greatly diminished and particularly in some animals.

But all this time physiologists were realizing more and more the dependence of the more recently evolved parts of the heart on the older and less differentiated ones. Whether the ventricle could beat independently was a minor matter. The important fact was that the other parts of the heart set the pace and it simply kept step. This is one of the most important principles of cardiac physiology and is beginning to play a greater part in the explanations of disorders of the heart, notably those of the nature of irregularities in the beat.

For the medical man the work of Roy and Adami has a special interest, because much of it was done with his needs distinctly in view, unusual precautions were taken to keep the heart under tolerably natural conditions and the work was largely done on the dog's heart, which greatly resembles that of man physiologically, we have reason to believe. In 1888 these investigators published views on heart strain in which the mechanical element was made very prominent; but in their paper on the physiology and pathology of the mammalian heart, published in 1892 in the *Philosophical Transactions of the Royal Society*, there is a judicious recognition of many factors, an avoidance of entanglement in either the myogenic, the neurogenic or the earlier one, the mechanical net, which made the work and its outcome of special interest. Attention is constantly paid to the nutrition of the heart and to the great importance of nervous influence as bearing on this. For the first time they brought into the requisite degree of prominence the relation between that condition, dilatation of the heart, so deplorable for the subject, and fatigue or imperfect nutrition; i. e., they did this as the result and natural outcome of the application of physiologic experiments. They distinctly say that "in a healthy heart dilatation and fatigue are synonymous terms. In a diseased heart the degree of dilatation of its cavities is in inverse ratio to its power of doing its work; in both cases the dilatation *per se* places the heart in an unfavorable position for meeting physiologic increase in the work thrown on it." They laid stress on the importance of the vagus nerve for the mammal as others had done for the cold-blooded animals. "The vagus acts chiefly in the interests of the heart and nervous system." The chief forms of rhythmic and arrhythmic irregularity are shown to be produced by vagus action. "The irregular heart expends energy, and its tissues, therefore, are more wasted for a given amount of work than in the heart which is beating regularly."

Roy and Adami believed that the increased size of the heart during vagus standstill was to be explained mechanically as due to increased pressure and not to any change in tonus, an opinion which my observations do not wholly justify. They laid stress afresh on the alteration of excitability in the ventricles produced by vagus stimulation; a fact to which McWilliam and my-

self had drawn special attention when dealing with the hearts of cold-blooded animals. Roy and Adami would explain the commonest kind of irregularity in the ventricles by this interference on the part of the vagus with their excitability, but they also recognized that the auricles may not respond to all the influences that reach them from the sinus.

The next prominent development in cardiac physiology is perhaps remotely due to the once dominant conception of the Cambridge school that physiology is physics and chemistry applied to the body, though the perfusion experiments of Ringer and others of the English and the German schools may have been specially suggestive. But the share that Loeb's work on the artificial fertilization of the eggs of invertebrates, if such it may be correctly termed, had together with his part in showing the influence of ions on muscular contraction generally proved a powerful stimulus and must not be underestimated. At all events a number of American workers began to test the influence of a variety of salts (ions) on heart action and considerable difference of opinion arose, so that if a physician were to attempt to follow all these publications in his confusion he might exclaim with Mercutio, "A plague on both your houses." According to this school, the heart-beat is of myogenic origin, but the real stimulus is to be sought in one or more of the salts of the blood.

G. N. Stewart's view, as expressed in the latest edition of his work on physiology, will likely commend itself to those who have not become prejudiced through special work with the ions. In regard to the causation of the heart-beat he says: "It is unquestionable that for the normal beat of the heart the presence of both salts (calcium chlorid and sodium chlorid) is one of the necessary conditions, but there is no solid foundation for the view that either the one or the other acts as a special chemical excitant of the automatic contraction."

Before passing on in my hasty review of the evolution of cardiac physiology mention must be made of the work of Porter on the mammalian heart. His extension of the researches begun by others on the influence of ligation of the coronary arteries and perhaps still more his feeding experiments helped to show more clearly than before the resemblance of the mammalian heart to that of the cold-blooded animals. Even the apex, usually regarded as so recalcitrant, was made to beat when connected with the rest of the ventricle by a small muscular strip containing a blood vessel through which a nutritive fluid could be passed.

Like a bomb-shell thrown into the camp of the myogenists came the new and wholly unexpected revelations of A. J. Carlson when he showed that the heart-beat in the king crab (*Limulus*) is, beyond all question, of nervous origin; that when the nerves and ganglia of the heart are removed it ceases to beat. We seemed to have been suddenly brought back to the period when the nerves of the heart of even the mammal were regarded in the same light as motor nerves, those that caused the contraction of skeletal muscle. The only question was as to how far such views were applicable to the hearts of mammals. Carlson holds that the burden of proof that conduction is muscular and not nervous, which is opposed to his own view, lies with the myogenists.

But lately the cause of the myogenists seems to them to have been strengthened by a revived study of a certain muscular bundle between the auricles and ventricles which, originally described by His, Jr., has been more recently examined by Hering and also by Retzer



in several mammals, including man. In the mammalian heart a bundle of muscle fibers may be traced from the interauricular septum below the fossa ovalis, forward and downward through the fibrous ring between the auricles and ventricles to blend with the musculature of the interventricular septum; while as possibly of considerable physiologic significance these fibers are found to be somewhat embryonic in character. Such a muscular bridge extending from the parts of the heart by which the rhythm of the ventricle is determined was just what was required, as it seemed, to make the explanation that had been apparently so successfully applied to the less differentiated hearts of the cold-blooded animals, equally, or at least to a considerable extent, satisfactory for the mammalian heart.

The resuscitation of the heart by perfusion experiments in human beings dead for many hours from disease was a sufficiently astounding phenomenon brought to light within the past two or three years. This result seemed to strengthen greatly the position of those who believed in the myogenic origin of the heart beat, though Carlson has offset this fact with some considerations that would make it appear that nervous tissue is not necessarily so short lived as we have been accustomed to suppose.

A body of workers has arisen within the last few years whose activities, to say the least, have been largely guided by the myogenic theory. They have attempted to explain nearly all heart irregularities by variations in certain properties of the heart muscle, and some of these writers, like Engelmann, have elaborated a system of technical terms that will prove somewhat repelling to the physician and may possibly lead many to suspect that these doctrines smack more of the laboratory than of Nature.

Engelmann believes that heart muscle is characterized by the following properties: the power to stimulate by conductivity, excitability and contractility, and he thinks that, in the frog at least, these properties are largely independent of each other. These views are so new, we stand so close to them, that it is difficult to pronounce on their merits fairly.

#### AUTHOR'S RESEARCHES.

Up to the present I have made but few references to my own views or work. Before I summarize in a few sentences what I conceive to have been the chief trends of heart physiology during the past 25 years I may be permitted to make a few references to the part I myself have played in the drama and the position I took and maintained from the first.

Very early in my physiologic career I became impressed with the following principles: 1. If ever we are to have a broad and safe physiology it must come through the comparative method. 2. However valuable graphic methods and laboratory methods are in general, they have their limits of safe application. An experiment, however well devised, puts the animal or organ under more or less unnatural conditions, and for this reason all work by the laboratory method should be supplemented and interpreted through observations and considerations that take us beyond the laboratory, and especially should results obtained by the graphic method be thus treated. 3. Overgeneralization and neglect of individual differences with a tendency to accept explanations that are too simple to meet the complicated ways of Nature are temptations that seem to me ever to beset the path of the physiologist.

With these convictions influencing me from the outset

of my career, most of my work on the heart has been done without the use of the graphic method. With set purpose I have aimed to maintain natural conditions above all things, in consequence of which, as I believe, some of my conclusions have been to a certain extent at variance with those of some able workers in the field of heart physiology.

My first paper on the heart of the sea turtle was published 21 years ago and was followed by others on the water tortoise, on the various kinds of sea turtles, on fishes, the menobranch, the alligator, the snake and the mammal. I was early convinced that the brilliant work of some of the early investigators gave evidence of yielding to some of the temptations referred to above, so that there was evidence to me of over-generalization with insufficient care in guarding the conditions under which the heart was working, and without sufficiently bearing in mind the possible fallacies that ever tend to creep into physiologic reasoning. My comparison of one ehelonian heart with another showed that there were considerable differences even in a single family; and the same applied, I found, to the hearts of fishes; while conclusions derived from these groups did not harmonize with those on work growing out of the invertebrates. Small wonder, then, that the physiology that had been living on the frog and the mammal lacked in breadth and truthfulness. My work on the water tortoise (slider terrapin) convinced me that in the matter of independent cardiac rhythm the truth had been overstated, and when comparison was made with other groups the same held. Only in the menobranch did I find a ventricle that when left to itself and not pampered by any kind of stimulation would manifest any such independent rhythmic properties as had been claimed for the land tortoise.

In 1905 Lingle showed that strips of the ventricle of the tortoise do not beat when merely kept under normal conditions, or even when subjected to the action of an electric current, except when moistened with a weak ("physiologic") saline solution, and he was of opinion that the contractions were due to the stimulus of sodium chlorid.

Twenty years before I had maintained that an independent rhythm was in the ehelonian, but feebly developed at the best and in many cases practically non-existent.

On the other hand, all I had seen tended to deepen the impression made by my first experiments that the vagus nerve is highly important, indeed, essential for the welfare of the hearts of all animals provided with it; and I have given some proofs of this that could not fail to carry conviction. In 1887 I published a paper on the causation of the heart beat, in which I endeavored to show that not one but many factors enter into this result, a view which was again urged before the physiologic section of the British Medical Association at its annual meeting in 1897, when I maintained that of the several factors entering into the causation of the heart beat each was variably operative on the hearts of different animals. The large majority of the members seemed fully satisfied with the myogenic theory, which certainly has the merit of simplicity and saves much trouble in thinking. The question is, Does it square with the facts of Nature? Of that more again.

About 7 years ago I became greatly interested in the nervous system and then and a little later spent much time in working out the intrinsic nervous supply of the



heart histologically. Only then did I realize how wonderfully richly is this organ supplied with neurons.

It is difficult for one who does such work as this on a large number of animals of different species and genera to accept the myogenic theory pure and simple as an adequate explanation of the heart beat. I find that Hoffmann, who has also worked much in this way, has a similar disinclination to be satisfied with myogenic explanations. He thinks that the ganglia act in some way toward a joint co-ordination.

Several important advances in cardiac physiology have not been referred to in this paper, largely because they have not been subject to question and because an account of them can be found in all text-books of physiology that are up to date. Our views as to the way in which the heart adapts itself to its work under normal and pathologic conditions are much more clearly understood, to mention but a single case.

Before proceeding to attempt to reconcile existing differences of opinion or provide a working hypothesis perhaps a very brief summary of our progress, or possibly I should rather say our tackings on the treacherous sea of cardiac physiology, may be helpful.

#### SUMMARY.

1. Physiology having developed almost exclusively in connection with the study of medicine, researches up to about 25 years ago were carried out practically only on mammals and the frog.

2. About this time, possibly owing to the influence of the doctrines of organic evolution, the science began to be more comparative, and in no region more than in cardiac physiology.

3. During this new epoch researches were carried out not only on various animals, but on the turtles and tortoises, the frog, the fish, the lizard, the alligator, the snake, the newt, etc., together with many invertebrates. The result was that early in this epoch the view that the muscle of the heart was subject to its nerves in very much the same way as ordinary skeletal muscle, gave place to a doctrine in which muscle was as much exalted as nerve had previously been.

The nerves of the heart were considered not as either initiators or conductors of the beat of the less differentiated parts of the heart, but simply as controllers or co-ordinators if even the latter; the beat was deemed wholly of muscular origin. This was the myogenic theory as opposed to the neurogenic theory. The extension of the work that had been carried out chiefly on the hearts of cold-blooded mammals seemed to show that the mammalian heart obeyed to a large extent the same laws.

4. Certain researches on the mammalian heart emphasized this dependence on an immediate and adequate blood supply.

5. Other researches both on lower vertebrates and on mammals made it clear that the vagus existed chiefly to spare the heart as well as adapt its work to the needs of the rest of the body; while still others emphasized its importance as the trophic nerve of the heart as distinguished from the accelerator nerves which tended to exhaust its resources.

6. Recent investigations have brought into prominence the importance of the nerve elements in certain, if not all, groups of animals, thus strengthening the neurogenic theory of the origin of the heart beat.

7. At the same time certain other facts, both anatomic and physiologic, have been given great prominence in connection with the myogenic theory, so that the whole

question has assumed an interest it has not had for many years.

8. During the greater part of the period covered by the last 20 years the question of an independent rhythmic power for each part of the heart has been kept prominent, and of late this, with differentiation of the various properties of heart muscle, has been made the foundation of attempts to apply modern cardiac physiology to cases of heart disorders, notably the various forms of arrhythmia.

In these attempts the explanations based on the myogenic theory of heart action have been much more prominent than those referring it to the nervous system. Although his work does not fall chiefly within the newer era, I must not, before an American audience, and in Boston, fail to mention that our veteran physiologist, H. P. Bowditch, was one of the pioneers in heart physiology. It was he, e. g., who first showed 35 years ago that slowly repeated electric stimuli sent through heart tissue have the power to originate independent contractions.

#### RECONCILIATION AND SUBSTITUTION.

The question that I must now try to answer for the practitioner is this: Can the physician accept with confidence the myogenic, neurogenic or the ionic theories? To this I will at once answer that I can not do so for myself. For me each contains a portion of the truth, while none, taken by itself, suffices to explain all the facts. In a paper published in 1887 on "A Physiologic Basis for an Improved Cardiac Pathology," I endeavored to show what I later maintained at the meeting of the British Medical Association in 1897 that in explaining the heart-beat several factors must be taken into consideration, and that the part each plays is variable for different species of animals, though in all the higher hearts each of them probably has an appreciable influence. In that paper I also called attention to a view that I think was for the first time distinctly formulated, viz., that the nervous system in vertebrates is constantly sending out impulses that are essential to the well-being of the tissues; that we can not make a sharp distinction between the functional and nutritional rôles of the nervous system; that one is closely bound up with the other and that this is why the heart is apt to fail in the exhausted man.

General exhaustion implies almost of necessity the badly nourished heart, the organ ready to dilate under any strain. If the battery be run down, the nerve stream that flows to the heart must be small. The importance of such a view has never been adequately realized, I believe, either by physiologists or physicians. It is in accord with vast numbers of facts which are otherwise inexplicable. We know to-day that muscles even when most relaxed possess a certain degree of tonus, and that this tone is dependent on the maintenance of the reflex arc. I would regard the environment in the widest sense as the source of the stimuli that, passing in through a thousand nervous channels, give rise to those impulses that maintain the healthy condition of all tissues, function being due to special modifications of that which is constant.

The importance of such constant outflowing influences to the heart can scarcely be over-estimated. It implies that the nervous mechanism of the heart is at least indirectly essential to its best condition and action for without it the qualities of muscle, which the myogenic theory presupposes, would speedily disappear; nor apart from such influences of the nervous system can



it be well understood how any ionic or other chemical theory can be applied. Certain it is that the heart with all its nerves severed must undergo degeneration. It may well be that a combination of certain ions is essential to the well-being of the heart, as indeed of all tissues, but that they can be utilized for any considerable period apart from the influence of the nervous system seems highly improbable.

To learn exactly what share the nervous system takes in actually initiating a heart beat in the vertebrate we must await further researches; in the meantime I can not myself believe that the nervous mechanism of the heart has no other function except that of control in the generally accepted sense of the term. Also, I do not find the evidence sufficient to justify the view that this elaborate system of neurons has no other influence than that of presiding over the nutrition of the organ, important as that is; especially as it has been shown that the peristalsis of the intestine, an organization of a lower form of structure, is of nervous origin.

#### CONCLUSION.

In conclusion, I would say that I believe for myself and recommend the practitioner to adopt the view that the heart beat is not due in the higher vertebrates to any one factor exclusively; but that chemical, muscular and nervous factors all enter into the result, and that the exact share each takes it is impossible to determine at the present time; but for practical purposes, as well as for theoretical explanations, whether the normal or diseased heart be considered, it is very important to bear in mind that the nervous system is behind all nutrition, that of the heart included.

### THE LIMIT OF PROPRIETORSHIP IN MATERIA MEDICA.

HOW FAR NECESSARY? HOW FAR PERMISSIBLE?

HOW CONTROLLABLE?

HOW CONCERNED WITH FRAUD.\*

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With the question of fraudulent nostrums as presented by Mr. Kebler this communication has nothing to do. They are outside of the domain of science. We are interested in the doings of "patent-medicine" criminals just as, but no more than, we are in the doings of criminals of other kinds. We desire to prevent and punish their evil devices; but these are innumerable and it is but waste of time and energy to try to itemize them. We are interested vitally, however, in what goes on in the medical and pharmaceutical household, and to that I would call attention. A portion of the subject has been presented to this Section by Professor Diehl in his paper on the National Formulary and its relation to proprietary medicines; but there is something more to be said, especially in relation to the limits that are to be drawn about legitimate proprietorship in medicines.

#### PROPRIETORSHIP UNNECESSARY.

Were I free to reconstruct the world according to the method that would please me best, I should certainly fail to make as good a world as that which exists, except in one thing—I should utterly abolish all proprietorship in articles of the materia medica.

The purity and quality of quinin, or strychnin, or opium, or iodids, or calomel, or arsenic, do not depend on any proprietary rights in these substances or in their official names; and what is unnecessary for the standard drugs is unnecessary for any and all others.

But we have to deal with the world as it exists, and proprietorship in certain agents of the materia medica, through our folly and carelessness, has been so firmly established that we can not now abolish it. We are, therefore, called on to regulate it. The question is: Can we regulate it and, if so, how and how far? We can regulate it absolutely in so far as physicians are concerned, for each of us is within the control of the ethical standards, the moral consensus of the profession. The profession utterly discountenances and repudiates every attempt on the part of the physician to constitute himself the proprietor of any remedy or of any remedial process, and it will ostracize any practicing physician who will descend to such a mercenary practice.

#### RELATION OF PHARMACISTS TO PROPRIETORSHIP.

How about the allied profession of pharmacy? Thus far pharmacists as a professional body have not seen fit to establish a standard which forbids one of their number from becoming proprietor of a drug, or of a process of manufacture of a drug, and so long as pharmacy has trade relations I presume that such proprietorship can not be forbidden. But there are two kinds of pharmacists: First, the retail pharmacist, so-called, that is to say, the individual practicing his profession, one who in his highest development is the colleague and brother of the physician, to whom the physician turns for advice and on whom he depends for aid in the treatment of the sick; and, second, the manufacturing pharmacist, the man, or firm, who produces either a single agent or a few agents, or who manufactures drugs and medicinal preparations in general for the purpose of selling them in bulk, and who does not fill prescriptions—does not come, therefore, into direct personal relation either with the patient who takes, or the physician who prescribes, his products. The relations between the physician and the individual or dispensing pharmacist are fairly satisfactory, are becoming better defined, and are not seriously disturbed by the question of proprietorship; that being adjusted on the basis of personal name-brand to which I shall refer later. The really serious and important question is as to what relation the medical profession can establish with the manufacturing pharmacist—whether the manufacturer of specialties or the manufacturer of drugs and preparations in general—that shall be fair and honest; that shall remove the obstacles offered by present conditions to the advancement of medical science, but at the same time shall concede to the manufacturer such property rights as may justly be his.

#### THE COUNCIL ON PHARMACY AND CHEMISTRY.

That is the question which we have to take up very seriously, which we must in a judicial spirit determine and, having so determined, must settle, and settle in the right way. The establishment of the Council on Pharmacy and Chemistry of the American Medical Association is a step in the right direction. I do not know how far that step will go. We have not yet been able to measure it accurately. So far as may be judged from present developments, however, the work of the Council on Pharmacy and Chemistry seems worthy not only of the approval of the Section, but also of the active support of every practitioner, every dispensing pharmacist, and every honorable manufacturer of pharmaceuticals.

\* Read in the Section on Pharmacology of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.



## ALL PROPERTY RIGHTS DEFINED AND LIMITED BY LAW.

Before taking up and trying to define the limits of the proprietorship in remedies which physicians may recognize on the part of the individual pharmacist or on the part of the manufacturing pharmacist, let us see what light may be thrown on the question by a brief review of property rights in general. All civilized communities recognize property rights. They recognize in the individual the right to make himself the exclusive possessor of an article or of an idea. Rights tangible and rights intangible, rights of various kinds, are recognized as legitimate property. On the other hand, property rights are accurately defined and limited by law. There are some things which may not lawfully be made property. At one time it was not only perfectly lawful, but was also deemed right and honorable for a man to make himself the proprietor of other men. Little by little opinion changed. First isolated voices, here and there, of cranks and reformers and agitators and abolitionists were heard and finally in this country, at least, property in human beings was abolished by law. Now we hear voices here and there advocating further limitations of those property rights which are still recognized; for example and notably in Russia, in Ireland and in Great Britain, property in land or the method of exercising proprietary rights over land is questioned; in the United States regulation of railroads and trusts, even public ownership, is agitated. Whether or not these and similar agitations will crystallize into law we do not know, and their justice does not here concern us; but we see that the principle has been established and is universally admitted that society has the right to define what objects shall be property, how property may be acquired, held or transferred, and in general to limit the extent to which property rights may go; that property in anything, except a man's own person and the fruit of his labor, is not a natural right inherent in man, but is purely a social, legal regulation. The existence of limitations on property rights is not, however, an excuse for the denial of right, given by law, and, therefore, within the domain of social protection. That property rights are limited by law justifies no one in seeking to deprive another by force or by chicane of what is lawfully his; hence we properly have laws to prevent and to punish theft. But there may be public property as well as private property. If the limitation of property rights fails to excuse the theft of private property, neither does their existence excuse the private appropriation of public property. To deny the existence of lawful property rights in *materia medica* is folly; but that does not justify illegitimate attempts to make private property of knowledge that belongs to the whole medical profession.

## PUBLIC AND PRIVATE PROPERTY.

Here, then, is the point at which we must draw the line. That which is of necessity public property, that which belongs to the whole medical profession—including therein both physicians and pharmacists—may not rightfully be made the exclusive property of any pharmacist, or any inventor, or any manufacturer. The attempt to introduce confusion into this subject is made in the interest of fakes and fakirs—not of those confessed criminals, the rogues whose fraudulent devices Mr. Kebler has told about, but of men who claim respectability and who, nevertheless, are a disgrace to the profession of pharmacy, if they ever belonged to it, and who certainly have been cast out of the ranks of recognized medicine, if, indeed, they were ever enlisted. I refer to

the projectors or proprietors of the fake "synthetics" and alleged novel "amido-benzol derivatives" or "compounds of the benzene ring," etc., which are novel only in name, usually being familiar agents disguised by mixture or otherwise. I refer to such stuff as "antikamnia" and its numerous imitators; to those manufacturers and dealers who have made or perhaps still make false or misleading statements concerning the composition, action or chemical character of the products they sell as remedial agents, and whose endeavor is by virtue of such false or misleading statements to induce physicians to use and to prescribe their nostrums. The effort to confuse the issue has been made in the interest of this type of fraudulent pharmaceuticals and their authors.

## PATENT RIGHTS.

Brushing such products and such confusion aside, let us inquire in what manner property may rightly be established in a legitimate drug or pharmaceutical product? Let us use the word product as the simplest, practically covering the ground. According to the laws of the United States, exclusive rights may be obtained over inventions relating to medicine, either on the product or the process. The grant is for seventeen years. This is a patent. It is on record in the Patent Office at Washington. Before the patent is granted a full description of the product or process to which claim is set up, including, therefore, tests for identity, must be made and filed. It is not secret, being of public record; and, moreover, the requirements which the Pharmacopeia properly insists on for the admission of a drug, are fulfilled—inasmuch as there are standard tests for identity, for purity and for quality. While, therefore, we should continue to reprehend secrecy, we should bear in mind that the law grants to pharmacists and manufacturers the right to take out patents on their processes; and so long as articles which are useful in medicine and of whose benefits we can not rightfully deprive our patients are lawfully patentable, we must recognize those patents (and I for one am in favor of doing so) about which there is no fraud. Of course, if the process as patented, or if the test of identity as filed, does not apply to the substance as found in commerce, the matter then enters into that region of fraud with which, as I have already said, we have nothing to do. But when a patent is honest and the article is useful, I am in favor of recognizing the product, using it and admitting it to the Pharmacopeia. Here, however, a new phase of the question appears—indeed, the most important one.

## NOMENCLATURE.

When a new medicinal product is brought into the world it must be given a name to distinguish it from all other products, and it is on this question of name that the whole discussion finally turns. A combination of carbon, hydrogen, nitrogen and oxygen in certain proportions made in a certain way, is given, let us say, the name of "phenacetin." It might have been called "acetphenetidin," but the inventor chooses instead to call it phenacetin. Never mind what his object is in using that particular combination of sounds, he uses it. He brings this product into the world, he gives it a name, and that is the only name by which it can be procured. That name enters into pharmaceutical and therapeutic literature. What is the necessary consequence? Surely this—the name is public property and not private. The patent law may recognize private property in processes, but it must recognize no private property in names. I believe—if I am incorrect I trust that Dr. F. E. Stewart, whom



I am quoting from memory, will set me right—that there have been certain cases decided in the U. S. Supreme Court and other courts—I think one was the “Singer sewing machine” case and another the “Castoria” case—which uphold this doctrine; then when a name is given to a patented product and the name enters into literature in general, into trade lists, into the dictionary, into periodicals and lectures and text-books, then such a name becomes a common noun and, therefore, common property. It is a descriptive name, and not a trademark. There can be no exclusive right in words, and if the word by which this particular combination of chemical elements has been described in literature is phenacetin, then its rightful name is phenacetin; and as phenacetin it can enter the Pharmacopeia. The Pharmacopeia may give it also another and a better name. It may give preference to the form acetphenetidin and give the form phenacetin as a synonym. That is another question. But whether official title or synonym, the rightful property of any individual in that name is *nil*. We must never for an instant admit such property. Otherwise our text-books, our dictionaries, our lectures, our medical society meetings, become one huge advertising machine for some proprietor. If the law is other than I have stated, then it is our duty to agitate for such amendment of the law as will exclude private property in names.

The process, however, is a different matter. Law and custom give the right to make property of processes if these show the necessary originality; and as the property right is a limited one, no great harm is done. I do not advocate patents on processes; indeed, I doubt from a sociologic viewpoint the wisdom of all patents; but that is too large a question to discuss here and now. Patents exist and we must face the fact.

But if patents on one process are advisable, how about patents on other processes? A patent on a process must cover that process and no other. Improved processes must have equal rights to obtain patents. Suppose a new process is found for manufacturing phenacetin or acetphenetidin? If the name phenacetin or acetphenetidin is private property, the inventor of the new process can do nothing with his invention unless he acquires the consent of the proprietor of the name. That is a manifest injustice; it retards the science of pharmacy; it is a clog to the progress of medicine. Therefore, if new processes are discovered for the manufacture of patented articles the inventor of the new process should have the right to the old name, because that is the name by which the product is known and used. If that is not the law, we must make it law—in the constitutional manner.

#### TRADEMARKS.

But there is still another way by which the attempt is made to make property of agents of the *materia medica*; that is by the so-called copyright or, in reality, trademark. As a matter of fact, there is no copyright on anything but books and papers; that is to say, on collocations of words, but not on a single word. But the single word may be “registered” as a “trademark” or “brand.” I may write and copyright a book or paper or poem on “stars” or on a “star,” but I can not copyright the word “stars” or “star.” I may, however, register the word “star” as a trademark to designate a particular brand of goods; for example, “star” razor or “star” braid. In neither case is the word itself copyrighted, because each manufacturer—the razor maker and the braid maker—has used it freely without regard to its use by any other; but it has become private property as applied to a par-

ticular product having another common name—razor or braid. So we could have “star” sewing machine, “star” phenacetin, “star” acetphenetidin, or “star” quinin, if you please; but the words razor, braid, sewing machine, quinin, phenacetin, remain common stock of all who use the language. If the law is otherwise, the law must be changed.

#### MANUFACTURER’S BRANDS.

How, then, shall the manufacturer, if he has given time, effort, expense, ability to the production of a particularly pure and worthy article of pharmacy, be protected? There is a simple and effective way. He has his own name and this he can use as a brand. Let him put his own name on his product, as a trademark, as Squibbs’ ether or Johnson’s plaster; or let him use any other device—star or sun or planet or initials, or anything that will indicate sufficiently that a particular article is made by a particular manufacturer. Let us frankly recognize this right by designating, when necessary, the particular brand of product with which our prescriptions are to be filled. I never hesitate to specify, when for any reason I find it necessary, Chapoteaut, Rosengarten, Wyeth, Fairchild, McK. & R., Fraser, Lloyd, Armour, Schering, Merck, or any other manufacturer, whose special product I wish. These are simply the names that come to me at the moment; there are many others that might be used with equal propriety. In this way we give the manufacturer his legitimate protection; we concede and make valuable his property right to his brand. We also protect the medical profession and science in their right to what is the general property—the descriptive name of the product. The name of the manufacturer as a trademark or brand of his products; the name of the article as the common property of the profession; thus we concede and thus we limit. The patent on the process may belong to the inventor for the seventeen years that the law gives it to him—until the law is abolished—and here also we have a definite concession and a distinct limit.

#### SECRECY.

It will be observed that, thus far, I have excluded entirely the question of secrecy. We are discussing questions of science, and secrecy is the very antithesis of science. Science is knowledge, systematized knowledge; secrecy is systematized ignorance. They are unrelenting foes; they can not come together save in deadly and destructive conflict. Moreover, secrecy is the parent of fraud. All the frauds that have arisen in the field of proprietary remedies have been builded on real or pretended secrets. But we are not concerned with mere frauds; I allude to them only to illustrate a danger. Is there any legitimate form of secrecy concerning agents of the *materia medica*? Concerning single agents?<sup>1</sup> No. Concerning mixtures, I doubt if there is much room for a secret of importance. I differ at this point with many manufacturers whom I respect for their high commercial and scientific standards; but whose vision is perhaps obscured a little by the question of trade interest. A manufacturer may say, for instance: “This mixture which I put forth contains ingredient A, so much; ingredient B, so much; ingredient C, so much; mixed according to a particular manner, with such flavor and such vehicle as I have found the best. All right. If

1. That is, as to the product. I have a sentimental objection to a secret process of manufacture but provided the product be one of definite composition and readily identifiable, I would not hesitate to use and to recommend it. Quinin, for instance, was long, perhaps still is, prepared by a secret process.



A, B and C really represent all that is active in that mixture and the exact quantities are as specified I have not much quarrel with him concerning his real or pretended secrets as to method, or flavor, or vehicle, though I would much prefer complete frankness. Frankness, so far as I am personally concerned, would inspire a confidence which I do not always have when it is absent. But suppose the manufacturer uses, as corrective or adjuvant, cocain, or hyoscin, or cannabis indica, or codein, or some other agent of positive power, and omits to publish the fact?

When we tell him that this is scientifically and morally wrong, he may reply: "Why, I just put in a little cocain to avoid upsetting the stomach, but it is only one-tenth of a milligram; that is of no consequence; it is not an active agent in the mixture; the other components do the work; that is simply my 'trade secret' in mixing." I do not care how little it is; if he did not put it in for the purpose of being active, why is it there? The manufacturer is not wasting his money by putting in unnecessary ingredients, and so long as the drug is there to act on the human body—whether synergistically or correctively to the other ingredients makes no difference—so long as it is there I must know it, or I am not justified in putting the mixture into the body of my patient. Therefore, we can not tolerate secrecy concerning anything, however minute the quantity, which is intended to, or which may without intent, give part of the medical effect, or which may be used to modify or to correct the general action or any special action of the whole mixture, or of any special ingredient. Any ingredient that, under any circumstances, may become physiologically active is one of which an overdose might be toxic, and concerning the presence and quantity of such agents full and exact information must be published. So, too, as to ingredients which chemically alter other ingredients or affect their absorption or elimination when administered.

It is not absolutely essential that we should know exactly what is used for mere flavor and mere vehicle, but I am under the impression that there are very few profitable secrets in flavors or in water; and when we come to vehicles other than water, as alcohol, glycerin, and so forth, we have definite and positive actions—perhaps chemical changes in the agent, perhaps local and systemic effects on the human organism, which must be taken account of. Thus many of the so-called liquid foods are chiefly alcohol, and the physician who ignores this fact does not do justice to his patient.

#### POWER TO CONTROL.

Finally, what is our power to control the action of manufacturers in the matters here spoken of? It is unlimited. We can prescribe or refuse to prescribe—dispense or refuse to dispense—any product or the products in general of any manufacturer. Let it be known that we will exert this power. Let us vest recognized authority in the Council on Pharmacy and Chemistry of the American Medical Association; in the Committee on Revision of the United States Pharmacopeia. Let them publish the facts—the whole truth, no more, no less—concerning all products and all manufacturers. Accordingly as our standards are respected or defied, let us act. There is no product, no firm, but something "equally good" may truly be found among legitimate products and among manufacturers willing to cooperate with the profession. Ours is the power if we choose to use it. Ours, therefore, and not the pharmacist's or the manufacturer's, is the full responsibility. We must meet our responsibility. We must use our power.

#### SUMMARY.

1. It would be best were there no private property rights concerning agents of the *materia medica*.

2. Property rights, however, exist legally in two ways: By patent and by trademark or brand.

3. Physicians and the Pharmacopeia should recognize these two forms of property right, and utilize them to control the situation through some recognized central authorities such as the Council on Pharmacy and Chemistry of the American Medical Association and the Committee on Revision of the United States Pharmacopeia.

4. The Pharmacopeia should admit useful patented products untainted by fraud (a) under the best short name fairly descriptive chemically, (b) under the name given by the inventor and recognized in literature as a synonym of the official title. Such names should be common property, free to the use of any manufacturer who may legally, and can actually, make a product conforming to official standards.

5. The patent as thus recognized applies only to process, not to product and not to name; and if this limitation be not in accordance with existing law the American Medical Association and the American Pharmaceutical Association should take the necessary steps to have the law amended accordingly.

6. Names of products being common property, manufacturers should be encouraged to register as brands and trademarks their own names or initials, or some arbitrary word or device, which should apply to all their products; and physicians should recognize and cooperate by specifying, when they deem it advisable, such brands of special products.

7. The use of fanciful and misleading names for special products and mixtures should be discouraged, and such brands or trademarks or proprietors' names of special articles should receive no recognition by medical or pharmaceutical authorities or by physicians. Products thus improperly designated should not be prescribed; they should not be referred to in lectures or papers or text-books.

8. This whole matter is entirely in the hands of physicians. Whatever manufacturers may do or fail to do, physicians write, or should write, their own prescriptions, or make their own purchases for dispensing. What they neither prescribe nor dispense will not prove profitable to manufacture. The responsibility, therefore, rests at last, as at first, squarely on the shoulders of physicians and can not be shifted to those of either the dispensing or of the manufacturing pharmacist.

#### DISCUSSION.

DR. W. J. ROBINSON, New York City, called attention to the fact that following the reading of his paper on the nostrum question at New Orleans in 1903, entitled, "The Composition of Some So-called Ethical Nostrums," the medical societies took a hand in the movement and wonderful results have been achieved. An examination of the pages of the medical journals of to-day will show the tremendous improvement that has been made. Many preparations which a few years ago were advertised in the most reputable journals are at the present time found only in those of the lowest kind. Of course, he said, there are still some preparations which should not be advertised in any reputable journal. He referred to a journal containing the advertisement of a preparation which purports to give the formula. It is headed: Beware of coal tar antipyreries. It itself contains two coal tar products, but fancy perverted terms are used for them. The nostrum is Labordine. Another is Buffalo Lithia Water. It is advertised in a great many magazines and in the *New York Times*. It is stated therein that Buffalo Lithia Water will cure the albuminuria of pregnancy and Bright's disease, stone, renal inflammation,



rheumatism, uric acid conditions and so on, and the names of Loomis, I. N. Love, Bartholow, Shoemaker, etc., etc., are given as authorities highly recommending it.

Dr. Robinson agreed with Dr. Cohen in all he said. He covered the same ground two years ago at the Atlantic City meeting and showed what preparations may be prescribed and the relation of the physician to proprietary medicines. If a preparation is patented and not a secret it may be prescribed with propriety. Dr. Robinson is convinced that the nostrum evil agitation will result in tremendous good to the professions of medicine and of pharmacy, as well as to the public.

MR. M. I. WILBERT, Philadelphia, corrected Dr. Robinson in one statement he made that the agitation in reference to the nostrum evil originated with him. In 1817 the then president of the New York State Medical Society read a communication along these very lines and made suggestions. In 1819 the same question was brought up by the County Medical Society of New York and the members discussed the question at great length, and even produced a pamphlet which attracted considerable attention. Coming to more recent times, it is more than fifty years ago, that, at the annual meeting of the American Medical Association in Boston, this question was discussed. Two years later the American Pharmaceutical Association discussed the subject even more vigorously and adopted a Code of Ethics which to-day stands for exactly what Dr. Cohen propounded, and which is ideal if the members of the pharmaceutical profession would only live up to it. So far back as 1880 the Philadelphia County Medical Society took up this same question. It was discussed in the State Medical Association, and Dr. Stewart brought it up later in this section. However, it is not a question of credit, but a question of doing, and eliminating the fraudulent from the practice of medicine.

DR. W. J. ROBINSON, New York City, stated that he did not mean to say that he was the first to mention this subject. To go back into history we find that even in Egypt they had a nostrum problem. He only wanted to assert with all possible emphasis, that his New Orleans paper was the paper that brought the whole subject to a head. The issues were presented so squarely and so unequivocally that they could no longer be ignored. And it is well to bear in mind, he said, that that paper, which would now be considered rather mild, was at that time considered so radical that there was some hitch about its publication in *THE JOURNAL*, and it was published only after quite a few abridgments and eliminations. Hundreds of people are now doing excellent work in the anti-nostrum movement, but Dr. Robinson believes that he deserves some credit as one of the pioneers of the movement.

DR. F. E. LEWIS, New York City, thought it must be very gratifying to the members of this section to note the friendly attitude the pharmacists have taken at this particular meeting. He deprecated a rather different tendency on the part of some of the pharmaceutical profession, that is in a measure a dictatorial position and an over-critical position toward the medical profession. Physicians have a right to demand from the pharmacist his assistance. He is to correlate their work, but not assume a dictatorial attitude. The Council of Pharmacy and Chemistry, in its fundamental bearing, he believes, is a step in the right direction. The one feature that will hold it back in its first objects is that it is too restricted among its pharmacists, that it does not embody sufficient of the principles of the medical profession. Dr. Lewis maintains that while the pharmacist has been of great value in the establishment of and in the placing of materia medica on its present high plane, the pharmacist knows nothing about the problems of the physician in the rural districts, who has problems which he must solve, and he must solve them according to the education and knowledge brought to his attention. This whole campaign, if it is going to amount to anything, must be educational, not coercive. Dr. Lewis believes that the medical profession, as a whole, is largely to blame for the situation as it exists to-day.

The question of proprietorship, he said, is not offensive at all. Proprietorship can be just as high-minded as any other walk in life, but physicians have the right to be scientific and they have the right to insist on a statement of the active ingredients of preparations they use. They should be honest. The question of honesty is the whole one. The question of

honesty of act. This movement must be slow because the profession is confronted by conditions and not theories, and there is a large body of medical men in this country to-day who depend on these ready-made things. If they are honest and if they can use them in a better way, well and good, but there are many people who would like to abolish the charge on the part of the physician, and they act on that basis.

DR. REID HUNT, Washington, D. C., agreed with nearly everything Dr. Cohen said. He referred to two points. First as to some of the new names in the Pharmacopeia: these names are for the most part the true names but in an abbreviated form. The very composition determines the name, and the substances can not scientifically, have any other name. Many of these names must be shortened for commercial reasons, but it certainly seems preferable to adopt names which are at least suggestive of the true names instead of perpetuating trade names, which are often derived from supposed therapeutic properties. Second, Dr. Cohen spoke of the physician specifying the maker of the drug he wanted. That would put the pharmacist to great expense. One physician would specify, *e. g.*, A's ether, another B's, because he believed it to be as good as A's, but less expensive; a third would want C's for some other reason, and so on until the pharmacist would be compelled to have a dozen brands of nearly every drug; aside from the expense the temptation to substitution would be opened. Dr. Hunt thinks it would be better for the physicians to ask for the U. S. P. article, but, of course, until there are thoroughly enforced national and state pure drug laws there is some danger of inferior articles being dispensed.

MR. H. P. HYNSON, Baltimore, Md., believes that pharmacists are a tractable set. They are the children or servants of the medical profession, and it follows that medical men really have the correction of all these evils in their own hands.

DR. LYMAN F. KEBLER, Washington, D. C., said that if physicians are going to prescribe and are prescribing such articles as those referred to in the various papers, they are endorsing the worst kind of frauds. Very few of the concerns that exploit these fraudulent remedies are manufacturers. They are using the large manufacturers of pharmaceuticals all over the country for the furtherance of their schemes.

PROF. C. LEWIS DIEHL, Louisville, Ky., said that there is a crying need for a change by which the medical profession may be led to prescribe preparations of well-known formulæ, not by their titles of trade marked preparations, but by the original titles under which such preparations and formulæ have become well established, so that the abuse, which compels the keeping of a half a dozen brands of the same preparation in stock, may be done away with.

DR. S. SOLIS-COHEN, Philadelphia, said that he is not advocating the use of trade names, as, for example, phenacetin, in preference to acetphenetidin. But he wants it made clear that the article termed phenacetin by its manufacturers is not different from the article termed acetphenetidin by the U. S. P. What makes the coining of these names profitable is that they become private property, or at least the attempt is made to treat them as such. Let it be understood—and if a law to that effect does not exist try to have it enacted—that a name can not be made property. Therefore, if any article is best known in literature by a trade name, seize that name as public property, make it official, and let any manufacturer employ it. Then the manufacturers will cease to coin these names and the pharmacopeial or chemical names only will be used. An ignorant physician will not then say, "I gave my patient phenacetin to-day, and to-morrow I am going to give him acetphenetidin;" it will be generally understood that urotropin and hexamethylenamina, are one and the same substance, and so on. If it is not necessary to specify manufacturers' names, do not so specify. Dr. Cohen does not advocate indiscriminate specification, but he does say that the claim of the manufacturer that he is legitimately entitled to some protection must be considered; and Dr. Cohen thinks it is wholly met by the use of his name. Many manufacturers are deserving of that; let them have it and then they need not claim in addition the illegitimate protection of a trademark name. Dr. Cohen thinks physicians should congratulate both themselves and the manufacturers on the friendly relations



existing between them and the Council of Pharmacy at the present time. That can be extended in many ways, especially as to therapeutic matters. He welcomes this as he does everything which will tend to improve the relations between the professions of pharmacy and of medicine, between the individual physician and the individual pharmacist, and also between the profession of medicine and the manufacturer on whom in the last resort physicians are frequently compelled to depend, simply because so many pharmacists have ceased to prepare their own galenicals. Dr. Cohen prefers when it is possible, to send his prescription to a pharmacist who makes his own fluid extracts, his own infusions and so on, but a great many men do not, and, after all, he must depend on some manufacturer who has made the preparation the druggist dispenses. Therefore, he must come into relation with the manufacturers, willy nilly. Let it be a definite and understood relation. The profession should have some means satisfactory to both sides of controlling the products of all reputable manufacturers. Commercial exploitation is not always bad; neither is it always good. If properly controlled, the good can be increased, the bad minimized. In 1858, Benjamin Ward Richardson introduced hydrogen dioxid to the medical profession. He laid down fully the indications and rules for its use. It was largely neglected until about 1880, when a manufacturing chemist began its exploitation. Despite Richardson's authority and ability, the profession might never have used this valuable agent had it not been commercially exploited. That particular manufacturer, however, asserted in regard to the therapy of hydrogen dioxid, many things which Richardson, being a scientific physician, did not assert. His product moreover, was defective; it was too highly acid. Physicians led astray by the commercial literature and neglecting to refer back to Richardson's writings, began to do much harm with the drug. That is the other side—the want of control. Many other useful drugs in and out of the Pharmacopeia have owed their general introduction to the exploitation of the manufacturers; on the other hand many useless drugs are exploited by them to the general detriment. The attitude of the profession should be one of encouragement to legitimate and scientific enterprise, of discouragement to fraud or unscientific pretense. In other words the medical profession must resume a friendly control of pharmacy.

## RESULTS OF IMPROVED TECHNIC IN OTOLOGIC SURGERY.\*

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Of late the technic of otologic surgery has steadily improved. Some of the advances in this line have already been generally accepted, while others are only regarded tentatively, or are not fully recognized. I consider only those improvements that are not accepted by all otologists and that have not yet been incorporated into their routine work. These improvements are largely connected with the physiologic treatment of wounds which materially shortens the convalescence and notably improves the results.

1. The advantages of a thorough mastoid operation are great. In this operation not only all the diseased tissue in sight is removed, but also the whole mastoid process ablated, and the zygomatic, occipital and jugular cells, if present, are opened, to expose all the cellular diverticula of the middle-ear system. The advantages are that there is no possibility that the convalescence will be much delayed by any remnant of the infected material which had inadvertently escaped removal, and a secondary operation will not be required except for possible intradural complications. The slightly increased operative time can not outweigh these benefits. Cases 10 and

25 show good results of this method. Bad results of a less extended operation are seen in Cases 1, 9 and 14 (Fig. 1).

2. The time consumed by the operation has been considerably shortened by the use of the three following instruments: *a.* Electric burrs of improved pattern are most useful in work on sclerosed bone or in finishing off an operation by the removal of irregularities and opening the recesses difficult of access to other instruments. *b.* Richards' curette is an instrument which allows direct boring in the bone and can be used to advantage in all but the very hardest bone. It thus dispenses with the need of chisel or gouge in most cases. *c.* My hand-driven front-bent gouge can be used instead of a chisel or mallet-driven gouge to open the hardest bone and in the delicate carving required in the excavation of the deeper parts.

These three instruments add greatly to the facility, safety and speed of the operation. Much time can now be saved in the operation, because it is no longer neces-

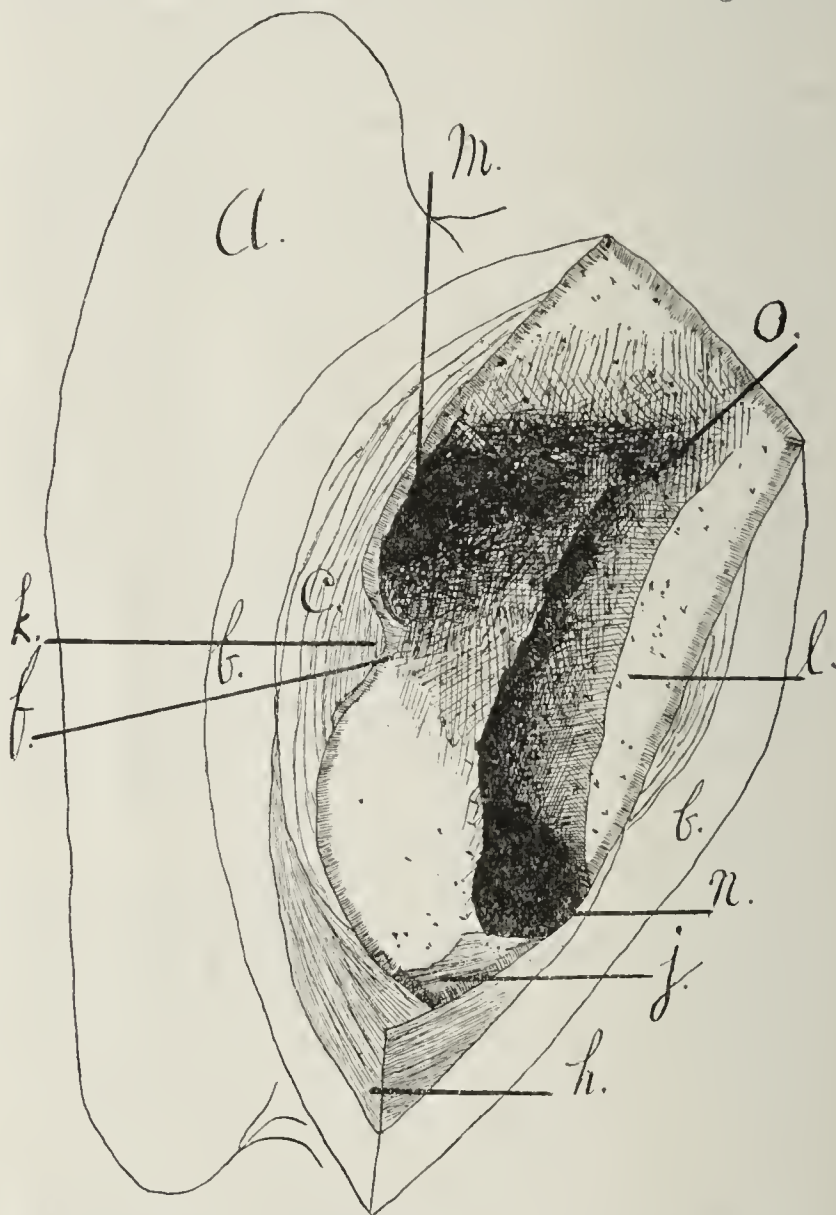


Fig. 1.—Simple mastoid operation for acute mastoiditis, the jugular cells have been thoroughly opened. The zygomatic, superior petrosal and occipital cells were not well developed. *a.*, auricle; *b.*, skin-flap; *c.*, periosteum; *f.*, posterior wall of osseous meatus; *h.*, sternomastoid muscle; *j.*, digastric muscle; *k.*, posterior wall of membranous meatus; *l.*, convexity of sigmoid sinus; *m.*, mastoid antrum; *n.*, jugular cells; *o.*, superior petrosal cells.

sary to polish the osseous walls till they shine again if the blood clot dressing is to be used. Cases 5, 6, 9, 10, 11, 14, 16 to 23 and 25 show shortened time of the operation.

3. The soft parts are moved and handled during the operation with greater care than they used to be, in order to preserve the periosteum intact and to avoid laceration and contusion of the soft parts which might delay the physiologic reparative process. The disposal of the soft parts after completion of the operation has been very much simplified. In the simple mastoid, when the blood

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



clot dressing is used, the soft parts and edges of the mastoid wound are allowed to adjust themselves. The coaptation may be made secure with deep sutures or preferably by a subcutaneous continuous suture of silver wire. In the mastoideotympanic operation, the mastoid wound is treated in the same way as the simple mastoid. I first tried this method in a case operated on Sept. 24, 1904. There is no longer need of a complicated plastic operation on the meatus. The meatus may be slit or left intact. I first left it intact in a case operated on May 23, 1904. In either case the meatus is not distended or the packing of the meatus is very light. Cases 10 and 25 have the meatus intact (Fig. 2). The closure of the Eustachian tube can be best effected by pushing the mucous membrane forward from the tympanic mouth of the tube and packing it toward the isthmus of the tube (Cases 12 and 18). I treated my first case in this way Sept. 14, 1904, by using a part of the drum membrane to cover the orifice of the tube.

The soft parts are manipulated always with the pur-

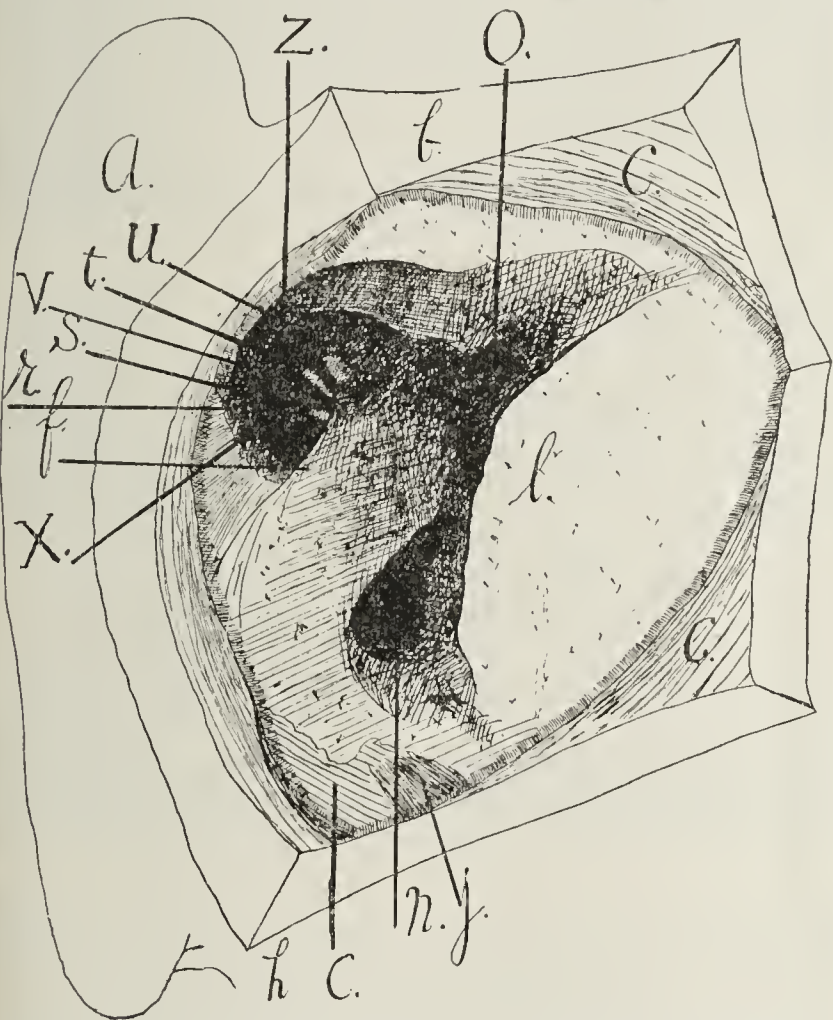


Fig. 2.—Radical mastoid operation, showing membranous meatus without the plastic flap: a, auricle; b, skin-flap; c, periosteum; f, posterior wall of osseous meatus; h, sternomastoid muscle; j, digastric muscle; n, convexity of sigmoid sinus; o, superior petrosal cells; r, anterior wall of osseous meatus; s, stapes; t, facial nerve; u, horizontal semicircular canal; v, processus cochleariformis; x, Eustachian tube; z, tegmen.

pose in view of avoiding a secondary operation and shortening the convalescence by the quick formation of a firm cicatrix in the track of the operation. Exposure of the dura mater has been proven to have no retarding action on the convalescence. I first closed a wound with an extensive exposure of the dura mater in a case operated on June 19, 1904.

4. I have modified the procedure of the ordinary radical or mastoideotympanic operation in order to preserve the tympanum with its ossicles and membranal attachments in place, to secure a maximum of drainage through a circular incision of the membrane, together with the usual complete removal of the osseous structures, but with retention of the annulus. This is indicated in cases in which the function of the tympanum

is fairly good and when there is no caries. I first tried this method June 27, 1905 (Case 15).

5. A careful study of the currents in the venous sinuses and veins of the head and neck justifies the precautionary measure of ligating the jugular vein before opening the sinus for thrombosis. This measure is intended to prevent setting a portion of the thrombus adrift. The ligation of the jugular vein above the facial, when the jugular is not diseased below this tributary, is indicated for the preservation of all the collateral circulation possible (Cases 2 and 3). When phlebitis of the bulb of the jugular is suspected it is best to open it by excavating its outer walls after first laying the sigmoid sinus open to this point, as shown in Figure 3 (Case 3). Case 1 was a fatal case in which the jugular was not ligated.

6. Brain abscesses are treated advantageously by the open method of extrusion in which no packing is used and there is not a too large meningeal opening, but with liberal removal of the brain tissue with the intent of exposing the abscess cavity by the removal of its outer wall. If a hernia should threaten, let the abscess be in the extruded portion. Large portions of the brain may be removed without danger to life, and mutilated and disorganized brain tissue is safer outside than inside the calvarium. The physiologic method of getting rid of

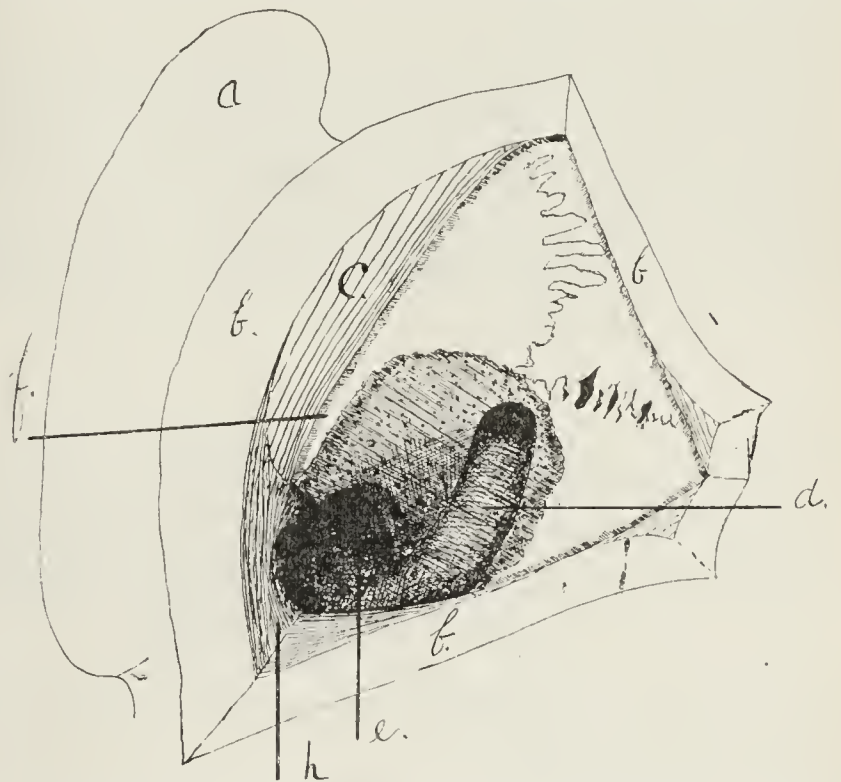


Fig. 3.—The jugular bulb and sigmoid sinus opened; operation was stopped before the mastoid antrum was entered. a, auricle; b, skin-flap; c, periosteum; d, inner and posterior wall of sigmoid sinus; e, jugular bulb; f, posterior wall of osseous meatus; h, sternomastoid muscle.

localized infected brain tissue is by the natural process of extrusion or hernia. Case 3 was treated by this method Nov. 15, 1905.

7. Progress toward physiologic or natural wound repair has been greatly advanced by the closure of the mastoid wound and the blood clot dressing after the simple mastoid operation, as advised by Blake, for the promotion of healing by first intention (Cases 9, 11, 19 and 20). If the clot breaks down, it does not matter much (Case 9). This procedure has been modified to give a maximum of union by first intention, together with drainage from the depth of the wound. This object is accomplished by closure of the wound, except for a small cigarette drain in the lower angle. My modification of this latter method is an early removal of the drain after the first 24 hours which allows the lower corner of the



wound to collapse. This insures a more rapid healing than in those cases in which the drain is left in a week or so, and seems to lessen the breaking down of the clot, probably by increasing the flow of serum. I use this method in all cases that do not promise well by the simple blood clot (Cases 21 and 23). In case the clot becomes infected, no damage is done, and the healing process progresses more rapidly if no packing is used (Case 21). The simple blood clot is indicated only in

selected cases, while my modification of the drained blood clot is indicated in all other cases. Dr. Reik has adapted a protective sheath for covering the operative field, which ensures against infection of the wound from the skin and hair, and accounts in some measure for his excellent results with the blood clot.

8. The blood clot in the mastoideotympanic operation, as advised by Blake and Sprague, is as useful as in the simple mastoid operation. My first experience with this

#### AUTHOR'S RECENT OPERATIONS ON THE MASTOID REGION.

No.	Name.	Age.	Diagnosis.	Operation.	Treatment of Wound.
1	E. S.	28	Operation in consultation; mastoiditis and sinus thrombosis; later, brain abscess.	Dura mater uncovered and found to be gangrenous over large area; small cerebral abscess (softening) ant. and int. to knee of sinus. Sigmoid sinus opened throughout its length and found empty except for thin, yellow, long fibrinous clot; no bleeding from below; operation discontinued on account of failure of respiration; jugular not ligated.	Packed because gangrenous tissue not been removed.
2	J. D.	35	Operated in consultation; simple mastoid operation 9 days before; sinus thrombosis.	Old wound opened and dura exposed over sigmoid sinus, which was diseased at the knee; jugular vein ligated above facial vein and sigmoid sinus opened throughout its length.	Packed; probably wound would reopen.
3	L.	5	Oper. in consultation; a Wilde's incision 3 days before; otitis media purulenta chronica; jugular thrombosis; later, gangrenous necrosis, cerebral and cerebellar softening (abscess).	Dura uncovered and found gangrenous in region of sigmoid sinus; small cerebral abscess lying ant. to the knee of sinus; small cerebellar abscess post. to knee; int. jugular vein tied above facial vein; sinus was opened and emptied from torcular to facial vein; jugular bulb evacuated and outer walls of abscess removed with scissors and sharp curette.	Packed because operation could be prolonged sufficiently for removal of necrotic tissue.
4	S. G.	12	Chronic purulent otitis media following mastoid operation.	Radical; dura exposed in both fossæ.....	Wound closed with blood clot at time of oper., but reopened and packed by house officer.
5	A. P.	7	Otitis media purulenta chronica.	Radical; dura exposed; meatus, L-shaped slit.....	Blood clot ....
6	A. S.	7	Otitis media purulenta chronica.	Radical; meatus, L-shaped slit.....	Blood clot ....
7	A. K.	38	Otitis media pur. chron., severe headache and dizziness.	Radical; dura exposed over considerable area.....	Blood clot, meatal flap, L-shaped.
8	G. T.	21	Acute mastoiditis; later, epidural and episinuous abscess.	Simple mastoid, with posterior epidural extension.....	Drained blood clot.
9	W. M.	14	Acute mastoiditis.....	Simple mastoid.....	Blood clot ....
10	M.	36	Acute mastoiditis; later, epidural abscess, osteomyelitis; extensive basilar exp. of meninges.	Radical .....	Meatus not slit.
11	H. N.	4	Acute mastoiditis.....	Simple mastoid.....	Drained blood clot.
12	M.	24	Otitis media pur. chron; caries of tympanum, severe headache.	Radical; dura exposed in both fossæ; Eustachian tube closed by pushing mucous membrane toward isthmus.	Drained blood clot.
13	A. R.	36	Subacute mastoiditis; later epidural abscess; operation in consultation, no discharge from the ear; middle ear conditions were chronic catarrhal otitis media.	Simple mastoid with epidural extension backward; no myringotomy.	Drained blood clot.
14	J. W.	34	Acute mastoiditis, later osteomyelitis.	Radical, extending in all directions over large area; dura exposed in both fossæ.	Drained blood clot.
15	R.	17	Acute mastoiditis.....	Modified radical; dura exposed in both fossæ.....	Blood clot.....
16	A. B.	45	Acute mastoiditis and otitis media pur. chron. following mastoid operation.	Radical .....	Wound closed with blood clot but reopened and packed by house officer.
17	E. M.	16	Otitis media pur. chron; had had previous mastoid operation, old style.	Radical; dura exposed; L-incision of canal.....	Blood clot.....
18	M. C.	12	Otitis media pur. chron., with two postaural sinuses following a previous operation.	Radical; dura mater exposed in both fossæ.....	Blood clot.....
19	I. W.	4½ mos.	Acute mastoiditis.....	Simple mastoid.....	Blood clot.....
20	A. D.	4	Acute mastoiditis.....	Simple mastoid.....	Blood clot.....
21	M. M.	4 mos.	Acute mastoiditis.....	Simple mastoid.....	Drained blood clot.
22	E. R.	3	Chronic mastoiditis and otitis media purulenta chronica.	Radical; dura exposed in middle fossæ.....	Blood clot, meatal flap closed.
23	A.	3	Acute mastoiditis.....	Simple mastoid.....	Drained blood clot.
24	S. L.	17	Otitis media purulenta chronica.	Radical; dura exposed in both fossæ; L-shaped cut of meatus; subcutaneous catgut suture; Eustachian tube closed by packing mucous membrane toward isthmus.	Simple blood clot.
25	T.	56	Acute mastoiditis, very extensive involvement.	Radical; exposure on dura of both fossæ and extension of dissection nearly to jugular bulb.	Drained blood clot, no slit or plug of meatus.



was in a case operated on Sept. 14, 1904 (Cases 6, 7, 17, 18, 22 and 24). If the clot breaks down, I do not pack. I began this method April 21, 1905, and have found the final healing and epidermatization slightly, if at all, delayed in the infected cases (Cases 5, 7, 14 and 18). My drained blood clot is similar to this procedure in the simple mastoid operation. The small cigarette drain should be removed after the first 24 hours (Cases 12 and 25). Rapid healing is the rule. No reopening

has been required in any case. If the blood clot breaks down extensively, it takes place in less than 5 days and the wound opens of itself and drains well (Case 14). In Case 10 there was delayed healing caused by packing. The bad effects of packing after the radical operation are shown in Cases 4 and 16.

9. Epidural abscesses do well with the drained blood clot dressing. The wound is closed round a cigarette drain. The first case I treated in this way was operated

## AUTHOR'S RECENT OPERATIONS ON THE MASTOID REGION.

Time. min.	Wound Closure.	Middle Ear Dry.	Hearing Result.	Final Result.
60	No granulation.....	Continued to discharge till death.	Not taken.....	Death from general septic infection; no metastases.
75	Granulated .....	In a few days.....	Normal .....	Total recovery, cosmetic result, condition excellent.
90	Neck and postaural wound healed on 52d day by granulation.	146th day; membrana tympani absent.	Watch, 4 in.....	Complete recovery, slightly depressed, smooth, postaural surface, slight scar in neck at one point only.
60	Wound closing well by first intention on 2d day, after which it was opened and packed by house officer; shows no signs of closing, 308 days after.	Shows no signs of getting dry, does not discharge externally.	Watch, 7 in.....	A very large posterior opening leading into middle ear, no tendency for epidermis to enter the middle ear or encroach on sides of large postaural opening, which continually secretes mucopus that dries on edges and does not run out.
40	Slow closure; wound infected later.....	35th day.....	Not taken.....	Imperceptible scar; perfect contour.
40	First intention, 4 days.....	44th day.....	Watch, 9 in.....	Imperceptible scar, even contour.
60	On 5th day wound was closed, by first intention; became infected and wound was opened on 8th day; 10th day nearly closed again.	21st day.....	"Much better since operation."	Scarcely perceptible linear scar, no change in external contour; headaches have ceased.
60	Wound healed, first intention, except at exit of cigarette drain.	15th day; membrana tympani completely healed.	Good .....	Linear scar, even contour.
28	On 2d day wound and canal suppurating; on 4th day secondary operation. 35 min.; behind former wound knee of sinus uncovered, several suppurating pneumatic cells found int. and post. to digastric fossa; wound not packed but allowed to close with blood clot; 4 days later wound suppurating; finally closed 16th day after 2d operation.	32d day.....	Watch, 26 inches..	Slight keloid in the upper part of linear scar; no unevenness of contour.
45	Packing removed from wound on 4th day; entirely healed on 22d day.	Practically dry, 18th day.....	Watch, 1 inch.....	Small scar, nearly smooth postaural surface.
6	Wound closed on 4th day, first intention....	Nearly dry, 4th day.....	Not taken .....	No scar or unevenness.
90	On 4th day, removed drain from wound, which closed on 6th day.	8th day.....	Better than before op., watch 10½ in.	Linear scar, no change of contour.
55	Wound closed on 7th day, except very small sinus at seat of cigarette drain.	Throughout convalescence.....	Unchanged; poor..	Linear scar, smooth contour.
55	Wound closed at first by first intention, except at exit of cigarette drain; later, about ¼ of wound broke down, wholly closed 20th day.	Nearly, 23d day.....	Watch, 3 inches...	Extensive even depression above and behind auricle; complete unilateral facial paralysis, gradually recovering.
45	Wound almost entirely closed by first intention, 5th day.	Removed packing from meatus, 2d day; middle ear dry, 5th day.	Normal .....	Linear scar, small keloid at one point; no unevenness of contour; mastoid process regenerated.
55	Posterior wound healed in 33 days.....	Granulations in tympanum, 33d day; dry, 158th day.	Watch, 1 inch.....	Large postaural depression.
47	Third day, first intention.....	3d day, packing removed from meatus; 13th day, practically dry.	Unchanged; poor...	Linear scar, small pit at the seat of former operation; no other deformity.
50	Wound closed on 3d day, first intention, except at central point, which was breaking down; 10th day wound closed finally.	Practically dry, 10th day.....	Unchanged; poor...	Linear scar; even surface.
6	Wound closed on 6th day, first intention....	8th day.....	Not taken .....	Very faint linear scar; even surface.
4	Immediate by first intention; first day postaural wound could hardly be discovered.	Less than 105 days.....	Watch, 18 inches..	No scar; even surface.
12	Wound infected; drainage discontinued on 3d day; did not close by first intention, but was healed on 9th day.	9th day.....	Not taken .....	Linear scar; even surface.
36	No suppuration, closed on 21st day.....	Removed packing from meatus, 2d day; dry, 13th day.	Not taken .....	Recurrent serous and seropurulent discharges from postaural wound and pus in canal; scarcely perceptible scar.
15	Cigarette drain removed 2d day, wound healed except at exit of drain.	7th day.....	Not taken .....	Imperceptible scar.
60	On 3d day wound closed by first intention...	14th day.....	Watch, 2½ inches.	Barely perceptible linear scar; contour undisturbed.
45	Closed on 2d day, except at lower angle, where cigarette drain came through; drain removed; 4th day lower angle of the wound was also healed by first intention.	6th day.....	Not taken .....	Barely perceptible scar; even surface.



on June 19, 1904 (Cases 8 and 13). The blood clot broke down in Case 14. Case 10 was one of epidural abscess with convalescence delayed by packing a few days.

10. The improved cosmetic result is very marked after the blood clot dressing, because the scar is only linear, and when the bone wound has been leveled off and enough of the posterior wall of the osseous external meatus removed to make a fairly even surface no deformity can result (Cases 3, 5, 8, 12 and 19 to 25). Deformity resulting from packing the wound is shown in Cases 4 and 16.

11. Among the advantageous results following the improved technic is a lessening of the operative risk, due to diminution of shock because of the shorter time consumed in the operation and the avoidance of jar to the nervous system. The jar is avoided by discharging the mallet and using instead the new instruments described in Paragraph 2. Absence of shock is shown by Case 24.

12. The shortened convalescence is due partly to the

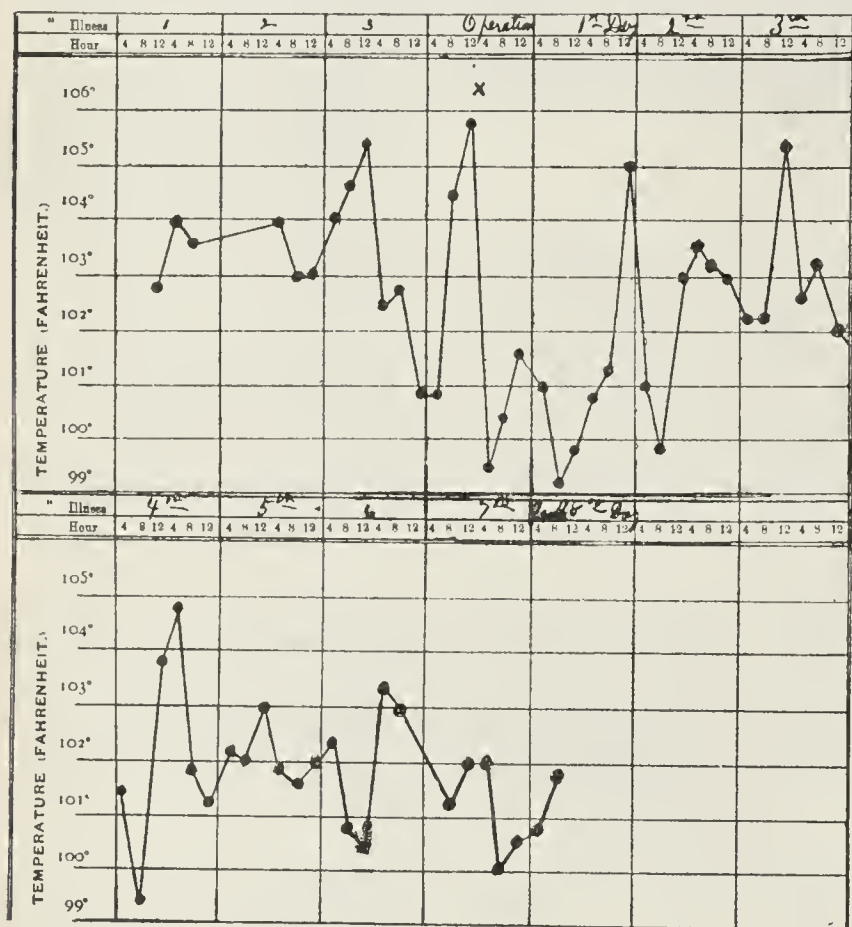


Chart 1.—Case 1.

better physical condition of the patient at the time of operation, because the operation is now usually undertaken before the patient's resistance is severely handicapped by the advance of the disease. It is also due to the improved manipulation of the soft parts and to their careful preservation and protection from unnecessary laceration and contusion during the operation. It is also due to the more scientific postoperative treatment which does not conflict with the well-known physiologic reparative process of Nature, but utilizes them to the best possible advantage in the blood clot and its modification. Nature's granulations do their intended work without stint or hindrance (Cases 6, 8, 11 to 13, 15, 17 to 22, 24 and 25). Slow convalescence, due to packing the wound, is shown in Cases 4 and 16.

13. Secondary operations are avoided by the thorough primary operation, by the encouragement of the formation of a firm cicatrix in the track of the operation and by the expeditious convalescence which prevents reformation of necrotic centers.

14. The preparation, operation and after-treatment now lead to a speedy termination of an uneventful convalescence (Case 24) and contribute in a large measure to the preservation of the residual hearing (Case 15). A maximum of residual hearing is to be attained after operation if the tympanum is allowed to cease secreting

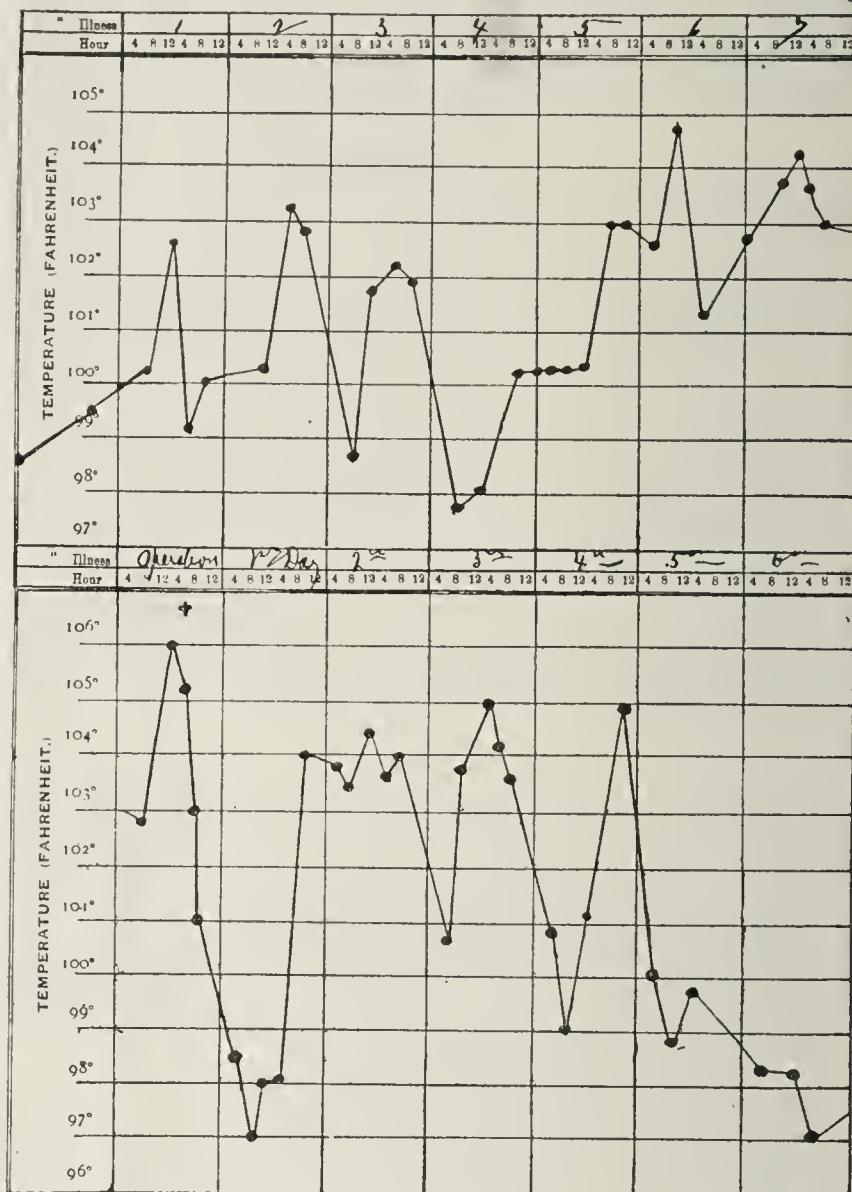


Chart 2.—Case 2.

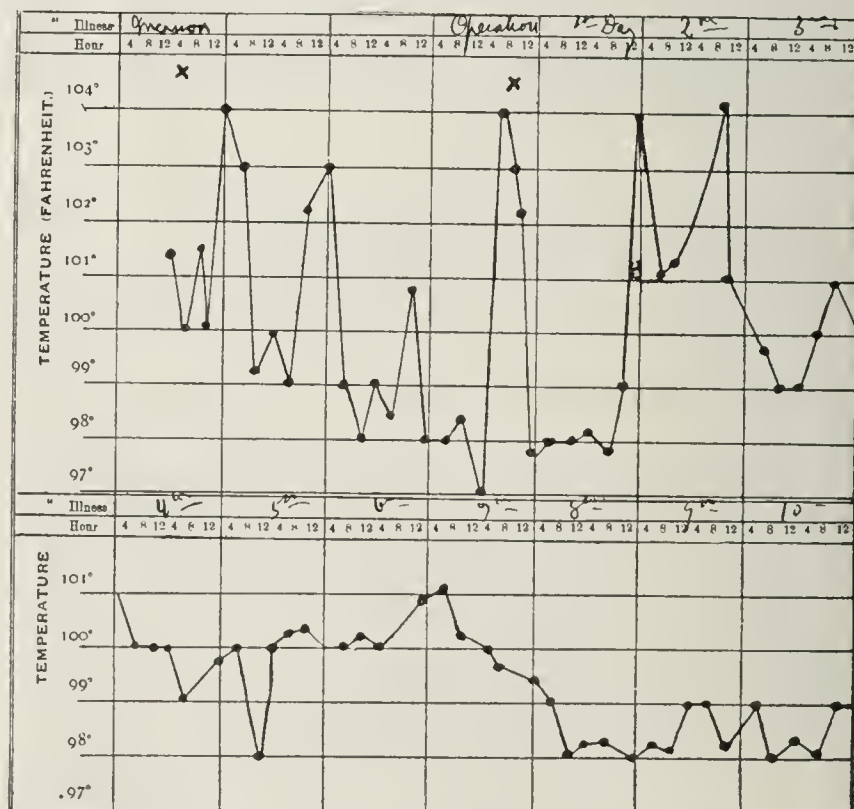


Chart 3.—Case 3.

before the postaural drainage is cut off, as this allows the sound-conducting mechanism to heal somewhat more quickly than by the reverse method.

15. The recent improvement in technic and the consequent rapid convalescence with a larger amount of resid-



ual hearing and no deformity justifies still earlier recourse to operative measures than formerly, which in the future will still further improve the statistics.

#### SUMMARY.

Following is a summary of the means and measures which encourage earlier operations with the hope of prolongation of life, a shorter convalescence and lessened expectation of a secondary operation, while they make the outlook favorable for more efficient hearing and absence of deformity: 1. Complete operation. 2. Use of efficient bone instruments and curtailment of useless polishing of the bone. 3. Rational disposal of the soft parts. 4. Preservation of the sound-conducting mechanism in selected radical cases. 5. Ligation of the jugular vein as high up as infection will allow before opening sinus and exenteration of the jugular bulb. 6. Management of brain abscess by the open method. 7. Blood clot, drained blood clot and my modification of the drained blood clot in the simple mastoid operation. 8. Reik's "protective sheet." 9. Blood clot in cases of epidural abscesses. 10. Cosmetic results of the blood clot, drained blood clot and evened-up bone wound. 11. Lessened shock and jar. 12. Shortened convalescence. 13. Elimination of secondary operation. 14. Avoidance of accumulated cicatricial tissue to interfere with the sound-conducting mechanism.

The 25 tabulated cases are the consecutive series of my recent operations on the mastoid region, arranged in order of severity of their postoperative constitutional symptoms:

#### DISCUSSION.

DR. A. H. ANDREWS, Chicago, said that those who have opened the lateral sinus and seen the freedom with which blood comes from the jugular bulb should have little fear of anything floating in that direction. While he has no objection to ligating the jugular previous to opening the lateral sinus, he can not advocate it for the reason Dr. Bryant gives. He has had some experience with the blood clot method of dressing, but it has not been satisfactory. It is true that the packing method does not always give entirely satisfactory results, and he will make further experiments with the blood clot method, although in some of the cases in which he has used it he has not been pleased heretofore. The question of hearing following these operations is important. The operations regarding the question of hearing may be divided into two classes: The simple, in which an effort should be made to get perfect hearing, and the tympanomastoid, in which, while perfect hearing can not be obtained as good hearing as possible should. The more perfect the drainage in the simple cases the more likely will perfect conditions in the middle ear be obtained. Dr. Andrews is satisfied that some physicians who are doing drainage operations do not appreciate the importance of letting the forward part of the antrum and the attic alone—of not probing the attic. He has known of the ossicles, especially the incus, being displaced by probing the antrum. When the incus is displaced it can not be expected that perfect hearing will follow the mastoid operation. If the best hearing possible is to be obtained in the radical operation, care must be taken not to allow granulation tissue to form over and about the stapes and the oval window. He considers that to be the most important thing in the after-treatment of the radical operation.

DR. CULLEN F. WELTY, San Francisco, said that every man can operate best with his own tools. He does not approve of the burr in the mastoid operation for the following reasons: The burr can not be controlled as well as the chisel, and heat comes from the friction. He has seen very few burr operations. He has seen the facial nerve severed by a slip. He also knows of a patient whose brain was punctured by a slip. He has never seen the facial nerve cut by the chisel, nor has he seen the chisel accidentally put into the brain. He thinks that the burr is particularly useful to smooth

rough edges of a mastoid cavity. The granulations are not so large and they heal much better. He can not speak with confidence or enthusiasm of the blood clot dressing. He does not think it is a surgical procedure, and believes that better results can be obtained by other methods. He is familiar with the blood clot dressing for the radical mastoid operation, but does not think it practical, because the granulation tissue must be taken care of. The amount of granulation tissue in a recent operation depends largely on the looseness or the tightness with which the tampon is applied. The hearing following acute mastoid operations should not be affected. After late operations it is apt to be somewhat lessened. This is not dependent on the operation, but is dependent on organized connective tissue which binds down the stapes, permanently impairing hearing. For this particular reason it is conservative surgery to operate early in acute mastoid cases. The hearing following radical operation is usually benefited, especially when dependent on the impairment of the conduction apparatus which can be removed.

DR. E. B. DENCH, New York City, said that he believes that every man will use the instruments he is accustomed to and do better than with some new device. Dr. Dench has always used the mallet and chisel. He has given the blood clot dressing a trial, and in every case in which he has used it, and he has used it by all methods, the wound has broken down and it has been necessary to reopen and drain. The procedure is unsurgical; that cavity can not be cut off from the air. The blood clot method was introduced first by Schede in Germany in treating osteomyelitis of the long bones in particular. Dr. Dench has taken pains to question some of the general surgeons, and finds that the method is in disrepute, even in osteomyelitis of the long bones. He has tried to get from some of the men using this treatment definite statistics regarding the actual number of cases in which the wound has been absolutely closed and a good result from the blood clot obtained. Dr. Dench declared that he can not conceive of proper drainage in the radical operation without doing a plastic operation on the auricle. A certain number of patients will get well without, but a large proportion will not. He has had to reoperate on some patients, in whom the operation had been perfect except that the meatus was small, but as soon as he made a proper meatus the ear became dry. Dr. Dench does not think that ligation of the jugular vein before opening the sinus is necessary. He has seen a portion of the clot below the level of the facial vein, and in that case the infection is not cut off at all unless the jugular below the level of the facial vein is tied and the facial vein as well.

DR. PHILIP HAMMOND, Boston, said that in all operative procedures the question of paramount importance is not the production of as little scar as possible, or making the treatment of short duration, but of what measures will be safest for the patient. It seems to him that the immediate closure of the mastoid cavity, as has been advocated, can but lead to disaster sooner or later. It is true that many satisfactory results have been reported following the blood clot dressing, but those who see bad cases which come to the hospital, in which within a few days after the operation there is a rise of temperature and a question of deeper infection, know how useful it is to have a clean wound where the changes in the bone can be seen and the sinus readily reached. Some ten years ago Dr. Hammond saw several radical operations in which a partial flap was made on the meatus, and subsequently the dressings were left out. The result, in one case in particular, was that the meatus practically reformed, closing off the mastoid cavity, and a chronic suppurative condition still exists inside the temporal bone.

DR. F. B. SPRAGUE, Providence, R. I., said that as Dr. Bryant mentioned his name in reference to the blood clot in radical operations, he would tell how it is done. It is not a blood clot operation according to the recommendation of Schede.

That is impossible under the disarranged anatomy. Dr. Sprague's technic is as follows: After complete exenteration of the structure, the canal flap being made according to the choice of the surgeon, the opening of the meatus is made large enough to admit of a half-inch pure gum drainage tube, which



is inserted as far as the facial ridge. A piece of round gauze wick covered with rubber tissue is then placed through the drainage tube along the remaining bony canal to the inner wall of the tympanum, then the whole remaining space is allowed to fill with blood and the mastoid incision closed to unite by primary union. The dressing is applied and left till the third day, when the wound is examined and, if in good condition, the new dressing is applied. The dressing near the tube will be wet with blood serum, but this is no indication for disturbance; should there be pus, however, it should be changed. On the fifth day the wick from the canal is removed and renewed. The seventh or eighth day the tube is removed and the cavity carefully wiped dry and packed closely, but not tightly, with gauze made in small tampons. This packing is repeated every day or two till epidermization is complete. Should the clot break down the cavity is irrigated with saline solution and tamponed as usual with small pieces of sterile gauze. If the blood clot fails, we save at least a week of painful dressings by the use of the rubber tubes and also have a good opening to pack through. This opening contracts after a while and the patient has a symmetrical canal mouth not as conspicuous and unsightly as the usual angular cuts.

Dr. Sprague said that he showed a patient in Boston, at the meeting of the Laryngological, Rhinological and Otological Society, three weeks from the day of operation, which was a splendid success, and he has done two other operations with equally good success. In the vast majority of cases, perhaps, the circumstances do not permit of such treatment. Wherever the blood clot can be used it helps to fill the cavity, gives a smaller space, and quicker healing is obtained, with less inconvenience to the patient.

Dr. KASPAR PISCHEL, San Francisco, suggested the use of lampwicks for cigarette drains instead of gauze. If a lampwick and a gauze drain be placed in a glass of water it will be seen that the lampwick drains much better.

Dr. O. H. REIK, Baltimore, said that he was sorry it is so hard to show Dr. Dench the error of his way, although Dr. Reik appreciated the conservative attitude he takes in the matter. It is perfectly proper that those who operate with the blood clot dressing in mastoidectomy should be required to demonstrate that this is a perfectly safe procedure. Dr. Reik said that he can not permit the statement that it is an unsurgical procedure to go unchallenged. He tried to show recently, in a paper published in *THE JOURNAL* of the American Medical Association, March 31, 1906, page 935, some reasons from the standpoint of the physiologist and bacteriologist why it is a perfectly scientific procedure. Physiologists have proved that the normal human blood is actually bactericidal. Perhaps an open cavity can not be better cleansed than by placing in it normal human blood which is capable of overcoming a certain number of micro-organisms. Dr. Dench stated that the Schede operation in osteomyelitis is in disrepute. Dr. Reik would rather say it is in disuse. Nothing has been brought out against it. It is in disuse, perhaps, mainly because success with the blood clot operation in the long bones requires an enormous amount of work. The surgeon must approach absolute cleansing of the wound and get out all the carious bone, to prevent infection and breaking down of the clot.

Dr. J. F. BARNHILL, Indianapolis, said that he would have to take ground against the blood clot operation. One reason is, that whereas this operation is done for the purpose of getting rid of pus and septic material which has formed in the mastoid, it is also done for the further purpose of draining the middle ear cavity and of preserving the hearing apparatus in its best condition as to function. He considers the latter one of the important reasons for doing mastoid operation early. It has been his experience, and that of many others, that when postauricular drainage is provided early, as in mastoid operation, the rupture in the drum membrane heals rapidly, pus ceases to flow from the middle ear at once, and in a short time after the operation the ear becomes almost normal in every respect. When a blood clot is left to fill the mastoid wound, the drainage from the middle ear is thereby blocked, and consequently the middle ear must continue to drain through the opening in the drum membrane, and do dam-

age to the ossicles and mucous membrane contained in that cavity. He therefore considers the presence of a blood clot in the mastoid wound a hindrance rather than a help to mastoid surgery.

Dr. C. J. BLAKE, Boston, said that the first case in which he used the blood clot dressings was one of acute mastoiditis following acute middle ear trouble, in a musician, to whom hearing was very valuable. In that case he did the crescentic cut of the drumhead superior posteriorly, in order to save the membrana vibrans with reference to future hearing, and did the mastoid operation. The cavity was allowed to fill with blood clot, the lips of the wound were closed by apposition and pressure pads of gauze. It was early in his experience with the blood clot dressing, and it was his custom at the end of forty-eight hours to slit up the wound with a blunt probe, a Bowman's probe preferably, putting the tip of the probe into the antrum and slitting the wound from top to bottom, thus making a division of the formed blood clot and providing the necessary drainage from the antrum. At the end of forty-eight hours the patient had a rise in temperature, suggesting the probability of an infectious process in the middle ear. On examination the edges of the wound were in complete apposition and there were no signs of redness, swelling, or other disturbance in the mastoid. The next day there was a small red spot on the top of the patient's head. The erysipelas ran its course, well over the head, and finally disappeared, the mastoid wound being left untouched, under the circumstances. At the end of five or six days, the erysipelas having passed, the mastoid wound was well apposed, healing had taken place, and not only was the mastoid closed, but the opening in the drumhead had closed also. Tests made six weeks later gave the patient 90 per cent. of normal hearing in that ear. If this can be accomplished, as it was under conditions of accident, why, he asked, should it not be made as nearly as possible, with proper exceptions, a natural and general rule?

Dr. W. SOHIER BRYANT, New York City, said that he has not seen any excessive granulations after the use of the blood clot. In regard to Dr. Dench's remarks about the blood clot and avoidance of packing in certain cases, Dr. Bryant thinks that there was a slight misunderstanding in the use of the word blood clot. He did not know how to use it so that Dr. Dench would understand exactly his meaning. He used the term simple blood clot, referring to wounds wholly closed by blood, and the term modified clot, referring to wounds only partially filled by blood clot. As to the size of the meatus following the omission of the packing after radical operation, he usually gets a meatus slightly larger than normal.

Dr. Bryant said that his method differs radically from that of Dr. Sprague. Dr. Bryant lets the wound close entirely, lets it collapse, the anterior soft parts falling back into the osseous excavation; and he uses a small amount of gauze in the meatus. He may or may not slit the meatus. The wound is dressed every day to make sure that it is all right. If the meatus looks dry after twenty-four hours, the gauze is left in twenty-four hours longer. If it is moist the gauze is removed and not replaced. The Blake blood clot is the simple blood clot without drainage. Dr. Bryant thinks that the drain blood clot is useful in more cases than the simple clot, because it is safer. A small cigarette drain, left in the bottom of the wound for not more than twenty-four hours, gives good drainage from the depths, as shown by the flow of serum which lasts several days after the removal of the drain.

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Provisions for War Prevent Provisions for Prophylaxis.—A rather sensational episode at the International Antituberculosis Conference, which recently closed its sessions at The Hague, was the statement made by the delegate from France that the millions which his country wanted to spend on works for social defense against tuberculosis and the like she had been compelled by diplomatic exigencies to devote to the purchase of cannons and munitions of war. This undisguised appeal for universal peace was warmly applauded.



DUTIES IN MUNICIPALITY AND STATE IN  
THE CONTROL OF TUBERCULOSIS.\*G. WALTER HOLDEN, M.D.  
DENVER.

It is the duty of municipalities and states to protect the lives, the property and the health of their citizens. The purpose of this paper is to bring to your consideration the relation of the state and the city to one disease—tuberculosis. At present states protect their citizens against other contagious and infectious diseases. Tuberculosis also should be under their control.

We know that tuberculosis is preventable and curable; yet we allow it to cost this nation 150,000 lives every year. Can we, as a nation, afford to offer up this annual sacrifice when the general adoption of preventive measures and their intelligent enforcement will gradually reduce this alarming mortality, and in due time stamp out the disease?

The prevention of tuberculosis is one of the most serious social problems that the country has to consider to-day, and the first movement toward the solution of the problem has been made by the medical profession, many of whom have put aside all selfish considerations and are working for the greatest good of humanity. So much has been said and written on this subject and, in proportion to its importance, so little enthusiasm has been aroused, that it is extremely discouraging to those who have the matter at heart; but results can be obtained only by persistent effort in keeping the subject constantly before the public. The idea still prevails, even among physicians, that this is a matter which can not be forced to an issue; that the education of the laity must be a question of generations; and so, with few exceptions, they evade their obvious responsibility. The education of the mass of the people must, of course, be gradual, but certain immediate and valuable results may be reached by influencing the authorities charged with the responsibility of state and city government.

## STATE AND CITY BOARDS OF HEALTH.

One of the first of these should be the appointment to our state and city boards of health of men scientifically equipped to deal with this special problem, and these men should be invested with the necessary authority to act. Every state board should have for its secretary an efficient, energetic man to oversee and to keep vigilant watch over the condition of the public health throughout the commonwealth and to keep in touch with municipal health boards. His salary should be sufficient to enable him to give his entire time to the work.

It is of the utmost importance that every city secure the services of an energetic, fearless, aggressive man to captain the work of its board of health. His salary should be large enough to assure independent action, and the appropriations for his department should be sufficiently large to enable him to obtain results. He should be given the necessary authority, and thoroughly supported in its exercise. Remember that this is a campaign against ignorance and the indifference which arises from ignorance. Also the opposition of interests which thrive through conditions as they at present exist, will be both persistent and powerful. Especially is this so in the enforcement of ordinances regarding food products and in the regulation of tenement buildings and districts. Unless the above is complied with, all ordinances and requirements are worse than useless.

It is not possible to discuss in this paper all the problems that must come before such boards for solution. I shall consider in a general way only those which have appeared to me of vital importance, after having corresponded with health boards throughout the country.

## COMPULSORY REGISTRATION OF CASES.

Compulsory registration should unquestionably be universally adopted. In a few instances it is already in force. A great many objections to compulsory registration are constantly being raised, but this is something which must be expected in the case of any reform. It is a common misapprehension to infer that, because a case of phthisis is reported, the physician has in any way violated the confidence of his patient or branded him a social outcast. This is far from being the intention, nor in those cities where this system has been enforced has it been the result. The records of reported cases are open only to officials authorized to inspect them.

In the case of the indigent, careless consumptive, who is a source of constant danger to the community, registration is necessary in order that some action may be taken toward improving his condition and the condition of his surroundings, and, if necessary, causing his removal to an institution where he will be under control. In the case of those under the care of reputable physicians no official action need be taken after notification unless the physician in charge especially requests it. It is assumed that a physician who can diagnose a case of tuberculosis and has reported it is competent to handle it.

It is the duty of the board of health to furnish the reporting physician with literature naming procedures and precautions to be taken by him in the care of the case, as well as necessary literature for the patient.

*Monthly Bulletins.*—State boards of health should issue monthly bulletins which should be sent to every practicing physician in the state. The monthly bulletins issued by the Kansas and Iowa state boards of health have recently been brought to my notice. They are a credit to the public spirit and professional ability of the gentlemen on these boards. They contain not only vital statistics, but discussions concerning problems of public hygiene and notice of what is being done in other states. The subject of tuberculosis is a prominent feature of these bulletins.

## GENERAL SANITATION.

The disposal of sewage and garbage receives due attention in all our larger cities. In many of the smaller towns and communities the work of the local boards of health is hardly efficient. The important matter of the proper cleaning of the streets is one on which I wish to lay emphasis. We have no method so effective and satisfactory in the paved districts of cities as the flushing process. The street-sweeping machines usually found are a great source of danger; while they drive the greater portion of dust and dirt to the curb to be shoveled into wagons, it is an unsafe and unsanitary procedure, because clouds of infected dust are thrown into the air and inhaled by every one in the vicinity. Not only should attention be given to the care of the streets, but more rigid supervision of alley cleaning should be insisted on. There are several very excellent devices for flushing filth to the gutter and into the sewers, thus doing away with the greater portion of infected material and lessening the danger from that which remains. This is comparatively an expensive procedure, applicable only to the larger cities with a sufficient water sup-

\* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



ply. Where this system is not practicable, streets should be sprinkled, swept and the sweepings carted away.

*The Spitting Nuisance.*—In considering the subject of the spitting nuisance, I can not do better than to quote from Dr. Foster, who has comprehensively covered the ground as follows:

As to legal restraint on the spitting habit it is not necessary to dwell. We know that through indiscriminate expectoration more than in any other way tuberculosis is scattered broadcast. We know that the habit is filthy and inexcusable. We all know how much has already been accomplished in eliminating the evil practice that at one time was considered our chief national characteristic. Expectorating in public places should be legally prohibited and the public should be made to respect the law.

The manner of calling the attention of the public to the antispitting ordinance varies in different cities. Denver, being a mecca for consumptives, has a particularly hard problem to handle, perhaps the most annoying feature of which is indiscriminate expectoration in street cars. Here we find it necessary to place plainclothes men on the cars, with the result that the offenders are arrested, a fine imposed, and their names inserted in the daily press. The humiliation attending the latter procedure is most effective. The method of calling attention to the antispitting ordinance in New York City is to be commended. The police are furnished with a pad of printed slips, one of which the officer hands to any person seen expectorating on the sidewalk. One side of this slip reads:

YOU ARE VIOLATING THE LAW AGAINST  
SPITTING.

You are subject to imprisonment  
or fine, or both.

BY ORDER OF THE BOARD OF HEALTH.

On the other side is printed the section of the sanitary code which is being violated. The unfortunate tendency of the average police officer, however, is to grow lax in enforcing the ordinance. While I should hesitate to recommend it, an effective stimulus to the performance of their duty could be found in allowing to the officer making the arrest a certain percentage of the fine imposed.

*Disinfection of Apartments.*—The commissioner of health should have a ruling relative to all apartments previously occupied by consumptives. Such apartments should be considered infected and, when vacated by death or removal of their occupant, they should be disinfected by the board of health, and it should be the duty of the physician, or any other person having knowledge of such previous occupancy, to notify the local board of health. A person who rents to any one apartments previously occupied by a consumptive before they have been disinfected should be considered guilty of a misdemeanor and fined.

*The Tenement House.*—Time will not permit me to discuss at length one of the vital problems in the prevention of tuberculosis—the elimination of the tenement house. We all know the danger that comes from overcrowding, and we know further how difficult it is to control it when money and influence are united to oppose legislation. We pay a heavy penalty for the maintenance of these evil conditions. When it is generally recognized that the spread of infection in the tenement districts jeopardizes the health of the entire community, rich and poor alike, more concentrated action will be taken and the necessary legislation will follow. In the meantime, it is the duty of the medical profession to do their utmost toward bringing this about.

*Public Conveyances.*—The state should pass more stringent laws governing the sanitation of railway sleeping cars and passenger coaches within its borders. If I am correctly informed, very few states have taken up this matter, although public opinion has forced many of the large railroads to adopt more sanitary measures than formerly, in order to avoid criticism. The states of Texas and Kentucky, however, have taken a definite stand in the matter, which other states would do well to imitate. Dr. J. H. Florence, acting health officer of Texas, has given me the recent regulations governing sanitation of railway sleeping cars in that state, rules which apply also to railway passenger coaches. These rules provide for the proper disinfection of sleeping cars and passenger coaches at stated intervals. They do away with the very dangerous practice of sweeping the cars in transit; they provide for the care and disposal of the expectoration of the passengers; they supervise the containers for drinking water and the handling of the ice.

The sanitary control of street cars and other public conveyances should receive more attention from city boards of health. These boards should enforce ordinances regulating the sweeping, cleaning and ventilating of all such conveyances, in addition to the antispitting ordinance.

*The Smoke Nuisance.*—Another source of danger to the public in closely populated cities and towns is the smoke nuisance. The continuous inhalation of minute particles of carbon irritates lungs already weak and is an unnecessary predisposing cause of weakness and disease which may easily be eliminated. Most cities already have ordinances regulating this, but they are not being sufficiently enforced.

*Inspection of Dairies.*—On the supervision of the health of dairy herds and the cleanliness of their products there is much to be said. Public opinion is awakening to the fact that the milk of tuberculous cattle is a great source of danger, in spite of the unfortunate statement of Professor Koch, in 1901. Most cities already pay some attention to the quality of their milk supply, yet the health of dairy herds, the conditions under which the cattle live, and the handling of their products, do not receive proper supervision. Herd inspection should receive careful consideration by state and municipal boards of health, working in conjunction with the state agriculture department. All tuberculous cattle should be condemned and killed, after the tuberculin test has been made, the state defraying a portion of the loss. This matter has been carried out in Massachusetts and several other states, and the results, I am informed, have been very satisfactory.

Inspection of herds should be made oftener than once a year, the reason for this procedure being well explained in the following extract from a letter from Dr. Bracken, executive officer of the Minnesota State Board of Health, in answer to a letter of inquiry:

There is a state law which provides for compensating owners who have tuberculous cows when the same are killed after showing reaction to the tuberculin test. An attempt was made in Minneapolis, St. Paul and Duluth to inspect the dairy cows. The attempt in Minneapolis and St. Paul practically was a failure for the simple reason that the herds are tested once a year and the cows purchased by the dairymen to replace the dead animals are not tested at the time of purchase. Still further, up to the present time there is no control over the cows that are furnishing milk that is shipped into the Twin Cities. In Duluth, the commissioner of health seems to have succeeded better, for he has passed an ordinance demanding that the dairymen should purchase only tested cows, and he has threatened that if knowledge comes to him of any dairy-



man selling milk from cows that have not been tested, he will advertise the party in the daily press.

During the last four years the Department of Agriculture of the United States has suggested to the state experiment stations a more cleanly method of milking, through the use of a specially devised covered milk pail; the proper care of the herd and the use of this pail assure the consumer a cleaner, purer milk.

*Inspection of Slaughtered Cattle.*—The Federal inspection of slaughtered cattle intended for home consumption, as made in our large packing houses, is exceedingly inadequate, owing to the rapidity with which animals are slaughtered. The most careful inspection is given to meat intended for export trade, for Europeans have recognized the danger which comes from eating infected meat; indeed, we are told that meat which is not considered salable in foreign markets is accepted and consumed by Americans. No one could have read the articles which appeared in the London *Lancet* in January, 1905, or recent magazine articles in this country, without feeling that meat totally unfit for consumption is constantly placed on the home market.

#### SCHOOL REGULATIONS.

A few states have laws to exclude tuberculous teachers or pupils from public schools, and in most of those states which have enacted such laws they are not enforced. That the daily contact with the tuberculous in the average ill-ventilated school room by children who are susceptible to the disease, is a menace to the health of the community, is a well-known fact. The exclusion of those already afflicted should be insisted on and a requirement made that teachers applying for positions in public schools furnish certificates of health from the state or city health board.

At a recent meeting of the State Board of Health of Minnesota, the following questions were presented by Dr. Bracken:

Are you willing to aid in the control of consumption? If so, see to it that those suffering from this disease are not employed as teachers: 1. Because they cannot hope to recover while following such an occupation. 2. Because they are a menace to the school children under their care.

See to it that children suffering from this disease are excluded from the schools: 1. Because their recovery is not probable if they are kept under the strain of school life. 2. Because the importance of fresh air, rest and good food is greater for the growing child than for adults, and the child attending school does not get the necessary amount of these. 3. Because close confinement in school may be followed by other kinds of tuberculosis than consumption, and may be followed by deformities or death. 4. Because school children suffering with consumption (pulmonary tuberculosis) are a decided menace to their associates. 5. Because by excluding them from school and allowing them to recover, and at the same time preventing the infection of others, many lives of value to the state will certainly be saved.

Rigid inspection of schools should be made by health boards, attention being paid to the instruction of teachers in the care of their charges during school hours.

Dr. Wm. C. Woodward, health officer of the District of Columbia, suggests that the most important feature in the spread of tuberculosis is the proper education of the community through the public schools. He says:

If hygiene, including the hygiene of transmissible diseases, were introduced into all the public schools of this country, and given a position of importance at least equal to that of geography, public lectures and exhibitions with respect to tuberculosis would soon be unnecessary, and every individual in the community could be reasonably relied on to protect himself and possibly to protect others from danger of infection.

At least the number who are willing to do so would be sufficiently large to demand and to procure the enactment of legislation that would bring their more ignorant and more obstinate fellow citizens to terms. The greatest obstacle to the enactment and enforcement of laws designed to bring about hygienic conditions arises from the ignorance of the community with reference to the necessity of such legislation, and the best culture medium for quackery is ignorance of physiology and hygiene.

School rooms should never be used for public meetings. There is little tendency to this in the larger cities, but in smaller communities they are often used for lectures and various social purposes. The danger from thoughtless expectoration is obvious. If they must be used for such purposes, they should be properly disinfected in each instance.

State or city charges, if tuberculous, whether in prisons, houses of correction, asylums or almshouses, should be separated from their companions. Some states have already taken this matter in hand, and have provided separate buildings for their tuberculous dependents. I would further suggest that every general hospital should isolate patients who are tuberculous, irrespective of the disease for which they were admitted.

#### STATE AND CITY SANATORIA AND DISPENSARIES.

The question of establishing state and city sanatoria is a very complex one. Theoretically, indigent consumptives should be cared for by the state, but in this age, when politics enter more or less into the management of public institutions, the results are not yet all that could be desired. Recent reports prove that the most successful institutions of this character are those founded by private enterprise and charitable associations. If the indigent consumptives are to be housed and controlled we can not have too many institutions for their care, and it is the duty of the state and city to do their share in the work. Large state institutions have proved themselves to be unwieldy, and the entrance of political considerations has seriously impaired their efficiency. A solution of this difficulty, at once largely eliminating the political features and greatly increasing the efficiency, would be the establishment by each county of an institution caring for the tuberculous of that particular community. These institutions could receive an appropriation from the state and be under the supervision of the state board of health, but the greater portion of the burden of their erection and maintenance should fall on the community whose citizens receive the care of the institutions.

The demands on every state and city treasury are enormous, and most officials hesitate to incur additional expense for work which does not appeal to them as vital. The first step toward gaining their co-operation in this movement is to convince them that it has an economic as well as a medical aspect. The effort to do so has been made repeatedly, and a temporary interest has been aroused. That the interest has not been permanent is due to lack of persistency on the part of the agitators. Moreover, for the care of the tuberculous who are charges of the state, the erection of elaborate buildings is unnecessary, and a cause of much discontent to this class after they return to home life. Adequate accommodations in which the best of results can be obtained may be provided at a cost of from \$150 to \$200 a bed. This erection of inexpensive sanatoria is a matter which would enable cities, towns, and counties to care for their tuberculous poor at a minimum cost and at a saving of many lives, for the



isolation and control of each individual case removes one more focus of infection from the community. Many cities have free dispensaries, especially those in which medical schools are situated, but they should be in every city, supported by municipal funds, and placed under competent medical direction. At such dispensaries it should be possible for poor consumptives to obtain free milk and eggs, as well as medical advice and treatment.

*The Parker Hill Experiment.*—During the summer of 1905 the Boston Association for the Relief and Control of Tuberculosis conducted an experiment worthy of more than passing notice, in establishing the Parker Hill Day Sanatorium. This was under the supervision of, and its success was largely due to, Dr. David Townsend. I quote from the report of the committee appointed by the Suffolk District Medical Society to investigate the crusade against tuberculosis in Boston:

In an orchard on Parker Hill rude structures and tents were erected, and here consumptives from the tenement districts of the city were provided for during the day. They were given lunches and dinner, medical supervision and nurses' care, and at night returned to their homes, to repeat the same thing the next day. This new departure has met with the approval both of the public and the profession, and has accomplished two objects, the improvement of the patient's condition, and his education, and, through him, that of his family, in the open air cure and hygienic modes of living.

I am not familiar with the further reports concerning this movement, but it is one worthy of emulation by organizations in other cities, and should receive support financially and otherwise from city authorities.

*Prophylaxis for Government Employés.*—Washington, D. C., being under the Federal government, presents conditions which are unique. President Roosevelt has shown himself thoroughly alive to the essentials of the problems with which we are dealing. He has urged before two sessions of congress that Washington be made a model city in all respects, a model to the municipalities of this country. He has given special attention to the problem of tuberculosis.

After receiving a report from the committee appointed by an executive order of December, 1905, to prepare a plan for the prevention of tuberculosis in government workshops, he issued an order directing that the head of each department in Washington should see that the rules prepared by this committee should be posted in every public building under his control; that names of persons in his department who are afflicted with tuberculosis should be ascertained and a copy of the rules be presented to each; that non-observance of the rules may at the discretion of the department head be considered just cause for separation from the service. The order further provides that, when there is doubt as to a person in the government service being afflicted with pulmonary tuberculosis, an order must be issued for an examination at one of the government laboratories, and that a certificate showing the result of that examination must be presented to the department. When a government laboratory is not accessible, examination shall be made at the government expense. This order applies also to the employés in government buildings and workshops belonging to the Army and Navy and to the Marine Hospital Service.

Through the efforts of the President, much will undoubtedly be done in Washington toward suppressing tuberculosis. For his initiative he deserves the thanks of all those who have this problem at heart.

We recognize that the greatest problem before the

profession to-day is that of the suppression of tuberculosis. Its solution does not lie in the cure of the individual case; if we had in our hands to-day a specific, the problem would still remain unsolved. The disease is primarily a disease of communities; it obtains a foothold and exists in the country only through ignorance of the means of its transmission and the modes of its infection. The most direct and effective blows against its strongholds must be dealt by municipal organizations. It is not a problem for the student and recluse alone, but to his talents must be added those of the man of action and executive ability. We are already in possession of sufficient scientific knowledge to deal with the problem; there remains the necessity of public education and the working out of business details.

While the profession may not agree on all minor points as to treatment, suitable climatic conditions, and general management, on certain broad principles we may stand as one man. Some of the best work that is being done in the country to-day is being done by enthusiastic, unselfish men, who are working along the lines which have been already successfully followed in the hardly won victories of the last half century over other specific infectious diseases.

Speaking from the standpoint of a specialist in tuberculosis in charge of an institution, I recognize that the eradication of the disease does not lie in the successful treatment of the individual case, but rather in the control of the disease, and the elimination of those vicious conditions which give it rise, by state and municipal organizations; along these lines, the best energy of a united and public-spirited profession should be concentrated.

## DUTY OF RAILROADS IN TRANSPORTATION OF TUBERCULOUS PASSENGERS.\*

JOHN R. HAYNES, M.D.

LOS ANGELES.

The contagiousness of tuberculosis is not now denied by scientific men of medicine.

A leper menaces the health and lives of those with whom he comes in contact very much less than does one suffering from pulmonary cavities and expectorating sputum laden with tubercle bacilli. How absolutely illogical and untenable is our position when we lift up our hands in holy horror while listening to accounts of the ignorant Kanakas who sleep, eat, and smoke with their leprous relatives and hide them from the minions of the law who have come to separate the sick from the well, while we associate in the same way with our tuberculous, only we are not obliged to hide them because we have not advanced so far as the Kanaka authorities in the protection of society at large by isolation. If these premises are correct, then the public should be protected while traveling, at least as much from the tuberculous as from the leprous passenger.

Undoubtedly many people contract tuberculosis while traveling on railroads and, more especially, while traveling in sleeping cars.

I have crossed this continent at least twenty times and do not remember an occasion when there has not been some one with tuberculosis in the car in which I lived, and, generally, a number on the same train, and on sev-

\* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



eral occasions death from tuberculosis has occurred. You will pardon me for mentioning an instance or two which will forcibly bring to your minds the danger of permitting tuberculous passengers to travel freely with others.

A year ago when I was crossing the continent, a passenger who bore all the ear-marks of advanced pulmonary tuberculosis—hollow cough, expectoration, emaciation, shallow, rapid respiration and hectic flush—entered the Pullman sleeper. In the morning he was the last one to arise and when the curtains of his berth were removed I saw that the window at the head of his berth was so covered with sputum that the glass was translucent instead of transparent. What possessed the man to expectorate against the window I do not know. He left the car soon after arising and the porter cleaned the window in the perfunctory manner common to men filling his position. On returning to my seat after a couple of hours stay in the smoker I found that a woman and little girl had been assigned the berth just vacated by our tuberculous passenger, and the little girl was standing on the seat looking out of the window with her face pressed against the pane and, as is the common custom among children, touching it with her tongue and lips.

On another occasion when I was coming from the East, a man and wife and two children entered our car at Las Vegas and occupied the drawing-room from which had emerged a passenger so emaciated and feeble that he had to be supported on both sides and whose choking cough all through the long night had driven sleep from many of us. This man had lived in that drawing room during the trip from Chicago to Las Vegas. What a frightful uproar would ensue if a leper were brought into a car, and how very soon would he have the car to himself! Yet the danger from the tuberculous passenger is many times greater.

#### SUGGESTIONS FOR REMEDYING THESE CONDITIONS.

To me your chairman has assigned the duty of making some suggestions for remedying the vicious conditions which menace society in transit.

I would suggest that added to the questions now asked by the ticket agent of those about to make long distance journeys, should be the following: Do you cough? If the reply is in the affirmative, then the would-be passenger must bring a certificate from the health department—if there is no health department, then from the railroad physician, and, lacking the latter, then from any reputable physician—stating the cause of cough.

If the case is one in which, in the opinion of the health officer, death within a few months or a year is inevitable, then a ticket should be refused the applicant unless he is being sent to a sanitarium to end his days or is away from home and desires to return.

Let me here protest with the utmost earnestness against the practice very prevalent in the East of sending away from home patients who can live but a few months at the least, and who frequently die *en route*. Probably every day in the year a large number of unfortunates afflicted with tuberculosis leave comfortable homes and journey toward California. If they are so fortunate as to get there alive, they may live in our midst for a few miserable weeks or months, or, possibly, one or more years, and then, strangers in a strange land, die that saddest of all deaths. They receive no ultimate benefit themselves, but, scattering about them death-dealing sputum, they constitute a menace to all around, but more especially to those who have inherited consti-

tutions that are incapable of resisting the onset of tubercle bacillus.

*Special Cars.*—Should, however, the health officer hold that recovery is possible in the climate in which the passenger proposes to seek relief, then he could be informed that he can go on a certain day, on a certain train and in a certain car.

This should be a compartment car with compartments opening on a corridor running along one side of the car and not in the center. Each compartment should have two berths placed lengthwise with the car, a water closet not enclosed and a folding wash-stand with running water. (This is the regular compartment car used on a number of our railroads). The floor should be covered with linoleum or, better, should be of cement and a small rug used. The upholstery should be of leather or, preferably, of movable cushions with washable covers. The hangings, if any, should be of washable material and the wood-work as plain as possible. All dejecta should be thoroughly disinfected before being allowed to escape from the closet. The sputum cups should be of paste board and should be burned in a stove designed especially for that purpose. There should be such a stove in each car.

Each hospital car should have a trained nurse in attendance whose business would be to care for all who needed her attention.

The hospital car should be attached only to trains having dining cars, and all meals should be served *a la carte* at reasonable rates to the passengers in their compartments and all dishes should be thoroughly disinfected and the paper napkins burned.

The cars should be run as often as necessary, once a week or once in two weeks and should be large or small as the railway companies should decide from experience.

*Disinfection.*—When a compartment is vacated by a tuberculous passenger, it should not be used again until thoroughly disinfected with formaldehyd, everything washable boiled, the wood-work and floor thoroughly cleansed and the movable cushions, mattresses and blankets disinfected in a hot room. These rooms should be at railway terminals, where supplies of disinfected cushions, blankets and mattresses could be obtained without causing any more delay than is made necessary by thorough cleaning of the compartments; but owing to the comparatively long intervals in the departure of hospital cars there would be sufficient time for thorough disinfection.

*Short Journeys.*—For those traveling a short distance covering only a few hours, a portion of a car could be set apart—a portion like the smoking compartments of the baggage car, for instance, without upholstery. It should be a chair car with one row of chairs only along each side of the car and near each chair a small, movable compartment into which a paste-board sputum cup could be placed and which could be lifted from its bracket and disinfected and the sputum burned at designated places.

These cars, like the hospital sleeping cars, could be run once a week, or a small portion of one car holding from four to six chairs could be run once daily.

#### OBJECTIONS.

The railroad company may object to carrying out the ideas suggested on account of the fact that they would be losing interest on the cost of cars not in constant use, and on account of the expense of an attendant or nurse and the extra expense of disinfecting by heat. But when we consider the enormous amount of money spent in palaces on wheels by the railroads, we believe that any



objections on the grounds of expense would not be well-founded, for they owe protection to society.

With reference to passengers of limited means traveling a long distance the health authorities should bear a part of their expenses, as they would if transporting those sick from other contagious diseases, such as leprosy or smallpox.

The objection is raised that people would decline to travel in the manner suggested, being branded, as it were, as diseased creatures to be avoided. Sentiment must be brushed away and tuberculous passengers must travel in such a manner as society may prescribe, in order that the many shall be protected. It should be thoroughly understood, by being published in the papers and in railway literature and, if necessary, by being printed on the tickets, that any tuberculous passenger evading by false representations the provisions for public protection, if discovered *en route* shall be put in the hospital car, if one be attached to the train, or be put off the train at a station where he could be cared for and compelled to wait until the first hospital car going his way arrives; and a heavy fine should be imposed on any physician who would connive at any evasion of these protective regulations.

These suggestions have been submitted to the passenger agents of two large transcontinental lines and they declared them practicable and feasible provided the various state health authorities or boards place tuberculosis on the list of contagious diseases. This would give the railroads the legal power to refuse tickets to any one suspected of having tuberculosis or any other contagious disease unless authorized by the health officer of the community where the ticket is sold. I think those who control the railroads will soon awaken to the necessity of thorough disinfection and isolation and thus add materially to the safety and comfort of their travelers.

## THE VALUE OF THE SANATORIUM IN THE CRUSADE AGAINST TUBERCULOSIS.\*

CLARENCE L. WHEATON, M.D.  
CHICAGO.

The progress of scientific medicine during the past decade has indeed been phenomenal. The original investigator has made contributions of seemingly untold value to us in the diagnosis and treatment of many formidable types of disease, yet new problems in the care and treatment of the tuberculous are constantly arising, to which the many contributions to scientific medicine seem less applicable than in the case of other prevalent diseases of a less complex nature.

It is my purpose in presenting this paper to consider briefly one of the most important factors in the successful treatment of tuberculosis and solution of this great problem, not losing sight of the fact that there exists a social and economic aspect to the disease. Are we not demonstrating throughout the civilized world the cure of a disease at one time considered incurable? And the results achieved in this field of medical science are of far-reaching importance, of interest to the profession from a medical and humanitarian aspect, and to the public and laity from a social and economic standpoint. It is a melancholy reflection that a disease from which nearly one-sixth of our race falls victims, which is prevalent in every country and climate, and from which neither age, sex nor condition of life enjoys an immu-

ity, a disease which presents more complex economic problems than any known, should until recently have been less understood and worse treated than any other to which humanity is subject.

Without regard to the circumstances of the patient or the stage of his disease, change of climate has been freely prescribed, and the hopeful sufferer finds himself in a strange land, surrounded by persons to whom his fate is a matter of indifference. He too often recognizes in those who administer to his wants individuals who perform ungraciously for hire services which in the home he has left would have been cheerfully rendered for affection. The human wrecks only recently observed scattered over the desert waste of the great southwest bear witness to this statement, as well as many wanderers seeking health in the mountain wilderness of some distant state, struggling for the mere necessities of life, with death an inexorable companion, and all the future dimmed by the shadow of waiting Charon. To these people, "climate," with its exhilarating dry air, blue sky and bright sunshine, is but a will-o'-the-wisp.

Our knowledge and the accumulation of facts relative to the modern treatment of tuberculosis is due in great measure to the influence of the earlier teachings of such men as Alonzo Clark, who fifty years ago, advocated the sanatorium for the care of the tuberculous. Rush, in his treatment of consumption, directed men into paths that are followed to-day. Bowditch demonstrated the pernicious influence of insanitary surroundings, particularly of soil and moisture, on the production of tuberculosis. He was one of the first to revive the doctrine of the infectiousness of consumption, and suggested a mode of treatment which precluded the possibility of the direct transmission of the disease. Trudeau has experimentally demonstrated the value of pure air in resisting tuberculosis and has assisted in demonstrating the worthlessness of so-called specific medication.

The pendulum has gradually swung from the old teachings to the new, directed through the influence of the pioneers in medicine, and to-day it has been clearly demonstrated that tuberculosis can be successfully treated and cured in any state of the union. The sanatorium, the ideal institution for the cure of the tuberculous, and the sanatorium idea is prevalent everywhere. After one hundred and twenty years of filth and disease the hospital method freed Havana; and the application of the laws of hygiene and sanitary science to the infected canal zone at Panama will reveal to the world the possibilities of modern medical science. And so with the tuberculosis problem; it must be solved in the sanatorium. As accessory to this central institution may be mentioned model free dispensaries in all cities, especially in crowded districts, open air day camps, information bureaus, lecture bureaus, experimental stations and various departments co-operating with the sanatorium under supervision of the state. This institution, properly managed, will control, discipline and educate the individual, especially in matters pertaining to personal hygiene, enabling him to go forth a missionary, as it were, in the art of proper living. Here the destitute from the great centers of population will find a home where they will receive proper treatment, where by means of segregation and careful supervision the dangers of infection to others may be eliminated, and where attention to detail may restore those patients not hopelessly diseased to lives of activity and usefulness.

The sanatorium bears a most important relation to the tuberculosis problem in the study of the economic course of consumption, especially in wage earners. This phase

\* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



of the disease does not, however, present itself until the earning capacity of the individual ceases and he passes from a period of partial disability to one of complete disability with dependency.

When the economic activities of the individual cease, the usefulness of the citizen to the state is at an end. In 1905 there were 10,000 consumptives of the state of Maryland. Eight thousand had ceased to be economic factors in their communities, and the state must ultimately provide for their support, and, if possible, restore them to lives of activity.

Without fear of contradiction, tuberculosis can easily be placed second to insanity in the extent of dependency it produces.

Marshall Price has stated that of 177 wage-earning males, among whom careful inquiry was made concerning the original and ultimate economic condition, 72, or 40 per cent. became dependent on charity, and during the course of their disease 26, or 14 per cent. died in charitable institutions, and it was supposed that the majority of the others received at some time charitable aid.

In 1897 the Muskoka Cottage Sanatorium was established at Gravenhurst, Ontario, the first hospital, I believe, to be established by the state for the care of consumptives. The success of this institution resulted in the construction of another sanatorium, the two institutions having a capacity of seventy-five patients each. Since the establishment of the Gravenhurst Sanatorium there is scarcely a geographical division in the union not interested in the establishment of a hospital for tuberculous patients. Contracts have been let in New Jersey for the construction of a sanatorium to cost \$225,000, exclusive of its equipment. Illinois has not as yet made any state provision for the care of the tuberculous; the Ottawa tent colony may eventually form the nucleus of a state charitable institution. The able management of this institution has effectively demonstrated that tuberculosis can be cured in Illinois as well as elsewhere.

It has been estimated that the eight thousand deaths from tuberculosis in Illinois in 1904 represent a monetary loss to the state of about forty million dollars. Admitting that 75 per cent. of the incipient cases could be cured in sanatoria, the state, by properly providing for these unfortunates, would annually save thirty million dollars. In Pennsylvania, deaths and illness from tuberculosis cause a loss each year of twenty-four million dollars. The loss of earning power during two or three years' illness and the increased cost of maintenance during this period has been estimated as equal to the direct loss from death.

The public services of the United States, the Army and Navy, and the Public Health and Marine-Hospital Service, are active in the antituberculosis crusade.

During 1904 the Fort Bayard (New Mexico) Hospital had a total of 644 soldiers suffering from tuberculosis. The results of the treatment reported in 643 cases were as follows: Twenty-two cases arrested, or 3.42 per cent.; improved, 340, or 52.88 per cent.; unimproved, 208, or 32.34 per cent.; died, 73, or 11.35 per cent.

Massachusetts was the first state in the union to adopt as a public enterprise methods which had been successfully used for many years abroad and later in our own country at private institutions.

In 1899, 68 per cent. of the incipient cases of tuberculosis were arrested at the Massachusetts State Sanatorium. In 1900, 73 per cent.; in 1901, 73 per cent.; in 1902, 72 per cent.; in 1903, 73 per cent.; and in 1904 76 per cent.

I am told that Boston was the first city in this country to establish a day camp for tuberculosis. The majority of the patients treated here gained materially in weight and strength and many were able to resume work.

The New York State Hospital for incipient tuberculosis at Ray Brook, in the Adirondacks, has issued a report for the first year of this institution. There were admitted 207 patients; in more than half the disease was in the incipient stage and there were no deaths. Of the 105 patients discharged, 52 were apparently cured; 26 arrested cases are reported; 16 improved, while 11 patients left without any improvement. Ninety of the 105 patients discharged gained an average of 10.5 pounds each.

The National Jewish Hospital for Consumptives in Denver and the Agnes Memorial Sanatorium in the same city are model institutions of their kind. The latter institution is a memorial to the mother of the millionaire, Lawrence C. Phipps. It is probably the foremost institution of its kind in the west designed for the care of those "whose physical condition gives promise of arrest or amelioration within a reasonable time." It is expected that the stay of each person will not exceed six months, and under no circumstances will hopeless cases be received.

The value of this institution to those who journey to Colorado can be appreciated by one who was a long resident of the state at a time when there were limited facilities in Denver and its immediate vicinity for the care of the tuberculous. Sixty-four and seven-tenths per cent. of the incipient cases were discharged cured; 17.65 per cent. were arrested; 17.65 per cent. were improved; in none did the disease progress, and none died; such is the record as shown from a recently published report of the Agnes Memorial Sanatorium at Denver.

The scientific solution of the tuberculosis problem seems at hand in Germany. The present rapid decline of the disease will result in its extermination in forty years or less. In Prussia the death rate has been lowered from 31 per 10,000 inhabitants in 1886 to 21 per 10,000 in 1900. This decline is in great measure due to the provision of sanatoria for the working classes and to the early and systematic resort to these institutions.

In New York City, the diminution from 1886 to 1901 has been more than 30 per cent.; it is the view of Dr. Biggs of the Health Department that with suitable methods of caring for the sick and proper precautionary measures, the death roll may be further reduced in a similar period of time.

These results attained in the so-called unfavorable climatic zones are of significance. We can no longer hold climate to be the one important factor in the cure of tuberculosis. It would appear that pure air of any climate is the chief essential in the arrest of this insidious disease.

We can not hope through the medium of the private sanatorium to achieve the most far-reaching results in the solution of this problem. The formation of anti-tuberculosis associations which, through private benevolence, should initiate and control the sanatorium movement, only asking a certain amount of government aid, will not accomplish the desired end. We will find these institutions, like many other private sanatoria, excluding all the indigent tuberculous patients, accepting no hopeless cases, and the very element that should be brought under control still a charge on their friends; if friendless, they soon become dependent on the county or are left to die alone in some tenement house loft in a crowded city, exposing others to the dangers of in-



fection in an environment previously rendered insatitary.

The sanatorium in the crusade against tuberculosis has passed the experimental stage; the results achieved through persistent effort and honest endeavor on the part of the profession justify the co-operation of the laity through the medium of the state legislature.

Establish state institutions for the care especially of the tuberculosis poor that they may be cured of their disease and returned to the commonwealth able-bodied citizens.

"The prolongation of life by the suppression of preventable disease is of much greater value to the state than the cost of the means employed."

In the light of comparatively recent brilliant achievements in serum therapy, it is reasonable for us to assume that a more specific treatment for tuberculosis may yet be derived. As clinicians, however, we should accept only those measures applicable to the treatment of tuberculosis that are rational, and should not expose the unfortunate victim of this disease to widespread experimentation in exploiting so-called cures.

The open-air treatment of this disease through the medium of the sanatorium has effectually demonstrated that tuberculosis is a curable disease in any climate, and it becomes our duty as physicians to give to humanity the knowledge and facts we have gleaned in this field of medical science, endeavor, if possible, to eliminate the ever prevailing superstition in the efficacy of falsely advertised nostrums as a cure for tuberculosis, refuting in some measure the claims of charlatans.

Could we finally attain this end in our crusade against tuberculosis, much of the sorrow would forever be banished from the millions of afflicted homes and the night of tears changed to the morn of hope.

39 Pine Grove Avenue.

[THIS SYMPOSIUM ON TUBERCULOSIS WILL BE CONTINUED NEXT WEEK.]

## AEROTHERAPY AND SOLAR THERAPY IN THE HOME TREATMENT OF TUBERCULOSIS.

WITH DESCRIPTION OF A WINDOW TENT.\*

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NEW YORK CITY.

As the most important therapeutic factor in the modern management of tuberculosis, we must consider fresh and pure air, and we can make the home treatment most successful when we imitate, so far as practicable, all the salient features of the sanatorium treatment. In these institutions the patients live outdoors virtually for twenty-four hours of the day. Let us now see how we can imitate this aerotherapy of the sanatorium treatment in the home of the patient.

In summer, of course, all the windows are open, and during the day we place our patients in the yard, on the veranda or on the roof, whenever and wherever conditions permit us to have the patient take what is known as the rest cure in the open air. Here he rests on a reclining chair with a proper knee bend and comfort-

able back. If the patient can afford it we get him also a half tent. This half tent is composed of a frame of steel tubing, which can be folded together when not in use (Fig. 1). Over this frame strong sail duck is stretched and secured by snap buttons on the inside, so as completely to protect the patient against wind and sun. To prevent the tent from being overturned by the wind, the frame has ground spikes holding it securely. A beach wicker-work chair can also be made to do the service of the half tent. After the seat has been removed the inner walls of the wicker chair are lined with padding. A reclining chair is placed with its back in the interior, and the whole so arranged that the patient is protected from the wind and sun. Whenever the patient is on the chair he should be so comfortable as to allow complete muscular relaxation. Mind and body must be at rest.

For poor patients the simple steamer chair and a few boards joined together to replace the costly half tent will have to answer the purpose. A large and stout umbrella, such as is often used at seaside resorts, can be fastened to the back of the steamer chair, and will answer the purpose when the tent can not be pro-



Fig. 1.—Half tent with patient resting on metal reclining chair taking the rest cure.

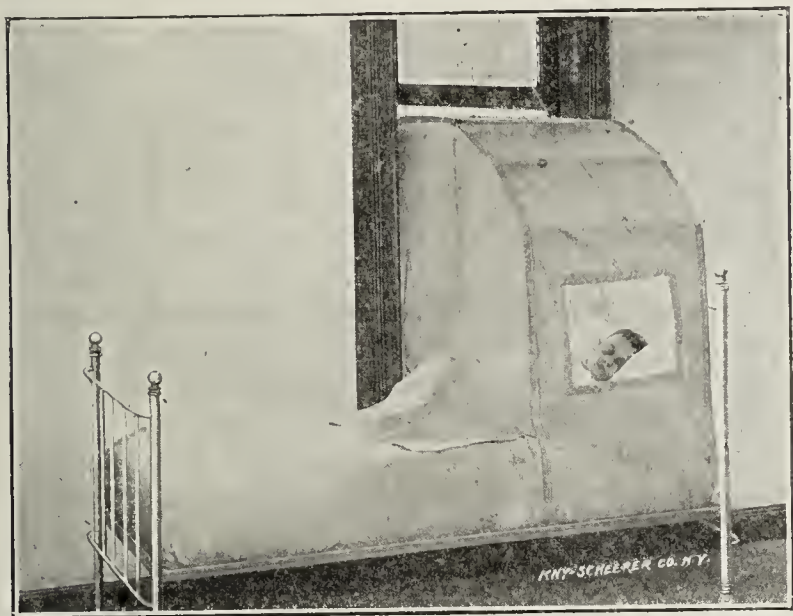
vided. The poor patient in cities will probably be obliged to resort to the roof for his rest cure, as the small yard of the tenement house, with many children playing in it, will scarcely be suitable. I do not favor the use of the fire-escape for this purpose. A recent conflagration in New York City, where many lives were lost owing to the obstruction of the fire escape, showed the dangerous results of evading the law in this way. On his reclining chair in the open air the patient should remain during the day whenever he is not taking any walking exercises.

In the modern American, and also in some European sanatoria, the majority of patients have their beds moved out on the veranda during the night, and there they sleep, often in the coldest weather. The brilliant results obtained through this method of sleeping outdoors in cold weather are too well known to all American physicians to need further mention here. What has worried me for years has been the fact that we could provide this open-air treatment at night only for

\* This is the chapter on Aerotherapy and Solar Therapy of an address on the Home Treatment of Tuberculosis delivered by invitation before the sixth Annual Conference of Sanitary Officers of the State of New York at Syracuse, Oct. 29, 1906.



As the illustration shows, this window tent is an awning, which, instead of being placed outside of the window, is attached on the inside of the room. It is so constructed that the air from the room can not enter or mix with the air in the tent. The patient lying on the bed, which is placed parallel with the window, has his head and shoulders resting in the tent (Figs. 2, 3, 4, 5). By following the description closely it will be seen that the ventilation is as nearly perfect as can



A black and white photograph of a building facade. The central feature is a large, arched window with a decorative pediment above it. The window is flanked by dark shutters. Below the main window is a smaller, arched opening. The building appears to be made of brick or stone. The image is framed by a dark border.

The tent is constructed of a series of four frames, made of Bessemer rod suitably formed and furnished with hinged terminals, the hinges operating on a stout pin at each end with suitable circular washers interposed to insure independent and easy action in folding, the Bessemer rod being hardened to make a stiff, rigid frame to insure maintaining the original form. The frame is covered with 7-ounce extra thick yacht sail



twill, properly fitted, and having elongated ends to admit of their being tucked in under and around the bedding to prevent the cold air from entering the room.

The patient enters the bed and then the tent is lowered over him; or with the aid of a cord and a little pulley attached to the upper portion of the window he can manipulate the lowering and raising of the tent himself. Shutters or Venetian blinds, whether they are attached on the inside or on the outside of the window, can be utilized in conjunction with the window tent as a screen to intercept the gazes of the neighbors and in stormy weather as a protection. The bed can be placed by the window to suit the patient's preference for sleeping on his right or left side, so that he has the air most of the time in his face. Another advantage of the window tent is that it will not attract attention from the outside. The bed being placed alongside the window will be convenient for a majority of the poor who have small rooms; if, however, the bed must be placed at a right angle to the window, it can be so arranged.

A piece of transparent celluloid is placed in the middle portion of the tent to serve as an observation window that the nurse or members of the family may watch the patient if necessary. It also serves to make the patient feel less outdoors and more in contact with his family. He can, if he desires, see what is going on in the room. If the window tent must be placed at a right angle to the window, the observation glass can be put in on the side. It goes without saying, that, as a rule, patients should not smoke; when, in exceptional cases, this may be allowed, the danger of the celluloid window becoming ignited must be impressed on them, and the greatest caution urged. I prefer celluloid to ordinary glass for this purpose, because it can easily assume the vaulted form of the rest of the tent, and thus avoid even the slightest possibility of an air-pocket formation.

If it is necessary to raise the bed to the height of the window sill it can be done with little expense. If the bed is of iron, a few additional inches of iron piping can be attached to the legs by a plumber or by any one handy with tools; a wooden bed can be raised with equal facility. If the window tent is to serve the patient only during the night it can be pulled up and the bed moved away from the window during the day and the window closed; or the tent can be taken from the hooks and put out of the way.

The window tent, of course, will be of greatest service to the consumptive sufferer in winter. If he is feverish, or his stay in bed is advisable, he can spend his entire time in the window tent. If the people are poor, and the room in which the consumptive sufferer lies serves as a living room for the rest of the family, the fact that the well members need not shiver and yet the patient can take his open-air treatment, is of vital importance in many respects. While the room will not be quite so warm as if the window were entirely closed, it will be much warmer than if there were no tent in front of the open window. Laying aside the economic advantages to a poor family in not being obliged to heat more than one room, the patient feels that he does not deprive his loved ones of comfort and warmth and that he is less a burden and hindrance to their happiness. The other members of the family, on the other hand, feel that they can give the patient all the air he needs and that he himself need not suffer for their comfort.

In winter the patient's bed must be covered with a sufficient number of blankets to assure his absolute comfort and warmth throughout the night. Still, this covering should not be so heavy as to press on the body and make the patient feel uncomfortable or tired. The tightly woven blanket is a better protection than the loosely woven one. To the poor, whose supply of blankets is, alas, often very limited, it may be valuable advice to tell them to put several layers of newspapers between the coverings. *Outdoor Life* for December, 1905, recommends having a dozen layers sewed between two layers of flannel. This will certainly make a cheap, light and warm covering. In extremely cold weather the patient, while sleeping in the window tent, should wear a sweater and protect his head and ears with a woolen cap, shawl or helmet, such as shown in Figure 6.

Some patients will complain that the bright light awakens them too early in the morning, and that they have difficulty in going to sleep again. In such instances I counsel the patient to have some light weight, but dark-colored material (such as black lisle thread hose) to put over his eyes. This usually obviates the inconvenience caused by the light.

The pulmonary invalid when in bed should be provided with a bell to communicate with his nurse, relatives or friends who take care of him. He should, of course, have a small sputum cup or pocket flask handy to receive his expectoration. I prefer the flask for use in the window tent, for it seems to me that any kind of a cuspidor which had to stand on the window sill would not be safe, as there is always a danger of its falling. A urinal should also be placed at the bedside, so that the patient will not have to leave the bed in the night.

There is one more benefit to be derived from the use of the window tent that is not to be underestimated. Patients who can only be persuaded with difficulty to sleep with the window wide open will not hesitate when they have this tent as an inducement. Draft, which the consumptive patient usually dreads, particularly when he perspires or in cold weather, need not be feared when sleeping in the window tent. The construction is such that even should the shoulders be accidentally exposed the three tent-walls protect the patient from violent currents of air which may be produced by leaving opposite doors in the room open. In this respect the window tent even has an advantage over sleeping on porches when they are not properly enclosed.

There is another advantage in this window-tent arrangement. The prolonged rest cure in bed will be more endurable when the patient is permitted to look out on the street and to watch life there, than when obliged to gaze at the four walls of his room.

When arranging for the rest cure on the reclining chair during the day, whether it is in the half tent in the garden, on the veranda, in the sleeping shack, on the roof, or on the balcony, one should always bear in mind that it is much more agreeable and conducive to the well-being of the patient, when taking the cure, to have a pleasant view to look on. In building a sanatorium, the greatest attention is paid to the proper selection of the place for the rest-cure gallery or veranda. The more pleasing and entertaining the outlook from these places, the more certain is one to keep the patients quiet and restful.

Lastly, an important point gained by the use of the window tent for consumptives is in regard to drop in-



fection, that is to say, the prevention of the dissemination of the bacilli through particles of saliva expelled during the so-called dry cough, sneezing, etc. While as a matter of course, the patient should be taught to always hold his hand or handkerchief before his mouth, when he coughs or sneezes, this is not always done, and to limit the possible infection to the interior of the window tent is obviously a great advantage. First, the constant exposure of the bacilli, which may have been expelled, to air and light will soon make them innocuous; and second, in this last model of the window tent the canvas of the tent is attached to the frame by simple bands so that its thorough cleansing, washing or disinfection is made easy.

Northrup and others have recently demonstrated that the ideal treatment of pneumonia is likewise pure, fresh and cold air by day and by night. When sleeping on the roof or in the open air is not feasible, the window tent is admirably adapted to the treatment of this disease in adults and in children. Thus, even if an intercurrent pneumonia should develop in the tuberculous patient, the window tent would be still of great service.

When there is no garden, veranda nor roof, the window tent can also be brought into service for the rest

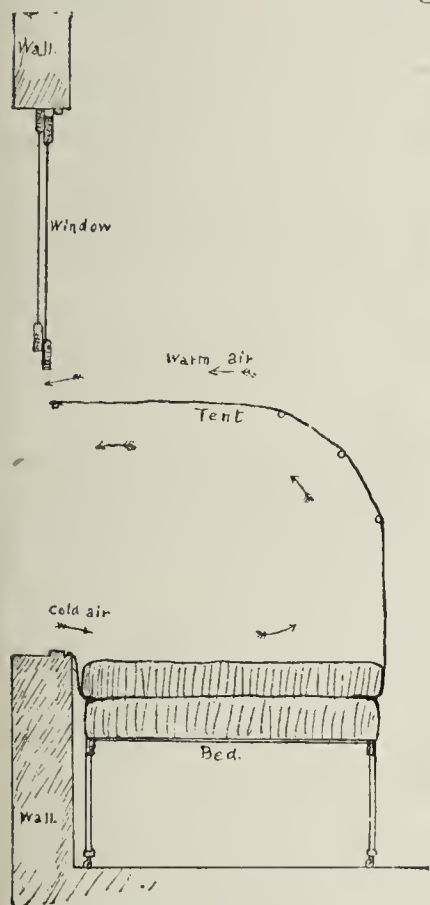


Fig. 5.—Diagram showing ventilation of window tent.

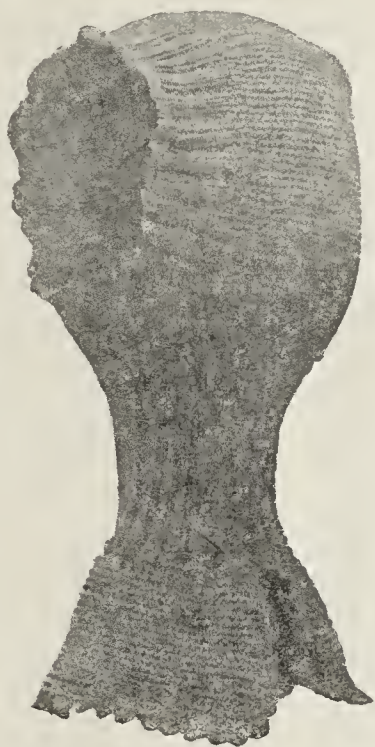


Fig. 6.—Woolen helmet to be worn when sleeping outdoors in cold weather.

cure during the day. The bed is moved away and the reclining chair is put in its place. The latter can be raised to the necessary height by wooden blocks or a platform and with the aid of blankets and comforters the air from the room can be excluded, and the patient being in front of the open window breathes only outdoor air. When beginning this aerotherapy, it is, of course, essential that it be done gradually according to the susceptibility to cold of the patient. Impress on him the fact that night air is as pure as day air, and begin by placing him in the tent for a few hours at night and a few hours during the day in the chair, gradually accustoming him to living in the pure air day and night. A hot-water bottle for the feet, either in bed or in the chair, may often be necessary in extreme cold weather, for the patient's feet must be kept warm if he is to be benefited by the open-air treatment.

As an adjuvant in aerotherapy I must not forget to

call attention to the importance of respiratory exercises. I have repeatedly described and illustrated them in my books<sup>1</sup> and various articles,<sup>2</sup> so that I do not think it necessary to dwell on the details of this phase of aerotherapy at this time. I will simply say that these exercises judiciously taught and carefully carried out are suitable in nearly all afebrile, early and moderately advanced cases. Even in the third stage I have seen beneficial results from judiciously directed breathing exercises. Most careful clinical observation made under Dr. Otis,<sup>3</sup> at the Massachusetts State Sanatorium, prove conclusively the value of careful breathing exercises in the treatment of pulmonary tuberculosis. The pneumatic cabinet must receive mention as a second adjuvant in aerotherapy of pulmonary tuberculosis. Those interested in this subject can refer to the works of Bowditch,<sup>4</sup> Quimby<sup>5</sup> and others. I have also described its indication and contraindication in my text-book on Pulmonary Tuberculosis.

After aerotherapy comes solar therapy or heliotherapy, that is to say, the utilization of the rays of the sun in the treatment of pulmonary tuberculosis. To be as brief as possible, let me give the concise directions which I think should be followed in order to get the best possible results from the sun bath:

The sunniest room should be selected for the purpose. Fixed carpets, of course, should not be placed in such a room, and the floor must be kept scrupulously clean. In a private home, where neighboring windows are often near, the arrangement will be more difficult, and low screens will have to be used. In winter the room should be heated to from 70 to 75 F.; as the patient's skin becomes less sensitive, the temperature of the room can be decreased. The room must always be well ventilated, and in summer the upper part of the windows can be left open.

The patient undresses entirely, but if he complains of cold feet he can keep on his stockings and even his shoes until he has become warm enough and desires to take them off. He first places a warmed sheet around his body and then a large blanket; he then lies down on the floor in the sun, his head in the shade and slightly elevated by a cushion. As he begins to feel the warmth of the rays of the sun, he gradually uncovers himself until the whole of his body is exposed to the sun; he exposes his back by turning on his chest. He remains in the sunroom for from half an hour to two hours, according to the instructions given him by his physician. He may change the recumbent to the sitting position or walk about.

Like all curative agents in the treatment of phthisis, the carrying out of this solar therapy should never be left to the caprice of the patient. Too much exposure to the hot rays may cause an erythema, an urticaria or other cutaneous trouble. To prevent these the patient should cover himself with one or even two layers of his sheet whenever the sun's rays produce a slightly burning sensation. Should these cutaneous complications occur nevertheless, the sun baths must be omitted for a

1. Les Sanatoria, thesis, Paris, 2 Ed., 1900. Pulmonary Tuberculosis, Prophylaxis and Treatment, Blakiston, Phila. Tuberculosis as a Disease of the Masses and How to Combat It. Am. Ed., F. Flori, New York City.

2. Johns Hopkins Med. Bul., September, 1901. Ann. of Gyn. and Ped., 1903, xvi. Jour. of Outdoor Life, July, 1905.

3. Otis: Trans. Nat. Assn. for Study and Prevention of Tuberculosis, 1906.

4. Bowditch: Boston Med. and Surg. Jour., July 16, 1885; and THE JOURNAL A. M. A., Aug. 1, 1885.

5. "The Pneumatic Cabinet in the Treatment of Pulmonary Phthisis." Internat. Med. Magazine, January, 1893.



time and the skin bathed in warm water, and friction with lemon juice applied. Headache, or a feeling of discomfort, is the signal to stop, no matter how short a time the bath has lasted. A high temperature is, of course, a contraindication to sun baths; such sensitive patients must remain in bed. Slightly feverish patients may be allowed to try solar therapy, but when experience shows that the baths are followed by an elevation of temperature, they must be discontinued. While taking his sun bath, the patient should perform frequent abdominal and thoracic breathing exercises.

If it is not possible to take sun baths, or enough sun baths, undressed at home, patients should be advised to take them outdoors, and should be told to dress as far as possible in light-colored clothes—never in black, red or brown—so as to permit the better penetration of the actinic rays. Patients should always take an umbrella or parasol with them to be able to shade their heads.

16 West Ninety-fifth Street.

## RESUME OF THE COMPLETE GASTRIC ANALYSES IN SIXTY-ONE CONSECUTIVE CASES OF INDIGESTION.\*

ALBERT WOLDERT, M.D.  
TYLER, TEXAS.

I have previously reported 30 consecutive cases of indigestion which I treated in private practice, and in which complete gastric analyses were made.<sup>1</sup> I now supplement that report by adding to the list 31 new cases, thus making a total of 61 cases reported to this date.

In my treatment of stomach disorders I have to a large degree followed the methods outlined by Ewald, as follows: 1, To secure a complete accurate history of each patient; 2, to determine the percentage of free hydrochloric acid; 3, to determine the percentage of total acids; 4, to determine the motor power of stomach; 5, to determine the absorptive power of stomach; 6, to determine the digestive power of gastric juice on albumin (meats); 7, to determine the digestive power of gastric juice on starch (breads); 8, to determine the presence or absence of the milk-curdling ferment (rennin); 9, to determine the presence or absence of bile in the gastric contents; 10, to determine the size and position of the stomach.

In order to determine the percentage of free hydrochloric acid, I have used the decinormal solution of sodium hydrate, which I always prepare myself by standardizing this decinormal solution of soda with a decinormal solution of oxalic acid, the crystals of which acid have been purified by boiling, recrystallizing and washing with ether. Several titrations are often necessary in standardizing the decinormal solution of sodium hydrate, for on its accuracy depends the most important data to be obtained by the stomach examination, namely, the determination of the percentage of the free hydrochloric acid in the gastric contents.

The indicator used for the free hydrochloric acid was the Töpfer reagent in nearly every instance, being confirmed by the tropeolin test; for the total acids I used the phenolphthalein test; for the digestive power of albumin the white of egg; for the digestive power of

starch the Lugol solution; for the motor power in perhaps ten instances the salol test was used, but in the others lavage three and one-half to four hours after a small meal; for the absorptive power the potassium iodid test; for the milk-curdling ferment (rennin) about 2 drams of milk to three or four drops of gastric juice, and placed in an incubator; and for the presence of bile the nitrous-acid test. The size and position of the stomach was determined by inflating the stomach with air, supplemented by gentle percussion.

To complete the examination, I have in nearly every instance made a careful examination of the heart, lungs, liver, spleen, urine, and when the occasion demanded it tested the eyesight for defective vision, examined the blood for the malarial parasite and made a microscopic examination of the gastric contents.

I have made it an almost invariable rule not to prescribe for a patient suffering with gastric trouble on his first call to see me, but require that he shall wait until the complete gastric analysis has been made before giving medicine. Since I have been engaged in this work I have been much impressed with the importance of making these examinations, and often have brought before me cases showing how futile all efforts would have been if I had tried to guess at the real condition present as suggested by the different symptoms presented.

### SUMMARY OF THE SIXTY-ONE CASES OF INDIGESTION.

Entire number of cases in the series and treated in private practice was 61.

#### *Variation in Percentage of Free Hydrochloric Acid.*

Free HCl was normal (.040 to .073 per cent.) in 10 cases or 16.66 per cent.

Free HCl was diminished (below .040 per cent.) in 7 cases or 11 per cent.

Free HCl was increased (above .073 per cent.) in 35 cases or 57 per cent.

Free HCl was totally absent in 9 cases or 14 per cent.

#### *Percentage of Free Hydrochloric Acid.*

Free HCl above .073 per cent. in 35 out of 61 cases or 57 per cent.

Free HCl above .10 per cent. in 22 out of 61 cases or 36 per cent.

Free HCl above .15 per cent. in 10 out of 61 cases or 16.66 per cent.

Free HCl above .20 per cent. in 2 out of 61 cases or .3 per cent.

#### *Percentage of Total Acids.*

Total acids were normal (35 to 60 per cent.) in 37 cases or 61 per cent.

Total acids below 35 per cent. in 14 cases or 23 per cent.

Total acids above 60 per cent. in 8 cases or 13 per cent.

Total acids above 88 per cent. were none (highest percentage was 88 per cent.).

Total acids below 4 per cent., none (lowest percentage was 4 per cent.).

#### *Motor Power of Stomach.*

Motor power of stomach was deficient in 26 out of 29 cases examined.<sup>2</sup>

#### *Absorptive Power of Stomach.*

The absorptive power of stomach was found deficient (over 15 minutes) in 48 cases or 80 per cent.; normal in 9 cases and not determined in 3 cases.

#### *Digestive Power of Gastric Juice for Albumin (Meats).*

Of the series of 61 cases the digestive power of gastric juice for meats was good in every case in which the HCl was in excess or even deficient (except one case), and always totally absent when the HCl was totally absent. The digestive power for albumin was not determined in 2 cases.

\* Read by invitation before the Central Texas Medical Association, Corsicana, Texas, July 11, 1906.

1. American Medicine, 1904, June 4.

2. In my opinion our rules employed to determine the motor power of stomach are defective.



*Digestive Power of Gastric Juice for Starch (Breads).*

The number of cases of hyperchlorhydria (free HCl above .073 per cent.) in which the digestion of starch (breads) was good, was 12 out of the 35 cases or 34 per cent. and deficient in 23 cases or 66 per cent.

Of the 9 cases in which the free HCl was totally absent the digestion of starch was always good.

*Tests for Milk Curdling Ferment (Rennin).*

The milk curdling ferment was active in 46 cases or 88 per cent; inactive in 6 cases, and not determined in 9 cases.

*Presence of Bile.*

Out of the 61 cases bile was tested for in 58 cases, and was found only two times.

*Size and Position of Stomach.*

The number of cases in which the stomach was found dilated (that is in having been inflated the fundus was found to project below the navel) in a series of 53 cases examined was 30 or 56 per cent., and normal in 23 cases or 43 per cent.

Hyperchlorhydria (free HCl above .073 per cent.) with dilatation of stomach was found in 16 out of 53 cases or 30 per cent.

The stomach was normal in size and HCl increased (above .073 per cent.) in 16 cases out of 53 or 30 per cent.

The stomach was normal in size with diminished HCl (HCl below .040 per cent.) in 3 cases out of 53 examined.

Out of the 9 cases in which the free HCl was totally absent the stomach was normal in size in 5 cases; dilated in 3 cases, and not determined in 1 case.

The free HCl was normal and stomach dilated in 5 cases out of 53.

The size and position of stomach was not determined in 8 cases.

*Sex of Patients.*

Of this series of 61 cases 46 patients were males and 15 were females.

*Age of Patients.*

Between 18 and 21 years there were 5 cases or 9 per cent; between 22 and 35 years there were 17 cases or 30 per cent.; between 36 and 50 years there were 27 cases or 49 per cent. The number of patients over 50 years of age was 6 or 10 per cent. The age was not determined in 6 cases.

*Season of the Year.*

Of this series of 61 cases 23 or 38 per cent. occurred during the fall months; 16 or 26 per cent occurred during the spring months; 11 or 18 per cent. occurred during the summer months, and 10 or 18 per cent. occurred during the winter months. In one case the season of year was not noted.

## THE QUESTION OF ADMINISTRATION OF HYDROCHLORIC ACID IN GASTRIC DISORDERS.

While I wish to admit that at present we have not learned everything that is to be known regarding all the methods, nor all the fine points in determining the true condition present in cases of indigestion, I have no hesitancy in stating that these methods employed are far in advance of guesswork methods; and further, that in the absence of a complete gastric analysis the treatment of such cases will too often end in complete failure on the part of the physician and consequent despondency on the part of the patient.

This statement becomes obvious when one considers the question whether or not one should administer hydrochloric acid, one of the most commonly used drugs in the treatment of gastric conditions. And hydrochloric acid secreted by the stomach (equal to several drams daily) is only one of the many other factors which should be considered in order to treat indigestion (dyspepsia) correctly.

For instance, in my series of 61 cases I found the following conditions present with reference to hydrochloric acid: This acid was normal in 16.66 per cent., or one-sixth of the entire series of 61 cases, consequently the amount of HCl as the evil factor was not present, but the real cause which did harm lay further back than the abnormal secretion of this acid.

In 57 per cent. of the entire series I found that there was an excess (above .073 per cent. of hydrochloric acid, and in such cases, of course, the administration of this drug could only have added additional insult to the existing injury. The HCl was below normal (.040 per cent.) in 11 per cent. of the cases, while in 14 per cent. of the series of cases the HCl was totally absent. In those patients (at least those I have treated), who, in the absence of malignant disease, were found suffering from an entire absence of HCl, the administration of this acid has had no effect in restoring the HCl to the normal. Here is a case in point:

CASE 1.—*History.*—Miss R., aged 26, large and plethoric, stated that her father at one time had for a period of about five months suffered from insanity during which period he was violent. Her mother had been subject to rheumatism. The patient had seven brothers, all of whom were healthy. She had two sisters, one of whom suffered from indigestion. The patient had typhoid fever nine years previously, and rheumatism four years ago.

She began to suffer with eructation of food and pain in the stomach 10 years ago. The pain in stomach would come on immediately after eating, during which period it would feel as though it was distended with gas. At the onset of her condition she would vomit occasionally after eating and after the stomach was emptied of food she would feel relieved. She had never vomited blood. For the past three years she had suffered from sick headache, the pain affecting the forehead and top of head. This headache frequently lasted all night or all day. She frequently suffered from dizziness but never fainted. She had fits or convulsions nine months previously. During these convulsions the tongue would be bitten. The monthly periods were very irregular. During the past two or three months the bowels moved nine or ten times daily. Notwithstanding these symptoms she had gained about six pounds in weight during the past six months.

*Gastric Analysis.*—The complete gastric analysis was made on March 31, 1904, and the HCl was totally absent. She was put upon HCl in doses of six drops (of the chemically pure HCl with water and syrup) together with pepsin and tincture of nux vomica, this prescription being given immediately after eating and again repeated in doses of half the quantity two hours after meals. At the end of 13 days another gastric analysis was made, but the free HCl was totally absent one hour after a test meal.

*Treatment.*—Intragastric faradization with negative pole within stomach with the coil tapped at 3,000 feet (alternately one and two cells), rapid interrupter, continued for about seven minutes, every two or three days. Hot and cold douches within the stomach were also used, but at the end of 20 days from the commencement of the treatment, though the diarrhea had ceased, the free HCl was totally absent. Notwithstanding the entire absence of HCl the various symptoms complained of by the patient greatly improved and she passed out of my hands.

Out of the numerous cases I have treated in which the free HCl was totally absent, I can not recall a single instance in which the administration of HCl in any way affected the percentage of free HCl one hour after a test meal. As to whether one should or should not use this drug in any given case of stomach disorder, my opinion is that when one is in doubt some other drug than HCl should be given.



## CERTAIN DISORDERS WHICH PRODUCE GASTRIC SYMPTOMS.

In this series of 61 cases of indigestion I met with the following conditions; Nurse's sore mouth, 1 case; gastric ulcer, 1 case; gastric cancer, 1 case; aortic stenosis, 1 case; mitral regurgitation, 1 case; gallstone, 2 cases; nephritis, 11 cases; anadenia or a destruction of the secretory parenchyma or glands of stomach, 2 cases; and gastrosia fungosa (or mold of a grass greenish-appearance), 4 cases.

This condition of gastrosia fungosa has been described by Knapp<sup>3</sup> and others as one in which the gastric contents have a grass green appearance resembling bile; or a dark red color resembling blood. In still other instances the color may be yellowish. In my 4 cases the color in each instance was grass green, resembling bile. In one instance this condition of gastrosia fungosa lasted for upward of two years before the patient came to me for treatment. It required six weeks of constant treatment by intragastric douches, composed of a weak solution of nitrate of silver and other remedies, to get rid of this mold. In one of these cases of gastrosia fungosa the free HCl was diminished (.01 per cent.); total acids, 40 per cent.; while in the others the free HCl was in excess. One of them had 0.13 per cent. of free HCl and a total acidity of 60 per cent.; one had 0.11 per cent. of free HCl and a total acidity of 52 per cent. Einhorn associates this condition of gastrosia fungosa with hyperchlorhydria, but one of my cases was certainly an exception to this rule.

To determine the presence of succinic and proprionic acids in these cases Knapp depends on certain color reactions obtained by the use of a weak, watery solution of ferric chlorid, but I have been unable to confirm these results as reported by Knapp.<sup>3</sup>

## ANADENIA.

In anadenia there is an increase of the connective tissue accompanied by round cell infiltration, and a consequent choking up of the glands of the stomach, ending in loss of secretion of free HCl and other products which should be formed in the stomach. Such cases end in both gastric and consequent intestinal indigestion, producing in many cases a severe form of chronic diarrhea with liquid stools. In such instances the bowels often act as much as eight to twenty times a day. One of my cases of anadenia might be recorded here:

**CASE 2.—History.**—The patient, a man, aged 52, who 28 years previously had received a gunshot wound in spine which produced permanent motor paralysis of the lower extremities. He had never suffered from any other serious illness. He stated that his present condition began about a year previously, at which time he began to suffer from indigestion. Diarrhea later occurred, the stools being light yellow in color and numbering 15 to 20 a day. He would occasionally pass undigested food from bowels. He had never passed any blood from bowels and there was no evidence of hemorrhoids. The heart, lungs, liver, spleen and urine were normal.

**Gastric Analysis.**—A gastric analysis was made on May 21, 1902. The free HCl was totally absent; total acids 12 per cent.; absorptive power deficient. There was no trace of digestion of albumin even though HCl was artificially added. The digestion of starch was good, but rennet ferment was deficient. A considerable degree of gastric dilatation was present in this case.

**Treatment.**—Under the influence of intragastric faradizations, and hot and cold douches by means of the stomach tube and other measures, a doubtful trace of free HCl transiently returned 13 days after the first examination was made.

## GASTRIC CANCER.

This patient was a resident of a neighboring city who had been referred to me for treatment.

**CASE 3.—History.**—Patient, a man some 40 or 50 years of age, gave no history of tumors of any kind in the case of father, mother, brother and three sisters. He had never been seriously ill. The onset of his trouble began in August, 1903, at which time he complained of colicky pains in region of stomach lasting an hour or two. The pains would come on without reference to the time food was taken. Occasionally vomiting would occur, after which he would feel relieved. The vomitus would occasionally be whitish in color and at other times greenish. He had never vomited any blood up to the time the gastric examination was made. Later he had constant pain over region of stomach especially marked over fundus and worse on pressure. No tumor could be detected over this region even after inflation had been done. The heart, lungs, liver, spleen and gall bladder were normal.

**Gastric Examination.**—A gastric examination was made July 6, 1905, at which time I found that the stomach contents were lumpy; after filtration had a specific gravity of 1032; free HCl was totally absent; total acids 16 per cent.; no trace of digestion of albumin; deficient digestion of starch; absorptive power greatly deficient (62 minutes); rennet ferment active. The lower border of stomach extended about half an inch below navel. The stomach was not nodulated and no dulness on percussion could be determined. Though the free HCl was totally absent I could not bring myself to the belief that cancer was present.

Six months later the patient had become greatly emaciated and had lost 75 pounds in weight. He now suffered constantly with pains in stomach and had begun to vomit blood. Eight months after the first examination had been made a hard mass could be outlined in the pyloric end of stomach and to outward appearances seemed to involve a large part of this organ.

**Operation.**—He grew steadily worse and a surgeon performed a gastro-enterostomy, a Murphy button being used. At the operation it was found that the cancer had involved a large portion, nearly half of the stomach, and no attempt had been made to remove it. Death occurred four days after the operation, the immediate cause of death being due to exhaustion. There had been no fever following the operation and firm adhesions had formed around the button which was still in position.

In this instance the cancerous growth had evidently been very rapid, since at the examination made a few months before, it could not be detected by careful examination.

## TRANSIENT ANACHLORHYDRIA.

Another class of cases is that in which the free HCl will be found totally absent (temporarily), only to return again under proper treatment. Such condition is evidently due to some form of obscure neurosis not yet determined.

These cases will often be found to be puzzling to the physician, and for many days, or perhaps weeks, one will be undecided as to whether gastric cancer is present.

In my 61 consecutive cases of indigestion treated in private practice the free HCl was found to be totally absent nine times, or 14 per cent. of the entire series. I have been able to make a diagnosis of gastric cancer in but one instance of this series, and I wish to give warning that one should not jump to the conclusion that cancer of the stomach is present, merely because the free hydrochloric acid is totally absent. The following case will illustrate this point:

**CASE 4.—History.**—The patient, a robust man, aged 37, 14 years previously had suffered from paralysis which affected the left arm and leg. After the paralysis began he had suffered from indigestion. He had three brothers living, one of whom suffered from indigestion. Of the five sisters, all

3. American Medicine, 1903, January 10.



were healthy. The patient had suffered from two attacks of pneumonia. He had an attack of measles five years previously, and four months ago had an attack of bronchitis. Two weeks before he came to me for treatment he began to suffer from a sensation of smothering.

A few days after this smothering sensation disappeared he began to suffer from a new sensation. He informed me that at one time he awakened out of sleep at 4 a. m. by a feeling of uneasiness or a fear of impending death, and stated that there was excessive rapidity of the action of the heart. He got up out of bed and walked around for awhile, but later came back and lay down again at which time he had a "sinking" feeling or a feeling as though he was "sinking into the ground." There was no pain over chest nor down the left arm. The feet and hands were cold and there was a partial loss of sensation which lasted two hours.

Other nervous spells followed at irregular intervals, and he carried with him at all times some medicine containing digitalis as a heart stimulant. Since the onset of the first nervous spell he had suffered from pain in region of stomach. The pain was more or less burning in character, and was located in region of xiphoid cartilage. This pain always grew worse about half an hour after eating, and came on without reference to the character of food eaten. He was under a constant dread that "something was going to happen" and always brought with him a friend to my office. He had not vomited for a year and had never vomited blood. During the past four months he had lost 10 pounds in weight. The heart, lungs, liver, spleen and urine were all normal. No tumor could be made out by palpation nor by percussion over the inflated stomach.

*Gastric Examination.*—A gastric examination was made December 15, 1903, and the free HCl was totally absent; lactic acid was not present by the Uffelmann test; the total acidity was 40 per cent.; digestion of albumin was totally absent at the end of three days; starch digestion was good; there were no sarcinae; stomach was normal in size and position.

*Treatment.*—Without the aid of any drugs whatever I succeeded in restoring the free HCl to normal (.058 per cent.) while the total acidity had increased from 40 to 48 per cent. during the same period. In this instance the only measures employed consisted in placing the patient on a restricted carbohydrate diet and the flushing of stomach with alternate hot and cold douches each day. In the following year (June 2, 1904) the free HCl was .0438 per cent. and total acids 28 per cent.

In another case in which the free HCl was totally absent it required three weeks' treatment to restore the free HCl to the normal amount, while in another case all efforts failed to have any influence in restoring a trace of free HCl.

#### NEPHRITIS ASSOCIATED WITH GASTRIC DISTURBANCES.

I have been much impressed with the frequency with which gastric diseases have been associated with nephritis and one would do well to keep in mind gastric manifestations associated with the early symptoms of this disease. Of my series of 61 cases there were 11, or 18 per cent., in which the patients were suffering with nephritis, or at least whose urine contained albumin and tube casts. All of these patients have almost invariably improved under treatment for gastric disturbances. In some of these the free HCl was in excess, while in one case it was at first totally absent, but under treatment returned to normal.

#### REFLEX DISTURBANCES WITH GASTRIC SYMPTOMS.

Lastly, I have found a considerable number of patients who have come to me for treatment who believed that they were suffering from stomach trouble, or what was in ancient times spoken of as "dyspepsia," but in a large series of gastric analyses of such cases these analyses disclosed the fact that the stomach conditions were

practically normal, while the real seat of the trouble was found to be far removed from the stomach. The following case will illustrate this point:

*CASE 5.—History.*—Mr. T., aged 23, family history negative, had never suffered with any serious disease. He began to suffer with chills and fever 7 years ago, but has been well for 5 years. He has used some tobacco and has drunk a moderate amount of liquor. Nine months previously he began to suffer with a sense of suffocation at night just before falling asleep. The attacks lasted an hour and a half. This sense of suffocation would be accompanied by a pain (sometimes dull, at other times sharp) in region of the heart, and radiating backward between the shoulder blades or spinal column. Every night he suffered from this pain and suffocation. He occasionally suffered from dizziness, or as though he "would fall to the ground."

After eating he had a dull aching pain in the region of the stomach which lasted an hour or two. This aching pain came on without reference to any kind of food. He never vomited but sometimes suffered from eructation of food, together with a good deal of gas.

*Examination.*—The heart, lungs, liver and urine were normal. The free HCl was .058 per cent.; total acidity, 32 per cent.; digestion of both starch and albumin good. Further examination disclosed hyperopia. Since he had glasses fitted he has never returned for further treatment.\*

## Clinical Notes

### CLOSURE OF THE ABDOMINAL INCISION.

CHARLES G. CHILD, Jr., M.D.

Adjunct Professor of Gynecology at the New York Polyclinic;  
Assistant Gynecologist to the City Hospital; Assistant  
Surgeon to the Woman's Hospital.

NEW YORK CITY.

In closing the incision through the abdominal wall after operation three structures need accurate apposition in order to restore, as nearly as possible, the normal anatomic relations. These are the peritoneum, fascia and skin. The muscles, provided they have been subjected to no further traumatism than the necessary displacement or separation of their fibers, require no retaining sutures.

In holding the tissues together until union has taken place, it is desirable to use as few sutures as possible, for every one introduced into the wound is a foreign body, increasing the chance of infection. The sutures should be so introduced as to accomplish their purpose without strangulation of the tissues which they unite, for where the sutures are tied in the wound the nutrition of the tissues they include is interfered with, and atrophy, if not actual necrosis, results. This is particularly true of the fascia, more poorly nourished, as it is, than either the peritoneum or the skin. Moreover, the tying of knots in the wound greatly increases the amount of foreign material introduced that later must become absorbed or encysted.

A careful consideration of the above facts and theories has led me to adopt during the past year the following method of closing the abdominal wound in the majority of my celiotomies, with most excellent results, especially in the transverse incision, where there exists a

4. Since this paper was written I have read a paper by Dr. J. Dutton Steele in THE JOURNAL A. M. A., Aug. 18, 1906, entitled "Relation of Excessive Gastric Acidity to Gastric Symptoms." Steele quotes from authorities who maintain that gastric symptoms may be partially due to an abnormally sensitive mucous membrane of the stomach, even though the acids may be normal. Certain facts occurring in my series of cases would seem to lend support to this view.



greater tendency to gapping between the fascial edges than in the longitudinal incision.

#### TECHNIC.

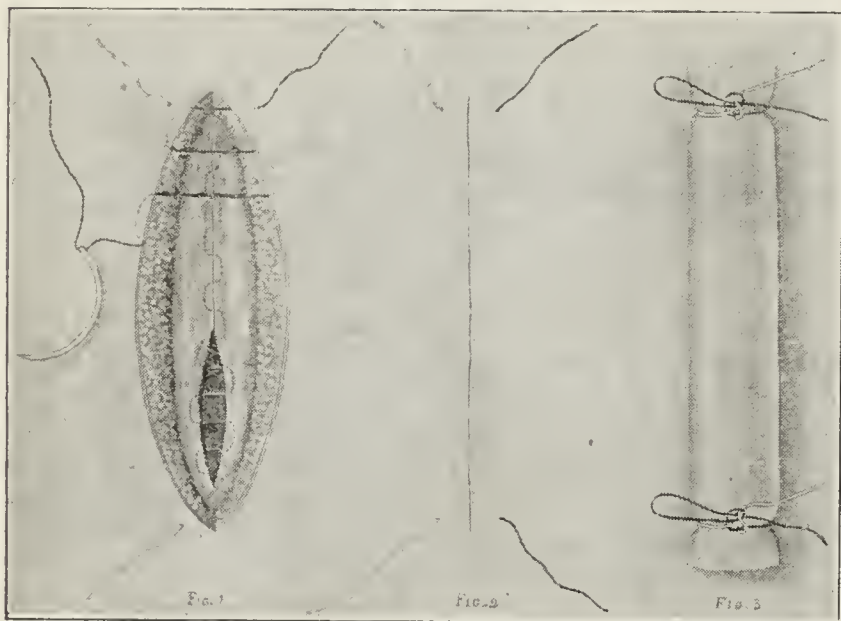
The peritoneum is brought together by a continuous suture of fine silk. The fascia is united by a running quilted stitch of medium sized silkworm gut, drawing the raw edges together without undue tension, and instead of being tied the ends are brought out through the skin and left long near the angles of the wound. (Fig. 1.)

The incision in the skin is closed by a continuous subcuticular stitch of silkworm gut, and the ends are also brought out long through the skin near the angles of the wound, but on the opposite sides from the fascial stitch. (Fig. 2.)

A firm roll of gauze, one inch thick and slightly longer than the wound, is now laid over it, and over this, at each end, the skin and fascial stitches are tied together in a single bow knot, just tight enough to take up any slipping that may have occurred in the fascial stitch since its introduction (Fig. 3.) At the first dressing on the second day the gauze between these knots is cut out so as to allow subsequent daily inspection of the wound.

At the end of the first week the knots are untied, releasing the remaining ends of the gauze roller and the skin stitch is cut off at one end and drawn out. One week later the fascial stitch is removed in a similar manner, thus leaving no suture material behind in the wound between the peritoneum and skin.

In case there is failure on the part of the wound to heal



Closure of the abdominal incision by method suggested by Dr. Child.

by primary union the skin stitch should be withdrawn and the fascial incision inspected. If this shows infection or if the infection is under the fascia, its edges can be readily separated by loosening the suture without removing it, and proper drainage secured. Later, when the infection has subsided and union begun the edges of the fascia can again be drawn together and good approximation obtained. Thus, the introduction of secondary sutures to close the separation in the fascia so often observed following suppurating wounds, and such a frequent cause of postoperative hernia, is avoided, saving much annoyance to both patient and surgeon.

114 East Seventy-first Street.

**Carbon Dioxid in the Air of Factories.**—W. M. Marriott (*Charities and the Commons*, Nov. 10, 1906) has investigated the condition of the air in eight factories in New York City. The total carbon dioxid varied from 7 to 16 parts in 10,000, being below 9 parts in 10,000 in all but one case. The limit fixed for schools in Massachusetts is 8 parts in 10,000, so that it appears that there is not much to complain of in regard to the condition of the air in the factories, but the fact that it was greatly polluted in one shows the need of supervision. The size of the room is no guide to the purity of the air, which depends rather on the efficiency of the ventilation.

## LITHOPEDION CARRIED TWENTY-SIX YEARS OR MORE.

H. W. MOREHOUSE, M.D., AND E. H. GRISWOLD, M.D.  
DANVILLE, ILL. PERU, IND.

**History.**—Mrs. B., aged 62 years, commenced to menstruate at the age of fourteen years. Menstruation was always regular and painless. The patient was married at the age of twenty. Her first child was born March 13, 1866; the second was born Sept. 16, 1867; the third, Oct. 9, 1869; the fourth, Aug. 16, 1871. She missed a menstrual period in July, 1880. In August she had a sharp attack of abdominal pain requiring rest in bed and morphin; three days later she had another attack still more severe, necessitating confinement to bed for almost a month. In September there occurred a very severe attack of pain accompanied by symptoms of collapse. She was confined to her bed for three or four weeks thereafter, and was not well enough to return to her home, a short distance in the country, until November. In December a colored uterine discharge appeared, the first since the preceding June. At this



Lithopedion: a, nasal process; b, left orbit; c, zygoma; d, submaxillary; e, auditory canal.

time there was a discharge of a fleshy membrane. From this time menstruation was regular and painless until 1886 when she had a severe attack of peritonitis confining her to her bed for about three months, after which menstruation was again established and remained normal until 1894 when it ceased permanently. During all this time there was abdominal soreness and distress occurring at irregular intervals. It was finally discovered during one of these attacks in the early part of 1906 that there was a movable abdominal tumor to the right of the median line low down in the pelvis.

**Operation.**—Abdominal section, made June 5, 1906, disclosed the abdominal tumor to be a lithopedion surrounded by and attached to omentum and intestine. There were no attachments to uterus, ovaries or tubes. Recovery was uneventful.

The specimen is complete in every respect, even to the preservation of the bones of the hands. It is a perfect skeleton of a fetus of five or six months, flexed on itself as *in utero*, as is shown in the accompanying illustration. This is a perfect picture of the specimen, as it was lifted from the abdominal cavity without any covering or vestment whatever except occasional small bodies of adipose tissue.

The omentum and the ileum were adherent to lithopedion by a very small band just beneath its submaxil-



lary. The calvarium, which is somewhat collapsed, is filled with a caseous mass. The whole is covered by a closely adherent thin fibrous tissue. The specimen is now in the museum of Rush Medical College.

## TWO CASES OF ECTOPIC GESTATION.

E. E. GELDER, M.D.

PEORIA, ILL.

As tubal pregnancy must often times be diagnosed from the history rather than by physical findings, a complete history of each case should be reported. Each specimen removed at operation or autopsy should be studied to ascertain, if possible, the cause of failure of the impregnated ovum to descend the tube and enter the uterus. In pursuance of these ideas I make this report.

**CASE 1.**—In July 1906, I saw this woman at her home, in consultation with her physician, Dr. W. H. Willis of this city, and obtained the following history:

*History.*—Mrs. —, aged 30, had been married nine years but had not been pregnant previously. Her menstrual periods had always been regular, not painful, and the flow normal in quantity and duration. She never had intermenstrual bleeding or leucorrhea, and never had symptoms referable to inflammatory or infectious disease or any of the pelvic viscera. In February, 1906, she consulted Dr. Willis for relief from sterility. Under anesthesia he dilated the cervix; nothing abnormal was removed by the curette. She menstruated in May but missed in June. Early in July, two weeks after her period was due, she began to flow a little; a week later she developed pain in the uterus and apparently had an early miscarriage but did not save what passed. After this she had no more uterine pain but pain and tenderness in the left side of the pelvis. About July 14, or one week after the supposed miscarriage, she was taken with sudden severe pain in the left side with some collapse; although the severity of the pain lessened, it never left her entirely.

*Examination.*—On July 27, under anesthesia, we found the uterus approximating the normal position with the exception of the cervix which was slightly displaced to the right; the cavity of the uterus was empty and of normal length. The left broad ligament was filled with a semi-solid mass which also extended into the posterior cul-de sac.

*Diagnosis.*—Ectopic gestation with rupture of the tube within the broad ligament.

*Operation.*—The following day, July 28, I assisted Dr. Willis in operating on the patient. Incision proved our diagnosis correct; a blood clot entirely filled the left broad ligament and had dissected across beneath its posterior layer to beyond the median line. The clots together with the left tube and ovary were removed; the broad ligament was washed out, and the two layers stitched together. The right tube and ovary were normal. The wound was closed without drainage and the patient made a rapid and uneventful recovery, leaving the hospital August 13, sixteen days after operation. She is now enjoying perfect health. As the specimen from this case was not preserved I can not give a report of it.

**CASE 2.**—Mrs. —, aged 20, had been married three years and had had one labor, no miscarriages.

*History.*—Menstruation began at 16, regular, not painful, quantity and duration normal. In April, 1904, her periods stopped and Jan. 30, 1905, I delivered her of a healthy baby. Some months later she resumed menstruating and her periods were regular and normal, the last one beginning July 1, 1906. She missed August 1, but began to flow on August 15. She did not consult me until September 15, having flowed off and on for a month. Vaginal examination revealed nothing abnormal so I prescribed gallic acid, ergotin and hydrastin. This apparently stopped the flow for a few days but it returned and on September 23. I curetted her uterus. I removed a small quantity of what I supposed was hypertrophied endometrium so made no microscopic examination of it. Bimanual palpation showed the fundus to be high in the pelvis but freely

movable, the examination was otherwise negative. A few days later she developed tenderness in the left tubal region and a slight fever which caused me to fear an infection following the curettement as it was done at her home. Hot douches seemed to relieve her and the fever left in a few days.

On October 8, while walking on the street she was taken with severe pain in the left pelvis and fainted; on regaining consciousness she vomited. I found her in collapse and called the ambulance. Reaching home she rapidly recovered from the shock but her left side was rigid and exquisitely tender, so I deferred further examination until morning. The next day I found her with normal temperature and vaginal examination revealed tenderness on the left side and rigidity of the left rectus muscle. I was somewhat chagrined as I had made a diagnosis of ruptured tubal pregnancy and expected to find a mass on the left side; but I could palpate neither tube.

All symptoms gradually subsided except pain referred along the descending colon up to the margin of the ribs. I was very anxious to avoid operative procedure on this patient and decided on the expectant line of treatment.

On October 29, I returned from my vacation and found her



Specimen from Case 2, slightly enlarged. Anterior layer of broad ligament dissected back to show ruptured tube (T). DA. The discolored area along line of rupture. DA flap from the tube is carried to the right to show the ruptured gestation sac (GS), with its amniotic lining. Note the small tortuous uterine end of the tube.

with slight fever, pulse 84, pain along the descending colon becoming worse on urination and defecation, no dulness on percussion, but an increase in resistance on deep palpation just inside the left anterior superior iliac spine. On vaginal examination I detected a mass high in the left pelvis, and exaggerated pulsation in all vessels to the left of the uterus.

*Diagnosis.*—Ectopic gestation, ruptured high in the pelvis.

*Operation.*—On Nov. 2, 1906, I opened the abdomen and found free blood in the peritoneal cavity, and a left tubal pregnancy. This had ruptured from the free surface of the tube and become walled off in a pocket formed by the rectum, sigmoid, posterior layer of the broad ligament, and left wall of the pelvis. I removed the clot and left tube. As they were normal I left both ovaries and the right tube. After a thorough cleansing of the pelvis I closed without drainage. The patient enjoyed an afebrile convalescence and left the hospital in good condition eighteen days after operation.

*Examination of Specimen.*—The uterine end of the tube was small, tortuous, and could not be probed. The covering of the tube was thinned out and torn along an irregular line on



its convex surface. The latter was congested and markedly discolored along the line of rupture; within was the ruptured gestation sac. No fetus was found. The cause of the ectopic gestation was either a congenital or acquired narrowing of the uterine end of the tube.

#### SUMMARY.

1. This was the first conception in Case 1.
2. Only 18 months had elapsed since the second patient was delivered of her first child.
3. Neither patient had ever presented symptoms of inflammatory or infectious disease of any of the pelvic viscera.
4. Neither had subjective symptoms of pregnancy.
5. In both cases the menstrual period was delayed exactly two weeks.
6. In Case 2 the rupture occurred into the peritoneal cavity and, though no hemostasis was applied, the hemorrhage was not severe.
7. The appearance of physical signs in Case 2 was very late, despite a typical history.

### PAINFUL HEEL,

WITH A DEMONSTRATION OF A THEORY AS TO A MECHANICAL CAUSE.\*

JOHN JOSEPH NUTT, B.L., M.D.

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NEW YORK CITY.

The name which heads this article is a rather unfortunate one, as it is not at all descriptive or distinctive. All pain referred to the plantar surface of the heel is not due to this condition.

Bradford and Lovett say: "This is a condition in which there is a tender and painful area under the middle of the heel." Whitman describes it with calcaneobursitis. Under painful heel he includes all pain referred to the bottom of the heel. When the pain is clearly localized he says: "The cause of the symptoms in such cases may be an inflamed bursa lying between the periosteum and the fatty tissue of the heel." Walsham and Hughes do not mention the subject in "Deformities of the Human Foot." Nor does Keetley refer to it in his "Orthopedic Surgery." The French surgeons, however, have recognized this condition, and Duplay has recommended an operation which is endorsed by Whitman. Young's definition, which is clear and exact, is: "Severe pain, accompanied by tenderness, in the center of the heel about the posterior attachment of the plantar fascia."

Painful heel is probably not a rare condition. As the pain is alleviated by rest, the milder cases are usually self-treated and are not seen by the surgeon until complications have arisen which cloak the original disease. Policemen, however, are not able to favor the foot. They can not give it rest even when extremely painful and must seek relief of the physician. Hence its synonym: policeman's heel. The only subjective symptom is the pain. This is constantly in one place. It is excited by walking much more than by standing and is temporarily relieved by absolute rest. If closely questioned the patient may state that the pain is worse just before he brings the foot forward in walking.

#### EXAMINATION.

Inspection may show nothing abnormal; both feet may be well formed. There will be no external evidence of inflammation. Deep pressure on the spot will usually produce pain. Manipulation will disclose a normal mediotarsal joint and the head of the astragalus and the scaphoid in their normal position. The only abnormality in the uncomplicated cases will be found at the ankle joint. Here the range of flexion will be found to be limited. In other words, non-deforming club-foot exists. If we knew this to be always the case, we could simply class painful heel among the complications of non-deforming club-foot, but doubtless sometimes painful heel, as defined, originates from other causes. Exostosis, bursitis or neuroma may be the primary lesion, though I believe they are more often secondary to the traumatism to the plantar fascia.

#### A MECHANICAL EXPLANATION.

A mechanical explanation of a cause of this condition I wish to demonstrate. As pointed out by Dr. Shaffer when he first described non-deforming club-foot, that condition is usually the cause of flat-foot, and may also cause bunions, corns, calluses, ingrowing toe nails and Morton's disease. He did not mention, however, that painful heel may be a result. As far as I know, painful heel has never been given a mechanical explanation based on a shortened gastrocnemius.

The shortened gastrocnemius is the *sine qua non* in Shaffer's foot. I use the term "Shaffer's foot" intentionally. Non-deforming club-foot, the name given it by Dr. Shaffer, is more or less confusing to the profession and is repugnant to the laity, especially to the woman who is proud of a well-shaped foot and perhaps a high aristocratic arch. This limitation of dorsal flexion, due to the shortened gastrocnemius, necessitates, in walking, the shifting of the weight of the body to a point more anterior than normal. Consequently an added strain is brought to bear on the plantar fascia and all the plantar tissues.

Normally the superincumbent weight is dispersed through the astragalus in three directions, downward and backward through the calcaneum, downward, forward and outward through the calcaneum, cuboid and two outer metatarsals, and downward, forward and inward through the astragalus, scaphoid, the three cuneiform and the three inner metatarsals.

If the gastrocnemius is but slightly shortened, say dorsal flexion is limited with the foot at a right angle to the leg, then, as the leg is flexed on the foot in locomotion, the weight normally falling on the posterior tubercles of the os calcis is transferred to the other two directions, and the heel, instead of supporting weight, is raised from the ground and strains the plantar fascia. Motion being blocked at the ankle joint, the force is transmitted further along and seeks to obtain movement at the next joint which is the mediotarsal. This extraordinary strain on the plantar fascia weakens it, and, if it elongates, dorsal flexion will take place at the mediotarsal joint and flat-foot will result. When the gastrocnemius is greatly shortened, as when dorsal flexion of the foot is arrested at 105 degrees or more, with the leg, the weight, in flexing the leg on the foot in the act of walking, is thrown so far forward that the plantar tissues tend rather to become a continuation of the post-tibial muscles and the length of the foot is shortened, the plantar fascia becomes contracted and, assisted by

\* Read before Bellevue Hospital Alumni Association, June 6, 1906.



both tibialis anticus and posticus, a condition of cavus presents.

I believe that painful heel usually is produced in those cases in which Shaffer's foot exists to a slight extent and the plantar fascia, instead of becoming weakened and lengthening throughout its extent, has given way at its attachment to the calcaneum.

In the history of these cases I have not been able to discover anything which pointed to a particular traumatism. It would seem to be the slight strain of each step rather than sudden evulsion or rupture. This theory readily accounts for periostitis, neuroma, ostitic growths and bursitis as complications and explains why they have been frequently cited as etiologic factors.

#### TREATMENT.

Treatment should be directed to the original cause and relieving the acute symptoms. Shaffer's foot can only be cured in one way, i. e., by elongation of the gastrocnemius. This is most satisfactorily accomplished by the use of Shaffer's traction shoe. The pain may be partially relieved by a steel arch so constructed as to remove the strain from the plantar fascia until the movements at the ankle are again normal. Operations for the relief of the symptoms by cutting down on an inflamed periosteum or bursa or the removal of an ostitic growth or a neuroma are seldom necessary. Cutting a depression in the sole of the shoe, prescribing rubber heels and such means having for their object the relief of pressure are misdirected. Immobilization in plaster of Paris, electricity and ointments are useless, while the traction shoe, the properly constructed steel arch and directions as to the proper method of walking are almost sure to afford relief and effect a cure.

#### CASE REPORT.

A recent case was so typical that I use it as an illustration.

*History.*—The patient was a policeman, with good general health and no constitutional diseases. For eighteen months he had had a sore heel. It came on gradually, but had been so severe as to make him limp slightly for nearly a year and a half. He had been treated for rheumatism, for flat-foot, for diseased bone, and for inflammation of the covering of the bone. He had had prescribed internal remedies and external lotions, steel arches (many patterns), rubber heels, and felt inner-soles, with a depression beneath the tender spot. He had had electricity, a variety of currents, and had the foot in a plaster-of-Paris cast for about three weeks. None of these measures had afforded him more than a fleeting relief, and he had been urged to have an operation.

*Examination.*—This showed a spot of acute tenderness over the inner part of the posterior attachment of the plantar fascia. The left gastrocnemius was normal, or nearly so, but the right, the one having the painful heel, limited flexion of the foot to 95 degrees with the leg. There was no deformity of the foot. No tumefaction of any kind could be found. A radiograph was negative.

After careful experimenting it was found that the greatest pain was experienced as the leg reached its greatest flexion on the foot in walking. In this position the strain on the plantar fascia is the severest.

*Treatment.*—Using the antero-posterior traction shoe daily for two weeks, and then every other day for two weeks more, elongated the gastrocnemius so as to permit of flexion to about 85 degrees. Insoles were ordered and altered a number of times before the correct shape was obtained. By gluing on to the plate pieces of leather, which could be shaved down and built up as desired, the model for the final plate was obtained. The result is the absolute freedom from pain on walking, the first time in a year and a half.

## TRYPSIN TREATMENT OF A CASE OF MALIGNANT DISEASE,

INVOLVING THE LEFT TONSIL, BASE OF TONGUE AND EPIGLOTTIS.

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CHICAGO.

*Patient and History.*—J. H., aged 56, hotel clerk, of good family history; has had gonorrhea, but denies having had syphilis. On Sept. 1, 1905, the patient weighed 168 pounds, and about this time complained of pain over the left side of the face, which later became more manifest along the left lower jaw, in the ear, and from the occiput to the vertex. As the pain was unrelieved he had five left lower teeth and two back upper teeth extracted. He was treated at various hospitals and clinics until May 9, 1906, when I first saw him at the Post-Graduate Hospital. At that time he could not protrude his tongue and swallowed with much difficulty the smallest amount of liquid, impulsively placing his hand as though to support the lower jaw. His speech was thick and indistinct, he had left facial paralysis and complained of constant pain radiating over the face from the angle of the left jaw.

*Examination.*—An indurated mass was found at the left side and base of the tongue, the size of a filbert; an indurated, enlarged, firmly-fixed left tonsil; a much thickened epiglottis and ulceration in the glosso-epiglottic sulcus of the left side. The submaxillary gland of the corresponding side was large, hard and adherent. At my request he was examined by Dr. T. Melville Hardie, Dr. George Morgenthau and Dr. Frederick Besley, all of whom pronounced the disease malignant and the case inoperable.

*General Treatment.*—We prescribed large and increasing doses of potassium iodid. Ten days later he had a violent hemorrhage from the mouth and was taken in an ambulance to the Cook County Hospital, where he remained more than five weeks. While there mercurial inunctions were administered daily for three weeks. He returned to us on July 2 and was under observation in the Post-Graduate Hospital for three weeks. There large doses of potassium iodid were given, and the leucodescent lamp applied as a placebo; yet his condition gradually grew worse. His weight was reduced to 115 pounds, and he was taking about 4 grains of morphin daily to allay the pain. As the patient was failing rapidly and nothing better could be suggested, we determined to try trypsin injections.

*Trypsin Treatment.*—Aug. 25, 1906, 5 minims of Fairchild Bros. & Foster's *injectio trypsin*, diluted with 10 minims of sterilized water, were injected under the skin over the enlarged gland, and August 28 10 minims were injected in the same region. On August 31 and September 4 15 minims were injected, and we noticed that the swollen submaxillary gland (which had enlarged to the size of a hen's egg during the course of one night, just prior to the beginning of trypsin injection), was very rapidly decreasing in size. He was swallowing more comfortably and feeling so much better that he celebrated his improvement by indulging in a ten-days spree. September 16 60 minims (one ampule) were injected, and since that time one ampule of *injectio trypsin* diluted with two volumes of distilled water has been injected under the skin of the buttocks each alternate day. On September 18 he weighed 123 pounds, and on September 20, 126 pounds, a gain of three pounds in two days, and he has taken but one-half grain of morphin in these two days. He drinks two quarts of milk daily in addition to a diet of eggs, oysters, beef, mutton, cereals, etc. At the present time his weight is 133½ pounds. He has little or no pain and is taking no opiate. His color is good, tongue fairly clean, and the infiltrations in the tongue, tonsil, epiglottis and submaxillary region have greatly decreased. He says that he feels well and believes himself cured. For a week past *injectio amylopsini* has been given every alternate day.



Unfortunately, our early diagnosis was clinical only. Recently I removed sections from the tonsil, and the laboratory diagnosis by Professor Zeit was pronounced "infective granulomata." As infective granulomata include tubercle, lupus, syphilis, glanders and farcy, leprosy and actinomycosis, without going into details, I think we may exclude all except actinomycosis, syphilis and tubercle.

There is reasonable proof that there is no possibility of the disease being actinomycosis in the fact that there has been no tendency toward breaking down of the tumors into abscesses. Also, that in careful microscopic examinations made by Professor Zeit no ray fungi were found. For lumpy-jawed cattle large doses of potassium iodid have been given with success, and similar treatment should prove beneficial when used for human beings who suffer with actinomycosis. In the case presented, however, very large doses of the iodid were given without success and he gradually became worse.

He denies ever having had a chancre, he never had secondary manifestations of syphilis, the infiltrations never broke down, they maintained their stony hardness under persistent antisyphilitic treatment.

Against tubercle, no tubercle bacilli nor giant cells were found in the microscopic section; he has not the characteristic pallor of mucous membrane found in tuberculosis. There is no pulmonary involvement.

My belief is that the growths are carcinomatous, that what improvement has been brought about is entirely due to trypsin, and that the granular cells found by Professor Zeit are degenerated cancer cells.

In conclusion, I wish to express my indebtedness to Dr. Hugh A. Cuthbertson, to whose painstaking efforts this patient's improvement is due.

34 Washington Street.

## VENTRAL HERNIA DURING PREGNANCY.

ERNEST F. ROBINSON, M.D.

KANSAS CITY, MO.

The following case is reported as a demonstration of the efficiency of "vertical overlapping" operation for ventral hernia. No severer test could be demanded than the experience of this case.

*Patient and History.*—Mrs. H., aged 23, was seen in consultation with her attending physician, Dr. Trexler, June, 1905. She was a little over three months pregnant, and was suffering from a hernia. About one year before, she had given birth to a still-born child. This labor, her physician told me, was very severe and prolonged, and he feared the result should she undergo a similar experience with the hernia that existed.

*Examination.*—A rupture at the umbilicus about the size of an orange was found, the hernial ring admitting the tips of two fingers. The hernia apparently contained omentum and at times, on straining, a knuckle of gut could apparently be felt. The contents of the hernial sac could be only partially reduced.

*Operation.*—Under ether anesthesia a transverse elliptical incision was made around the hernial sac, down to the deep fascia. The sac was freed from its attachments at the ring. It was opened, and the contained omentum, which was greatly thickened and adherent, was dissected free, tied off with catgut, and dropped back into the abdominal cavity. All about the ring, the fat was dissected free and a small incision, one-half inch deep, was made on either side of the ring. Then from above downward, the tissues were brought together as flaps, making the upper slip over the lower as advised by the elder Mayo. This was accomplished by inserting two mattress sutures of kemp into the edge of the lower border of the ring

and passing the thread underneath the upper border and bringing it out two inches above. These sutures held the flaps in position, but they were in addition, united by several buried catgut sutures. Thus, in place of the hernia, there existed a double layer of abdominal wall. The skin wound was closed without drainage.

*Postoperative History.*—Immediately following the operation, rather severe vomiting occurred, but the line of sutures held well and primary union resulted. A little less than five and one-half months later, the patient gave birth to a large, healthy child. It was a face presentation and labor was much protracted, but the line of union held firmly.

The only complaint the patient had to make was that she no longer had a navel, but was like her great ancestor, the original Adam.

## A CASE OF SURGICAL EMPHYSEMA (?) OF UNUSUAL ORIGIN.

HENRY POWER, M.D.

SPOKANE, WASH.

While acting as surgeon to the Spokane division of the Great Northern Railway, I was, on July 24, in charge of a case giving the following history, part of which was furnished by officers of the wrecked train:

*History.*—The victim of the accident, a healthy man of about 30 years of age, was seated in the forward part of the smoking car when the engine, mail car and baggage car left the track and ran down an embankment into a deep lake. The car in which the patient sat was also about half submerged. He, though shaken up, retained control of himself and made his way through the window and remembers swimming in the lake. An employé who stood on the bank states that he offered the swimmer the end of a stick in order to draw him to the shore; before this could be done, however, one of the tanks of acetylene gas, which had broken from its fastenings, was seen to have taken fire and floating on the surface of the water, was discharging a large jet of flame from an orifice with great force. The tank, floating past, threw the flame full in the face of the swimmer rendering him unconscious for one or two hours. On examination severe burns were noted on the hands and face, and in the cavity of the mouth and pharynx and on stripping the patient marked emphysema was seen extending on both sides from the lower jaw to the lower end of the sternum, being most marked about the neck and upper chest. There was marked dyspnea and some pain was complained of about the neck and pharynx and to some extent about the right clavicle.

For some days the patient seemed in serious condition but there was little if any rise of temperature. Some expectoration of a bloody nature was noted and at times small black masses were mixed with the blood. The emphysema had extended slightly over the abdomen but was not so marked above, leading to the inference that the pressure was only in process of equalizing and that the total quantity of air had not increased since the accident.

During the subsequent stay of the patient in the hospital careful examination failed to show any fracture of ribs or clavicle and the case made a slow recovery without new symptoms of importance. Up to the middle of October there persisted a slight amount of gas in the upper abdominal wall.

None of the commonly accepted theories of the etiology of emphysema explains this case. Possibly the sudden pressure in the mouth and pharynx caused a rupture into the subcutaneous tissues, allowing gas to escape into them.

*Attractive Food for the Invalid.*—The physician will find it worth his while not only to investigate the articles of food to be prescribed but to be sure that they are daintily and attractively presented. The order in which they are to be given should be arranged so that the appetite may not tire.—*Medical Times.*



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 141.)

### TUSSOL.

MANDELATE OF ANTIPYRINE. PHENYLGLYCOLANTI-PYRINE.

Tussol,  $C_{11}H_{12}N_2O.C_6H_5.CHOH.CO_2H=C_{19}H_{20}O_4N_2$ , is a salt of mandelic acid,  $C_6H_5(CHOH.CO_2H)$ , and antipyrine.

It is prepared by heating mandelic acid and antipyrine in molecular proportions on a steam bath, and crystallizing the product of the reaction, after cooling, from alcohol.

It is a white, crystalline powder, having a bitter taste and melting at  $52^\circ$  to  $53^\circ$  C. ( $125.6^\circ$  to  $127.4^\circ$  F.). It is soluble in 15 parts of water, 3 to 4 parts of alcohol, or 25 to 26 parts of ether, producing solutions of acid reaction. When heated above the melting point, it gives off the odor of bitter almonds, and finally burns without leaving a residue. It is split into its constituents by milk and by alkalies.

Its aqueous solutions give the reactions for antipyrine; if warmed with potassium permanganate it develops the odor of benzaldehyde, but it is not affected by silver nitrate, barium nitrate, dilute sulphuric acid, or hydrogen sulphide.

It is incompatible with alkalies, milk and milk food.

**Actions and Uses.**—Tussol combines the antipyretic, analgesic and sedative action of antipyrine with the stimulant action of mandelic acid on glandular secretions.

It is recommended for use in the treatment of whooping cough. Some observers question whether it is more effective than a mixture of its components.

**Dosage.**—0.05, 0.1, 0.25, 0.4 or 0.5 Gm. ( $\frac{1}{2}$ , 2, 4, 6 or 8 grains), according to the age of the patient.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 569,415.

### URETHANE.

A name commonly applied to *Æthylis Carbamas*, U. S. P.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

### URIFORM.

COMPOUND ELIXIR OF HEXAMETHYLENETETRAMINE, SANTAL AND SAW PALMETTO.

Each 8 Cc. (2 fluidrams) is said to contain: Hexamethylenetetramine 0.5 Gm. ( $7\frac{1}{2}$  grains), Saw Palmetto 0.3 Gm. (5 grains), Santal 0.16 Gm. ( $2\frac{1}{2}$  grains), Damiana 0.16 Gm. ( $2\frac{1}{2}$  grains), Coca, 0.16 Gm. ( $2\frac{1}{2}$  grains), and Nux Vomica 0.016 Gm. ( $\frac{1}{4}$  grain) in a menstruum containing 20 per cent. of alcohol with sugar and aromatics.

**Dosage.**—For adults, 4 to 8 Cc. (1 to 2 fluidrams).

Prepared by Schieffelin & Co., New York. U. S. trademark No. 37,924.

### URITONE.

A name applied to Hexamethylenamina, U. S. P.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

### UROPHERIN-B.

THEOBROMINE AND LITHIUM BENZOATE. UROPHERIN BENZOATE.

Uropherin-B,  $LiC_7H_7N_4O_2+LiC_7H_5O_2$ , is a double salt of theobromine-lithium and lithium benzoate.

It is a white powder containing 50 per cent. of theobromine. It is soluble in 5 parts of water; it decomposes on exposure to light and air.

A solution of uropherin B. will respond to the various tests for lithium, theobromine and benzoate.

**Actions and Uses.**—It is a diuretic, said to be particularly efficient in connection with digitalis.

It is recommended in dropsy, nephritis and diseases of the heart and of the genitourinary organs.

**Dosage.**—0.3 to 1 Gm. (5 to 15 grains) in powder or capsules, followed by water.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. trademark.

### UROPHERIN-S.

THEOBROMINE AND LITHIUM SALICYLATE. UROPHERIN SALICYLATE.

Uropherin-S.,  $LiC_7H_7N_4O_2+LiC_7H_5O_3$ , is a double salt of theobromine-lithium and lithium salicylate.

**Actions and Uses.**—The properties, actions, uses and dosage of this compound are practically the same as those of "theobromine-lithium benzoate" (see Uropherin-B).

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. trademark.

### UROTROPINE.

A name applied to Hexamethylenamina, U. S. P.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark No. 27,257.

### UROTROPINE—NEW.

A name applied to Hexamethylenamine Methylencitrate (which see).

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

### VALYL.

VALERYLDIETHYLAMIDE. VALERIANIC ACID DIETHYLAMIDE.

Valyl,  $C_4H_9.CO.N(C_2H_5)_2=C_9H_{19}ON$ , is a compound of valeric acid and diethylamine.

It is prepared by the direct interaction of its acid and basic components.

It is a bright, colorless, neutral liquid, having a peculiar pepper-like odor, boiling at  $210^\circ$  C. ( $410^\circ$  F.). It is soluble in 25 parts of water and easily soluble in alcohol or ether.

It should be neutral to moistened litmus paper and the boiling point should not vary materially above or below that indicated.

It should not be exposed to the air.

**Actions and Uses.**—Valyl acts as a sedative, antispasmodic and nervine, similar to valerian.

It is recommended in hysteria, traumatic neurosis, hemicrania, neuralgia, menstrual irregularities, insomnia due to nervousness, etc.

**Dosage.**—Owing to the liability of valyl to oxidize when exposed to the air, it is supplied only in the form of gelatin capsules, each containing 0.125 Gm. (2 grains), the dose being 2 or 3 capsules, administered during or immediately after meals, or otherwise with a little milk.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 897,730.

(To be continued.)

**Coffee Drinking in Germany.**—J. B. Heinrich (*Med. Klinik*, ii, No. 15) deplors the spread of coffee drinking in Germany as a peril to the national welfare. He points out that it acts as a direct irritant to the nervous system, and where it is too extensively used is almost comparable in a social point of view to alcohol in its bad effects. The increase of its use in Germany of late years has been marked. In 1896 there were 122  $\frac{1}{3}$  million kilograms imported and in 1902 172,500,000. That allows for each inhabitant, including small children,  $3\frac{1}{2}$  kilograms per annum. Women drink most coffee in all classes. He sees some prospects of salvation in the increasing use of malt coffee, which has in many places in Germany largely aided the strife against alcohol excess.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, JANUARY 19, 1907.

## MEDICAL ECONOMICS IN MEDICAL SCHOOLS.

We publish this week<sup>1</sup> an outline of the "Course in Medical Economics" recently sent to all medical colleges, in accordance with the instructions of the House of Delegates of the American Medical Association. The suggestion for such a course is the result of the revelations of the unfortunate professional conditions prevailing in nearly every section of the country, conditions that have become apparent during the re-organization movement, and which are believed, by those best informed on the subject, to be due to a lack of instruction of medical students along the lines now proposed.

The trend of all modern education is toward the practical, toward such training of the individual as will fit him for true success in his life work. Such an education is nowhere more needed than in the training of the physician. But this practical instruction must be on a broader plane than that of simply obtaining a knowledge of anatomy, physiology, chemistry, therapeutics, surgery and the various underlying and fundamental branches of what is understood as a general medical education. This is all practical, certainly, as well as necessary; in so far as it relates to the diagnosis and treatment of diseases it may be sufficient. But there is something more in the training of a medical man than the simple acquirement of scientific knowledge.

The successful physician occupies a place in the community of vastly greater importance than does any other individual, not even excepting the clergyman. The physician comes more directly in touch with the frailties, sorrows, aspirations and joys of humanity than does any other individual. His influence in the community, politically and socially, is, or, if he lived up to his opportunities, would be greater than that of any other. The physician who appreciates his obligations must not be satisfied with simply treating disease; he must so treat his patients that he may command their confidence and respect, and that he may have the confidence and respect of the community in which he lives. But, most important of all, he must so conduct himself that he will have the confidence and respect of his fellows in the profession. All these things spell "Success" with a capital S.

The medical colleges of to-day have a greater responsibility than used to be the case. There was a time, not

so long ago, when the student entering a medical college carried with him a certificate from a preceptor. The rule then was, and to it there were few exceptions, that the prospective medical student should spend at least a year with a physician as an apprentice. Before beginning his medical college work he had learned, by actual experience and personal observation, what the real life work of a physician is. He had learned from his preceptor, by example, how to conduct himself, the relationship of the doctor to the patient and the patient to the doctor. By keeping his preceptor's books, collecting his bills, etc., he obtained an insight into the business side. Now it is different. Nine students out of every ten enter the medical college with the vaguest idea of the physician's life, its responsibilities or its possibilities, and, unfortunately, most of them leave it with ideas just as indefinite. They know how to diagnose and treat diseases, but about their other functions and obligations as members of the medical profession they know nothing. And it is to be regretted that many never learn.

There is a business side to the practice of medicine, and it is a most important side. As in other callings, there are honest and dishonest business methods, and, also as in other callings, the honest business methods win. Bad business methods have crept in and many well-meaning men have fallen into errors, bringing reproach on themselves and on their profession, because they were never instructed in correct methods. If the division of fees, contract and lodge practice, commissions from druggists, sly methods of advertising in newspapers in connection with operations and accidents are wrong in principle and hurtful both to the individuals who do such things and to the profession as a whole, why not give prospective physicians instruction in regard to these matters while they are being molded, so that they may at least start in the right direction? Instead of doing this, most of the medical colleges turn their graduates adrift at the end of the college course, without chart or compass, and then censure them and bemoan the perversity of human nature because they take the wrong direction. Most of them want to do right, and the majority finally get right, but only after many false moves and mistakes, against which they should have been warned.

The value of medical societies, especially to the young physician, is immeasurable in many ways. How many medical colleges convey a knowledge of this fact to their students? Are there a dozen in the whole country? To the shame of the colleges, no! Correct conduct as a physician in little things and big, toward his patients and toward his confrères, makes for happiness and success. Are there a dozen medical colleges in the country that appreciate this? No. "All that is necessary is that a man should be a gentleman" is the excuse, but this is not true. The medical code is broader than the social code.

1. See page 246.



"Doctors are not business men," is a remark that is getting to be wearisome, both because it is repeated so often and because it is true. That doctors are not business men is because they have not been taught that the practice of medicine is both a business and a profession. But they ought to be taught, and by those whom they pay to teach them.

Once in a while in this or in that college a talk is given to the members of the graduating class on the value of medical society membership, on medical ethics, on business methods, or on some subject relating to their conduct as men among men. When notice of such a talk is posted on the college bulletin board every member of the class arranges to be present. They are immediately interested. And every man is present, because every man is craving for that kind of instruction. Why not give more of it?

Better a little less knowledge of the "glass and the brass" and more of that which will make for a higher *morale*, more ethical practice and for true success.

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#### DARK DAYS AND PHYSICAL AND MENTAL DEPRESSION.

During the past six or seven weeks the bright days have been exceedingly rare, even for this rather gloomy season of the year. According to the weather reports, there were less than five clear days throughout most of the northern part of the region east of the Mississippi during December. Since then weather conditions have not ameliorated and the first half of January has been quite as gloomy. Under these circumstances a definite increase in the amount of catarrhal disease of the respiratory tract is always noted, and it seems clear that the absence of sunlight encourages the propagation of various germs in the air, which prove the source of infective disorders when inhaled.

This is what might be expected from what we know of the wonderful bactericidal action of sunlight. It is evident, too, that resistive vitality is lower in the absence of sunlight and that the feeling of depression which comes over most people during a succession of gloomy days is a manifestation of lowered vital activities. These considerations furnish precious hints for disease prophylaxis and emphasize the necessity of persons who are already in weakened conditions taking special care of their health and assuming no risks from exposure, overexertion or other morbid factors during such periods. They also suggest the advisability of physicians being very firm not to allow weakened patients to leave the house under such conditions, even though they have been sufferers from only slight ailments.

There are even more important considerations, however, with regard to mental conditions at such times. During the last few weeks many more suicides than usual have been reported in the newspapers. The frequency with which suicide has been associated with

homicide is especially noteworthy. The statistics of suicide for many years have shown that a much larger proportion of these unfortunate fatalities occur on dark gloomy days than during fine weather. If additional proof were needed of this fact, it would be found in the number of cases that have been reported recently. It is evident that there is here a definite hint for physicians who may have charge of patients whose mental affliction is likely to take the course toward suicide. Precautions should be multiplied, nurses and attendants should be warned, recourse should be had to material protections of various kinds, such as the removal of possible instruments of death, and the safeguarding of windows by bars; for, without such careful provision, human vigilance is sure to relax at some moment and the result may be an unfortunate fatal termination that might readily have been prevented if the possibility of its occurrence had been carefully foreseen. In a word, in times of long-continued gloomy weather, the attention of physicians and nurses must be especially awakened to the much greater possibility of these accidents, which inflict so much suffering on families; any medical means that helps even in slight degree to prevent them must be sincerely welcomed.

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#### THE CAUSE OF SYPHILIS.

Not quite two years have elapsed since Schaudinn and Hoffmann described in the lesions of syphilis a very delicate spiral organism, slightly refractive and difficult to stain, which they called *Spirochæte pallida*. In this comparatively short time there have appeared, according to a recent review,<sup>1</sup> over 400 papers bearing on this subject, a number which indicates the lively interest which has been taken in the organism. As would be expected, the discovery was at first received with a considerable degree of skepticism, and inasmuch as each year, for a period of twenty-five years preceding 1905, had seen a new syphilis parasite discovered, this was not to be wondered at. Schaudinn and Hoffmann were themselves very conservative in the statements in their earlier papers; they did not claim that the *Spirochæte pallida* was the cause of syphilis, but merely called attention to its frequent association withluetie lesions.

It may not be amiss at this time to point out just what has been the result of the immense amount of work expended in studying this organism. In their earlier papers the discoverers of the organism did not find it in every case of syphilis, but in the last 70 cases of primary and secondary lues which they have examined they have never failed to discover it. A few other observers have been equally successful, but, as a rule, there have been from 10 to 40 per cent. of failures in each series of cases examined. It is only fair to say, however, that the organism is exceedingly difficult to see, and many observers make the statement that as their experience increases they find the parasite more and

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1. Huebner: Dermat. Ztschr., September, 1906.



more frequently. In tertiary lesions the organism at first was found so infrequently that doubt was cast on the positive observations, and it was suggested that possibly it did not appear in the same form in this stage of the disease. Of late there have been so many positive findings in tertiary luetic lesions that there seems no doubt that the organism is present in them also, but in greatly reduced numbers. This makes it certain that tertiary lesions are infective, which many have doubted, but which is further substantiated by successful inoculation of apes with large quantities of gummatous material. The most striking aspect of infection with the *Spirochæte pallida* occurs in connection with congenital syphilis. The failure of the earlier observers to find the organism in but a small percentage of cases of the hereditary disease has been replaced by almost constant success by the introduction of the silver method of staining. Recent reports show that in many instances the parasites are present in the tissues of syphilitic infants in enormous numbers, and, as a rule, the organs showing the most marked lesions contain the largest number of parasites.

It can easily be seen on looking over the literature that, with very few exceptions, the work of Schaudinn and Hoffmann seems to have been confirmed. Organisms have been described in connection with non-syphilitic lesions which their discoverers have claimed could not be distinguished from *Spirochæte pallida*. Submitted to experts these organisms have, without exception, been shown to differ in one way or another from that parasite. It is nevertheless true that a good deal of experience is required to make the distinction in some cases. The silver method has been attacked by several observers, who have claimed that the so-called spirochetes were nerve fibrils or fine strands of intercellular substance. These claims have not stood the test of investigation, and in the face of the immense number of controls seem almost ridiculous. It seems reasonably certain that the cause of syphilis has at last been discovered. Certainly, though all of Koch's postulates can not be fulfilled in connection with this organism, we are as much justified in regarding it as the cause of syphilis as we are in regarding *Bacillus lepræ* as the cause of leprosy.

The practical aspects of the discovery are at present not much dwelt on, but it seems certain that great practical benefit must result. In some instances the discovery has actually been put to the test successfully, in the recognition of doubtful cases, and in the early diagnosis of the disease from the primary lesion. That this has not been done more often is doubtless due to the difficulty in staining and recognizing the organism. There is little question that in time methods of rapid and more intense staining will be discovered; in fact, advances have already been made in this direction. We may then hope that a search for the organism will become a routine procedure in patients suspected of hav-

ing syphilis. The possibility of cultivating the organism and of producing a curative serum seems to be remote, but there is no reason why in time the difficulties which at present prevent this desirable consummation may not be overcome.

#### SEWAGE DISPOSAL IN CHICAGO.

The recent recommendations of the experts of the International Waterways Commission have caused the speaker of Chicago sewage disposal to raise its head anew. As is well known, the larger part of the sewage of the city of Chicago is now discharged into the Chicago Drainage Canal. A large and well-populated territory, both south and north of the district draining into the main canal, is, however, still not connected with the canal, and this fact is not only a source of some complaint on the part of taxpayers, but is a real menace to the water supply of certain sections of the city. The rapidly growing population in and about South Chicago still drains into the lake—a condition that apparently endangers the purity of the Hyde Park water supply. We are told that *B. coli* is found at times in considerable numbers in the tap water derived from the Hyde Park intake.

In view of the conditions threatening the purity of a portion of the water supply, the trustees of the sanitary district of Chicago have been urging the construction of a new canal to drain the Calumet and South Chicago area. This proposition, however, which entails increasing still further the amount of water diverted from Lake Michigan through the Drainage Canal, has met with opposition from the International Waterways Commission. Two eminent New York sanitary engineers, working under the auspices of the commission, have recently submitted a substitute proposition designed to obviate the necessity for digging the Calumet canal. These authorities have reached the conclusion that the extension of the dilution method to the outlying territory is not the only way to preserve the lives and health of the people of Chicago. In place of a new canal, they recommend the purification of the sewage by an efficient system of filtration, sprinkling filters being the least expensive of the methods suggested. By the use of sprinkling filters, which are cheaper both in point of construction and in annual cost of operation than either intermittent sand filters or contact filters, an adequate degree of purification can be accomplished.

It is reported that the trustees of the sanitary district will oppose the plan so presented. The objection that the sand dunes of the State of Indiana will be injured seriously by a properly managed system of sewage disposal is not one that can have much weight when the success of the sewage farms of Berlin and Paris is kept in mind. Such a system of disposal is more likely to augment than to detract from the resources of a barren tract of land. It will be remembered, also, that great ad-



vanees have been made in the scientific disposal of sewage within a few years, and that the purification of sewage on relatively small areas is much better understood than it was sixteen years ago when the Drainage Canal was begun. It is interesting to note that Mr. Hering, one of the engineers who has drawn up the report referred to, was also a member of the commission that originally recommended the construction of the Drainage Canal. No one, we believe, will be more ready than Mr. Hering to admit that a noteworthy advance in scientific knowledge has occurred since his first report. One of the members of the drainage board is said to have remarked that the report of Messrs. Hering and Fuller is "more a treatise on bacteriology and scientific sewerage than a feasible scheme for the remedy of Chicago's drainage troubles." He thinks that it may be safely admitted that such troubles are likely to partake more and more of the nature of scientific problems and will fall more and more into the hands of experts. In the long run, treatises on bacteriology, chemistry and engineering can not fail to supplant the opinions held even by the most intelligent and public-spirited laymen. The question of a "deep waterway" from Chicago to the Gulf should be kept separate from a consideration of the best means of disposing of sewage and maintaining the purity of the city water supply. The sanitary needs of a city should not be confused with an avowedly commercial project, however desirable in itself the latter may be.

Briefly speaking, several points seem to deserve consideration in the present situation: First, the general feasibility of a scheme of sewage filtration; second, the relative efficiency and desirability of sewage filtration as compared with the construction of another drainage canal with its consequent problems of dilution and effect on the Illinois valley; third, the relative expense of filtration and dilution methods, and, fourth, the future of the whole water supply and sewage disposal system in Chicago, so far as can be forecasted from the probable increase of population.

#### STATE TUBERCULOSIS SANATORIA.

The movement for the establishment of a state tuberculosis sanatorium in Indiana is meeting with opposition from physicians in one locality. A circular has been sent out and appears in the newspapers signed by twelve physicians protesting against an appropriation for any such purpose. It is argued that the benefits of such an establishment would not compensate for the cost to the taxpayers. The curability of advanced tuberculosis in the climate of Indiana is questioned, as well as the value of the open-air treatment in such a climate. The danger of its infectiousness is also discussed. Of course, it is a matter for the taxpayers of Indiana to consider whether or not the benefit will be such as to warrant the expenditure, but the experience in other states has shown that state tuberculosis sanatoria properly managed and absolutely freed from political influence have a decided value, not so much for the

numbers of cures, perhaps, though that is not to be underestimated, but as educative centers. That tuberculosis taken early is curable in many cases is a sufficiently established fact—indeed, the number of such cases occurring spontaneously or under any kind of treatment is probably far greater than has been generally recognized. When we consider the almost universal distribution of the infection it would seem probable that a very respectable portion of the population are instances of cured tuberculosis. When the disease has advanced far enough to be readily recognizable there is no question but that placing the patient under proper conditions and treatment such as can be obtained in a well-managed modern tuberculosis sanatorium in any climate, even the changeable one of our northern lake states, will greatly improve the chances for recovery, and it is unreasonable to assume that such conditions are likely to prevail or are fully supplied at present in the average home. The existence of a sanatorium would, therefore, be justified. Home conditions also can be greatly improved; and the greatest value of a state sanatorium should be largely in the educative influence it ought to exert in bringing about such improvement. It is true that too much may be expected from such an institution, and that it may be perverted to some extent by political mismanagement, but both of these drawbacks should be considered beforehand and guarded against so far as possible. It is also true that we may be overestimating the special danger of infection and undervaluing the influence of heredity to some extent, as the Indiana protestors allege, but, taken as a whole, their argument against the establishment of such an institution is not creditable to those who signed the circular.

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#### CONGRESS ASKED TO REMOVE POSTAL PROTECTION AGAINST FRAUDS.

A bill that passed the lower house of Congress January 7 and that is now before the Senate calls for the attention of physicians. Its object is to deprive the Postmaster General of the power to refuse the privileges of the mails to the promoters of frauds, and it masquerades under the simple title "providing for a judicial review of the orders excluding persons from the use of the United States mail facilities." It was introduced and supported, it is said, by congressmen who have among their constituents the promoters of certain notorious nostrums and other frauds. Under the present law the persons reported by the postoffice inspectors have the opportunity of appearing before the assistant attorney general for the department and stating their side of the case before a fraud order is issued; under the proposed law they would have the privilege of interposing all the law's technicalities and delays—and every one knows what they are—before an order could become effective. The unsuspecting public would thus be at the mercy of the swindlers until they had worked out their vein and swallowed and digested the profits. Every one who has given attention to the subject has recognized that the Postoffice Department, by its fraud order system, is one of the chief protections to the public. That no injustice is done is sufficiently shown by



the fact that in over 2,600 fraud orders issued the department's ruling has been questioned in only about thirty instances, and in only two cases have injunctions been granted: in one on a technicality, and in the other on constitutional grounds, which were later overthrown by the decision of the Supreme Court. Millions in money, to say nothing of the benefits to health and morals, which should be always the first considered, have thus been saved to the public. We can not afford to let this safeguard of the moral, physical and financial welfare be thus abolished.

#### NATIONAL VS. STATE PURE-FOOD LAWS.

The national pure food act, which went into effect January 1, carries with it, in a negative way, a danger that is not inconsiderable. The unthinking may be lulled into a sense of false security and unconsciously may get the idea that impure and adulterated food is henceforth to be a *rara avis* on the market. This act, while prohibiting the sale of impure foods within the District of Columbia, in the several territories and outside of the state in which it is manufactured, in no way interferes with a purveyor of adulterated foodstuffs in any particular state—provided such foods are sold within the state where manufactured. In other words, while any food that is brought in from another state must come up to the standard of purity required by the national law, the foodstuffs manufactured within one's own state may be grossly sophisticated. This gives the dishonest manufacturer a chance to unload on his home market what old stock he has that does not comply with the federal requirements and also permits him to continue to manufacture and sell within his home state food material that is impure and adulterated. The way to prevent this dishonest and health-destroying traffic in a state is to enact a state pure food law.

### Medical News

#### ALABAMA.

**McCormack Addresses the Legislators.**—Dr. J. N. McCormack, who has been speaking in Alabama in the interests of medical organization and health matters, delivered an address at Montgomery, January 10, before a joint session of the General Assembly of the state. The *Montgomery Advertiser* says: "Dr. McCormack spoke for nearly two hours, pointing out the great things that have been accomplished by the medical profession, confessing frankly to the sins of omission and commission of the profession, and urging, in stirring terms, the passage of laws which will give the doctor greater opportunity to do things for the health of the community in which he lives. At the conclusion of his address the following resolution was presented and adopted unanimously:

*Resolved*, That the thanks of this audience be tendered Dr. McCormack for his able and illuminating address on the relation of the medical profession to the general public and to legislative bodies, national and state, and to the public service. As legislators and representative men we realize that the clearer light thrown on the genesis and methods of destruction of disease, by such addresses as this, has imposed new and higher duties on us as guardians of the people's welfare, and that the legitimate domain of the legislator has been widened, in the light of modern science.

#### CALIFORNIA.

**Illegal Practitioner Fined.**—A. M. Seuitka, Los Angeles, a Japanese, accused of practicing medicine without license, is said to have been found guilty and fined \$50, December 20.

**Health of the State.**—The monthly bulletin of the State Board of Health for November shows that there were reported

during the month 2,585 deaths, 1,839 births, and 2,158 marriages.

**Society Meeting.**—At the last meeting of the Marin County Society the following officers were elected: Dr. William F. Jones, San Rafael, president; Dr. Frederick J. Hund, San Rafael, vice-president; Dr. John H. Kuser, Novato, secretary and treasurer.

**Cleared from Manslaughter.**—The indictment charging Dr. Charles Freedman, assistant police surgeon of Los Angeles, with involuntary manslaughter, by alleged carelessness in operating on a Mexican, August 12, was dismissed by the judge of the superior court, December 19.

**Smallpox.**—Smallpox is reported to be epidemic in Quincy, Plumas County, where there are a number of cases of mild type.—Smallpox has broken out on the Shippee ranch, above Bellota, and it is said that there are several cases of the disease in the vicinity of the ranch.—At Webb's Station two cases of smallpox are reported.

**Diphtheria.**—Two cases of diphtheria are reported in one family in Stockton.—The Grant school, Oakland, which was closed early in December on account of diphtheria among its pupils, will remain closed indefinitely, by order of Health Officer Ewer. He considers conditions in the school house such as to be favorable to the spread of diphtheria. On examination of throat cultures from 850 pupils it was found that fully 25 per cent. were affected.

**Southern California Physicians Meet.**—The Southern California Medical Society at its annual meeting in Los Angeles, December 5 and 6, elected the following officers: Dr. Cornelius Van Zwahlenburg, Riverside, president; Drs. William W. Roblee, Riverside, and George E. Abbott, Pasadena, vice-presidents, and Dr. Joseph M. King, Los Angeles, secretary. At the banquet at the Angelus Hotel, on the last evening, Dr. Woods Hutchinson was the toastmaster.

**Typhoid in Refugee Camps.**—The committee appointed by the San Francisco County Medical Society to investigate the typhoid conditions since the fire and earthquake, has reported a steady increase of typhoid fever, the highest number being 322 cases in October. The committee reports that the disease is most prevalent around the so-called "irregular" refugee camps, composed of the huts of individuals who mainly support themselves and where the sanitary conditions are of the worst order. The committee advises regulation of these camps and also suggests that an inspection be made of the milk supplied from dairies outside of San Francisco County.

**Personal.**—Dr. Oliver D. Hamlin has been appointed physician in charge of the Receiving Hospital, Oakland, and Dr. William H. Irwin has been appointed assistant physician.—Dr. Charles E. Congdon, Jamestown, was thrown from his buggy December 1, in a runaway accident, sustaining serious injuries.—Dr. Ellis Harbert, Stockton, has been appointed consulting surgeon of the Santa Fe System, in charge of the division from San Francisco to Bakersfield, and Dr. Harry W. Taggart has been appointed local surgeon at Stockton.—Dr. Henry H. Lissner, San Francisco, has started for Europe.—Dr. Woods Hutchinson, Redlands, has succeeded Dr. George W. Tape as medical director of the Arrowhead Sanitarium.—Dr. Arthur D. Houghton has been appointed superintendent of the Los Angeles Detention Hospital.

#### COLORADO.

**Deaths for November.**—During November there were reported to the State Board of Health 809 deaths and 30 stillbirths, equal to an annual death rate per 1,000 of 16.01. During the month 52 deaths occurred from typhoid fever and 7 each from diphtheria and scarlet fever.

**More Typhoid in Denver.**—In his annual report, the health commissioner of Denver declares that there has been a large increase in typhoid fever during the year, ascribing this to the number of people who camp out during the summer and drink polluted water from streams and rivers. During the year there were 3,050 deaths, of which 611 were due to tuberculosis and 268 to pneumonia.—During November 323 cases of typhoid fever were reported in the entire state, however, a decrease of 381 cases as compared with the previous month; 195 cases of scarlet fever, an increase of 73; 54 cases of diphtheria, an increase of 17, and 36 cases of smallpox, an increase of 33, as compared with October.

#### DISTRICT OF COLUMBIA.

**The Hazen Estate.**—Letters of administration have been granted to the widow of Dr. David H. Hazen, who died intestate, leaving an estate valued at \$225,000.



**Society Meeting.**—At the annual meeting of the Medico-Chirurgical Society of the District of Columbia, held in Washington, December 27, the following officers were elected: Dr. George W. Cabiniss, president; Drs. Creed W. Childs and Melchiah M. Lucas, vice-presidents; Dr. John W. Mitchell, recording secretary; Dr. Albert Ridgeley, corresponding secretary; Dr. Charles H. Marshall, treasurer; Dr. Edward D. Scott, librarian, and Drs. Robert Reyburn, Furmann J. Shadd, Daniel S. Lamb, John R. Francis and Austin M. Curtis, censors.

#### GEORGIA.

**More City Physicians.**—At a special meeting of the Augusta council provision was made for a physician to be known as special physician for the treatment of contagious and infectious diseases. The council now has the appointment of five city physicians.

**Personal.**—Dr. Harry B. Nunnally, Monroe, has been made assistant senior surgeon at the Grady Hospital, Atlanta.—Dr. Reynolds Kirby-Smith, Atlanta, has resigned his commission in the Army and will return to Atlanta to practice medicine.—Dr. Charles H. Richardson has been elected mayor of Montezuma.—Dr. Frank M. Ridley, Jr., was shot and seriously wounded while attending a wedding at La Grange, January 2.

**Society Meetings.**—The Chatham County Medical Society held its annual meeting December 12 at Sparta and elected the following officers: Dr. Thomas J. Charlton, president; Dr. Joseph G. Jarrell, vice-president; Dr. John M. Sigman, secretary; Dr. Ralph M. Thomson, treasurer, and Dr. John L. Fanner, censor, all of Savannah.—At a recent meeting of the Atlanta Medical Library Association Dr. Michael Hoke was elected president; Dr. E. Bates Block, secretary, and Dr. Edgar G. Ballenger, treasurer. A committee of 10 was appointed to consider the upbuilding and enlargement of the scope of the Atlanta Medical Library.—The Habersham County Medical Association met in Cornelia, December 19, and elected the following officers: Dr. Oliver T. White, Mount Airy, president; Dr. John B. Jackson, Clarksville, vice-president, and Dr. John K. Burns, Clarksville, secretary and treasurer.—At the annual meeting of the Fulton County Medical Society, held at Atlanta December 20, the following officers were elected: Dr. Claude A. Smith, president; Dr. Walter B. Emery, vice-president; Dr. Michael Hoke, secretary; Dr. Emil von Goidtsnoven, treasurer, and Drs. Cyrus W. Strickler, Edward C. Davis and John C. Olmsted, censors, all of Atlanta.

#### ILLINOIS.

**Automobile Ambulance.**—The commissioners of Cook County have invited proposals for an automobile ambulance, for the use of Cook County Hospital.

**Fined for Practicing Without a License.**—C. P. Brunig of Pea Ridge is reported to have been tried before a jury at Mount Sterling for practicing as a physician, without a state license, and to have been fined \$100 and costs.

**Fined for Distributing Medicine Samples.**—For violating a provision of the Moline city ordinance, which prohibits the distribution of medical samples, Haudy Berndt was fined \$5 and costs, January 3.

**Low Death Rate.**—Evanston claims to be one of the healthiest cities in the country, with a death rate of 9.33 per 1,000 for 1906. Pneumonia caused 30 deaths and tuberculosis 22, out of the 215 deaths of the year.

**Medical Science Library Incorporated.**—The Evanston Medical Science Association has been incorporated with the object of collecting and maintaining a medical library, not for profit. The incorporators are William G. Alexander, and Drs. Stephen V. Balderston and Edward H. Webster.

**Oppose Advertising.**—At the quarterly meeting of the Coles County Medical Society, at Charleston, January 8, stringent resolutions were passed with reference to the appearance of names of members of the society in the lay press, in connection with accidents, operations and the like.

**Vaccination Order Annulled.**—Notice was given to the board of education at Galesburg by the board of health, annulling the order which requires all pupils attending public schools to be vaccinated. This action was taken on account of the diminution of smallpox and the failure of new cases to appear.

**Cook County Coroner's Report.**—During December the coroner of Cook County held inquests in 386 cases of violent or sudden death. Of these one was a Chinaman and 18 were negroes. There were 14 murders, 34 suicides, 50 deaths from

railroad accidents, 22 from falls, 21 from alcoholism and 140 were reported to be from natural causes.

**State Board Election.**—At the annual meeting of the State Board of Health in Springfield, January 15, Dr. George W. Webster, Chicago, was re-elected president, and Dr. James A. Egan, Springfield, was re-elected secretary and treasurer. This is Dr. Egan's eleventh year as secretary of the board.

**To Advance Secretary of Board of Charities.**—The president of the Illinois State Board of Charities has sent a communication to the attorney general urging the necessity of a resident head for the office force of the board; one who should be more than a secretary or a clerk, and who should be provided with a sufficient number of assistants. Secretary Graves is, it is said, mentioned for the new position.

**Communicable Diseases.**—The mayor of DeKalb announces that the quarantine against scarlet fever is being strictly respected, and that the disease appears to be under control.—A number of cases of scarlet fever are reported in Ivesdale.—After a long period of immunity from the disease, two cases of scarlet fever are reported in Elgin.—Aurora reports five cases of scarlet fever.—The spread of scarlet fever in Aledo has been checked, and no new cases have appeared for several days.—Peoria is reported to have fifteen cases of typhoid fever on East Bluff, and these have been traced to an infected milk supply.

**Personal.**—Dr. J. C. Westervelt, Shelbyville, chief medical inspector of the State Board, has assumed the duties of assistant secretary of the board.—Dr. William W. VanWormer, Girard, has been appointed division superintendent of the Chicago and Alton Railroad, vice Dr. Charles A. Allen, Virden, resigned.—Dr. Edward L. Mitchell, Monmouth, was struck by a falling ladder at the Monmouth Hospital, January 7, which temporarily stunned him and caused a severe scalp wound.—Dr. Walter B. Stewart has been named health commissioner of Joliet, vice Dr. William A. McRoberts, resigned.—Dr. Charles Taylor, Elkhart, has resigned as superintendent of the Illinois Asylum for Feeble-Minded Children, Lincoln.

#### Chicago.

**Fire in Hospital.**—A fire, which broke out in the attic of the South Chicago Hospital, January 12, necessitated the temporary removal of 17 patients, but little damage was done.

**Local Charities.**—By the will of the late Bernard Neu, who died October 1 in Hamburg, \$500 is bequeathed to Michael Reese Hospital, and \$200 each to St. Luke's and Alexian Brothers' hospitals, and the Home for Incurables.

**Visiting Nurses.**—The superintendent of the Chicago Visiting Nurses' Association, at the annual meeting, reported that 71,980 visits had been made by the nurses of the association to the sick and suffering of Chicago during the year.

**Convicted of Cocain Selling.**—Dr. Albert Dahlberg, who was found guilty by a jury of the illegal selling of cocain, is reported to have been fined \$200, January 3, and to have been sent to the house of correction until payment of the fine.

**Children's Hospital Society Meeting.**—At the annual meeting of the Children's Hospital Society, January 6, \$1,300 was ordered to be distributed to the various hospitals where children have been cared for. Dr. Frank Billings was re-elected president of the society, and Dr. Frank S. Churchill, secretary.

**Deaths of the Week.**—The death rate of the week, 17.29 per 1,000 per annum, was the highest January death rate since 1899, and is nearly 17 per cent. greater than that of the corresponding week of 1906. The greatest increase in mortality was among the aged and those afflicted with chronic diseases. Of the total of 609 deaths, 117 were due to pneumonia, 93 to tuberculosis, 55 to nephritis, and 54 to heart diseases.

#### INDIANA.

**Applies for New Trial.**—W. H. Gray, La Porte, who was fined \$25 and costs early in December, for practicing medicine without a license, has applied for a new trial on the grounds that he was convicted on false testimony.

**Regulation of Distribution of Medicines.**—The Anderson city council, at a meeting held Dec. 31, 1906, passed an ordinance requiring all distributors of medicine samples to submit the articles to the board of health for examination. Any violation of this ordinance will be punished by a fine of from \$10 to \$100 and 30 days' imprisonment.

**Settled by Compromise.**—It is reported in the daily press that the charges preferred against Dr. Stephen D. Spees, Terre Haute, by the State Board of Medical Registration and Exam-



ination are to be dismissed, on condition that the defendant agrees to go to a medical school and takes a postgraduate course, after which he is to take an examination before the state board in the regular way.

**Society Meeting.**—At the recent meeting of the Fountain County Medical Society the following officers were elected: Dr. Louis A. Bolling, Attica, president; Dr. Clinton G. Beckett, Attica, vice-president; Dr. George Rowland, Covington, secretary-treasurer, Dr. George H. Dinsmore, Kramer, delegate to the state medical society; Dr. Frederick J. Walter, Kramer, delegate to the American Medical Association, and Drs. Marshall Petet, Verdersburg, Alva L. Spinning, Covington, and Walter H. Ross, Veedersburg, censors.

**Personal.**—Dr. George U. Runcie, Poseyville, has resigned as president of the board of town trustees.—Dr. John C. Baxter, Auburn, will continue as coroner of DeKalb County for the next two years.—Dr. George P. Cosby, Evansville, is suffering from optic neuritis.—Dr. George Smith has been elected health officer for Knightstown, vice Dr. Omar H. Barrett.—Dr. Aljah W. Lloyd, Marion, health officer of Grant County, is taking a trip to Arizona. During his absence Dr. Otis W. McQuown is acting in his stead.—Dr. Robert A. Cushman, Princeton, has been selected as mine physician for the ensuing year.

#### IOWA.

**Communicable Diseases.**—The health officer of Oskaloosa reports that there are now only twelve or fourteen cases of smallpox in the city, that all are under quarantine, and that no new cases have developed.

**Personal.**—Dr. Robert E. Conniff, Sioux City, for fourteen years a member of the State Board of Health and for four years its president, has resigned, to take effect January 31. Dr. A. M. Linn, a member of the board, gave a banquet, January 9, at his home in Des Moines, in honor of Dr. Conniff.—Dr. Manuel M. Schener, Valley Junction, has been appointed division surgeon for the Rock Island System, vice Dr. Charles E. Diehl.

**Successful Tuberculosis Propaganda.**—The State Board of Control has selected a tract of 280 acres of land, 5 miles north of Iowa City, on the Cedar Rapids-Iowa City interurban electric line, as a site for the State Hospital for Tuberculosis. The profession of Iowa and the Iowa Association for the Study and Prevention of Tuberculosis are much pleased over the expected hospital, in the securing of which their efforts have assisted.

**Society Meeting.**—At the annual meeting of the Chickasaw County Medical Society at New Hampton, December 4, the following officers were elected: President, Dr. Amos Babcock, New Hampton; vice-president, Dr. Perry E. Stuart, Nashua, and secretary-treasurer, Dr. Edwin N. Johnston, Fredericksburg. The society adopted resolutions setting forth that the indiscriminate practice of embalming the dead is wholly unnecessary, and that in a case of suspected poisoning it often prevents the establishment of actual facts; that a law should be passed making it a misdemeanor to embalm dead bodies, until after the death certificate has been issued, and then only after the embalmer has been specifically employed by the proper authorities.

#### KANSAS.

**Asylum for Insane.**—The State Board of Control will recommend that the legislature provide for the establishment of an asylum for the care of the incurable insane in the state and that the present plan of county asylums be done away with.

**Unlicensed Practitioner Fined.**—Joseph Huff, a self-styled "cancer doctor" of Franklin County, is reported to have been recently fined \$50 for practicing medicine without a license, and has appealed to the Supreme Court.

**Personal.**—Dr. Arthur W. Clark, Lawrence, physician of Douglas County has resigned.—Dr. H. E. Williamson, Olathe, was run over by a street car in Kansas City recently, necessitating the amputation of both legs above the ankle.

**Cost of State Hospitals.**—The per capita cost of maintaining patients at the Topeka State Hospital for the Insane was \$157.16 for the fiscal year ending June 30, 1905; for the next fiscal year the cost was reduced to \$136.46. At the Osawatomie Hospital the per capita cost was \$135.63.

**Society Elections.**—The Southern Kansas Medical Society held its annual meeting at Wichita, December 27 and 28, and elected the following officers: President, Dr. George K. Purves; vice-president, Dr. James E. Oldham; secretary, Dr. Frederick B. Lyons, and treasurer, Dr. Martin Hagan, all of Wichita.

**Druggists Want Medicine Venders to Pay License.**—The members of the Allen County Druggists' Association are petitioning the legislature to pass a law requiring all medicine

peddlers to take out a state permit, as the regular druggist is required to do. This movement is not confined to Allen County, as other druggists throughout Kansas are contemplating similar action.

**Plans for State Medical School.**—Dr. George H. Hoxie, dean of the University of Kansas School of Medicine, announces that the ultimate plan for the institution is the erection of nine buildings, to cost about a quarter of a million of dollars. The hospital building is already finished and in service; a second building for laboratory and class purposes, is almost ready, and the new dispensary at Armourdale will be ready for opening in the autumn.

**State Sanatorium for Consumptives.**—The secretary of the State Board of Health will ask the legislature this winter to appropriate \$235,000 for the establishment of a state sanatorium for the treatment of consumptives, of which \$200,000 is expected to be used in the purchase of a site and construction of buildings, and \$35,000 to be allowed for maintenance. It is his opinion that the sanatorium should be located at some point in western Kansas.

**Hospital Notes.**—Vail Cottage, the new pavilion for nervous diseases at Christ Hospital, Topeka, constructed at a cost of \$12,000, has been formally dedicated.—The Bethel Hospital directors have decided immediately to begin work on the building of a new Mennonite hospital at Newton.—The Arkansas City Hospital is now practically completed and ready for the reception of patients. The institution has been erected at a cost of about \$9,000 and is thoroughly equipped.—A building permit has been issued for an addition to the Bethesda Hospital, Topeka, to cost \$600.

**Communicable Diseases.**—Four cases of diphtheria are under quarantine at Salina. The county health officer has notified all physicians immediately to quarantine all cases suspected of being diphtheria.—The epidemic of diphtheria in Council Grove and the southern part of Morris County caused the abandonment of all public Christmas exercises and similar gatherings. In the five days preceding Christmas three deaths were reported.—Several cases of diphtheria, with two deaths, are reported from New Cambria.—Jamestown is under strict quarantine, on account of the presence of diphtheria.—Smallpox is reported to be prevalent in Cherryvale.—Smallpox is reported to have broken out at Niles.—A case of smallpox is reported at the Soldiers' Home, Leavenworth.

#### KENTUCKY.

**Diphtheria.**—The school trustees of Shepherdsville have ordered the schools closed, because of the presence of diphtheria in the town.

**Hospital Notes.**—About \$10,000 has been subscribed to the Cynthiana Hospital, and \$5,000 additional is required to furnish the proper equipment. A site has been secured, with four acres of ground, on Penn Street, on which is a large residence which can easily be adapted for the purpose.

**County Society Elects.**—At the annual meeting of the Jefferson County Medical Association in Louisville, December 18, the following officers were elected: Dr. Sidney J. Meyers, president; Dr. Dunning S. Wilson, vice-president; Dr. Virgil E. Simpson, treasurer, and Dr. Charles W. Hibbitt, secretary.

**Kentucky Valley Physicians Meet.**—At the annual meeting of the Kentucky Valley Medical Association at Campton the following officers were elected: Dr. James H. Stamper, Campton, president, and Dr. Cornelius Marcum, Millers Creek, vice-president. The next meeting of the association will be held at Torrent in June next.

#### LOUISIANA.

**Smallpox.**—A number of cases of smallpox are reported from Napoleonville by the parish health officer.—An epidemic of smallpox is reported in Caldwell Parish.—The threatened epidemic of smallpox at Angola is well in hand, and it is expected that the disease will soon be stamped out.

**The Delgado Memorial.**—Mr. Isaac Delgado has given \$180,000 to the Charity Hospital, New Orleans, for the erection of the Delgado Memorial, a building to be devoted to the treatment of chronic and incurable diseases. This is an addition to the \$20,000 already given the hospital by the late Mrs. Samuel Delgado.

**Society Meeting.**—At the annual meeting of the Orleans Parish Medical Society the following officers were elected: President, Dr. John J. Archinard; vice-presidents, Drs. John B. Elliott, Jr., Charles J. Landfried and John J. Laurans; secretary, Dr. Amidie Granger (re-elected); treasurer, Dr. Edward O. Trahan; librarian, Dr. Homer Dupuy (re-elected); and directors, Dr. C. Jefferson Miller, J. Farrar Patton and Edwin J. Graner.



**Personal.**—Dr. George M. Snelling, New Orleans, has returned from Europe.—Dr. William J. Emmer has been elected chairman of the New Iberia Board of Health, vice Dr. Adolph Koch.—Dr. Robert J. Young, Abbeville, is reported to be ill at the St. Charles Hotel, New Orleans.—Dr. Thomas G. Ford has been elected president, and Dr. Randell Hunt re-elected surgeon and superintendent of the State Charity Hospital, Shreveport.—Dr. Oscar Dowling, Shreveport, has been appointed a member of the State Board of Health, vice Dr. T. Edgar Schumpert.

**Tuberculosis Campaign.**—The Louisiana Anti-Tuberculosis League has been organized, with Dr. Edward L. McGehee, New Orleans, as permanent chairman. Among those who took part in the meeting were Dr. Wallace J. Durel, New Orleans, representing the Louisiana State Medical Society; Dr. William T. O'Reilly, the New Orleans Board of Health; Dr. Susanna Otis, the New Orleans Dispensary for Women and Children; Dr. Fred J. Mayer Scott, the Louisiana State Board of Health; Dr. John B. Elliott, the New Orleans Parish Medical Society; Dr. Felix A. Larue, New Orleans, the Louisiana State Board of Medical Examiners; Dr. G. Farrar Patton, the New Orleans Polyclinic; Dr. Edmund M. Dupaquier, the New Orleans Sanitarium; Dr. Alexander Ledoux, the New Orleans Progressive Union; Dr. John T. Halsey, the Medical Department of Tulane University, and Drs. Ralph Hopkins, J. Birney Guthrie, Isaac I. Lemann and Ernest S. Lewis.

#### MARYLAND.

**Personal.**—Dr. Charles W. MacGill is reported to be seriously ill at his home in Catonsville.—Dr. Washington G. Turk, Annapolis, celebrated his seventy-fifth birthday anniversary with a family reunion, January 8.

**Smallpox.**—A case of smallpox has been discovered in a negro settlement near Edesville, Kent County, Maryland. A teacher in the public school in Kent County has developed smallpox and it is said that a number of pupils are ill. All the white and colored public schools in Kent have been closed, pending inspection.—Three cases of smallpox are reported at Lansdowne.

**State Sanatorium.**—The board of directors of the Maryland Tuberculosis Sanatorium, after trying in vain to secure a suitable site, have advertised, the requirements being 100 acres of land at an elevation of from 1,000 to 1,500 feet, one-half, at least, to be cleared land with a southern slope, and an abundant supply of pure water. The location must be in immediate proximity to the railroad and as near to centers of population as possible.

**Society Meeting.**—The Anne Arundel County Medical Society met at Annapolis January 8, and elected the following officers: President, Dr. Harry B. Gantt, Millersville; vice-president, Dr. W. Clement Claude, Annapolis; secretary, Dr. Louis B. Henkle, Jr., Annapolis; treasurer, Dr. Frank H. Thompson, Annapolis; censors, Drs. Thomas H. Brayshaw, Glenburnie, and Joseph M. Worthington and William S. Welch, Annapolis, and delegates to the Medico-Chirurgical Faculty of Maryland, Drs. Thomas H. Brayshaw, Glenburnie, and Walton H. Hopkins, Annapolis.

#### Baltimore.

**Anti-Spitting Crusade.**—Baltimore has taken up the crusade against spitting in the street cars, on sidewalks and in public buildings, and many arrests have been made by the police.

**Bust of Virchow Presented.**—On the evening of December 31, Dr. John C. Hemmeter presented to the Medical and Chirurgical Faculty of Maryland a life size marble bust of Rudolph Virchow, and made an address on, "Virchow as an Anthropologist."

**Respiratory Diseases.**—There was a great increase in respiratory diseases during the week ended January 12, doubtless due to the remarkably mild and humid weather. Pneumonia caused 43 deaths; consumption, 40; bronchitis and influenza, each 7. The total number of deaths for the week was 245.

**Bequests.**—By the will of the late Mrs. Ella Burns Beaston, about \$200,000 will eventually be received by the hospital for consumptives of Maryland. She also left \$10,000 to the Hospital for Women, Maryland, and \$10,000 to the Church Home and Infirmary. These bequests are to become effectual on the death of the mother of Mrs. Beaston.

**Delay in Securing Hospital Site.**—The property owners near the proposed twenty acre lot in the vicinity of the alms house, where it was proposed to build, have threatened injunctions if the city persists in its intention to build there. It is therefore announced that the authorities will erect the hospital on an eight acre lot in the same neighborhood.

**Fatal Accidents.**—During 1906, 278 fatal accidents were reported. Of these 49 were caused by railroads, 29 by street cars, 59 by drowning and 28 to burns.—During the year there were 23 homicides and 72 suicides. Of the latter 61 were white males, 12 white females, 2 were Chinese and two were negroes. The ages ranged from 17 to 78.

**Acceptance of Libraries.**—On January 3 the formal acceptance of the two collections of books presented to the Library of the Johns Hopkins Medical School was made, with addresses by Dr. William Osler and Wm. H. Welch. The Marbury collection is the old Warrington Dispensary library of Liverpool, containing 944 volumes of the sixteenth, seventeenth and eighteenth centuries, and is especially valuable for the study of the history of medicine. The Jenks collection is on monstrosities and numbers 936 volumes. It is the Friedrich Ahlfeld library of Marburg, Germany.

**Registration of Tuberculosis.**—Maryland has now a law requiring physicians to register all cases of tuberculosis with the State Board of Health. The state and city makes free examination of the sputum of persons suspected of having tuberculosis and the state makes compulsory the fumigation of apartments vacated by death or removal of consumptives. This law works no hardship and is considered beneficent by both physicians and laymen. The members of the Maryland Association for the Prevention and Relief of Tuberculosis, to whose persistent efforts its passage is due, are working for the passage of a similar law for the District of Columbia, which is now pending in the Senate.

**Personal.**—Dr. Arthur Wegefarrth, president of the North-eastern Dispensary, gave a dinner to the physicians of that institution December 28.—Employés of the health department entertained Health Commissioner Dr. James Bosley at their annual banquet. Assistant Health Commissioner Jones acted as toastmaster. During the evening Dr. Leonard J. Turlington, health warden of ward 27, was presented with a set of silver spoons by his colleagues.—Dr. Isabella K. Godfrey has retired from the practice of medicine and resumed the pursuit of music and art.—Dr. William A. Fisher, Jr., is at Lucerne, Switzerland.—Dr. Arthur M. Shipley and Dr. Gordon Wilson have returned after three months' work with Professor Chiari, Strassburg.—Dr. William Hewson, Baltzell, has returned after two years abroad.—Dr. William Osler was in Baltimore from December 29 to January 4, the guest of Dr. Henry Barton Jacobs. He sailed from New York January 8, on his return to England.—Drs. H. M. Baxley, Edward E. Mackenzie and Edmund A. Munoz have been re-elected attending physicians to the Baltimore General Hospital.—Dr. H. Warren Buckler has been appointed medical inspector of public schools, vice Dr. A. Duvall Atkinson, resigned.—Dr. P. Gustav Dill was robbed of jewelry and an overcoat on January 11 by a highwayman.

#### MASSACHUSETTS.

**Injured in Fire.**—Dr. Otto L. Schofield, Wellesley, was severely burned about the face and hands, January 9, by a gasoline explosion and fire which destroyed his automobile and garage.

**Nominations.**—Dr. Henry E. Scars, Beverly, has been nominated for associate medical examiner of the seventh Essex district.—Dr. George B. McGrath has been nominated to succeed Dr. Francis Harris as medical examiner of Suffolk County.

**Rabies.**—During the eleven months ended Dec. 1, 1906, at least six deaths from rabies occurred in the state. More than 1,000 dogs were reported as mad. The disease prevails in the counties of Berkshire, Franklin, Hampshire, Hampden, Worcester, Middlesex, Essex, Suffolk, Norfolk, Bristol, Plymouth and Dukes.

**Backward School Children.**—Superintendent of Schools Brock of Boston, studying the 619 children, 10 years old or over, who are still in the first three grades of the public schools, has found their backwardness to be due in 115 cases to illness and absence caused thereby, in 107 cases to mental weakness or retardation, in 3 cases to deafness and in one case to blindness.

**Hospital to be Investigated.**—By order of Governor Guild, the Hospital for Dipsomaniacs, Foxboro, established in 1899 at an expense of \$150,000, is to be investigated by a committee of the council. It is claimed that the cure of inebriates has been neglected in the effort to make a good financial showing; \$20,000 to \$30,000 has been expended by the state there each year. In 1905 insane patients were also sent there.

**Examination of Dairies.**—The State Board of Health, in its crusade for pure, clean milk and dairies, examined 271 dairies in November, nearly all in western Massachusetts. Fifty were



found satisfactory. Amherst had 24 of these out of a total of 122; Holyoke 8 out of 28; Northampton 3 out of 31, and South Hadley 10 out of 60, not a very good showing for college towns. Of 684 food or drug samples analyzed 177 were found adulterated, and of 328 samples of milk tested 133 were either adulterated or varied from the legal standard.

**Recurrence of Scarlet Fever.**—After a long period of quiescence scarlet fever has appeared in almost epidemic form in Boston and vicinity. Cambridge, Malden, Somerville and Everett have the most cases, while Boston has had a similar increase in the south, west and north ends. Boston and Cambridge are using their school medical inspectors to detect and isolate the disease. A probable source has been found in a large milk route. The cases are, as a rule, very mild and are not confined by no means to children. A school in Belmont has been closed.

**Issue Muzzling Orders.**—The wide prevalence of hydrophobia has led to the adoption by many towns and cities, including Boston, of muzzling orders for periods of three to six months, and authority has been given to Dr. Austin Peters, state cattle commissioner, to enforce such regulations whenever towns or cities neglect to do so. It is hoped that by this means hydrophobia may be kept from some of the counties where it has not yet appeared. Meanwhile so numerous have been the cases due to bites by infected dogs, that a ward for Pasteur treatment has been opened at the Tewksbury Clinic Hospital of the state, and some towns are providing themselves with serum from New York for the treatment of local patients at their homes.

**Medical Baths.**—The receipts for the medical baths of Boston, for the year ended November 1, were \$4,493.03, a gain of \$506.53 over the preceding year. These baths are non-commercial, are conducted in a purely ethical manner, and the profits are applied to improvements. Beginning with November 1, a detailed report of each case is sent to the physician referring the patient to the medical baths for treatment. At the time of each treatment the operators record the weight of the patient before and the pulse rate before, during and after each general heating procedure, the character, duration and temperature of each thermotherapeutic and hydrotherapeutic measure, the pressure of douches, the reaction of the patient to cool and cold treatment, the amount of rest before and after treatment, and the systolic blood pressure before and after each carbon-dioxide bath. The committee of physicians in charge is composed of Drs. James J. Putnam, Elbridge G. Cutler and Robert W. Lovett.

#### MICHIGAN.

**Illegal Practitioner Fined.**—P. Court Van Woerden, Grand Rapids, who was charged with practicing medicine without a license, claimed in court that his parents in Holland had given him the surname of "Dokter," which he accordingly was legally authorized to use. The court, however, imposed a fine of \$100, which was paid.

**Personal.**—Dr. Louis A. Roller has been elected president of the health board of Grand Rapids.—Dr. Charles F. H. Frieberg has been appointed health officer of Bay City, vice Dr. William Cunningham, deceased.—Dr. John Leeson, Cadillac, has recovered from a severe attack of erysipelas.—Dr. John F. Bennett, has been appointed to succeed Dr. Otto T. Toepel, Detroit, as coroner of Wayne County.—Dr. Andrew P. Biddle, Detroit, is seriously ill with pneumonia.—Dr. William E. Blodgett is recovering from his recent illness.—Dr. Lyman W. Bliss, Saginaw, is reported to be critically ill.—Dr. Stephen S. Hanson, Port Huron, has been appointed physician of St. Clair County, vice Dr. Archibald Maclaren, resigned.—Dr. Charles M. Steele, Battle Creek, has resumed practice after a long and tedious illness. Dr. Thomas A. McGraw, Jr., Detroit, has been seriously ill with streptococcus infection of the throat and myocarditis.

#### NEW YORK.

**Want Good Drinking Water.**—At a recent meeting of the Buffalo Academy of Medicine, the members adopted a resolution offered by Dr. Peter W. Van Peyma, opposing any plan for increasing the water supply of Buffalo which does not provide for making the water safely potable.

**Hospital Finances Improved.**—The friends of the German Hospital, Buffalo, came to its rescue at the recent fair, the proceeds of which after paying all expenses, amounted to \$23,274.97. This amount cleared the floating indebtedness, and leaves only the first mortgage to be paid.

**To Stop Sale of Cocain.**—At a meeting of the State Board of Pharmacy, held in Albany, January 9, steps were taken toward securing legislation at the present session of the legis-

lature to prohibit the sale of cocain in any form except on a physician's prescription. The proposed measure will prohibit the filling of a prescription more than once and will be drastic enough to reach many so-called "catarrh cures" and other compounds known to contain cocain.

**Utica Hospital Notes.**—The medical staff of the Utica General Hospital held its annual meeting December 18, and elected the following officers: Dr. Fayette H. Peck, president; Dr. Charles E. Chase, vice-president; Dr. William B. T. Roemer, secretary and treasurer; and Drs. Sands C. Maxson, Charles E. Chase, Edward M. Hyland, Judson G. Kilbourn, Thomas H. Farrell, Arthur R. Grant and the president, Dr. Fayette H. Peck, ex-officio, executive committee.—Dr. Morris J. Davies was recommended for appointment as a member of the staff, to succeed Dr. Walter C. Gibson, resigned.—Dr. H. H. Lenahan was appointed as assistant to Dr. Grant in the gynecological department.

**Vital Statistics for 1906.**—The number of deaths in the entire city for the past year was 76,206, an increase of 2,492 over 1905. According to Dr. Darlington, this increase is due to the increased population. There was an increase of 1,084 deaths from pneumonia, 622 from measles, 424 from heart disease, 420 from tuberculosis, 343 from diphtheria, 286 from violence, 171 from Bright's disease, 166 from old age, 130 from cancer and 107 from scarlet fever. The death rate was 18.35 per 1,000, practically the same as in 1905. The total number of suicides in the entire city was 705, an increase of 45 over the preceding year. The number of marriages in Greater New York was 48,355, an increase of 5,700 over the year 1905. The number of births reported were 111,772, an increase of 8,000 over 1905. This is the highest number of births ever reported to the health department. There was a decrease in the deaths from typhoid fever, malaria, whooping-cough, cerebrospinal meningitis, influenza, bronchitis and stomach troubles in children under 5 years of age.

**Incorporation of the Public Health Defense League.**—A bill has been introduced in the state legislature providing for the incorporation of the Public Health Defense League under a special charter patterned after that of the Red Cross Society. This indicates the beginning of the work for which the Public Health Defense League was incorporated, i. e., that of an organized movement against medical and surgical quacks, frauds in "patent medicines," etc. As set forth in the charter, the purposes of the league are:

To obtain and to disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, and to work for the enlightenment of the public on all matters affecting these subjects; to work for the enactment of laws in the United States, Territories, and colonial possessions, for the protection and preservation of the public health and morals; to assist the constituted authorities in the enforcement of all laws affecting the public health, including those laws for the prevention of quackery, charlatanism, and criminal practices in the healing art; the prevention of adulteration and substitution of drugs and food substances; the prevention of the sale of narcotics, alcohol, and dangerous substances of every kind whether under the guise of proprietary remedies and so-called patent medicines and nostrums and remedies, or whether sold as narcotics in violation of law; the prevention of admission to the United States mails of all newspapers and printed matter of every sort advertising any business injurious to the public health or morals; and to prohibit the advertising of such business in any way; to oppose and work against the passage of laws detrimental to the public health and morals; to work for the repeal of any law having such an effect; and generally to institute proceedings in law and equity to carry out the objects and purpose of corporation.

This organization's first meeting, in New York City, Nov. 15, 1906, was reported in THE JOURNAL, Nov. 24, 1906, p. 1758.

#### New York City.

**After a Hundred Years.**—The by-laws of the Medical Society of the State of New York, just published, show that the membership in the year 1806 was 371, while in the year 1906 it was 2,303.

**Small Fire in Bellevue.**—A fire broke out recently in the storeroom at Bellevue Hospital and the smoke filled the alcoholic ward, causing a great deal of confusion and necessitating the removal of all the patients from that ward. The fire was soon controlled. Only slight damage was done.

**Neurological Officers.**—At a meeting of the New York Neurological Society, January 8, the following officers were elected: President, Dr. Charles L. Dana; vice-presidents, Drs. Bernhard Sachs and L. Pierce Clark; recording secretary, Dr. Edwin G. Zabriskie; treasurer, Dr. Graeme M. Hammond.

**Physicians Robbed.**—Dr. James O'Neil was attacked by three men, knocked down, rendered unconscious and robbed of his money, watch and diamond pin.—Dr. Alexander Trautman's house was entered by burglars, December 20, who stole jewelry and silver valued at several hundred dollars.



**Gifts for Hospitals.**—The Society of Friendly Sons of St. Patrick, following its usual custom, has forwarded checks for \$100 each to the following institutions: St. Vincent's, Presbyterian, St. Francis' and St. Joseph's hospitals; Gabriel's Sanitarium, Gabriels, N. Y., and St. John's Guild.

**Suicides.**—During the months of September, October and November 191 persons committed suicide in New York City. Of this number 55 died from gunshot wounds, 20 from carbolic acid, 20 from strangulation, 17 from gas asphyxiation, 9 died by jumping from high places and one each from leaping from a train, taking chloroform and taking paris green.

**Ambulance Service Stopped.**—Owing to strife among doctors and nurses of the Washington Heights Hospital, which is said to have resulted in neglect of the ambulance service, this service has been ordered discontinued by the board of police surgeons. The management of the hospital is being investigated by the board of directors and a complete reorganization of the entire staff is to be effected.

**Trachoma in Brooklyn.**—Supt. Robert W. Bassett of the Brooklyn Eye and Ear Hospital says that fully 50 per cent. of the school children of Brooklyn are afflicted with eye troubles and that about one-third of that number have trachoma. He is of the opinion that in one-half of these cases of eye trouble the disease is due to personal untidiness, improper food, bad air and poor hygienic surroundings.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended January 5, 342 cases of tuberculosis, with 180 deaths; 298 cases of diphtheria, with 53 deaths; 225 cases of scarlet fever, with 14 deaths; 157 cases of measles, with 12 deaths; 66 cases of whooping-cough, with 13 deaths; 40 cases of typhoid fever, with 9 deaths; 9 cases of cerebrospinal meningitis, with 14 deaths; also 5 cases of small-pox and 118 of varicella, making a total of 1,260 cases, with 295 deaths.

**Hospital Lacks Funds.**—The Lying-in Hospital has been able during the past year to use only about two-thirds of its rooms, owing to lack of funds. Only 2,841 patients were taken in and 5,000 were turned away. The total number of cases treated by the society supporting the hospital was 6,265, mostly in tenement houses. More than 8 per cent. of the births in Manhattan during the year occurred in the society's indoor and outdoor departments. The number of visits made by the outdoor department was 33,390. The expenditure for the year was \$129,580.

**Influenza Prevalent.**—Influenza has spread to such an extent as to amount almost to an epidemic. The number of deaths from the disease for the week ended January 5 was 32, as against 8 for the week ended December 29. The deaths from pneumonia and bronchial pneumonia increased from 232 during the week ended December 29 to 358 for the week ended January 5. La grippe is particularly prevalent in Brooklyn, where for the week ended January 5 there were 18 deaths from this disease. The death rate from other diseases usually aggravated by influenza has also increased.

#### NORTH CAROLINA.

**Beds Endowed.**—Two beds have been endowed in the Highsmith Hospital, Fayetteville, for the care of afflicted children, one in memory of Mrs. Mary A. Highsmith, mother of the chief surgeon, Dr. Jarvo F. Highsmith; the other in memory of Mrs. Anna E. Bullard.

**State Hospital Reports.**—The biennial report of the State Hospital at Morganton shows a balance of \$58 remaining from the appropriations. The number of patients in the hospital December 1 was 1,072. A per capita allowance of \$145 is asked of the forthcoming legislature, and appropriations of \$40,000 for a new building to accommodate 100 additional male patients, and \$5,000 each for two pavilions for tubercular patients. During the biennium the hospital has been free from epidemics. Less than one-fourth of the deaths in the two years were due to some form of tuberculosis. The directors adopted resolutions testifying to their high regard for their superintendent, Dr. P. L. Murphy, and hoping that he would soon be restored to health and be able to return to his duties. —The directors of the State Hospital at Raleigh, in their biennial report, eulogize the economical management of the hospital at the hands of Superintendent Dr. James McKee, suggest the imperative need of more land for the development of the "colony system" and report a very large amount of cures for the term. They announce the completion of a new wing which adds more than 100 beds to the capacity of the hospital.

#### OHIO.

**Typhoid Due to Infected Milk.**—The State Board of Health has investigated an outbreak of typhoid fever at Kenton and traces most of the cases to milk supplied by a single dairy, several cases of typhoid fever having occurred at the home of the proprietor. It could not be ascertained whether the milk was contaminated by water, flies, direct handling or in some other way.

**Anti-Expectoration Ordinance.**—The board of health of Youngstown has had prepared 100 signs which are to be posted in conspicuous places. The signs read as follows: "Don't spit on the sidewalk—Fine \$2.00. Board of Health." —The physicians of Chillicothe have adopted resolutions protesting against the habit of expectorating on sidewalks, and have begged the mayor to use his authority to enforce the ordinance against expectoration.

**Hospital Notes.**—During the year ended November 15, 1,301 patients were treated at the Dayton State Hospital; 246 were received during the year; 85 were discharged cured and 37 improved, and 73 died. The per capita cost for the year was \$144.99. —The Emergency Hospital at Wapakoneta was opened to the public January 1. The second floor of the Hunter block has been donated for this purpose and equipped with cots, medicine and surgical instruments.

**Northwestern Physicians Meet.**—At the sixty-second semi-annual meeting of the Northwestern Ohio Medical Association, held in Lima, December 14, the following officers were elected: Dr. William A. Dickey, Toledo, president; Drs. Solomon B. Hiner, Lima, and Martin Stamm, Fremont, vice-presidents; Dr. Edwin A. Murbach, Archbold, secretary (re-elected), and Dr. William S. Phillips, Belle Center, assistant secretary and treasurer (re-elected). The next meeting of the association will be held in Toledo.

#### PENNSYLVANIA.

**Hospital for Inebriates.**—Decisive steps are being taken by the Medical Society of the State of Pennsylvania to establish a state hospital for victims of the liquor and drug habits. A committee was appointed, which will draft a bill to be introduced in the Senate and House of Representatives.

**Scranton Epidemic.**—There have been 35 more typhoid fever cases reported, making a total of 996, and three more deaths have been recorded, making a total of 84. Dickson City, four miles from Scranton, reports 13 typhoid cases. The water supply there is the same as that supplied to North Scranton.

**Hospital Site Selected.**—Drs. Robert G. Le Conte and Henry Tucker, Philadelphia, and Henry L. Orth, Harrisburg, a committee appointed by State Health Commissioner Dixon to select a site for a state miners' hospital in the Panther Creek Valley have selected Moser's field, midway between Tamaqua and Lansford.

**Agreement on Vaccination.**—The health and school boards of Altoona have reached an agreement over the enforcement of the vaccination law. Instead of the health board's physician performing the third vaccination, it may be done by the family physician in the presence of the health board's physician, according to the ruling of Dr. S. G. Dixon, state health commissioner.

**Hospital Notes.**—It is reported that Joseph Ratti, who died recently in Italy, made ample provision for the maintenance for the hospital at Bloomsburg, which he was instrumental in founding, and which bears his name. —Braddock General Hospital has become so crowded that it has been decided to build an addition at a cost of \$150,000, which will increase the capacity of the hospital from 50 to 200 patients.

#### Philadelphia.

**Children's Ward Opened.**—The new children's ward recently erected at the Methodist Episcopal Hospital was formally given to the institution last week. It has a capacity of 50 cribs and is equipped with all the modern improvements and conveniences. About \$4,000 have been subscribed by charitable friends of the hospital, one donor alone volunteering to fit out 10 cribs.

**Filters to be Completed.**—The contract for the completion of the preliminary filters at the Belmont plant has been awarded. The work under contract consists of the construction of rough filters to scour the water so that it may be passed through the final filters at a greater rate than 3,000,000 gallons per acre per day. Slow sand filters are normally operated at the 3,000,000-gallon rate, but by prefiltration it is said that this rate can be doubled.



**Hospital for Gastric Disease.**—The American Hospital for Diseases of the Stomach, at 1809 Wallace Street, was formally opened January 3. The hospital has been established for the treatment of patients suffering from gastrointestinal ailments and also for the scientific study of such diseases. The hospital at present has 30 ward beds and a number of private rooms. A free dispensary, open every day, is operated in connection with the hospital.

**Typhoid Epidemic.**—Typhoid is epidemic in the city, according to the department of health. There have been 343 new cases recorded, an increase of 91 over last week. Dr. A. C. Abbott, chief of the bureau of health, charges the blame to the long delay in completing the filtration system. He says that the great majority of cases are reported from the unfiltered water districts. Every hospital in the city is treating typhoid fever cases, and some of them are crowded because of the great increase in the disease. This is especially true of the hospitals in the northeastern section of the city. The Episcopal Hospital has 123 typhoid patients; St. Joseph's, 30; St. Mary's Hospital, 30, and 12 are in the Frankford Hospital. All the officials agree that filtered water has accomplished a great deal in keeping the typhoid rate down to a minimum in districts where it is supplied. That this is true is shown by a comparison of the number of cases that were reported in the year just ending in the filtered and unfiltered districts. The total number of persons who contracted the disease in 1906 was 9,751, with 1,061 deaths. The best results, as expressed in figures, are found in the Roxborough filtered water districts, where the cases were only a trifle more than 2 per 1,000 of population. The total population served is 113,755. The figures relating to the unfiltered districts point unerringly to the cause of the disease. The worst of these four districts, Wentz Farm, is the only one that receives its water supply from the Delaware River at a point three miles below the Torresdale filter plant. This district, with a population of 706,713, had 12 cases to each 1,000 of population.

#### UTAH.

**Statistic Gatherers to be Paid.**—The State Board of Health announces that a bill will be introduced into the legislature providing expenses or a fee or both to be paid to the physicians of the state who gather vital statistics and report them to the State Board of Health.

**Smallpox.**—Smallpox is reported to be epidemic in Monroe, Sevier County, and Dr. F. E. Clark, state sanitary inspector, has been sent to make an investigation. At present there are more than 90 cases in a town of 1,800 inhabitants.—About 6 cases of smallpox are reported in Heber City. Dr. Clark reports 50 very light cases at Midway and Charleston, the entire infection having been imported from Park City.

**New Medical Practice Act.**—At a meeting of the legislative committee of the Utah State Medical Association, December 22, it was determined to urge the passage of a new medical practice act, which strengthens the present act where weak and provides for reciprocity in regard to the issue of license or examination. A special meeting has been called for January 16 to consider the proposed new legislation. It is hoped that there will be a full attendance of the profession.

#### VIRGINIA.

**New Hospital for Roanoke.**—Dr. T. H. Strohecker of Salem has entered into an agreement with the physicians and surgeons of Roanoke to build and equip a general hospital in that city on property secured on Campbell Avenue. Those connected with the movement are the following: Drs. Leigh Buckner, Ralph W. Brown, H. M. Wallace, Louis G. Richards, Edward C. Ambler and G. Madison Maxwell, Roanoke; Dr. John O. Boyd, Winchester, and Drs. Stuart McGuire, William S. Gordon and John Dunn, Richmond.

**New Proposed Health Regulations.**—The State Board of Health has passed a bill in which are incorporated the proposed new health regulations. Under the provisions of this bill each county will have a public health commissioner, appointed by the circuit judge and paid at the rate of 2 cents per annum for each citizen in the county. The state board has the power to discharge health officers who have not performed their work, and to bring action in the courts to enforce the health laws, to make sanitary inspection and surveys and to establish quarantine. The bill provides that in every county there shall be a county health commissioner and in every city a department of health and charities composed of a board of three commissioners. Under the present health law the county commissioners are members of the county board of health *ex-officio*.

#### GENERAL.

**American Physio-Therapeutic Association.**—Physicians who are interested in the study and legitimate practice of the physical (drugless) therapeutic methods, notably electrotherapy, phototherapy, mechanotherapy, hydrotherapy, suggestion and dietetics, are invited to join the American Physio-Therapeutic Association. Particulars may be secured from the secretary, Dr. Otto Juettner, 8 West Ninth Street, Cincinnati. The other officers for the ensuing year are: President, Dr. H. H. Roberts, Lexington, Ky.; treasurer, Dr. George H. Grant, Richmond, Ind.

**Ohio Valley Physicians Meet.**—The Ohio Valley Medical Association, at its eighth annual meeting in Louisville, November 14 and 15, urged the legislature to show its recognition of the deviser of ovariectomy, Dr. Ephraim McDowell, Danville, by taking steps to have his statue placed in the Hall of Fame. The following officers were elected: Dr. Brooks F. Beebe, Cincinnati, president; Drs. J. Leaming Wiggins, East St. Louis, Ill., Curran Pope, Louisville, and Albert E. Sterne, Indianapolis, vice-presidents, and Dr. Benjamin L. W. Floyd, Evansville, Ind., secretary (re-elected). The association decided to hold its 1908 session at Evansville.

**Seaboard Medical Association.**—The Seaboard Medical Association held its eleventh annual meeting at Wilson, N. C., December 13 and 14. Dr. Albert Anderson, Wilson, presided in the absence of the president, Dr. John C. Rodman, Washington. Dr. Robert L. Payne, Norfolk, Va., was elected president; Drs. Julian M. Baker, Tarboro, N. C., Philip St. L. Moncure, Norfolk, Va., and E. Thomas Dickinson, Wilson, N. C., vice-presidents; Dr. John R. Bagby, Newport News, Va., secretary (re-elected); Dr. Israel Brown, Norfolk, Va., treasurer; Dr. Isaac W. Lamm, Lucama, N. C., orator. The session of next year will be held in Norfolk, Va.

**Psychopathologist and X-Ray Operator Wanted.**—The Cook County (Ill.) board has created the position of psychopathologist for work at Dunning and will also appoint an x-ray operator for the Cook County Hospital. Both of these positions, as announced in Illinois news last week, page 145, are open to all competent men. The first position carries with it a salary of \$2,400 a year and that of the x-ray operator \$900, in addition to maintenance in both cases. The examination for psychopathologist takes place February 12, instead of the date mentioned last week. The examination for the x-ray operator will be held January 23. Applications must be filed with the Civil Service Commission, room 312, 218 La Salle Street, Chicago, before the date of examination.

**Congress on Dermatology to Meet.**—The sixth International Dermatological Congress will meet in New York City Sept. 9 to 14, 1907. THE JOURNAL has noted from time to time the progress of preparations for this convention. The Section on Cutaneous Medicine and Surgery of the American Medical Association has had its part in the invitation and preparations. The following physicians compose the organization committee for America:

John T. Bowen, Boston.	Milton B. Hartzell, Philadelphia.
Andrew P. Biddle, Detroit.	J. Nevins Hyde, Chicago.
Edward B. Bronson, New York.	George T. Jackson, New York.
L. Duncan Bulkley, New York.	Sigmund Lustgarten, New York.
R. R. Campbell, Chicago.	D. W. Montgomery, San Francisco.
William T. Corlett, Cleveland.	Prince A. Morrow, New York.
I. Dyer, New Orleans.	William A. Pusey, Chicago.
George T. Elliot, New York.	Francis J. Shepherd, Montreal.
Martin F. Engman, St. Louis.	Henry W. Stelwagon, Philadelphia.
John A. Fordyce, New York.	Grover W. Wende, Buffalo.
George H. Fox, New York.	James M. Winfield, Brooklyn.
Thomas C. Gilchrist, Baltimore.	Joseph Zeisler, Chicago.
W. S. Gotthell, New York.	

Further information may be obtained from the American secretary-general, Dr. John A. Fordyce, 80 West Fortieth Street, New York City.

#### CANADA.

**Vital Statistics of St. John, N. B.**—During 1906 the total number of deaths occurring in St. John, N. B., was 775, as compared with 762 in 1905. Ninety deaths were caused by tuberculosis. There were 472 cases of infectious diseases, with 44 deaths.

**Doctor's Name Must be Restored to the Ontario Register.**—The courts have ordered that the name of Dr. Alexander Crichton, Castleton, Ontario, shall be restored to the register of the Ontario College of Physicians and Surgeons, whence it was removed last summer for alleged unprofessional conduct. Dr. Crichton having advertised a cure for la grippe, which would also cure other diseases.

**Manitoba's Health in 1906.**—There were 1,160 cases of typhoid fever in Winnipeg in 1906, as against 1,406 in 1905. The deaths were 109. In other points in Manitoba the deaths from this disease numbered 266. Only 12 cases of smallpox occurred in the province during the year, 7 of these being in



Winnipeg. Dr. Leeming, Winnipeg's bacteriologist, made 6,314 tests in 1906; of this number 1,561 were diphtheria swabs, and 458 sputa for tubercle bacilli. The blood tests for typhoid fever numbered 511.

**Typhoid Fever in Montreal.**—There are about 1,000 cases of typhoid fever in Montreal and the immediate surrounding municipalities. The bad quality of the Montreal drinking water is the cause. Two young practitioners have succumbed to the disease within the past week. Hospitals are full and nurses are very much in demand. Dr. E. Pellitier, secretary of the provincial board of health is investigating the outbreak and will shortly make a report thereon. Dr. L. La-berge, Montreal, municipal health officer, states that the cases have originated in three wards of the city.

**Personal.**—Dr. R. E. McConnell, son of Dr. J. B. McConnell of Montreal, is visiting his father, on his return from the west coast of Africa, where for the past two years he has been studying blackwater fever, at the instance of the Liverpool School of Tropical Medicine. After a few weeks in Canada, Dr. McConnell will return to Africa and continue his studies.—Dr. Ernest A. Hall, Victoria, B. C., is a candidate in the interests of the Canadian Labor Party in the British Columbia legislative elections.—Professor Ernest Rutherford, McGill University, Montreal, is to succeed Professor Schuster as Langworthy professor and director of physical laboratories at the University of Manchester, England.

**More Money for War on Tuberculosis in Canada.**—The Canadian Association for the Prevention of Tuberculosis recently waited on the prime minister, Sir Wilfrid Laurier, and the finance minister, the Hon. Mr. Fielding, asking for a grant of \$5,000 in order the better to prosecute the work of preventing the spread of tuberculosis in Canada. The federal government now votes \$2,000 annually for the purpose. The finance minister stated that what they would do in the matter would later on appear in the estimates for the coming financial year.—The urgent need of a consumption sanatorium for Montreal was the chief item discussed at the recent annual meeting of the Montreal League for the Prevention of Tuberculosis. The cases reported this year to the society numbered 256 as compared with 244 last year.

**Medical Societies.**—The following have been elected officers of the Thunder Bay Medical Association: Hon. President, Dr. T. S. T. Smellie, Fort William, Ont.; president, Dr. C. J. H. Chipman; vice-president, Dr. H. E. Paul; secretary, Dr. J. D. Chisholm; treasurer, Dr. J. A. Crozier; executives, Drs. J. M. McGrady and C. E. McCartney.—The Hamilton Medical Society held its annual meeting December 7, when the following officers were elected: President, Dr. Ingersoll Olmsted; vice-president, Dr. Storms; corresponding secretary, Dr. Davey; recording secretary, Dr. Hess; treasurer, Dr. McNichol.—The London (Ont.) Medical Society held its annual meeting December 11. The following officers were elected for the ensuing year: President, Dr. E. Seaborne; vice-president, Dr. W. J. Stevenson; secretary-treasurer, Dr. U. E. Bateson.—A new medical society has been formed in Goderich, Ont.

**Personal.**—Dr. McNaughton of the London (Ont.) Provincial Hospital has been transferred to Mimico.—Dr. George W. Badgerow, formerly of Toronto, has gone to London, Eng., to practice.—Dr. W. H. Lowrey, formerly of Guelph, Ont., has commenced practice in Toronto, after postgraduate work in Europe.—Dr. F. L. Grasett, Toronto, has been elected by acclamation to represent the graduates in medicine in Trinity College council.—Dr. Neil McPhatter, New York, president of the Canadian Club of that city, visited Toronto recently.—Drs. Arthur Rosseau, Montreal, and C. S. Grondin and Arthur Simard, Quebec, have been elected officers of the French Academy by the government of France.—Dr. Charles Hodgetts, secretary of the Ontario Board of Health, announces that if Ottawa, Ont., decides to erect a sanatorium for consumptives the Ontario government will contribute \$4,000.—Dr. J. L. Potter, formerly of Glenwood, N. F., has gone to London, Eng., to study.—Dr. H. E. Langis, Vancouver, B. C., has gone to the south of France for several months.

**Hospital News.**—During 1906 50,441 patients were treated at the Montreal General Hospital, 3,459 in the wards and 46,982 in the outdoor departments. During December 279 patients were admitted and 253 were discharged. There were 27 deaths in the month, 16 of which occurred within three days of admission.—The management of the Western Hospital, Montreal, has appealed to the public, asking that assistance be granted to complete the new hospital building which is to cost \$60,000.—The annual meeting of the St. Catherines (Ont.) General and Marine Hospital Association was held December 27, when plans were considered for a new hospital

building to contain 60 beds.—Edmonton, Alberta, is to erect a new hospital to cost \$75,000.—Fort William, Ont., is considering the erection of a new hospital to cost \$40,000.—The Isolation Hospital in connection with the Vancouver (B. C.) General Hospital has been completed.—The Alexandra and St. Paul's contagious hospitals, Montreal, are requesting the Montreal city council to increase the annual grants from \$15,000 each to \$30,000 each.

#### FOREIGN.

**Compulsory Notification of Tuberculosis in Scotland.**—At a meeting of the Edinburgh town council Dec. 18, 1906, it was resolved to make the notification of tuberculosis compulsory. It is estimated that the cost to the city will be about \$1,500 a year.

**Collection of Medical Medals and Coins.**—The heirs of Dr. J. Brettaner of Trieste, have presented to the Vienna university the valuable and unique collection of medical medals and coins which he had been gathering for years. They presented with it a small endowment for the maintenance and enlargement of the collection.

**Herman Cohn's Bequests for Prizes in Ophthalmology.**—The universities at Heidelberg, Berlin and Tübingen have each received 10,000 marks (\$2,500) from the estate of the late world renowned ophthalmologist, Herman Cohn of Breslau. The income from each endowment is to be awarded as a prize for research in ophthalmology.

**Dentist Appointed for Public Hospital.**—The new Rudolf Virchow Hospital at Berlin has had a dentist added to the working force. It is said to be the first time in Berlin and probably in Germany that dentistry has been added as a feature of hospital treatment. M. Carow, the official medicolegal expert, is the first dentist to be appointed to the position.

**Postponement of Third Latin-American Medical Congress.**—The third medical congress and exhibition of the Latin states of Southern and Central America was to have convened at Montevideo, January 13, but the date for the opening has been postponed to March 17. Uruguay has been making extensive preparations for the congress, having enlarged the scope of the exhibition to include everything bearing on public health, hygiene, forestry, protection of land, and the problems of sanitation of cities, etc.

**Index to Russian Medical Literature.**—According to its annual custom for twenty-one years, the *Med. Obozryenie* of Moscow presents in one of its last issues for 1906 (No. 22), the complete index of all the current medical literature in the Russian periodicals for the year before, 1905. It is indexed by subjects, with the names of the authors in black letter type, and will be found valuable for bibliographic references. The literary output in Russia is large, but the more important works are generally published in some journal in western Europe simultaneously with their publication in Russian.

**Death of a Valiant Anti-Nostrum Agitator.**—THE JOURNAL has mentioned from time to time the warnings issued by the mayor and board of health of Carlsruhe, Germany, in regard to nostrums advertised in the local papers. The public is informed in regard to the composition of the remedy, and warned against paying the excessive price usually charged for what costs, as a rule, only a few cents to manufacture. The warnings and notices were collected and published in book form in 1905 (G. Braun's Verlag, Carlsruhe), the pamphlet containing 148 pages with notices in regard to 254 different nostrums or "cures." (Warner's Safe Cure is included in the list.) Few boards of health are so ably seconded by the municipal authorities as at Carlsruhe, and the profession learns with regret of the death of the mayor of the city, Oberbürgermeister Schnetler, at the age of 60. There was no official board of health when he first assumed office, and its organization was due in large part to his encouragement.

**The Vienna Volunteer Emergency Corps.**—Vienna has had for twenty-five years an organized system of medical and trained lay helpers and ambulances for first aid in cases of accidents, suicides and other emergencies. More than 14,000 persons have attended the practical courses in first aid in emergencies, and the service now has an official enrollment of 21 physicians, 6 clerks, 18 drivers and 8 attendants, besides the trained lay help. The service was organized immediately after the burning of the Ring Theater at Vienna, where about 800 persons lost their lives, many of whom, it was felt, might have been saved if first aid measures had been available. The Vienna corps has served as a model for others elsewhere, and



its silver jubilee was celebrated recently with much ceremony. It has received many donations and bequests, so that the service is being constantly extended and an emergency hospital is now contemplated. The record has averaged about 80 cases a day with a total of 17,000 cases in which first aid measures were required.

**Imposing Public Monument to Rubio at Madrid.**—The *Siglo Medico* for December 15 contains a full page illustration of a monument recently unveiled by the king at Madrid to the memory of the eminent Spanish surgeon, physician, and medical journalist, F. Rubio. The monument stands in a public square, opposite the surgical clinic and institute which he founded. He is represented seated at ease; his flowing beard and the academic robe thrown across his knees enhance the dignity of the large figure. A low balustrade around the back of the platform bears engraved in large letters two rows of names of the most illustrious members of the profession in Spain in his day—1827-1902—as if he were presiding at a meeting. He holds a scalpel and bistoury in one hand, and a pen in the other, while some of his published works lie at his feet. On the broad steps leading up to the platform is a female figure in flowing robes, bearing an infant in her arms, with an older child by her side, typifying Humanity, and the generations yet to come. The monument is of marble, but the group on the steps is of bronze, symbolical of eternal admiration. Rubio was the founder and editor of the *Revista Ibero-Americana de Ciencias Medicas*, a large and handsome illustrated medical and surgical quarterly. The initiative for erection of the monument came from A. Pulido, one of the editors of the *Siglo Medico*, who was also instrumental in having a bust of Benavente, another prominent member of the profession, placed not long ago in another public square.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Dec. 15, 1906.

#### Conference on Hospital Abuse.

An important conference, the first of its kind, on what has been long felt in the profession to be a growing evil, hospital abuse, was held in London, Dec. 6, 1906. The chair was taken by Sir William Church, and there was a large attendance of hospital representatives from all parts of the United Kingdom. Out of 272 hospitals asked to appoint delegates, 149 did so, the number appointed amounting to 180. Fifty-six hospitals have the matter still under consideration, and 29 stated that they do not propose to take action. The chairman said that the present conditions in our great hospitals are unsatisfactory. On the one hand hospitals appeal for funds to support their work, and on the other, there is a widespread feeling that there are many evils connected with hospital practice. The out-patient system as now carried on is different from that intended by those connected with hospitals during the last 60 to 80 years. As early as 1682 Bartholomew's Hospital had to face the question of the growth of out-patients, and since then the question has been a burning one. Now the difficulty has become greater from its extreme complexity. He deprecated many of the appeals made by hospitals for funds which are far from dignified. What is wanted is coöperation between the hospitals, not competition. The majority of the medical men feel that there is a grievance in connection with hospital relief. Sir William Church has always been struck with the difference between the relation formerly existing between the family physician and the heads of families, and that relation now. Formerly the family physician treated the domestic dependents of the family. Now they are sent to a hospital, generally to a special hospital, although the patient is suffering from a disease which might as well have been treated in a general hospital. A resolution approving of the principles welcoming further consideration of the principles contained in the proposals drawn up by the Joint Hospitals Committee was carried unanimously.

#### Heavy Damages for Impure Drinking Water in a Hydropathic Establishment.

An action was brought by a woman against a physician, proprietor of a hydropathic establishment at Great Malvern, for damages for loss and expenses incurred by her, owing to breach of warranty and negligence of the defendant in warranting that the drinking water of his establishment was pure and fit for drinking purposes, whereas it was contaminated with sewage, by drinking which she and her two sons contracted typhoid fever. The physician denied negligence which caused the damage, but admitted breach of warranty, and paid \$6,250 into court. The plaintiff went with her two sons,

who were at Eton, to the defendant's establishment, and contracted typhoid fever, from which one son died and she and the other son were ill for a long time. The plaintiff contended that she owed a duty to others, and that the case ought to be investigated. An arrangement was come to between the parties by which the defendant paid all the expenses of the plaintiff and all costs as between solicitor and client. Counsel for the defendant told his client that he was liable on a warranty, however careful he had been to avoid the damage which the plaintiff had suffered. The defendant contended that he was not responsible at all, and that the damage was owing to negligence of the local health authorities, against whom he is now bringing action.

#### Enforcement of Test Examinations of the Throats of Children for Diphtheria Bacilli.

Throughout the past summer difficulties have arisen during the prevalence of diphtheria in various London districts from physicians giving certificates of freedom from infectiousness in children who at the time are carriers of diphtheria. The matter was discussed at a meeting of the Metropolitan Branch of the Incorporated Society of Medical Officers of Health. A resolution was passed declaring that it is not possible in the absence of a bacteriologic examination to decide that a child is free from the infection of diphtheria, and that in the event of the prevalence of diphtheria in any district, any child excluded from school for sore throat should not be re-admitted without a medical certificate of freedom from infection based on a bacteriologic examination. Since then, the London County Council has decided to require such examination. However, in informing the health officers of the metropolis of this fact, the educational medical officer of the council states that he knows of several cases of "carriers" where physicians have within a few hours submitted swabs to various laboratories with negative results. The council has issued cards to teachers, who will give them to children sent home from school. These cards state the reason why the child is excluded and that it is necessary before it is re-admitted that a bacteriologic certificate be obtained from the family physician or from the health officer, which the latter will give without cost.

#### Fifth Interim Report from the Expedition on the Congo of the Liverpool School of Tropical Medicine.

Like the other reports of the expeditions of the Liverpool School of Tropical Medicine, this one contains much valuable information. It is written by the members of the expedition, Drs. J. E. Dutton and J. L. Todd, with the collaboration of Mr. R. Newstead. While on the expedition Dr. Dutton contracted recurrent fever, to which he succumbed. In 1904 Dr. Dutton and Dr. Todd reported that they had discovered a spirillum to be the pathogenic cause of human tick fever in the oriental part of the Congo Free State, and that they had infected monkeys with spirilla through the bites of ticks. The disease in man they found to be a relapsing fever. The spirochete responsible for it appears to be identical with the *Spirillum obermeieri* of the relapsing fever known in Europe. In one experiment they succeeded in transmitting to another animal the spirillum by the bites of young ticks hatched in the laboratory from eggs laid by infected parents. In the present report the history of human tick fever in the oriental province of the Congo Free State is well described. It appears that the great explorer, Livingstone, suffered from annoyance by ticks while at Nyangwe in 1871. But the fact that ticks communicated this disease to man was unknown before the investigations of the expedition. Natives who said they were ill from the bites of these insects were thought to be malingering, and "tick fever" was confounded with malaria. It seems that one attack of tick fever confers immunity. In those well cared for the mortality is not great. The incubation period from the bite to the first symptoms is about a week. However, symptoms are said sometimes to follow within a few hours. The fever is of sudden onset and in no case preceded by a rigor, differing from the onset of relapsing fever in colder climates. There are great prostration, severe backache, bone ache and headache, usually frontal. Slight diarrhea is fairly constant. Here, again, the symptoms differ from the relapsing fever of cold climates, in which the vomiting may be incessant and constipation is the rule. There are usually three or four attacks, each lasting from three or four days, with intervening periods of from five to nineteen days. The attacks often end in more or less profuse perspiration. The spleen is sometimes enlarged. The complications observed were herpes, epistaxis and hiccough. Although there is great prostration during the attack, comparative health is quickly regained after defervescence. The authors also describe the disease in animals—the rabbit, guinea-pig, rat and monkey.



## Pharmacology

### Physicians and the Food and Drugs Act.

The provisions of the new Food and Drugs Law have excited interest among druggists and among the manufacturers of proprietary medicines, especially among the smaller firms making the so-called "patent medicines." Many queries as to the interpretation of the law have been addressed to the Department of Agriculture and have been answered in a way which indicates the policy of the department, although these answers are merely opinions that do not have the force of law. Some of the opinions which have been published are of interest to physicians, although few of the regulations affect them directly. Preparations manufactured according to the formula for well-known proprietaries such as Godfrey's cordial, and sent out with a fac-simile of the original circular wrapped around them, must state that the circular is a fac-simile of the original circular. If the circular contains unwarranted claims as to the cure of any disease it will conflict with the law. The appearance of the word "cure" on the label would in practically every case constitute misbranding through misrepresentation. "A picture conveying an idea which can not be borne out through the use of the medicine is not permitted." The manufacturers of proprietary preparations are not required to disclose their formulas, but must comply with the law in regard to the presence of alcohol and other designated drugs.

The questions asked indicate considerable anxiety in regard to the requirement to label the preparation with the amount of alcohol, etc. The name of the alcohol or other designated ingredient must be put first and printed in eight-point capitals. The percentage of alcohol must be stated and the amount of other drugs must be given in grains per ounce or minims per fluid ounce. Some manufacturers are afraid that the name alcohol may prejudice people against the preparation and ask if they may not substitute cologne spirits, grain alcohol or some other synonym. The answer given to this query by Dr. Lyman F. Kebler is: "The law uses the word 'alcohol' and no other word will be permitted to express the quantity of this product present."

The amount of alcohol in the finished product must be stated irrespective of whether it is introduced as alcohol or as a constituent of some other ingredient used in making the medicine. The presence of wood spirit or methyl alcohol is not permitted. The law applies to external as well as internal remedies. Remedies used for the eradication of lice and similar vermin are subject to the provisions of the law, according to Kebler, who says: "Lice and similar vermin are classed among the parasitic diseases by medical men." According to Secretary Wilson, hair tonics, cold cream, tooth powders and dentrifices, and also those soaps, preparations of bay rum and of talcum powder for which claims of curative power are set forth on the labels, must comply with the law. Names such as "castor-oil pills" or "cactus oil" applied to preparations which do not contain these ingredients are in conflict with the law. "Liver berries" or other name of an article that does not exist can not be used on the label even with the addition of the word "compound" as a part of the title. A preparation put out as "mandrake pills" must not contain other active ingredients, but a preparation may contain other ingredients if the word "compound" be added as part of the title. In such a preparation the ingredient which gives the distinctive name "shall be an active constituent of the mixture and shall be present in as large a proportion as any other active medicinal constituent. For instance, the term 'compound savin oil' may be applied to a mixture of 50 parts of savin oil and 50 parts of French turpentine, or equal parts of savin oil, oil of spike and French turpentine. Moreover, the term should be used thus: 'Compound savin oil' and not 'savin oil compounded.'"

A label which contains the name of a physician is improper unless a physician of that name has really some connection with the remedy. Thus "Dr. Koch's German Cure" must be German in some sense, and Dr. Koch must have been at some time connected in some way with the preparation.

It is impossible to say what effect these regulations will

have on the sale and use of "patent medicines," but it would seem that the more vicious of these remedies ought to be at least greatly restricted in their power to do harm. The physician will have it in his power to learn whether his patients have been taking narcotics under this guise and to point out to intelligent patrons the danger in their indiscriminate use.

Some other regulations affect the physician somewhat more directly. Whisky or brandy sold as medicine must conform to the standard prescribed by the Pharmacopeia and must be at least four years old. It is not misbranding to use common English terms for preparations of the Pharmacopeia as Epsom salts for magnesium sulphate.

There has not been any ruling relative to caramel, glucose, saccharin, etc., in connection with pharmaceutical preparations, but their use in any way that might mislead or deceive (or so as to conceal deficiencies or defects in quality or strength) is forbidden.

If a coating purports to be chocolate—and, as is frequently the case, contains no chocolate—the statement that the pills or tablets are chocolate coated will be deemed misbranding.

In case a prescription calls for Squibbs' or Parke, Davis & Co.'s Ergot, or Fairchild Bros.' Essence of Pepsin, or Sharp & Dohme's Fluid Extract of Digitalis, it will be considered a violation of the law to substitute some other make.

### Nostrums in Great Britain.

The London *Lancet* is publishing a series of articles on "The Trade in Secret and Proprietary Medicines" by a barrister-at-law. In these articles the writer refers specifically to certain proprietary preparations that are being advertised to physicians, in a way that is not to the credit of the preparations, on the contrary the comments are of such a nature as to injure their sale, at least on physicians' prescription. The same tactics were adopted by the injured parties as have prevailed on this side, as will be seen by the following from the *Lancet*, December 1:

"We have received from several manufacturers copies of an anonymous communication which has been addressed to them with reference to the previous articles of this series. It has been printed in imitation of typewriting and probably has been distributed broadcast. It runs as follows:

"Have you seen the attack on Owners of Trade Marks and Proprietary Articles in the *Lancet* of November 17, pp. 1390, 1391, 1392? Is this calculated to induce Advertisers to continue their Advertisements in this Journal?

"We will answer this amiably intended question from our point of view. These articles constitute no attack whatever. They are legitimate criticism of an existing state of affairs with which some people may agree and in which others may see dangers. The persons likely to suffer from the publication of the articles are not those of our advertisers to whom these anonymous communications have been addressed—as they have perceived. Every journal which keeps a conception of its public duties before it has to recognize—at any rate in this country—that criticism honestly and carefully directed at all the various phases of contemporary life must sometimes fall on individuals or classes whose advertisements actually help to swell the revenues of the journal. We invite our anonymous friend to come out of his shell (whence we could extract him in five minutes if we thought it worth while) and to indicate to the medical world what course he, as a proprietor or an editor, is taking, or is prepared to take, in respect to the advertisements of reputable firms. Would he suggest that all public policy must be shaped for him by his advertisers, and does he think that honorable manufacturers expect and desire this? We appeal to our critic's pocket as an inducement for him to take to the open. There are certain kinds of advertisers who would be glad to know where they can obtain not only publicity in the advertisement columns, but nothing save praise from the editorial pen."

### The Multiplicity of Names for Identical Preparations.

In an article on synthetics in the *Journal of the Michigan State Medical Society*, Dr. J. O. Schlotterbeck, Ann Arbor, says: "Suppose some genius conceived the plan of placing on the market common cane sugar under the name of 'sugarine,' and advertised it in most glowing terms as the most wonderful sweetener the world ever knew at a price of \$1.10 a pound. Another, quickly recognizing the credulity of the public, exploits cane sugar as 'sweetol,' and makes additional arguments why it should be used in preference to others, and sold at 75



cents per pound. Another places 'Ducitol,' at 50 cents per pound, and, finally, an honest dealer offers the same article at 5 cents per pound as 'saccharum' or sugar. What would you think of the cook who would use several of these brands of sugar in making your pastry? An exactly similar condition exists in medicine to-day. The pharmacopeial synthetic hexamethylenamina is on the market to-day under the name urotropin, cystogen, aminoformin, formin, uritone, urisol, cystamin and so on, at prices ranging from 10 cents to \$1.10 per ounce. It is not uncommon for physicians to prescribe one or more of these fancy-named, but identical synthetics in the same mixture, expecting to get the combined action of different urinary antiseptics. It is also true that patients have been treated first with hexamethylenamina under one name and then with the same article under another name, in the expectation that looked-for results will finally manifest themselves.

"By prescribing hexamethylenamina, the physician receives an article that is uniform and whose purity and quality can be controlled by the tests of the Pharmacopeia. Besides that, he is then not a party to the fostering of a graft, which is possible by prescribing the same article under a fancy-registered name and sold at a price ten-fold greater than the pharmacopeial article. Surely, no physician wishes to inflict an unnecessary hardship on himself, or pharmacist or patient."

#### The Control of Proprietary Remedies in France.

The inability to control the purity and identity of the numerous new chemicals introduced into medicine, many of them of a proprietary character, has led the French Pharmacists to propose the establishment of a central laboratory to test these drugs.<sup>1</sup> The Paris Pharmaceutical Society appointed a committee in 1904 which, after considering various remedies, decided in favor of the simpler plan proposed by the Swiss pharmacist, Golaz: That manufacturers should be requested to furnish with each package of the compounds which they manufacture, data relating to (a) the name and exact chemical synonym. (b) Tests, establishing identity. (c) Melting and boiling point. (d) Solubility. (e) Incompatibilities. (f) Dose. (g) Precautions to be taken to sterilize and keep the substance. A letter embodying these requests has been addressed by a committee of the Swiss Pharmaceutical Society to the various manufacturers and similar action has been taken by various foreign pharmaceutical societies and the Pharmaceutical Society of Paris has, in response to invitations from these societies, taken the action to which it committed itself two years ago in accepting the report of its committee. It will be noted that the data called for are essentially similar to those which are required by the Council on Pharmacy and Chemistry of the American Medical Association.

#### Work of the Minnesota Dairy and Food Commission.

Bulletin No. 20 of this commission gives an account of some of the work done on "patent medicines" "for the purpose of demonstrating the great need of an adequate law governing the manufacture and sale of these products. The department does not condemn all 'patent medicines' *per se*, but there are so many fraudulent and injurious 'dopes' on the market, that radical measures should be adopted by the legislature of this state to compel manufacturers who use certain ingredients, at least to make a plain statement of facts on the label."

Reports, more or less complete, of the analysis of a number of preparations are given. The preparations examined included so-called dyspepsia cures, cough and consumption cures, cholera and diarrhea remedies, and bitters and tonics of various names. These show from 10 to 50 per cent. of alcohol present in the samples examined. Codein, croton oil, chloroform, morphin, salicylic acid and strychnin were among the powerful drugs found in the various preparations.

It is encouraging to see official scientific bodies like the Minnesota dairy and food commission taking up this subject, and it is to be hoped that this beginning will be followed by prompt action by the legislatures not only of Minnesota, but of other states as well.

1. Bulletin de la Société de Pharmacie de Bordeaux, Oct., 1906.

## Correspondence

### The Venereal Peril.

WILMINGTON, DEL., Dec. 23, 1906.

To the Editor:—Anent your editorial on "The Venereal Peril" in THE JOURNAL, December 22, I might relate my experience along the line of "education." About four years ago I delivered before the students of our state college two lectures on venereal diseases. The lectures were attended by all the students and listened to very attentively. When the first lecture was delivered, the students, eager for unsavory information, crowded the lecture room. Expectation of "fun" was written on every face, and it seemed that all were prepared to make the most of the occasion of listening to utterances which they can enjoy only among themselves. As the lecture progressed, however, the expression became more and more serious, and, when the dangers lurking in gonorrhea and syphilis were unraveled, many a face turned pale and many a listener became thoughtful. Vice was presented to them in its natural aspect shorn of all its seductive mysteries, and the decent boy was horrified. So wholesome was the effect of this lecture that the Young Men's Christian Association of the college asked me to repeat it before them. Whether these lectures influenced the morals of the students I do not know, but I do know that the information imparted served as a deterrent to many a boy who hitherto considered gonorrhea as something "not worse than a cold," and syphilis as a readily curable chancre.

This winter I received a request from the Young Men's Christian Association of Delaware College to deliver a series of lectures on venereal diseases before the student body. I delivered two lectures, one on the anatomy, physiology and abuses of the sexual organs, and the other on venereal diseases and the social evil.

The way in which these lectures were received makes me ask: Why should not this be done in every institution where boys and girls are instructed? Surely there is not a state or city in which some physician is not competent to take on himself this missionary work.

A. ROBIN, M.D.

### The Phyletic Factor in Cancer.

CHICAGO, Jan. 4, 1907.

To the Editor:—The zealous search for a parasite in cancer tends to obscure the obvious phyletic factor, illustrated in its distribution and clinical course.

The oldest of the three embryonic layers (epiblast) produces the epithelium of the skin, the central nervous system, and later the anus. The second layer (hypoblast) produces the epithelium of the alimentary canal and associated glands. The last and intermediate layers (mesoblast) produce the connective-tissue structures and the reproductive organs. The mesoblastic tissues complete their development after puberty.

The malignancy and frequency of cancer seem to vary directly with the phyletic age of the various organs, being least in the earliest, greatest in the latest organs. Thus carcinoma is notoriously frequent and malignant in the breast and uterus. The breast, a specialized skin gland, appears with the mammals; the completely fused uterus with specialized cervix appears in the apes—both therefore among the latest organs. Cancer of the skin in general is notoriously benignant compared with that of the breast; cancer of the Fallopian tubes and the vagina (ancient parts of the Müllerian duct) is far less malignant and frequent than that of the uterus. Of the urinary organs the bladder appears first in the amphibians; vesical cancer is more frequent and malignant than the same disease in the more ancient ureter and kidney. In the digestive tract the anus, stomach and large intestine are more liable to carcinoma than the more ancient small intestine. In the male genital tract the prostate, highly specialized in mammals, is the most frequent seat of carcinoma.

The chromatin arrangement in cancer cells, identical with that of genetic cells, also indicates the persistence of reproductive power. The only dynamic agent as yet demonstrated



to possess the power of destroying cancer cells—the Roentgen ray—also destroys the genetic cells, spermatozoa and ova, in the persons of those much exposed to its action. A further argument is found in the normal secretion of metastatic cancer cells, illustrated in the cases where removal of the thyroid for cancer has been followed by cretinism, and this in turn cured by the secretion of secondary thyroid cancers developing elsewhere.

These and similar data indicate that the origin of cancer is genetic rather than parasitic. This conception is further supported by the familiar influence of continued irritation in the origin of cancer; illustrations are found in the pipe cancer of the lip, the scrotal cancer of the English chimney-sweep, in the 201 cases of penile cancer among uncircumcised Hindus in the Madras Hospital, against none among equally numerous but circumcised Mohammedans (both races being equally susceptible to cancer in other parts); by the virtual limitation of skin cancer to the unprotected face and hands (practically unknown in the scalp, protected from sun and wind by the hair); and by many other familiar clinical data. The hyperemia induced by chronic irritation must favor cellular activity.

Such data, while not irreconcilable with a parasitic, strongly suggest rather an intrinsic cause of cancer.

WILLIAM T. BELFIELD.

### The Intermediate Host in Ainhum.

PHILADELPHIA, JAN. 9, 1907.

*To the Editor:*—Thinking that it can not fail to be of interest to many readers of THE JOURNAL, I send you the following excerpt from a letter sent to the American Society of Tropical Medicine, and read at the last meeting of the Council:

BENGUELLA, ANGOLA, W. AFRICA, Oct. 24, 1906.

You will be glad to hear that I have completed my investigation on the life history of *Filaria perstans*. I believe I have demonstrated that the tick, *Ornithodoros moubata*, Murray, plays the same rôle for *perstans* that the mosquito does for *nocturna*, carrying the parasite from man to man by its bite. Perhaps you would like to announce this discovery for me at the next meeting of the society. It will be announced in Paris, Berlin and London. I am publishing a preliminary note on the subject, but just where I do not know yet as I have sent it to my friend Low of London, who helped me during the course of the work with much valuable advice and criticism.

F. CREIGHTON WELLMAN.

As there will be no meeting of the society until March, it seemed best to give Dr. Wellman whatever advantage might arise from an earlier publication of his discovery.

JOSEPH MCFARLAND, M.D.

Secretary of the American Society of Tropical Medicine.

### "Operated."

CHICAGO, Jan. 14, 1907.

*To the Editor:*—In an editorial in THE JOURNAL, Jan. 12, 1907, you draw attention to the improper employment of the verb "to operate," without, however, referring to an article published in THE JOURNAL some twelve years ago (March 9, 1895, page 352) on "The Improper Use in Medical Literature of Certain Words and Phrases." In that essay you will find the objectionable use of "operate" discussed at length—as well as several other improprieties of the kind. Members of a learned profession like ours can hardly afford, even in a careless moment, to encourage the use of expressions that are notoriously incorrect and for which there is no lingual demand.

CASEY A. WOOD.

## Marriages

GEORGE E. TUCKER, M.D., to Miss May Heller, both of Riverside, Cal., January 1.

PAUL T. HOPE, M.D., to Miss Harriet Clawson, both of Mercer, Pa., December 27.

GEORGE W. TAPE, M.D., to Miss Emma Langenhagen, both of Arrowhead, Cal., recently.

BERNARD H. NICHOLS, M.D., to Miss Myrtle E. Smith of Ravenna, Ohio, January 1.

HENRY A. LEAMING, M.D., to Miss Mable Johnson, both of Crestline, Kan., December 19.

T. A. BRYAN, M.D., Lerna, Ill., to Miss Vivian Hadley of Plainfield, Ind., December 25.

EDWIN MURBACH, M.D., Archbold, Ohio, to Miss Maude Eastman of Ottawa, Ohio, January 1.

HENRY BROWSE, M.D., to Miss Georgia Clark, both of New Martinsville, W. Va., December 29.

EDWARD C. WINANS, M.D., Chicago, to Miss Lona Luena Fancher of Hammond, Ind., recently.

HARLEY H. EMERSON, M.D., Gratis, Ohio, to Miss Bess Ewalt of West Alexandria, Ohio, December 24.

JAMES LUTHER CHURCH, M.D., to Miss Mary Priscilla Kellogg, both of De Kalb, Ill., December 25.

THOMAS WALTER CURRY, M.D., to Miss Ethel King, both of Streator, Ill., at Ottawa, Ill., January 3.

ROBERT LEE RAMEY, M.D., El Paso, Texas, to Miss Cornelia Allen Hill of Henderson, Ky., January 9.

JOSEPH J. DUNN, M.D., Cleveland, Ohio, to Miss Regina Marie Moran of Oil City, Pa., January 2.

FREDERICK A. STOKES, M.D., Indianapolis, Ind., to Miss Zoe Jackson of Washington, Ohio, January 1.

EDWIN H. McMILLAN, M.D., Redondo, Cal., to Miss Marie Mattison, at Pasadena, Cal., December 25.

JULIUS FERDINAND MAUERMANN, M.D., to Miss Barbara Luchsinger, both of Monroe, Wis., December 31.

CHARLES T. WALL, M.D., to Miss Arminda Murphy, both of Washington, Ind., at Louisville, Ky., December 22.

SAMUEL A. LEINBACH, M.D., Quakertown, Pa., to Miss Lillian Souder of Allentown, Pa., at Reading, Pa., January 1.

THEODORE C. Lyster, captain and assistant surgeon, U. S. Army, to Miss Lula L. Withenbury of Glendale, Cincinnati, January 10.

## Deaths

Henry Watson Dudley, M.D. Harvard University Medical School, 1864; a practitioner of Abington, Mass., for 42 years; medical examiner for the southeastern section of Plymouth County; professor of pathology in the College of Physicians and Surgeons, Boston, from 1882 to 1893 and in Tufts College Medical School, Boston, from 1893 to 1902, and lecturer on legal medicine in the same institution; president of the Plymouth County Medical Society in 1878 and 1879, and at the time of his death a censor in that organization; a member of the Massachusetts State Medical Society, and councilor since 1883; a member of the Massachusetts Medicolegal Society; a charter member of the Hatherly Medical Society, died suddenly at his home in Abington, December 29, from heart disease, aged 75.

Edward Gilman Bryant, M.D. Harvard University Medical School, Boston, 1892; formerly port physician of Boston; later house physician of the Women's Hospital in the State of New York, and after a term as specialist in throat diseases at the Willard Parker Hospital, appointed head physician of the Hospital for Contagious Diseases, North Brother Island, and recently made chief diagnostician of the New York Department of Health; a member of the New York County Medical Society, died in Bellevue Hospital, January 8, from chronic nephritis, aged 38.

William H. Myers, M.D. Jefferson Medical College, Philadelphia, 1855; surgeon of the Thirtieth Indiana Volunteer Infantry during the Civil War; one of the oldest practitioners of Allen County, Indiana; prime mover in the establishment of hospitals in Fort Wayne and in the organization of the Fort Wayne Medical College; for many years surgeon to the railways centering in Fort Wayne; considered one of the ablest expert witnesses in the state, died at his home in Fort Wayne, January 5, after an illness of two weeks, aged 80.

Joseph Hall Moore, M.D. University of Georgetown, Medical Department, Washington, D. C., 1854; a Confederate veteran; for 10 years president of the Virginia State Board of Dental Examiners, and for six years professor of clinical surgery in the Medical College of Virginia, died at his home in Richmond, Va., from senile debility, December 28, after an invalidism of several months, aged 74.

Edmund Morris Pease, M.D. College of Physicians and Surgeons in the City of New York, 1862; surgeon in the Federal army during the Civil War, and afterward a medical missionary in the Marshall Islands; for 12 years a resident of Clare-



mont, Cal., died in the Pomona Valley (Cal.) Hospital, November 28, four days after operation for intestinal obstruction, aged 77.

**Philip Carroll, M.D.** University of Georgetown, Medical Department, Washington, 1879; a veteran of the Civil War; for 26 years in the diplomatic service of the United States, during which time he was awarded a diploma of honor for heroic and efficient service during the cholera epidemic in Palermo in 1885, died at his post of duty in Manzanillo, Mexico, December 15.

**Theodore F. Heath, M.D.** College of Physicians and Surgeons in the City of New York, 1851; a member of the Northeast Ohio Medical Association; a member of the town council, board of township trustees, and once president of the board of education, died at his home in Cuyahoga Falls, Ohio, January 5, from heart disease, after an illness of five years, aged 78.

**Ebenezer O. Bennett, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1880; for 19 years superintendent of the Wayne County Insane Hospital, Eloise, and thereafter surgeon of the Michigan Soldiers' Home, Grand Rapids; a veteran of the Civil War, died at his home in Detroit, January 1, after a short illness, aged 70.

**John Roberts Umberger, M.D.** Pennsylvania Medical College, Philadelphia, 1861; in 1852 a member of the staff of the governor of Pennsylvania; a member of many medical societies; and one of the best known physicians of Dauphin County, died at his home in Dauphin from cerebral hemorrhage, January 2, after an illness of six weeks, aged 77.

**Charles Collins, M.D.** Rush Medical College, Chicago, 1894; a member of the American Medical Association and one of the most esteemed practitioners of Lima, Ohio; for several years division surgeon of the C., H. & D. R. R., died at his home in Lima, December 29, from organic heart disease, after a long illness, aged 38.

**Royal Porter Wales, M.D.** Homoeopathic Medical College of Missouri, St. Louis, 1861; a member of the American Medical Association and one of the early physicians of Carroll County, Ill., who lived at Lanark for many years, died at his home in Colorado Springs, Colo., January 1, after a long illness, aged 67.

**William E. Johnston, M.D.** Starling Medical College, Columbus, Ohio, 1882; twice a member of the school board of Etna, Pa., and Burgess of the town from 1903 to 1906; a member of the local board of health, died at his home, January 1, from typhoid fever, after an illness of several weeks, aged 52.

**Joseph Volmer, M.D.** University of Freiburg, Germany, 1877, a member of the American Medical Association; and formerly a practitioner of Milwaukee, Wis., and of Grand Rapids, Mich., died at his home in Hutchinson, Minn., from nephritis, after an illness of several months, aged 55.

**William H. Dingee, M.D.** Department of Medicine of the University of Pennsylvania, Philadelphia, 1896; a well-known specialist on diseases of the eye, ear, nose and throat in Philadelphia, died at his home in that city, December 30, from chronic nephritis, after a prolonged illness, aged 32.

**Volney Homet, M.D.** Jefferson Medical College, Philadelphia, 1856; surgeon of the Seventh Pennsylvania Volunteer Reserves during the Civil War; a member of the Bradford County (Pa.) Medical Society, died at his home in Wyalusing, December 27, from heart disease, after a long illness, aged 73.

**Frank E. H. Steger, M.D.** University of Nashville (Tenn.) Medical Department, 1855; for many years a leading practitioner of Alabama, died at the home of his daughter in Nashville, Tenn., January 3, from cerebral hemorrhage, after an illness of two weeks, aged 96.

**John D. Smith, M.D.** Memphis Medical College (Medical Department of Cumberland University), Memphis, Tenn., 1855; surgeon in the Confederate army during the Civil War, died at his home in Paducah, Ky., from senile debility, December 28, aged 80.

**Albert J. Fisher, M.D.** Philadelphia College of Medicine and Surgery, 1852; a practitioner of Mifflin County, Pa., for more than 50 years, and a member of the state legislature in 1889, died at his home in McAlisterville, December 31, from paralysis, aged 76.

**James Nelson Banks, M.D.** National Medical College, Medical Department of Columbian College, Washington, D. C., 1842; a practitioner of Chicago until his retirement a few years ago, died at his home in Kenilworth, Ill., December 11, aged 90.

**Frederick A. Waggoner, M.D.** Keokuk (Iowa) Medical College, 1896, a member of the American Medical Association and a well known physician of Hamilton, Ill., died at Boulder, Colo., where he had gone for his health, January 1, aged 34.

**Henry C. Berger, M.D.** Rush Medical College, Chicago, 1891; prominent as a social democrat at Milwaukee, was taken ill in Racine, Wis., January 2, with heart disease, and died while being taken to the Emergency Hospital, Milwaukee, aged 42.

**Philip Edwards Johnson, M.D.** College of Physicians and Surgeons in the city of New York, 1894, a physician of New York City, who formerly resided at New Brighton, S. I., was murdered and robbed at Portland, Ore., January 7.

**John B. Cameron, M.D.** McGill University, Medical Department, Montreal, 1893; assistant gynecologist at the Montreal General Hospital, died at that institution January 4, from typhoid fever, after an illness of 10 days, aged 38.

**Julius F. Krug, M.D.** Medical College of Indiana, Indianapolis, 1879; a member of the Erie County Medical Society and Medical Society of the State of New York, died at his home in Buffalo, December 31, from pneumonia, aged 56.

**Earl H. Ostrander, M.D.** University of Buffalo (N. Y.) Medical Department, 1857; formerly of Appleton, Wis., died at his home in Ballard, Wash., December 28, from chronic bronchitis, after an illness of more than a year, aged 78.

**Isaac A. Moody** (Years of Practice, Ohio, 1896); a member of the American Medical Association, and for 26 years a practitioner of Junction City, Ohio, died at that place November 18, suddenly, from heart disease, aged 56.

**J. M. Theodore F. Forest** (Years of Practice, Louisiana); a member of the Vermillion Parish Medical Society, died at his home in Kaplan, La., from hepatic abscess, November 25, after an illness of three months, aged 69.

**Theodore F. Morris, M.D.** Bellevue Hospital Medical College, New York City, 1863; for 40 years a practitioner of Jersey City, N. J., died at the home of his son in Astoria, L. I., January 1, aged 75.

**Andrew Jackson Eastman** (Years of Practice, Kansas); a practitioner of Kansas for 30 years, died at his home in Burlington, November 15, from carbuncle, after an illness of two weeks, aged 63.

**John L. Connelly, M.D.** Rush Medical College, Chicago, 1878; for many years a resident of Harristown, Ill., died at his home in that village, January 1, from heart disease, after a long illness, aged 60.

**Horace T. Bell, M.D.** University of Louisville, Medical Department, 1874, died at his home near Sharpsburg, Ky., December 26, from dropsy, after an illness of two months, aged 65.

**Samuel Wilmot Gleason** (Examination, New York), 1874; for more than 60 years a practitioner of medicine, died at his home in Brockport, N. Y., December 7, from senile debility, aged 85.

**Clare Sumner Learned, M.D.** College of Physicians and Surgeons, Chicago, 1905, was found dead in his apartments in Chicago, January 9, from accidental gas asphyxiation, aged 25.

**Sarah C. Taylor, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1881; died recently at her home in Hamburg, Iowa, aged 71, and was buried at Sidney, Iowa, January 4.

**Alpheus S. Sayers, M.D.** Medical College of Indiana, Indianapolis, 1894; died at his home, in East Newmarket, Md., December 26, from acute gastritis, after an illness of one hour.

**Frederick A. Rugg, M.D.** University of Nebraska, College of Medicine, Omaha, 1897, of Douglas, Wyo., died in the South from nephritis, after a long illness, December 29.

**J. Buxton Williams, M.D.** University of Maryland School of Medicine, Baltimore, 1868; a Confederate veteran, died suddenly at his home in Oxford, N. C., January 2, aged 68.

**Geary W. Reynolds, M.D.** University of Vermont, Medical Department, Burlington, 1866, died at his home in Potsdam, N. Y., December 29, after a prolonged illness, aged 62.

**Edward M. Shaw, M.D.** Medical College of Ohio, Cincinnati, 1885; died at his home in Victoria, Texas, January 1, from heart disease, after an illness of two days, aged 46.

**W. Murray Johnston, M.D.** University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1887; died at his home in Los Angeles, December 29, from peritonitis.

**Albert B. Cope, M.D.** Jefferson Medical College, Philadelphia, 1883, died at his home in Columbus, Ohio, January 4, from tuberculosis, after an illness of several years, aged 60.

**Albert N. Willey, M.D.** Vanderbilt University, Medical Department, Nashville, Tenn., 1881, died at his home in Shawnee, Okla., January 1, after an illness of five years.



James Emery McCormick, M.D. New York University, New York City, 1894; of Ottumwa, Iowa, died in Miami, Fla., December 29, after an illness of three months.

John T. Doke (License Indiana, 1889); a veteran of the Civil War and a practitioner of medicine since 1868, died at his home in Argos, Ind., December 27, aged 64.

Solomon D. Meredith, M.D. Barnes Medical College, St. Louis, 1895, of Carthage, Mo., was shot and killed by Arthur Sanderson of Carthage, January 4, aged 37.

Samuel M. Todd, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1865; died at his home in Boyertown, Pa., January 3.

Robert Caruthers, M.D. University of Nashville, Medical Department, 1880, died at his home in Nashville, December 31, after a long illness, aged 53.

Aylesbury Mathis, M.D. Jefferson Medical College, Philadelphia, 1851; died from paralysis, at his home in Sandersville, Ga., December 31.

Joseph W. Glynn, M.D. Long Island College Hospital, Brooklyn, 1894, died at his home in Flatbush, Brooklyn, December 31, aged 36.

Olive F. McCune, M.D. Hygeio-Therapeutic College of New York, 1859, died at her home in Brooklyn, January 4, aged 77.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### THE PROGNOSIS IN DISLOCATION OF THE HIP.

—, MASS., Dec. 20, 1906.

*To the Editor:*—Kindly answer the following questions: (a) in a case of simple uncomplicated dorsal dislocation of the hip in a healthy man, what amount of shortening, if any, ought to result, granted that reduction has been accomplished in a scientific manner? What is the character of the apparatus and dressing that should be applied immediately following reduction? How much would a coincident injury to the knee of the injured leg, producing a slight synovitis with a small amount of effusion, add to the gravity of the case? Where can I find references and statistics that bear on the prognosis, as obtained from similar cases, especially with reference to the probable period of total and partial disability and the character and amount of permanent disability likely to result?

(b) An open wound, 2 inches square in area, below the popliteal space, has the skin margin one-sixteenth inch higher than the granulating surface. Two months have elapsed since the injury; meantime there was a complication, in the form of erysipelas of the calf, lasting two weeks. Granulations show no tendency to grow, though the patient is now in perfect health. What is the best method of favoring the formation of healthy granulations? T. T.

ANSWER.—(a) There should be no shortening whatever in a simple uncomplicated dorsal dislocation of the hip in which complete reduction has been effected. In fact, the length of the leg should be just what it was before the dislocation occurred, provided in the reduction none of the torn capsule or other soft parts has been carried into the acetabulum in advance of the head of the femur. Ordinary rest in bed is the only treatment necessary after reduction has been accomplished, as there is usually no tendency for the dislocation to recur. In case the patient suffers much pain or is restless, the joint may be immobilized by means of a long splint for a few days. In ordinary uncomplicated cases in healthy men, the patient is up and around with a crutch in from seven to fourteen days and back to work within a month. Patients have been able to return to work within fifteen days. Hoffa places the partial disablement at 25 per cent. for from four to six weeks. Waibel, in his text-book on "accidents" (Begutachten der Unfälle), where much information concerning the subject will be found, also allows partial disablement of 25 per cent. for four to six weeks in the simple uncomplicated cases.

(b) The quickest way of healing a wound such as described, would be to apply hot, moist dressings of 3 per cent. boric acid for a few days until the wound is clean and granulating, and then cover the surface with Thiersch grafts. The leg should be fixed on a splint during the healing in order to prevent movement of the knee which might displace the grafts.

### SHIP SURGEONS.

COLUMBIA, Mo., Jan. 8, 1907.

*To the Editor:*—Kindly give me some information concerning the hospital staffs on ocean steamships, how positions may be obtained, also about the remuneration, duties, etc. L. T. MARSH.

ANSWER.—Transatlantic liners carry one surgeon; the larger vessels have one or two assistants also. The positions are to be obtained by applying directly to the steamship companies. The duties usually consist in the medical attention required by all passengers in consequence of sickness or injury incidental to the voyage, and also all medical care of the steerage passengers and crew. In the case of the other passengers medical attention not demanded by conditions incident to the voyage is a matter of private contract between the physician and the patient. The salary paid by the companies varies from nothing to \$150 per month, in addition to board and lodging. A usual amount is \$50, but the gratuities on some vessels amount to more than the salary. Further information can be obtained by applying to the ocean steamship companies.

### THE TYPHOID SPINE.

PITTSBURG, PA., Jan. 5, 1907.

*To the Editor:*—In an editorial on "Typhoid Spine" in THE JOURNAL, January 5, the statement is made that "last year Fluss was able to collect nearly 50 cases." I am making a study of the literature, and have not seen any reference to his article. If you will kindly send me the reference, I shall appreciate the favor very much.

DAVID SILVER.

ANSWER.—Fluss' article is found in Centralblatt f. die Grenzgebiete der Medizin und Chirurgie, Oct. 11-Nov. 30, 1905, viii, 17-21. He gives references to 46 cases.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 12, 1907:

Duval, Douglas F., asst.-surgeon, granted leave of absence for thirty days.

Davidson, Wilson T., asst.-surgeon, leave of absence extended fifteen days.

Wilson, Compton, asst.-surgeon, ordered to report in person, on Tuesday, Feb. 19, 1907, to Major William C. Borden, surgeon, president, examining board, Washington, D. C., for re-examination for advancement.

Little, William L., asst.-surgeon, advanced to the rank of captain, from Jan. 6, 1907.

Purviance, Wm. E., surgeon, Pipes, Henry F., asst.-surgeon, and Bingham, E. G., asst.-surgeon, relieved from duty in the Philippines Division, and will proceed on the first available transport sailing from Manila, after April 1, 1907, to San Francisco, and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Morris, S. J., asst.-surgeon, relieved from duty on the transport *Sumner* and from further duty at Fort Schuyler, N. Y., and ordered to Fort Washington, Maryland, for duty.

Crampton, Louis W., deputy surgeon general, granted two months' leave of absence, to take effect about Jan. 21, 1907.

Halloran, Paul S., asst.-surgeon, ordered to proceed from Fort Leavenworth, Kansas, to St. Louis, and assume charge of the medical supply depot in that city during the absence of Lieut.-Col. Louis W. Crampton, deputy surgeon-general.

Parkman, Wallace E., contract surgeon, relieved from duty at Fort Assiniboine, Mont., and ordered to duty at Fort Keogh, Mont.

Hayes, Melville A., contract surgeon, left Fort Stevens, Oregon, and arrived at Fort Flagler, Wash., for temporary duty.

Marshall, John S., examining and supervising dental surgeon, left Army General Hospital, Presidio of San Francisco, on leave of absence for ten days.

McAlister, John A., dental surgeon, relieved from duty at Presidio of Monterey, Cal., and ordered to duty at Fort Sheridan, Illinois.

Rhoades, Rex H., dental surgeon, relieved from duty at Fort Sheridan, Illinois, and ordered to duty at Columbus Barracks, Ohio.

Boak, S. Davis, dental surgeon, relieved from duty at Columbus Barracks, Ohio, and ordered to Havana, Cuba, for duty; granted leave of absence for ten days.

Voorhies, Hugh G., dental surgeon, authorized to return from the Philippines in June or July, 1907, on the transport *McClellan*, via Suez; granted leave of absence for one month.

Wolven, F. Homer, dental surgeon, returned to Fort Monroe, Va., from leave of absence.

Miller, William G., contract surgeon, ordered to Army General Hospital, Washington Barracks, D. C., for treatment.

Holmes, Thomas G., contract surgeon, granted leave of absence for one month.

Hereford, John R., contract surgeon, order for duty at Fort McPherson, Ga., amended; will proceed to Fort Dade, Fla., for duty.

Allen, Ira A., contract surgeon, relieved from further duty at Fort Dade, Fla.; will proceed at expiration of present sick leave of absence to Fort McPherson, Ga., for duty.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 12, 1907:

Kennedy, T. J., P. A. surgeon, to duty on the U. S. R. S. *Hancock*.

Blackwell, E. M., P. A. surgeon, to duty at the Naval Academy, Annapolis, Md., as the relief of Asst.-Surgeon R. E. Hoyt.



Moore, A. M., surgeon, retired, detached from duty at the Naval Recruiting Station, Memphis, Tenn., and ordered home.

Grove, W. B., surgeon, to duty at the Naval Medical Supply Depot, Brooklyn, and additional duty under instructions from the Bureau of Medicine and Surgery.

Hoyt, R. E., P. A. surgeon, detached from duty at the Naval Academy, Annapolis, Md., and to duty at the Naval Hospital, Canacao, P. I., as the relief of Asst.-Surgeon H. W. Smith.

Smith, H. W., asst.-surgeon, on the reporting of his relief, detached from duty at the Naval Hospital, Canacao, P. I., and to home by way of Europe, with permission to delay two months in Europe.

Taylor, E. C., P. A. surgeon, detached from duty at the Naval Hospital, New York, and to duty at the Naval Recruiting Station, Memphis, Tenn., in place of Surgeon C. J. Decker, whose orders for this duty the Bureau recommends revoked.

Holloway, J. H., P. A. surgeon, detached from duty at the Navy Yard, Norfolk, Va., and such other duty as may have been assigned him, and to duty with the Navy Recruiting Party No. 4.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 9, 1907:

Geddings, H. D., asst.-surgeon general, directed to proceed to Charleston, S. C., for special temporary duty, on completion of which to rejoin station.

Guiteras, G. M., surgeon, granted leave of absence for seven days from Jan. 8, 1907.

Lavinder, C. H., P. A. surgeon, granted leave of absence for seven days.

Lavinder, C. H., P. A. surgeon, granted an extension of leave of absence for seven days.

Grubbs, S. B., P. A. surgeon, granted one day's leave of absence, Jan. 7, 1907.

Anderson, J. F., P. A. surgeon, directed to proceed to Detroit, Mich., for special temporary duty, on completion of which to rejoin station.

Collins, G. L., asst.-surgeon, granted two days' leave of absence, January 7 and 8.

Barnes, W., acting asst.-surgeon, granted leave of absence for nine days from Jan. 1, 1907.

Lyall, R., acting asst.-surgeon, granted leave of absence for four days in December, 1906, under Paragraph 210 of the Regulations.

Ransom, S. A., acting asst.-surgeon, granted leave of absence for twenty days from Jan. 1, 1907.

Stearns, H. H., acting asst.-surgeon, granted leave of absence for twenty days from Dec. 12, 1906.

Stearns, H. H., acting asst.-surgeon, granted leave of absence for ten days from Jan. 1, 1907.

Holsendorf, B. E., pharmacist, granted leave of absence for thirty days from Jan. 1, 1907.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended, Jan. 11, 1907:

#### SMALLPOX—UNITED STATES.

California: Los Angeles, Dec. 22-29, 1 case; San Francisco, Dec. 8-15, 1 case.

Georgia: Augusta, Dec. 25-Jan. 1, 10 cases.

Illinois: Abingdon, Nov. 16, 1 case; Chicago, Dec. 22-29, 1 case; Galesburg, Dec. 22-Jan. 5, 18 cases; Moline, Sept. 27-Nov. 9, 5 cases; Victoria and vicinity, Jan. 7, present.

Indiana: South Bend, Dec. 22-Jan. 5, 5 cases.

Kansas: General, Nov. 1-30, 41 cases.

Louisiana: New Orleans, Dec. 29-Jan. 5, 2 cases.

New York: New York, Dec. 22-Jan. 5, 6 cases.

Texas: Houston, Dec. 29-Jan. 5, 2 cases.

Virginia: Louisa County, Nov. 11-Jan. 5, 6 cases.

Washington: Spokane, Dec. 22-29, 9 cases.

Wisconsin: Milwaukee, Dec. 15-Jan. 5, 23 cases.

#### SMALLPOX—FOREIGN.

Africa: Cape Town, Nov. 10-24, 4 cases.

Brazil: Bahia, Nov. 24-Dec. 8, 7 cases; Pernambuco, Nov. 1-15, 16 cases; Rio de Janeiro, Nov. 11-Dec. 8, 5 cases, 2 deaths.

Chile: Coquimbo, Nov. 15-30, 28 cases, 2 deaths; Iquique, Nov. 24-Dec. 15, present.

France: Paris, Dec. 1-8, 12 cases.

Gibraltar: Dec. 2-9, 3 cases, imported.

Great Britain: Manchester, Dec. 15-22, 1 case.

India: Calcutta, Nov. 23-Dec. 1, 3 deaths; Madras, Dec. 1-7, 3 deaths.

Italy: General, Nov. 22-Dec. 13, 14 cases.

Russia: Odessa, Dec. 1-8, 17 cases, 2 deaths; St. Petersburg, Nov. 23-Dec. 1, 6 cases.

Spain: Barcelona, Nov. 1-10, 5 deaths; Cadiz, Nov. 1-30, 3 deaths; Seville, 33 deaths.

Syria: Beirut, Dec. 8-15, present.

#### YELLOW FEVER.

Cuba: Habana, Dec. 26, 1 case; Santa Clara, Jan. 8, 1 case.

#### CHOLERA.

India: Bombay, Nov. 24-Dec. 8; 13 deaths; Rangoon, Nov. 24-Dec. 1, 11 deaths.

#### PLAGUE.

Chile: Antofagasta, Nov. 26-Dec. 9, 4 cases, 3 deaths.

Egypt: Alexandria, Dec. 4-18, 4 cases, 1 death; Garbeh, Dec. 11, 1 case, 1 death; Guerga, 1 case, 1 death; Kenh, Dec. 7-20, 26 cases, 22 deaths; Menculieh, Dec. 10-18, 11 cases, 7 deaths.

India: General, Nov. 17-24, 6,941 cases, 5,300 deaths; Bombay, Nov. 28-Dec. 8, 18 deaths; Calcutta, Nov. 24-Dec. 1, 14 deaths; Rangoon 18 deaths.

Japan: Kobe, Nov. 24-Dec. 8, 2 cases, 1 death.

Mauritius: Oct. 4-Nov. 8, 112 cases, 81 deaths.

## Medical Organization

### A COURSE IN MEDICAL ECONOMICS.

For the reasons given below, it was suggested in the House of Delegates of the American Medical Association, at its Boston session in June, 1906, that each medical college be requested to consider the establishing of a department in Medical Economics, the chair to be filled by a carefully selected teacher who has himself been successful in the special lines to which the work relates. The subjects to be included in this department, it was suggested, should be (1) a business course, (2) a course in the medical ethics and (3) a course on organization. A course in the history of medicine might also be included.

1. *A Business Course.*—This course is intended to lay stress on (a) Importance of probity and honor in all transactions, particularly in reference to those as witnesses, as insurance or pension examiners, in the issuance of health certificates, etc. (b) The fundamental principles underlying a physician's compensation, as well as the dangers both to the profession and to the public from inadequate support (proper compensation most important, since it enables the physician to keep up with the advances in medicine and be better equipped to meet the responsibilities of his life-saving work). (c) The importance of a fair but purely advisory schedule of fees in each community. (d) The justice of double fees after 8 p. m. that time may be had for study, society work and family and social life. (e) Necessity of modern methods of medical bookkeeping and frequent, regular and systematic collections. (f) The duty and privilege of cheerful, gratuitous service to the worthy poor, but that such service to the clergy and other well-to-do classes should cease at once and forever (this last should be explained by the statement that osteopathy and nearly every other fad have had their chief support from those whom physicians have served without compensation). (g) The evils and dangers of lodge and contract practice. (h) The downright dishonesty of a division of fees with surgeons and druggists, unless it be with the full knowledge of the payer. (i) Value both to the physicians and to the public of coöperation between physicians instead of the old spirit of competition. In brief, this course should give each student complete instruction in regard to the financial side of his practice.

2. *A Course in Ethics.*—This course should begin with the inculcation of the broad spirit of altruism, which should be a part of the warp and woof of every true physician. It should be made clear that doctors exist primarily because there is sickness to be prevented and afflicted people to be relieved, and only secondarily for their own benefit. They should be taught that, instead of the profession being overcrowded, there are not enough physicians in this country to do the work if every sick person received the kind of scientific examination and treatment to which he or she is entitled. The Principles of Medical Ethics, embodying the accumulated advice and wisdom of the ages, should be read section by section and discussed and explained so that its teachings can be adapted to the needs of their daily lives, and made both chart and compass to them, instead of the bone of contention and fruitful cause of trouble which has been its chief function in the past. They should be taught that no doctor has ever profited permanently by unprofessional or dishonest conduct, and that the widespread public disgrace under which the profession is laboring to-day, handicapping us individually and as a whole, in both reputation and purse, is the result of petty, senseless, causeless quarrels between physicians competing for the same practice, which by joint study and increased competency would be found so multiplied that both or all of them could hardly give it attention. In contrast with all of this should be held up the reasonable and desirable possibilities open to a united profession in every county, state and the nation, working intelligently for the promotion of its own and the public welfare.

3. *A Course on Organization.*—This course embraces the entire field of medical sociology, including business and ethics, but should be restricted more particularly to the methods best adapted to secure higher standards of competency and more practical coöperation between physicians already in practice, and who have not had the advantages of such a course as is here advocated, and with whom the new graduates will at once



be brought in contact. The history of medical organization in this and other countries, and the present disorganized and demoralized condition of medical affairs in this country, traceable largely to a failure of the schools to teach better methods in the past, should be outlined. The plan is now going into operation based on the county society system, with the state and national associations for fostering and acting as connecting and intercommunicating links and agencies between these, should be explained clearly. It should be dwelt on that the county society, or subdivision of it, as may be, meeting weekly or oftener for joint study, social intercourse, business adjustments and the solution of all other problems inseparable from the evolution of a great profession into the usefulness possible to it under intelligent direction, is of the first importance, and membership in it the first duty of the graduate after his location is selected. The proper relations between the county, state and national organizations, and especially the dependence of the entire system and of the individual doctor on the permanent efficiency of the county societies, should be thoroughly presented so that the students know and appreciate what it means to each of them. They should also have drilled into them then how easily the county societies may be developed for systematic postgraduate study. The average physician in this country has done little studying after graduation, and the schools owe it to themselves, their students and the people, that in so far as they can guard against it, their alumni shall not leave them without instruction on these important matters. They should also be told how and why by occasional joint meetings with the bar, teachers, ministerial associations, legislators, municipal and other officials, mutual instruction and understandings may be secured of infinite value to all.

*Argument.*—Good results from such instruction will be: (a) A medical profession more up to date in medical knowledge, resulting from (b) a better organized profession, including better city and county societies, and, therefore, (c) more ability to influence legislation that will lessen present evils and raise medical standards. (d) More successful physicians, financially and, therefore, also professionally, since they may be better equipped. (e) A removal of the stigma of the "shiftless or unbusinesslike doctors," which at present has much to do with lowering the dignity of the profession. (f) The proper regulation of gratuitous practice and an end to pauperization of those well able to pay. (g) Better vital statistics reports.

The urging of this course is a direct outgrowth of the startling revelations made in the effort to organize the profession of this country within the last five years. Largely because of the entire and incomprehensible neglect of these important subjects in the past, even in the best medical schools, it was found that a majority of the physicians in many states are in such poverty that they receive no periodical literature except the cheap or free trade journals; have few text-books which do not antedate their graduation, and in every way are so poorly equipped as to be unable to give their patrons the benefits of modern scientific treatment. In most states more than two-thirds of the entire profession had not had the benefit of membership and attendance in any medical society; that profitless, senseless discord existed in nearly half of the communities, the faculties of the colleges often contributing to this in no small degree where two or more exist in a community, and that in consequence of these conditions the profession as a whole has always been and still is held in such public contempt that it is powerless in most states and in the nation in securing and enforcing legislation in both civil and military life, most essential to the honor and usefulness of the profession, and still more so to the well-being of the people.

If medical graduates in the past could have been taught how they could have legitimately obtained practice and made a living, how and why they should live in peace and coöperation, or at least on terms of decent respect, with their professional neighbors, and the importance of such unity of purpose and action in public affairs as would have enabled the power and influence of the profession to have been concentrated on legislators and the other official classes, state and national, these evils, so disastrous to its good name and progress, would have been avoided or greatly minimized, and it would be unnecessary now to spend years to regain ground which should never have

been lost, or in recovering that place in the public and official estimation which was forfeited by faults entirely within our own ranks. It is within our power, however, now to so educate the future physicians, while they are grouped together in the schools, and are in the formative periods of their professional lives; as to greatly lessen these evils and to enable our profession, in time, to come into its own. To this end the Association has determined to do all in its power to enlist the coöperation of schools and examining boards in each state, and to press the work until these objects are attained.

#### A MODEL ORGANIZATION.

##### The Washington County (Pa.) Medical Society.

We have just received from the secretary, Dr. John D. Donaldson, Canonsburg, Pa., the announcement and program, for the year, of the Washington County (Pennsylvania) Medical Society. This admirable organization is a striking proof of the fact that the success of a society depends on the quality of the men who compose it and not on numbers or locality. Although having no large cities or centers of medical activity within its jurisdiction, this society has developed a membership, interest and enthusiasm which would be worthy of any large city. Its meetings are held bimonthly at the Washington County Court House at Canonsburg, in a room which the county has set aside for the use of the society. This room contains the books, records and various properties of the society, as well as portraits of its presidents and prominent members of years gone by. The organization thus possesses the first qualification for stability and permanence; namely, a fixed and recognized home. Its membership comprises practically the entire reputable medical population of the county. Each member receives regularly from the secretary a printed communication containing announcements, programs and items of general interest.

When we examine the program, which has been made up for the coming year, we find that, instead of leaving the work of the society to chance or accident, the entire year's work is provided for, so that there is no conflict or repetition. The program illustrates so many points which should be considered by county secretaries that it is worthy of further comment.

The January meeting is devoted to a consideration of diphtheria. The first paper covers the bacteriology of the disease; the second, the clinical diagnosis. In the third paper, the method of preparation and action of antitoxin is considered, while the fourth and last paper has to do with the prevention of diphtheria and methods of disinfecting. Here we have the cause and the means of recognizing the disease considered; then, since antitoxin is the only rational modern method of treatment, it is fitting that the physician who uses it should know something about its method of preparation. The last paper brings out the pathologic and hygienic phase of the disease, as well as the duty of the physician to the community.

The March and May meetings are devoted to obstetric questions and so are very properly inaugurated by a paper on the "Anatomy of the Female Pelvis." Then follow articles on "How to Diagnose the Presentation;" "The Diagnosis, Treatment and Prevention of Septic Infection;" "The Use and Abuse of Forceps;" "The Mechanics and Management of a Breech Presentation;" "Placenta Previa;" "Prolapsus Funis;" "Face Presentation" and "Detection and Repair of Lacerations of the Perineum." Every one of these topics is eminently practical, worthy of discussion and of interest to every general practitioner in the society, as well as to the member with a leaning toward specialism. Every one of them could be adequately and interestingly considered by a well educated and well equipped general practitioner.

The fourth meeting is devoted to the eye, ear, throat and nose. The topic is introduced by a paper on "The Anatomy of the Eye;" followed by one on practical ophthalmoscopy and one on iritis and glaucoma. "The Anatomy of the Ear, Nose and Throat" is then considered; followed by papers on "Otitis Media and "Chronic Rhinitis and Pharyngitis."

The September meeting, the fifth, is devoted to diseases of the stomach. Two papers, one on "The Anatomy of the Stomach" and one on "The Chemistry of Digestion," serve to introduce the topic. Papers on "Hiccoughing and Vomiting;" "Early Symptoms of Cancer" and "Pathology of Ulcer of the Stomach," complete the program.

The last meeting of the year takes up the subject of the liver and gall bladder. After the usual introductory article on the anatomy of the structures under consideration, is a paper on "Drugs that Act on the Liver." A paper on "The



Pathology of the Gall Bladder" and one on "Biliary Colic," complete the program.

We have here twenty-nine papers for the year, an average of five papers to a meeting, each considering the subject of the evening from a different point of view, and, together, covering systematically all the essential features. The secretary's report states that there are, at present, 108 members in this county society. If the work is evenly distributed, this would mean that each member would prepare a paper on an average of about once in four years. In addition to the benefit which he would derive from a carefully prepared paper, presented to his fellow practitioners for criticism and advice, he would also, in this time, hear about 100 papers read and discussed. As the local dues of the society are \$3.00 a year, the total expense of each member for four years would be \$12.00. Could any intelligent physician possibly make a better investment of so small a sum? Can any physician in Washington County who really desires to be of the greatest possible value to himself and his patients, afford to miss any of these meetings? Is there any reason why any ten physicians, of ordinary education, training and experience, practicing in any county in the United States, can not get together six times each year and do similar work if they so desire? What is now actually being done in Washington County can be done in any other county, if the local members of the profession will only make up their minds that they can and will work together in harmony for the benefit of themselves and the community in which they have their homes.

**Contract and Lodge Practice.**—Medical societies are united in declaring themselves as being opposed to contract and lodge practice, and their members are convinced of the perniciousness of such systems of employment. The work savors of the dry goods store's weekly bargain, and the patient is forced into accepting the services of a physician whom he would not employ if his wishes were consulted. Cheap pay, cheap labor, although there is an occasional exception to this rule. But it is the rule and not the exception that must be dealt with in this instance.

The *Ohio State Medical Journal*, in its November 15, 1906, issue, very ably discusses this question editorially. One deplorable effect of this business is the strained relations between the patient and his physician. Patients, left to their unbiased judgment, select the physician of their choice, because they think he can treat them better than any other physician within their reach; consequently he enjoys their fullest confidence. This knowledge is a most decided stimulant to the physician in calling out his best efforts in behalf of the patient. Having this confidence, he knows that his advice will be heeded and measures for the welfare of the patient will without question be carried out. Between physician and patient there exists a confidence that is of inestimable value to both, for there is nothing that so weakens the efforts of the physician as to feel the lack of this close bond of sympathy.

In the great majority of instances the relation of the lodge or corporation doctor to his patient is only formal and wholly lacking in this mutual confidence. The physician being chosen by the lodge or corporation the patient accepts his service through loyalty to his fraternity or perhaps because he can not help himself, in which case he looks on the doctor as inferior, because he is cheap. Under these circumstances a physician is often continued through a severe sickness in which a life is in the balance when he is absolutely repulsive to the patient. The best results can not follow such conditions.

The *Ohio State Medical Journal* believes that the next serious objection to this class of practice is that an inadequate remuneration is invariably provided by those originating the idea, with the expectation that services can be secured at the stipulated "knock-down" price because most physicians have need of the increase of income. The entire proposition, thus fostered, is devoid of good business principles. The servant that is but half paid will give poor service. If a railway or other corporation has such financial or other interest in the health of its employes or patron that it assumes the responsibility of professional service, there is no good reason why it should not pay for the same at the price current in that locality.

## Society Proceedings

### COMING MEETINGS.

Med. Society of State of New York, Albany, Jan. 29, 1907.

Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.

### PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Regular Meeting, held Dec. 12, 1906.*

The President, DR. CHARLES K. MILLS, in the Chair.

#### SUPPRESSION OF QUACKERY.

##### Relation of the Physician to the "Patent-Medicine" Curse.

MR. EDWARD BOK of the *Ladies' Home Journal* pointed out that in two distinct ways the medical profession to-day is obstructing the efforts of the laymen in the fight against "patent medicines." Since the life of the nostrum business depends on the publicity which can be given it, in the fight against it, one of the first efforts has been to ascertain to what extent the press can be depended on to exclude "patent medicines." To-day scarcely a prominent monthly magazine accepts "patent medicine" advertisements; the same is true of the prominent weeklies and the farm journals. Pressure is being brought to bear on the religious press. Of the newspapers, 43 absolutely refuse "patent medicine" advertisements.

All classes have been assisting except the physicians. The average medical paper, he said, reeks with "patent medicine" advertisements in the form of reading notices and abstracts. The very class of papers that should be the first to cleanse its columns is the last. As a result, when the newspapers were asked to exclude "patent medicine" advertisements, the argument was advanced that the medical press admits them.

To pass resolutions is easy and comfortable and about as ineffective as comfortable. Organized protest amounts to little, but the individual protest has positive force. Two ways were pointed out in which this can be exerted: As readers and subscribers physicians may insist that the advertisements be excluded; or, as physicians, they may stop prescribing the nostrums and thus make the advertisements unprofitable.

While assembled to discuss "The Suppression of Quackery," a more appropriate topic, in his opinion, would be "The Suppression of the Physician in Aid of Quackery."

##### Quacks and Their Relation to the Practice of Medicine.

THOMAS W. BARLOW, ESQ., of the Philadelphia bar remarked that it is actionable at common law to speak of a physician as a "quack," and that the term has been one of reproach for many centuries. Partridge, a quack of 1708, was also a cobbler, astrologer and almanac maker. Of him Swift had said:

"Weep all you customers who use  
His pills, his almanacs and shoes."

Smith went about England in the Eighteenth century dressed in black velvet and offered to cure any disease for a sixpence. His coach, drawn by six bay horses, had on it a coat of arms with the motto *Argento Laborat Faber* (Smith works for money).

Mr. Barlow defined a quack as one who pretends to have skill or knowledge which he does not possess. He quoted Dr. Johnson as having said over a century ago that a doctor of medicine is a physician under the protection of the laws and by the stamp of authority. In defining the practice of medicine within the meaning of the law he quoted from the opinions of the courts of the different states. The power of the states to regulate the practice of medicine has been universally upheld. The Supreme Court of Pennsylvania describes this as a just and proper exercise of the police power of the state.

Regarding the legal situation in Pennsylvania, he said that the law declines to recognize osteopathy, electropathy and Eddyism as schools of medicine, and yet holds their practitioners exempt from offense if in attempting to heal they use neither drugs nor instruments, because "it is doubtful," as one court says, "if the legislature has the right to restrict the choice of the citizen in a matter concerning only himself."



This he designated as a dangerously illogical and foolish situation. He regards it as unnecessary to prove that the prevention and cure of disease is not a matter concerning only the citizen himself. He urgently insisted on the necessity for a further extension of the police power of the state regarding the prevention and cure of disease and the intervention of surgery, so that the public health may be safe-guarded still further and more exact conditions be required "to enforce the social compact for the protection of life and health and the general weal of the community." He pointed out the public menace of a system which permits the devotees of osteopathy and Eddyism to make contracts to heal or cure or relieve any disease whatever without requiring of them any knowledge protecting the people against the disaster of contagion, and of not holding such healers liable for the infringements of the laws of the board of health. He asserted that the law should require of a practitioner of medicine and of all persons and agencies proposing or promising to treat or cure disease or deformity, a comprehensive knowledge of human anatomy, human physiology, pathology, obstetrics, hygiene, materia medica and the practice of medicine and surgery.

#### Journalism and Quackery.

MR. GEORGE W. OCHS, publisher of the *Public Ledger*, said the relation that journalism bears to quackery is not dissimilar to that borne by the medical profession, with the distinction that the latter is fortified by a definite code of ethics and is enabled to discriminate by expert knowledge. The honest journalist attempts to discriminate and in doing so makes great pecuniary sacrifices, yet the medical profession, as a rule, does not aid him, to any extent.

The chief agency for the sale of nostrums and the mainstay of the quacks is the newspaper. Their life is the newspaper; their sole source of sustenance, their single means of success, their only hope of existence is publicity—its widest opportunity and most effective agency being the newspaper. While there alone the trouble should be attacked by those in sympathy with the purpose, it should be remembered that a newspaper has but two sources of revenue: advertising and subscription, the latter being a negligible quantity. In attempting to curtail the advertising, the prudent publisher must act with discretion and conservatism. The approval of a right-thinking community does not liquidate the multiplicity of enormous expenses of a newspaper, unless, forsooth, public opinion be so educated that it will aid the journalist who makes these sacrifices by moral support, by persuading the discriminating public to buy that newspaper, and by systematically avoiding all other newspapers that insult intelligence and decency by a contrary course.

Mr. Ochs suggests that a union of all the medical forces into a well-organized, compact, efficient instrument to conduct the campaign by systematic, careful, persistent and continuous enlightenment concerning the real promoters of the evil, and the effective means of remedying it, will achieve triumphant success. The self-respecting newspaper will not commercialize its ethics any more than the honest practitioner. The absence of the advertisements of the nostrum vender and the quack from one newspaper is public notice that this sort of tainted revenue has been rejected by the publisher; their appearance in another is public notice that it seeks this business and that its journalistic code is written in different ethics. Thus the contrast stands clearly forth, and the offender, if such he be, may be pilloried in the market place to be penalized, if the public so decrees. Enlightenment, Mr. Ochs stated, can best come by the influence of the medical profession. Hence it lies with the profession, if effective results are sought, to concentrate all its energies and employ all its devices to awaken and vitalize this impulse of public opinion, which, once aroused, is irresistible.

#### What Can the Organized Medical Profession Do to Suppress Quackery?

DR. HENRY W. CATTELL first called attention to the duty of the profession to remove all causes of reproach in this matter from among its own ranks. Among these were mentioned

the conducting of medical schools on a purely commercial basis and the lowering of standards. A contribution of money to a medical school too often secures a coveted teaching position in the institution. The securing of an appropriation from the legislature for hospitals, to say nothing of the illegal methods often employed to secure such appropriations, is another evil. Dr. Cattell contends that any hospital largely supported by funds from the state treasury should, under proper restrictions, permit others than those officially connected with it to treat their pay patients within its walls. He asserted that there are trusts in medicine as there are in every-day life, and pooling and rebates, and mergers are done as effectually by the medical profession as by railroads and other soulless business corporations. He arraigned the medical profession as responsible for the enormous sale of such preparations as Vin Mariani, which, it is alleged, a few years ago contained cocain. He said that in order to permit its sale under the laws of Pennsylvania the ingenious manufacturer had converted the cocain into bases. Much can be done to correct these evils by a united medical profession. Then would it be possible to effectively endorse the movement advocated by Professor Norton of Yale for the formation of a National Bureau of Health, whose head shall be a member of the President's Cabinet; and a society, such as the recently formed Public Health Defence League, would no longer be a necessity.

#### Deceptions in the Chemical Formulas of Nostrums.

DR. HENRY LEFFMANN said that the growing murmur against secrecy has at last reached the ears of some of the manufacturers, and has led a few of them to be frank and to make known clearly and distinctly what they sell; but in many other cases the pretended publication is merely a trick. Perhaps the richest field for such tricks is to be found in connection with the formulas of organic compounds. Organic chemistry is very complex, and its discoveries have outrun its nomenclature. Moreover, except as to the simplest compounds, the nomenclature is not uniform. It is therefore left to individual ingenuity to devise terms that may conceal ideas rather than convey them. Hence, a mixture of acetanilid and ammonium carbonate may appear as ammoniated phenylacetamid, thus not merely throwing the physician off his guard (as many may not know that phenylacetamid is a synonym for acetanilid), but leading one (even if he recognizes the substance) to believe that the preparation is a derivative of that drug, whereas it is merely a mixture. Then there is the late exposure of an attempt to put off on the profession a mixture of chloral and glycerol as a new and remarkable compound worthy of sesquipedalian title.

Some specific instances of deception in labelling were cited by Dr. Leffmann, taking them from cases that have come under his notice. In the northwest section of Philadelphia a druggist has been displaying prominently a liquid malt-extract, conspicuously labelled: "This is not beer," and claiming for it starch-digesting power. Analysis shows that it contains 6.5 per cent. of alcohol and no appreciable diastase. In a sense, the label is correct. The article is not a beer, but rather a strong ale, but the intention of the label is, probably, to lead the purchaser to believe that it is a non-alcoholic, or at least feebly alcoholic preparation. Certainly this is the impression that the label would convey to most people.

No more outrageous deceptions are practiced, he said, than those in the so-called concentrated, predigested or specialized foods. Meat extracts are sold by the ton under the pretence that they contain the nutritive matters of meat, whereas they consist almost entirely of the basic nitrogenous waste products, fit food only for microbes. Under a title indicating high nutritive quality, a liquid is sold containing 16 per cent. of alcohol and less than 1 per cent. of proteids, calculated from the nitrogen obtained.

In an article in the current number of the *American Journal of Pharmacy*, Prof. Charles H. LaWall reports the discovery of the use of acetanilid as a preservative in hydrogen dioxid. This has been done by several firms, one of high standing in pharmaceutical relations. When charged with the practice the makers admitted it. They said it was a "trade secret." The



label on one of the bottles of this adulterated preparation reads: "This product represents the highest chemical skill in producing absolute purity, potency and accuracy. We guarantee it to be strictly U. S. P. in all its requirements, meeting anticipation at all times."

Dr. Leffmann said that it is a well-worn accusation to declare that the profession is largely responsible for the existing state of affairs. Some time ago a druggist informed him that he had received from a reputable physician a prescription for a mixture of ammonol, antikamnia and phenacetin. In his teaching in medical chemistry he does what he can to warn intending physicians against any form of secrecy.

Dr. JOHN B. ROBERTS, in opening the discussion, stated his belief that the people's resource to quackery is due to: 1. An erroneous belief that for every disease there is a special medicinal remedy which will cure it. 2. To the lying advertisements in secular and religious newspapers, published by editors, often clergymen, who, if intelligent and educated, must know that they are disseminating untruth. 3. To the unjustifiable use by doctors of nostrums of whose compounds they are ignorant. 4. To ignorant or careless physicians who are unable to give their patients such skilful treatment as modern medicine is able to furnish. 5. To the inordinately high fees of certain skilful medical practitioners, which render their services unattainable by many and lead to the belief that all doctors of ability are costly luxuries.

The first cause is due to the ignorance of the public of physiology and of the value of sunshine, fresh air, good water, exercise and hygienic and decent conduct. The second is due to the love of money, however tainted that money may be. The third and fourth were said to be largely due to the former existence of many low-grade medical schools, some of which still exist. The fifth was regarded as due to a lowering of professional standards to a commercial basis, so that to some doctors the size of the fee has become more important than professional honor and the alleviation of human suffering.

Dr. S. SOLIS-COHEN agreed with Mr. Bok and Mr. Ochs that the medical profession should bring their united weight and individual effort to bear on the publishers of medical journals and on the publishers of daily newspapers. Following the plan of the Consumers' League of publishing a "white list" of manufacturers whose goods are recommended for patronage, it would seem to him perfectly proper for the Philadelphia County Medical Society to publish a list of the daily newspapers of Philadelphia which it recommends for patronage by its members and the public. It need not be said that such and such a paper ought not to be bought, but that a certain other paper is recommended.

Regarding the medical press he thought the members of the profession owed it to themselves never to purchase nor to contribute to medical journals which violate the ethical standard of the profession in the acceptance of nostrum advertisements. Each physician should examine his own daily practice, and if finding that he prescribes remedies concerning which he does not know the composition, he should at once correct the practice. Though not believing that so high a percentage as that quoted of the physicians of Philadelphia prescribe nostrums, if such fact exists, he declared it to be the duty of the County Medical Society to exercise its discipline over those members.

Dr. HENRY BEATES emphasized the statement that many so-called physicians prescribe quack nostrums because of ignorance of the art of writing prescriptions, and deprecated the fact that medical colleges graduate a large percentage of men coming under this classification. Illustrative of the ignorance of some of the graduates of medicine, he cited an incident of a recent session of the State Medical Examiners. In answer to an examination question, the would-be practitioner of medicine has written: "We have two kinds of electricity, sporadic and foradie. Sporadic electricity is used intermittently and foradie is used continuously." Of nitrate of silver, which the same aspirant believes to be a fluid, he would administer a dose of "from one to two drops." Other similar examples were given. Dr. Beates suggested the advisability of putting

on a screen such illustrations of the dense ignorance of some of the graduates in medicine, side by side with the diplomas showing the signatures of the men allowing them to graduate. Such instances, he thought, explained the prescribing of quack remedies by so many doctors.

Another cause of this prevalence is the inexcusable apathy of individual members of the profession. There should be organization of the medical profession with a definite purpose against quackery and in a protest against medical colleges graduating incompetent men.

Dr. LYMAN F. KERLER, chief of the laboratory of the Bureau of Chemistry, Department of Agriculture, spoke of the work in the laboratory at Washington, and gave many instances of the deceptions attempted by the manufacturers of nostrums and of prepared foods which had been detected in the enforcement of the pure food and drug law.

Dr. GEORGE ERETY SHOEMAKER said that it should be understood that medical journals bear the same relation to the publishers as the daily newspaper, being published for the purpose of making money, and that a sharp distinction exists between the business end and the editorial end. There is, fortunately, one medical journal in the United States founded and controlled by the medical profession, THE JOURNAL of the American Medical Association. Reference was made to the splendid stand taken by the Association journal on the subject of nostrums.

Dr. JOHN Q. McDUGALD expressed his gratification at hearing Mr. Barlow's explanation of the law and his opinion of the need of a law governing the practice of medicine. He cited a glaring instance of a quack doctor practicing without restraint of the law.

#### SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Nineteenth Annual Meeting, held at Baltimore, Dec. 11-13, 1906.*

*(Continued from page 162.)*

##### Improved Method of Locating Foreign Bodies with the Roentgen Ray.

Dr. ROBERT CAROTHERS, Cincinnati, said that the most important step in foreign body surgery is some definite or fixed idea of the location of the foreign body. The Roentgen ray has been of untold value in developing this step. Stereoscopy as applied to radiography, called stereo-skiagraphy, is the most improved method, and would seem to give the most accurate location of a foreign body. The ordinary Roentgen ray plate looks flat. The stereoscope gives a perspective view very much as if the parts (bone and bullet) were before one in nature. Two separate plates are made of the same part without changing the position of the part skiagraphed, which is placed on the compression diaphragm table (the compression diaphragm itself being discarded), on a hollow board or plate-holder, with a metallic bottom, so that the rays may be obstructed partially, and in this way one plate can be removed and a second supplied. The tube is held in the tube-holder, and with the use of a plumb-bob it is carefully centered through the part to be skiagraphed on to the center of the plate. The plates are made with the tube placed  $1\frac{3}{8}$  inches to either side of this central point, so that they are made from points  $2\frac{3}{4}$  inches separated from each other, corresponding to the distance between the human eyes. The developed plates are placed in highly illuminated boxes facing each other, and are from them reflected into two small looking-glasses which are placed at a right angle to each other with the apex of the angle placed between the eyes of the observer in the stereoscope. One now looks into the two looking-glasses, each eye in a separate glass, sees a separate plate; then by adjusting the plates and the stereoscope to get an exact focus, the two plates are made to look as one, and it would appear that there is one looking-glass behind which the observer looks, reflecting the object back on to the retina, producing a perspective view. This method is of especial value in locating foreign bodies in the spine, thorax and abdomen, where it is almost impossible to get a plate which is not flat by any other method.



## Surgical Treatment of Thyroid Disease.

DR. CHARLES H. MAYO, Rochester, Minn., reported 110 cases of exophthalmic goiter, with 9 fatalities, and but two of these were in the last 64 operations. In 2 cases of sarcoma and 6 cases of carcinoma there was one operative death, which occurred on the third day. Aside from the deaths recorded there was one death from pneumonia on the eighth day. Patients are prepared as to lung complications, and the rhythm and tension of the pulse, which should be carefully investigated, as they are the danger signals.

Very rarely is local anesthesia employed, the preference being for the open drop method of giving ether. The patients receive from 1/120 to 1/150 grains of atropin and 1/6 grain of morphin, 20 to 30 minutes before the giving of the anesthetic. The position of the patient is head up (reverse Trendelenburg), with a roll of gauze under the neck to elevate small tumors. A transverse collar incision is made through the skin and platysma muscle, the sterno-hyoid muscles being separated at the mid-line. In exophthalmic goiter and complicated cases, the anterior muscles on one side, at least, are severed as high as possible over the thyroid to preserve the nerve supply and break the scar effect. Cysts and encapsulated growths are enucleated. Other goiters are extirpated, care being exercised in preserving the parathyroids to prevent tetany and in protecting the recurrent laryngeal nerves. In this one is aided by leaving the posterior capsule of the gland in the extirpation. Sufficient gland substance should be preserved to prevent myxedema and, as it depends on the character of the gland, no definite rule can be given as to what constitutes the proper amount.

## DISCUSSION.

DR. GEORGE W. CRILE, Cleveland, said that in a series of 114 operations on the thyroid gland his experience compares very well with the conclusions reached by Dr. Mayo, with the exception that he has been unable, thus far, to get as low a mortality as Dr. Mayo reported from operations in the presence of hyperthyroidism. In the late cases of colloid goiter of long standing, if symptoms of exophthalmic goiter appear, he has found that operations on this class are comparatively simple and safe. Young persons with acute exophthalmic goiter coming on without previous goiter apparently, appearing with other symptoms, he has found to be great risks from an operative standpoint. Of the 114 operations on the gland, there were 5 cases of carcinoma and 5 of sarcoma. In one of the cases of carcinoma he noticed unmistakable symptoms of exophthalmic goiter. He has not had a fatality in any case engrafted on a chronic goiter, but he has had three deaths in 20 cases of acute exophthalmic goiter following operations.

DR. RANDOLPH WINSLOW, Baltimore, has been particularly interested in the anesthetic employed in these cases. Personally, he has been making use of scopolamin-morphin anesthesia by injection as a means of general anesthesia, and the infiltration of the skin with the Schleich solution for strictly local anesthesia, and finds that it works very well. The patients, as a rule, do not complain.

## Toxemia of Pregnancy.

DR. W. M. JORDAN, Birmingham, Ala., called attention to the non-specific nature of the liver lesions in cases of toxemia of pregnancy, and said that much the same character of changes occurred in toxemias from other causes. There is a decided tendency for toxemia patients to get worse after the uterus is emptied, except in the case of eclampsia, which for special reasons is not considered in this paper. The cause of this is attributed to a probable increase in the pre-existing toxemia through the addition of toxins resulting from the process of involution of the uterus. For this reason pregnancy should be terminated at an earlier date than would otherwise seem necessary, as this probable postpartum increase in the toxemia must be allowed for. Attention is called to the probable unfavorable influence of anesthesia, as most of the inhalation anesthetics are to some extent liver poisons. Jordan advises that pregnancy be terminated as soon as it becomes evident that the symptoms are of toxic origin.

(To be continued.)

## Medical Legislation

## CONFERENCE OF THE COMMITTEE ON MEDICAL LEGISLATION AND THE NATIONAL LEGISLATIVE COUNCIL.\*

Annual Meeting, held in Washington, D. C., Dec. 13-15, 1906.  
(Continued from page 155.)

## Committee of One Hundred to Aid in Securing a Department of Health.

PROF. IRVING FISHER of Yale University: Mr. Chairman, Ladies and Gentlemen: I want to say at the outset that I was more than delighted to hear the remarks both of the chairman and Dr. Barchfeld, and I was particularly delighted to see the definite form in which he had drawn up the proposal of the National Department of Health. The American Medical Association for a number of years, about twenty I think, has been in favor of establishing a National Department of Health, I think, now that the comprehension and coöperation of other organizations is more or less assured, the outlook for such a department is very bright.

The Public Health Defense League to which the chairman referred, I note from the public press, has committed itself to the advocacy of a National Department of Health, and the economic section of the American Association for the Advancement of Science, of which I am chairman, has in like manner committed itself. At the last meeting, held at Ithaca, in June and July, a paper was read by my colleague, Professor Norton, of which I had a number of copies printed for distribution here, and which many of you no doubt have seen, in favor of a National Department of Health, from the standpoint of economics, discussing in detail the economical advisability of a National Department of Health.

This problem has many relations other than medical. After this paper was read it was voted that I, as chairman of the section, should appoint a committee to keep the subject alive and to consider the best methods of achieving the ends of Professor Norton's paper. I have been engaged during the last few months in selecting and appointing that committee, and I have been astonished at the unanimity of approval which I have received. I think there were only about a dozen declinations, and in almost every case the declination was accompanied by a statement of approval of the object of the committee, the declination being on the ground of advancing years, or occupation in such a way that the incumbent could not give proper attention to the committee. I received for instance, a letter from Grover Cleveland declining to serve on the committee on these grounds, but authorizing me to state that he was definitely in favor of the plan.

I have called this a Committee of One Hundred, although there are so many others that I would like to have invited to become members of the committee, but I thought that a committee larger than one hundred would scarcely be a committee, but rather a petition. It seemed to me that the strength of this particular movement would lie in the fact that it was endorsed by the American Association for the Advancement of Science, and consisting, for the most part of laymen.

## CONNECTED WITH THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Dr. William H. Welch, President, American Association for the Advancement of Science, and of State Board of Health of Maryland: Professor of Pathology, Johns Hopkins University.

Prof. Irving Fisher, Chairman of the Committee of 100 and of Economic Section American Association for Advancement of Science; Professor of Political Economy, Yale University.

J. Franklin Crowell, Secretary Economic Section American Association for the Advancement of Science; Editor *Wall Street Journal*.

Prof. J. P. Norton, author of paper on National Health Department read before American Association for Advancement of Science, on the basis of which the committee was appointed: Professor Political Economy, Yale University.

Prof. James McKeen Cattell, Editor *Science*, the official organ of the American Association for the Advancement of Science; Professor of Psychology, Columbia University.

## CONNECTED WITH THE UNITED STATES GOVERNMENT.

Dr. Robert M. O'Reilly, Surgeon-General, U. S. Army.

Dr. P. M. Rixey, Surgeon-General, U. S. Navy.

Col. William C. Gorgas, Sanitary Officer, Isthmian Canal.

Dr. H. W. Wiley, Chief Bureau of Chemistry, Dept. Agriculture.

L. O. Howard, Chief Bureau Entomology, Dept. Agriculture.

\* The complete record of the conference (from which this report is an abstract) has been published in book form and can be obtained on application to the American Medical Association, Bureau of Legislation, 103 Dearborn Avenue, Chicago.



Dr. Cressy L. Wilbur, Chief Statistician, Vital Statistics, U. S. Census.

A. C. True, Director Office of Experiment Stations, Dept. Agriculture.

Chas. P. Neill, Commissioner of Labor, Dept. of Commerce and Labor.

James R. Garfield, Chief Bureau of Corporations, Dept. of Commerce and Labor (now Secretary of the Interior).

Gifford Pinchot, Chief Forester, Dept. of Agriculture.

Max J. Baehr, U. S. Consul, Cienfuegos, Cuba.

A. D. Melvin, Chief of Bureau of Animal Industry, Dept. of Agriculture, Washington.

Amos P. Wilder, U. S. Consul, Hong Kong, China.

Gen. Leonard Wood, Gov. of Moro Province, Philippines.

(I was sorry that I could not persuade Dr. Wyman to allow me to add his name to this list.)

#### CONNECTED WITH STATE AND LOCAL GOVERNMENTS.

Dr. A. C. Abbott, Health Officer of Philadelphia.

Dr. Thos. Darlington, Health Officer of New York.

Dr. Alvah H. Doty, Health Officer, Dept. of Quarantine, New York.

Dr. John S. Fulton, Sec. Maryland State Board of Health.

Prof. Chas. Harrington, Sec. Mass. State Board of Health, Professor Hygiene, Harvard Medical School.

Dr. Charles D. Smith, State Board of Health, Portland, Me., Prof. Physiology, Bowdoin College; Supt. Maine Gen. Hosp.

#### CONNECTED WITH MEDICAL AND HYGIENIC INSTITUTIONS AND ASSOCIATIONS.

Dr. Joseph Bryant, President-elect American Medical Association.

Dr. George H. Simmons, Secretary American Medical Association.

Dr. Charles A. L. Reed, Chairman Legislation Committee of American Medical Association.

Dr. Hermann M. Biggs, Pres. Nat. Assn. for Study and Prevention of Tuberculosis.

Prof. Livingston Farrand, Sec. Nat. Assn. for Study and Prevention of Tuberculosis.

Dr. C. O. Probst, Sec. Amer. Pub. Health Assn., and Ohio State Board of Health.

Prof. L. Emmett Holt, Sec. Rockefeller Institution.

Dr. J. H. Kellogg, Supt. Battle Creek Sanitarium.

Dr. Prince A. Morrow, Pres. Amer. Society Sanitary and Moral Prophylaxis.

Dr. Dudley A. Sargent, Pres. Boston Health League.

Luther H. Gulick, Pres. Amer. Physical Education Society.

#### PHYSICIANS AND HYGIENISTS.

Dr. Frank Billings, Pres. Assn. Amer. Physicians; Prof. of Medicine, Rush Medical College.

Dr. Henry B. Fayall, Prof. of Therapeutics, Rush Med. Coll.

Dr. P. M. Jones, Editor *Jour. California Med. Assn.*

Prof. E. O. Jordan, Editor *Jour. of Infectious Diseases.*

Dr. Quitman Kohuke, formerly Health Officer of New Orleans, Covington, La.

Dr. Richard C. Newton, formerly Editor *Jour. N. J. Med. Assn.*, Montclair, N. J.

#### CONNECTION WITH OTHER ASSOCIATIONS AND INSTITUTIONS FOR HUMAN BETTERMENT.

Felix Adler, Pres. Ethical Culture Assn.

Miss Jane Addams, Hull House, Chicago.

C. Loring Brace, Sec. Children's Aid Society.

Mrs. Melvil Dewey, Sec. Lake Placid Conf. on Home Economics.

Prof. S. M. Lindsay, Sec. Nat. Child Labor Com.

E. R. L. Gould, Pres. City and Suburban Homes Co.

Mrs. Ballington Booth, Volunteers of America.

Edw. T. Devine, Gen. Sec. Charity Organ. Soc., N. Y.

Rev. Josiah Strong, Pres. Amer. Inst. of Social Service.

John Graham Brooks, Pres. Nat. Consumers' League.

Adna F. Weber, Sec. Amer. Assn. of Labor Legislation.

Prof. Jeremiah W. Jenks, Pres. Amer. Econ. Assn.

Robert Treat Paine, Pres. Amer. Peace Assn.

Dr. Daniel C. Gilman, Pres. Nat. Civil Service Reform League.

William R. George, "George Junior Republic."

Robert Woodward, Pres. Carnegie Institution, Washington.

J. Eugene Whitney, Sec. People's University Extension Society, New York.

#### EXPERTS ON VARIOUS PHASES OF HEALTH WORK.

Prof. Francis C. Benedict, Prof. of Chemistry, Wesleyan University.

Dr. Jaques Loeb, Prof. Physiology, Univ. of California.

Prof. M. E. Jaffa, Prof. of Chemistry, Univ. of California.

Prof. Ellen H. Richards, Prof. of Sanitary Chemistry, Mass. Inst. of Technology.

Prof. Franklin C. Robinson, Prof. of Chemistry, Bowdoin College.

Prof. F. F. Weshrook, Prof. of Pathology and Bacteriology, Univ. of Minnesota.

Prof. Samuel H. Woolbridge, Prof. of Heating and Ventilating, Mass. Inst. of Technology.

Dr. Wm. T. Councilman, Harvard Med. School, Boston.

#### CONNECTED WITH EDUCATIONAL INSTITUTIONS.

Pres. James B. Angell, Pres. Univ. of Michigan.

Dr. J. S. Billings, Librarian Public Library of New York.

Prof. H. R. Chittenden, Director Sheffield Scientific School, Yale University.

Pres. Chas. W. Eliot, Pres. Harvard University.

Pres. Arthur T. Hadley, Pres. Yale University.

Pres. G. Stanley Hall, Pres. Clark University.

Miss Hazard, Pres. Wellesley College.

Booker T. Washington, Supt. Tuskegee Institute.

#### CLERGYMEN AND LAWYERS.

Rev. Lyman Abbott, Editor *Outlook*.

Rev. W. G. Eliot, Portland, Ore.

Rev. C. H. Fowler, M. E. Bishop, New York City.

Rev. Edw. Everett Hale, Chaplain U. S. Senate.

Rt. Rev. John Ireland, Archbishop, St. Paul, Minn.

Prof. James B. Ames, Dean Harvard Law School.

Hon. Ben. S. Lindsay, Juvenile Court, Denver.

Hon. John D. Long, Ex-Sec. of Navy, Ex-Gov. of Mass.

Hon. Wm. K. Townsend, Judge U. S. Circuit Court of Appeals.

#### MISCELLANEOUS.

Prof. Liberty H. Bailey, Prof. Agriculture, Cornell Univ.

Luther Burbank, Horticulturist, Santa Rosa.

Andrew Carnegie, Philanthropist.

James H. Causey, Health and Political Reform, Denver.

Miss Grace H. Dodge, Working Girls Soc., New York City.

Thos. A. Edison, Inventor.

Horace Fletcher, author of books on health.

Prof. Harry A. Garfield, Prof. of Politics, Princeton.

Prof. Franklin H. Giddings, Prof. Sociology, Columbia Univ.

Prof. C. R. Henderson, Prof. of Sociology, University of Chicago.

Mrs. Mary F. Henderson, author of books on health.

John Mitchell, Pres. United Mine Workers.

Melville E. Stone, Gen. Mgr. Assoc. Press.

Talcott Williams, Editor.

Michael Vincent O'Shea, Madison, Wis.

This completes the reading of the Committee of One Hundred. You will notice that in that committee there are a few lawyers, whose services, I think, would be gladly given for the purposes mentioned by Dr. Barchfeld, and I would like to ask, if I may, of Dr. Barchfeld one hundred copies of his bill, to distribute among the members of this committee. I am sure I can make good use of them.

No member of Congress is on the committee, for the reason that, as soon as I began to speak with congressmen on the subject, I was met with the reply that they did not wish to commit themselves in advance and in public, but wished to wait until the bill was brought before them, when they could act with a free mind, although a number of them expressed themselves as thoroughly in sympathy with this movement. (Applause.)

SURGEON GENERAL WALTER WYMAN, U. S. Marine-Hospital Service: Mr. Chairman, will you permit me to make a short statement. There was nothing in my deeming it best not to go on that committee to indicate any opposition to it. I so expressed myself in my letter to Dr. Fisher, but the position I hold would make it seem to me preferable to all concerned in every way that I should not be on that committee. I just wanted to make that explanation.

THE CHAIRMAN: It is proper, I think, that I should say something to this subject which has been presented. In the first place, I want to apologize to this Council, as I have apologized to Dr. Barchfeld, for our failure before coming here at the opening of the last session of Congress to find out that we really had three members of the medical profession in that body. We knew about the Senate, where we have two members. But we had looked so long in vain that really we had quit looking. I feel that this Council and the entire medical profession of America is indebted to Dr. Barchfeld for his splendid initiative in taking up this work.

Now in regard to this bill: It obviously covers, in general terms, everything that is going to be required. The question of detail, the doctor has left in blank, and he left it in blank very obviously for the reason that he wishes to have it licked into constitutional shape, with such legal provisions and such phraseology and such form as would enable it to stand muster in the Supreme Court of the United States. This Council took action that would have enabled us without any further delay to have submitted this bill. We asked for the appropriation but it did not come. The strings to the purse of the Association are held by the trustees. I brought this question to the attention of the House of Delegates, under the rather mistaken idea that the House of Delegates ran things in the American Medical Association, and that body, laboring under the same misapprehension, by a very specific action, appropriated \$1,000, or as much of the same as might be necessary, to employ an attorney for this very purpose. That action was arbitrarily reversed by the trustees and the expenditure was denied. I think, with Dr. Barchfeld, and I have no hesitancy in expressing it here, and I express it for the purpose of record, so that it may appear in THE JOURNAL, where it may go to every member of the Association, that the action on the part of the trustees was seriously a mistaken action. And I believe that when they—the members, the House of Delegates and the trustees—come to see this question as evolved by Dr. Barchfeld they will be more actively impressed. And, furthermore, now that this splendid influence has been brought to us by Professor Fisher; now that we have been shown this grasp of the subject by Professor Norton in his paper read before the American Association for the Advancement of Science, which is simply an illumination on this subject, we can present it in a clarified form before the general public.

Now, with Dr. Norton's contribution and with this bill of Dr. Barchfeld's, submitted through Dr. Fisher to an executive



committee of the Committee of One Hundred, which will take up and thrash out these questions, let us hope that the matter will be speedily brought to a focus, so that it can be placed in Dr. Barchfeld's hands for presentation to the National House.

This Council has taken the position from the beginning of its existence that no measure be endorsed by this Association or by this body acting for the Association, unless we had a reasonable assurance as to its legal form so that it would pass muster both in the House and in the courts; for that reason we have hesitated to act more promptly than we otherwise would have done.

#### The Bill for the Relief of Dr. James Carroll.

Dr. von Mansfelde (Nebraska) introduced a resolution relative to the Bill for the Relief of Dr. James Carroll. Referred to a committee consisting of Dr. A. S. von Mansfelde (Neb.), Dr. C. Z. Aud (Ky.), and Dr. S. D. Van Meter (Colo.).

#### The Osteopath Bill.

The chairman called up the Osteopath Bill for the District of Columbia, which was read in full. Its salient features were the following:

Section 1. That there shall be, and is hereby, created a board of osteopathy examiners, to be composed of five physicians in good standing, adherents to the osteopathic system of practice, to be appointed by the Commissioners of the District of Columbia. Of the members of the board first appointed, one shall be appointed to serve one year, two to serve two years, and two to serve three years, or until his or her successor be appointed: *Provided*, That no member of the board shall have been engaged in the practice of osteopathy in the District of Columbia for less than two years at the time of his or her appointment.

Sec. 3. That from and after the passage of this Act all persons desiring to practice osteopathy in the District of Columbia shall apply to said board for license to do so. Applicants shall submit to examination on the following-named branches, to-wit: Anatomy, physiology, chemistry, pathology, principles and practices of osteopathy, hygiene, histology, surgery, obstetrics and gynecology, medical jurisprudence and such other branches as said board shall deem advisable; but said board shall not examine any applicant until satisfactory proof is furnished that he or she is of good moral character and over twenty-one years of age, nor until he or she has presented a diploma issued to him or her by a reputable college of osteopathy, which, at the time the said diploma was issued, required personal attendance on a course of instruction of not less than twenty-seven months. All examinations shall be both theoretical and practical and of sufficient severity to test the candidate's fitness to practice osteopathy. All questions propounded for the examination of applicants except such as relate specifically to the treatment of disease, shall be the same questions propounded to applicants for licenses under the provisions of an Act entitled "An Act to regulate the practice of medicine and surgery, to license physicians and surgeons, and to punish persons violating the provisions thereof in the District of Columbia," approved June third, eighteen hundred and ninety-six; and the answers submitted by applicants for licenses to practice osteopathy shall be marked on a scale of equivalent severity to that adopted for the marking of the answers submitted by applicants for licenses to practice medicine. To the end aforesaid the president of the board of osteopathic examiners, in so far as relates to the selection of questions to be used in examinations and in so far as relates to the rating of the answers to said questions, whether questions propounded to or answers submitted by applicants for licenses to practice osteopathy or for licenses to practice medicine, shall be entitled to all the rights and privileges of the president of the several boards of medical examiners of said District.

Sec. 6. That the examination referred to in Section three shall be conducted orally and in writing, in accordance with the rules and regulations prepared by said board.

Sec. 7. That if in the opinion of a majority of the board of medical supervisors, sitting together with the president of the board of osteopathic examiners, and in the opinion of a majority of said board of osteopathic examiners, said applicant has fairly and successfully passed such examination as hereinbefore provided for, the board of osteopathic examiners shall, as soon thereafter as possible, issue to him or her a license signed by the president and the secretary of said Board and attested by the seal of the District of Columbia, which license shall entitle said applicant, after it is registered as hereinbefore provided to practice osteopathy in the District of Columbia. Every bona fide holder of a diploma issued by a reputable college of osteopathy who was practicing osteopathy in the District of Columbia on the first day of January, nineteen hundred and six, shall, upon application, made within one year after the passage of this Act, and the payment of a fee of five dollars, be granted a license without examination by said board. The license provided for by this Act shall not authorize a holder thereof to give or prescribe drugs for internal use. All licenses issued by said board shall be numbered consecutively, and a register shall be kept by the secretary showing the number of each license, the date of issue, and to whom issued.

Sec. 8. That the board of osteopathic examiners of the District of Columbia, be and is hereby, authorized and directed to license to practice osteopathy in said District without examination, any applicant for such license who had been engaged in the practice of osteopathy in any other jurisdiction, whether a state or territory, or insular possession of the United States, or a foreign country.

THE CHAIRMAN: This bill is now before you for consideration. I will first ask Dr. Sowers, representing the Medical Society of the District of Columbia, to speak on the question.

DR. Z. T. SOWERS, of the District of Columbia: Mr. Chair-

man, I thought it would be wise, in order to bring the matter intelligently to the profession, to distribute among the members a few copies of the bill, our protest to the bill and the reply to that protest.

I will briefly state the situation, but our arguments against the bill are presented here in detail and it is more easily gotten at by reading it in the printed form.

This bill was first introduced by Senator Foraker in the Senate or in the Senate committee, but it was not until it had received the attention and consideration of the committee, nor until it had passed the committee, that the profession of Washington knew anything about it. The bill was brought in by Senator Foraker, who was chairman of a subcommittee to which these matters are referred, and the courtesy in the Senate toward its different members, and more especially toward its different committees and subcommittees is so great, that there is very little difficulty in getting such bills through the Senate committee as a whole if they are introduced from such a committee. That bill, introduced by him, came up and, without any trouble whatever, the bill, through the influence of Senator Foraker, passed the Senate committee of the whole. It then went to the Senate and the same courtesy exists there which paralyzes almost anything you want done in the Senate or any opposition you might raise. But the Committee of the Medical Society here interviewed quite a number of the senators, some fifteen or twenty, and got their opposition and they promised to oppose the bill, and I believe it would have been defeated if it had been brought up when the members of the Senate were in the room.

The patron of the bill, Senator Foraker, very adroitly waited until three days before the adjournment of Congress. I had had it arranged so as to be notified when the bill came up. I was watching for it in order to have the different members who were opposing it brought in. I received a telephone message that the bill was up, brought up by Senator Foraker, and that there were only ten or twelve members in the room. The question of a quorum was not raised, and the feeling of courtesy toward him made it impossible to do anything at all, and the bill was read and passed. In the meantime I asked some of my aides up there to go and find these different members who were going to oppose the bill, among them Senator Spooner, who was to be with us to-day. Every one of these men were in their committees, and before they could get to the floor the bill passed the Senate.

I mention this to show you that there is really a very great opposition in the Senate to the passage of this bill if we can bring it to bear.

After it passed the Senate it went over to the House, and now it is before the House in committee on the District of Columbia.

DR. BARCHFELD: What committee of the House is it before?

DR. SOWERS: The District of Columbia Committee.

DR. BARCHFELD: I want to say that you need not fear the passage of this bill. There is too much good sense in the House Committee on the District of Columbia, and I have confidence in the stability of that committee.

DR. SOWERS: In regard to that I would like to say that I have an intimate acquaintance with some of its members, and I saw them yesterday, including its chairman, and I asked him what he thought, and he said that there were some very strong advocates of osteopathy in the House and in that committee and he thought it would be just as effective there as in the Senate, but he personally would do all that he could to oppose it.

Now, we have got to look at it just as though it was in great danger of being passed. We must not permit ourselves to imagine that they have sense enough to prevent the passage of a foolish bill simply because it has just passed the Senate. The same thing will occur in the House, unless we use influence enough to prevent its passage. They all want to do the right thing, but they are so in the habit of being approached by people with something up their sleeves that they are always on the lookout. Now, Dr. Barchfeld, being a member of Congress, presenting a thing like that, would have more influence than forty of us.

DR. S. D. VAN METER, of Colorado: Mr. Chairman, I feel that this is of such vital importance to the medical profession throughout the United States that it should be made a matter of general referendum. It is especially dangerous, since it strikes at the very fundamental basis of the practice of medi-



cine throughout the United States. If this bill should pass the national body, it would be used as a lever in one-half the states of the Union to secure a similar bill by the osteopaths in those states, and, therefore, I would move you to make it a matter of general referendum.

DR. S. D. PRESBREY, of Massachusetts: I would like to second that last motion, if you please, and to say that, as the representative from Massachusetts, it is a subject that comes very close to me, as I happen to be a member of a similar committee to that of your Chairman in the Massachusetts Medical Association and in the State Legislature. We have had to meet this condition. Each year there has been an effort on the part of the osteopaths to gain some kind of a foothold. I can not exactly state what the foothold was, but once, I think, it was to get an incorporation of some kind of an educational system that was supposed to be osteopathic, and at another time one clause was that they should have one or two representatives on the Board of Registration, in order to make sure that their people would be admitted and registered as physicians. At this very meeting I heard this question asked, which has been referred to here, What is osteopathy? What is it? You get nothing but vague and general talk, and it is not this, and it is not that, and somebody says, "Massage is a pretty good thing," and they say, "This is not massage." Then you say, "Then tell us what it is," and they say, "Our people teach exactly what you teach to students of medicine, except that they are not taught anything about medicine." That was the sort of thing that was brought up and we had to fight it. So far we have come out successfully. There is nothing on the Massachusetts statute books in favor of osteopathy. I do not know whether there will be something this year or not. I suppose we have got to be up and fighting again, and I do not want something passed here that will be thrown back in our faces.

DR. S. D. VAN METER, of Colorado: Mr. Chairman, is it in order to discuss the question as to the prevention of osteopathic legislation at this time?

THE CHAIRMAN: That is the question now under consideration.

DR. S. D. VAN METER, of Colorado: I would like to occupy a few moments time on this proposition of preventing osteopathic legislation, especially as to one point that I feel is very vital.

I am speaking not from a theoretical point of view, but from a practical point of view, having had to fight the proposition in the State of Colorado during the sessions of the last three assemblies of that state. My position is well defined in this paragraph, in the paper I read in California some time ago, in which I called attention to a weak point of the law which would allow osteopathic legislation to come into that state. I then said that the good that has been accomplished by the refusal of licensing bodies to admit to examination those applicants whose preliminary and collegiate training has not been equivalent to a minimum schedule approved and accepted by such bodies has already been mentioned. It may seem a distinction without a difference to say that it would have accomplished just as much good in elevating medical education had the boards incorporated in their rules and regulations the same schedule of minimum educational requirements as being conclusive in the majority of cases that applicants having pursued an inferior course of training would be considered unqualified. In the application of any principle we should look carefully ahead and if possible avoid any concomitant effect. What have been the other results of insisting on prerequisites to examination of medical licensure? Nothing, did we have to reckon with members of the medical profession only. Unfortunately we have to consider the position in which it places us when prosecuting cases of violation of these statutes. The possibility that an occasional applicant might become qualified by a course of study taken in a college not living up to the adopted requirements offers a foundation for a plea of monopoly pleasing to the average jury and often encouraged by our courts who frequently, notwithstanding the great knowledge they arrogate to themselves, are decidedly short on matters medical. Furthermore, no other provision in our medical laws has been so much to blame for that ridiculous condition of separate boards by different medical sects. Coupled with the further unnecessary provision of examination on materia medica and therapeutics it has been most effective in keeping medical sectarianism alive; and to-day, when the educated physician body has so many phases of charlatanry to deal with, it is well to consider most carefully such points. At this time New Jersey and New York are compelled to put forth no little energy to prevent the enactment of a law regu-

lating osteopathy. What would they lose by granting the privilege of these pseudo scientists to apply for license and take the board examination if they wish to assume the offices of a physician? Nothing! But it would at once sweep from under these latter-day disciples of Cagliostro every vestige of the footing on which they stand in asking for an act ostensibly to regulate a system of poor massage, but in reality designed to create an easy door to the legal practice of medicine. It matters not how specious be their plea, it sounds very plausible to legislators. I have heard it so often me-thinks I could close my eyes and hear the reverberations of those words as spoken by the oleaginous tongues of their lobbyists. Their story runneth thus: "Why, we are thoroughly qualified to practice the healing art—are ready to stand the most rigid test, but, according to the laws of the state, we are not even permitted to apply for examination unless we take a course of instruction in medicine in which we do not believe." Gentlemen, I have lost more than one hour of needed slumber seeking a neutralizer for this unctuous hypocrisy, and it is with great pleasure I can, from experience, say that the removal of all prerequisites to application for license is more disconcerting to a host of osteopathic lobbyists than a regiment of Japanese soldiers would recently have been to a lone Russian scout.

Following that, I wish to read from the *California State Medical Journal* of November, this year, remarks on osteopathy from their ex-president. This, gentlemen, is after they enacted their law and is what their ex-officer said:

Five years experience authorizes me to attribute the high percentage of failures during the last year to the presence of new examiners on the board. One year, at least, is required to familiarize oneself with the subject of examination, and the study of the law may necessitate an additional year or two. The new examiner, however lofty his purpose be, can not prove an immediate success; he will almost invariably strive to display the extent of his own learning rather than test the applicant's knowledge. Complex, obscure, and catch questions characterize the work of the new examiner. As proof of this contention, I beg permission to cite the markings in the subject of obstetrics, held by a new member of the board. At the August examination, 67 out of 70 applicants failed; whereas, at the corresponding examination the year previous, obstetrics being in the hands of an older examiner, not a single applicant failed. The disturbing element represented by the new examiner is apparently well recognized by the Homeopathic State Society, for the two Homeopathic members of the board have remained at their post since their election in 1901. Of the five regular pioneers, only one remains on the board.

Osteopathy.—The price paid for our medical law was the Osteopathic Act, which authorizes its licentiates to practice osteopathy and minor surgery. In reality they practice medicine, surgery, obstetrics and the various specialties. The price was already too great in 1901. To-day it seems fabulous. During the past five years 490 licenses have been granted by the Osteopathic Board, on presentation of diplomas, i. e., without examination. California harbors three colleges of osteopathy. Illegal practitioners of medicine and applicants rejected by the medical board supply a considerable and constantly increasing percentage of osteopathic licentiates.

DR. A. J. BARCHFIELD, M. C., of Pennsylvania: Mr. Chairman, I am going to ask you to do something that I will try to carry out for you, namely, I am going to ask you to petition the three members of the profession in the House of Representatives to constitute a committee to act before the Committee on the District of Columbia for the purpose of killing this bill. That is what I am going to ask you to do. (Applause.)

DR. W. A. SPURGEON, of Indiana (alternate for Dr. John N. Hurty): The introduction of this bill, and the possibility of its passage in the District of Columbia, presents a formidable feature which is more extensive and which is more far reaching than the mere inherent virtues of the question alone. I rise, Mr. Chairman, to make just one suggestion, and that is that the legislator, whether he be a national or a state legislator, as a rule looks on these questions of medical legislation in an entirely different light and from an entirely different viewpoint from you or me. They do not see these questions as we see them until we can get to them with propositions on a broad basis and on a high plane. They will turn us down every time. We can go to them and say that we as a medical profession are at war with special legislation with reference to the position or the attitude of any particular school. They will fail to understand us. You understand it, but the average legislator fails to understand that proposition. He looks on it as a professional or as a sectarian fight, and you will be defeated every time. You must put this question on a high plane. You must strike at this question from a more vital standpoint than from the standpoint of a profession, in my judgment. I have been through the mill just a little on this proposition, and I say to you that unless there is something inherently in



that bill which strikes at the cause of education, that strikes at the welfare of the common people, unless there is something there which sends a dagger to the heart of the interests of the great rank and file of the people, you can not control your legislature on that question from a sectarian standpoint. You can not approach it in that way, and you will get defeated. It has been done in the states; it may occur in the District of Columbia.

I just rise to offer this suggestion, that if in that measure there is a direct thrust at the educational standard in medicine, if it is there, you can take that as a club and you can thrash the very life out of the measure. (Applause.)

But, as a rule, you can not do it on any other basis. You must show the average legislator in this country the measure is inherently wrong in itself, as it has to and as it touches the interests of the great rank and file of the people who are their constituency. We have got to learn that lesson. We have got to fight these battles along that plan, and until we do that we are going to get defeated.

And, while I do not think that I have listened to a paper that was better in itself, more extensive in itself—while I do not know when I have listened to anything that pleased me better than the Chairman's address, yet he referred to a thing in that address that, in my judgment, is a mistake; for when you raise the question, when you mention the name, when you advertise the question of sectarianism, at any time, you boost its interests, you advance it. The way to the unification of the great medical profession of this country to-day, I believe, is in ignoring the existence, as far as possible, of sectarianism. Let it be forgotten. It is an unfortunate condition in this country. Let us bury it in forgetfulness as rapidly as possible, so that every qualified man, whether he be of one school or another, may recognize the fact that his very existence depends on qualification and not at all on sectarianism.

The main point that I want to insist on here is that you take into consideration in this fight special legislation, the fact, which nearly always occurs, that it is a thrust, that it is a blow, at the educational standards in medicine, and so it is nine times out of ten. It has been so in the states. It is probably so here. You will generally find that it is putting down the bars so that one class of men may cross over where the fence is lower.

Let us say to the osteopaths; let us say to the homeopaths, to the regulars, and to every man that we meet on a common plane, that we all submit to tests that are alike, and that these tests are the high tests that determine a man's efficiency and proficiency in the business of practicing medicine and surgery in this country. When we can say that and ask, in the name of the great cause of education in this country, that the bars be put down for no man, but that all measure up to the same standard, I think, then, that you will get a hearing.

DR. A. S. VON MANSFELDE, of Nebraska: I want to say one word in regard to the remarks of the gentleman (Dr. Spurgeon) who just preceded me, and that is that in a court of justice we are in the habit of calling a defendant's name, and this is the court before which this osteopathic business is pending, and the defendant's name must be mentioned.

Now, I move you, Mr. Chairman, that we respectfully petition, through the officers of this Council, the three members of the House of Representatives, who are members of our profession, that they appear before the Committee on the District of Columbia and present the cause of the people in regard to this legislation and, if possible, convince that committee that it will be a great, great mistake, an injury to the people, if such a bill as that is passed.

DR. S. D. VAN METER, of Colorado: I second that motion.

After remarks by Drs. von Mansfelde and Sowers the motion was carried.

(Whereon, at 12:45 the Conference adjourned to meet the next morning at 9:30 o'clock, with the understanding that visits be made during the afternoon to members of Congress.)

#### OPEN SESSION.

FRIDAY MORNING, DEC. 14, 1906, 9:30 O'CLOCK.

THE CHAIRMAN: Gentlemen, the first report is on the Army Medical Reorganization Bill, of which committee Dr. Bacon of Chicago, is chairman, but, in his absence, Dr. J. F. Percy, representing the State of Illinois, will present the report.

DR. J. F. PERCY, of Illinois: Mr. Chairman, I have the honor of submitting the report of the subcommittee on the Army Medical Reorganization Bill as follows:

#### To the National Legislative Council:

The members of the Council will remember that at the time of the last meeting of the Council, that is, last June, the Army Medical Bill had passed the Senate after scrutiny and long debate, with but five dissenting votes. The House Committee, General Hull, Chairman, gave our Council an informal hearing on the merits of the bill April 4, the House Committee reported the bill favorably with but few modifications—the number of colonels being reduced from 16 to 14, the lieutenant colonels from 24 to 20, and the majors from 110 to 100. The bill did not get a vote in the House before the close of the session in spite of considerable effort to induce Speaker Cannon to let the bill come to vote, made by the members of the Council and by the American Medical Association itself while assembled in Boston.

During the vacation of Congress some effort was made to get congressmen to support the bill. The Council and the county auxiliaries have also had the coöperation of several prominent physicians not members of our bodies. In particular, we sought the support of Hon. George Prince of the Fifteenth Illinois Congressional District, and a member of the House Committee on Military Affairs. We are glad to report that Mr. Prince has promised his valuable support to the bill. Efforts to secure the support of Speaker Cannon have resulted in getting his promise not to oppose the hearing of the bill on a suspension day. This is now the only chance to get the bill through this session, as it would never be reached on the regular calendar. It is believed that it can be passed in a few minutes if Speaker Cannon will recognize Mr. Hull to call it up.

We therefore recommend that the Council call on Speaker Cannon and Chairman Hull and ask them to arrange for the passage of this measure that we believe so important to the welfare of the Army.

It might be added that we have had during the year an additional argument in favor of the passage of the bill. When it seemed probable that it would be necessary to send to Cuba an Army of occupation, Surgeon-General O'Reilly, anticipating the need of a considerable increase in the number of contract surgeons, wrote to a number of well-known physicians in different parts of the country asking for names of capable physicians who might accept positions as contract surgeons. It was my experience, as well as that of our chairman, Dr. Reed, and of many others, that the physicians, to whom we made the proposition of General O'Reilly, when they learned the status of the contract surgeons, refused to consider it. This demonstration of the low estimate placed on the position of contract surgeons by the better members of the profession proves that in case of need, which may at any moment arise, the Medical Department of the Army will be at a disadvantage even greater than at the time of the Spanish-American War.

C. S. BACON, Chairman Special Committee on Army Bill.

THE CHAIRMAN: You have heard the report of Dr. Bacon, chairman of this committee. This is simply a report of progress, giving definite information as to the status of the bill, and the question now arises as to what more can this Council of the American Medical Association do to advance the interests of this measure.

DR. A. S. VON MANSFELDE, of Nebraska: I move, Mr. Chairman, that the report be entered on the minutes and be printed, and that the thanks of this Council be given to Congressman Prince for his valuable services.

The motion was duly seconded, formally put and carried.

THE CHAIRMAN: What more can the Council do to advance the interests of this measure? On this question I would like to hear from Dr. Burton, who has been assigned a member of this Council and who is the representative-at-large to Congress from Delaware.

DR. BURTON, of Delaware: Mr. Chairman, I hope you will allow me to make a suggestion in the form of a motion. I think the report's suggestion that the Council call on Speaker Cannon and make a formal request that Mr. Hull be recognized for the purpose of calling up that bill a very good suggestion, and I have no doubt that Dr. Barchfeld, as I know that I myself, would be very glad to go with the Council and introduce you and make a request from both of us, in connection with the request of the Council.

THE CHAIRMAN: Would it be well to include in the motion that the committee call on the Committee on Rules?

DR. H. R. BURTON, of Delaware: Yes; there would be no objection to that.

Whereon, the motion, having been duly seconded, was formally put and carried.

#### The Hammond and Canteen Bills.

THE CHAIRMAN: We have here Dr. H. L. E. Johnson, who has been looking after the Hammond and Canteen bills, and he is here to report about the status of these matters.

DR. A. S. VON MANSFELDE, of Nebraska: I move you, Mr. Chairman, the adoption of that report.

THE CHAIRMAN: It has been moved and seconded that the report of the committee be adopted. The adoption of this report like the preceding one, involves a reindorsement of the measure and its continuance in the hands of the present committee.

The motion, having been duly seconded, was formally put and carried.

(To be continued.)



## Book Notices

TEXT-BOOK OF COMPARATIVE GENERAL PATHOLOGY for Practitioners and Students of Veterinary Medicine. By Prof. Dr. Th. Kltt, of Munich. Authorized Translation by Dr. William W. Cadbury, Assistant Demonstrator of Pathology in the University of Pennsylvania. Illustrated with 4 colored plates and 131 illustrations. Cloth. Pp. 471. Price, \$5.25 net. Chicago: W. T. Keener & Co., 1906.

This book appears to cover in a satisfactory manner the field indicated by its title. The fundamental facts of pathology are presented in a lucid manner and with special reference to the requirement of veterinary practitioners and students. Everywhere throughout the work the close relationship that exists between veterinary and human medicine is apparent. Indeed, the basic principles are identical; both branches of medicine have come from a common source and have been developed along similar lines. Were it necessary, the present work might well serve as a guide for students of human medicine introductory to the study of special pathology. The translation is smooth and the editorial notes, which are enclosed in special brackets, are in the main apposite and helpful. The publisher's part has been well done, and without doubt the volume will be received with approbation by instructors of veterinary students and it should have a large field of usefulness.

Like all text-books, this book also falls a little behind the actual present state of knowledge especially in subjects now actively investigated. Thus the part played by opsonins in phagocytosis receives no mention either by the author or the editor. In view of the rapidity, however, with which knowledge expands as new fields of investigation are opened or new methods of study are introduced inadequacies of this sort are largely unavoidable. In future editions it no doubt will accord with the wishes of many to materially enlarge the sections on parasitic organisms. The following paragraph from the introduction states so well the view generally taken by intelligent, unprejudiced persons *re* animal experimentation that it is quoted here in full: "To sympathetic persons it may indeed seem a serious thing that we be forced for our own advantage to make use of the sufferings of lower animals in order to avert—dangers from ourselves and to purchase by animal sacrifice the means of combating contagion. But the instinct of self-preservation impels man, just as the necessity for food with many animals demands the death of other creatures. The slaughter of animals for sport is far worse, and productive of more pain to them; and many of the methods of killing in the kitchen of the epicure are much less excusable than any of the practices in the whole range of deplored animal inoculation, so unavoidable for the establishment of medical science. When it is remembered that without the results obtainable by such work—experimental pathology—millions of people must forever be threatened by early death from pestilence, as of old, when countless numbers were sufferers in these epidemics and were hurried off before their time and when destructive cattle plagues forced heavy burdens on the land, whole hecatombs of animals for which the experimentalist must account must appear but a trifling matter. Prohibition of animal experimentation, as is sought by unrestrained zoömania, would be equivalent to prohibiting the cure of the sick; since Nature affords for many affections no means for restoration other than the blood of inoculated animals. Human education and the high ethical tone of medical science will certainly be sufficient security that experimental pathology in pursuit of its purposes will not lend itself to useless animal torment."

NEW SERUM THERAPY. By D. Montgomerie Paton, L.R.C.S. and L.R.C.P. Cloth. Pp. 311. Price, \$2.25 net. New York: William Wood & Company.

The "New Serum Therapy" described in this volume of 311 pages consists of the stomacheic administration of diphtheria antitoxin and certain normal serums, for pathologic conditions ranging from ordinary wounds to locomotor ataxia. It is somewhat shocking to find that there remain some diseases well known to physicians and to the laity which Paton has failed to include in the long list of ailments which lend themselves to specific treatment with the "plasmata" of the sheep,

horse or ox, or with diphtheria antitoxin. It may be that the opportunities to try antitoxin on syphilis, gonorrhea, falling of the womb, gumboil, and uncinariasis have not presented themselves to Paton, and that, with true scientific conservatism, he refuses to commit himself until he has tried one or two gallons of low potency antitoxin in each of these diseases.

Paton's theory, briefly, is as follows: The serums mentioned, when given by the mouth, have the power of increasing tissue resistance so that the proteolytic ferments of the bacteria find no point of attack. This power seems to be much more pronounced in diphtheria antitoxin than in normal serums, but has no apparent relation to the antitoxin itself.

The use of the serums of the horse and sheep for tuberculosis, and of the ox for influenza is based on the supposed higher resistance of these animals to the diseases mentioned. In addition to these effects the "plasmata" are supposed to have a very high food value.

Possibly with the exception of some value which may be attached to serums as food substances, on which Paton lays great stress, his deductions are out of harmony with the facts recently gained concerning the specific relation of the reaction on the part of the host to the invading microbe. However serious the author's work has been, the clinical evidence which he presents in support of his principles are far from inviting confidence. The work reflects little credit on the author or on the discrimination of the publisher.

THE MEDICAL STUDENT'S MANUAL OF CHEMISTRY. By R. A. Wittinghaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University. Sixth Edition. Cloth. Pp: 820. Price, \$4.00 net. New York: William Wood & Company, 1906.

This edition has been enlarged to include the increased application of chemistry to medicine and the advances which have been made by chemistry itself. The section on chemical physics and general chemistry has been rewritten to give proper consideration to the relation of physics to chemistry as shown by the newer investigations. While inorganic chemistry has been left nearly as before, the sections dealing with organic and physiologic chemistry have been extended and brought up to date. An excellent feature is the statement, in italics, of important facts, principles and definitions. The author properly urges that the principles of the science be thoroughly imparted without the attempt to burden the mind with too large an array of facts. In regard to quantitative methods of analysis of urine the distinct advice is given that the practicing physician "abstain entirely from any attempt to use them, unless, indeed, he may spare the time from his practice to become a worker in a chemical laboratory." Another statement needs special emphasis: "And in this connection it should also be said that the value of such investigations frequently depends on comparisons of intake with output, and that in such cases the inquiry should not be entered on unless the patient is willing to undergo the personal discomfort of a regulated and measured diet." Such advice may lessen the use of the ureometer, but is calculated to further the accuracy of scientific medicine. While it may be true, as the author says, that nothing is discussed in the book that can not and should not be taught to medical students, it remains a question what portion of it the physician can be expected to remember, although the book will furnish a valuable means of refreshing his memory.

A TEXT-BOOK OF PATHOLOGY. By A. Stengel, M.D., Professor of Clinical Medicine, University of Pennsylvania, with 399 illustrations in Text. Fifth edition, thoroughly revised. Cloth. Pp. 979. Price, \$6.00 net. Philadelphia: W. B. Saunders Company, 1906.

The revision appears to be thorough and conscientious and the material is, in the main, well digested. A serviceable and reliable text-book is the result. Dr. Stengel's book is a kind of *multum in parvo*. In addition to the sections on general pathology and pathologic anatomy there is considerable space given to the morphologic and cultural details of pathogenic microorganisms and there is an appendix on pathologic and bacteriologic technic. If another revision of the book is ever necessary, the question should be considered carefully whether students would not be rendered a greater service if attention



were concentrated on the more essential parts of the main subject—Pathology—and purely bacteriologic and technical matters relegated to the special works where they belong. At present there are no references to original articles and other sources of information and discussion. This the progressive student will regret, because such references, when judiciously selected, are valuable aids to real study. They are especially necessary in connection with a book like this, in which so many important subjects are treated in so concise a form. There is apparently no mention in the book of blastomycosis, either local or general; and the discussion of the theories of immunity, as well as the statement of the facts, seem to us susceptible of considerable simplification and adjustment.

**CLINICAL DIAGNOSIS.** A Text-Book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By C. P. Emerson, A.B., M.D., Resident Physician, the Johns Hopkins Hospital, Associate in Medicine, the Johns Hopkins University. Cloth. Pp. 641. Philadelphia: J. B. Lippincott Company.

In this work are discussed very ably the clinical pathology and diagnosis of the sputum, urine, stomach and intestinal contents, feces, blood, and the various body fluids, both normal and abnormal as carried on in the clinical laboratory of the Johns Hopkins Hospital. Nothing of value to the diagnostician appears to have been omitted, so that the book is a complete exposition of well-tried and accepted methods of laboratory diagnosis, although many of them can not be employed by the general practitioner because of the time and equipment needed. The book emphasizes, however, the need of a closer association and coöperation between the practitioner and the laboratory worker. The fact that this work is based on the experience derived from access to the records of a large hospital for seventeen years, considerably enhances its practical value. It is well written, well illustrated and printed on stock that is free from the gloss so hurtful to the eyes.

**STÖHR'S HISTOLOGY,** Arranged on an Embryologic Basis. By F. T. Lewis, Assistant Professor of Embryology at the Harvard Medical School. From the Twelfth German edition, by P. Stöhr. Sixth American Edition, with 450 illustrations. Cloth. Pp. 434. Price, \$3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

This book has been thoroughly revised and rearranged, the new arrangement being based on an embryologic plan. The directions for preparing sections have been reduced considerably, a very desirable change because the student must learn the technic from his teacher and by experience in the laboratory and not from a text-book. It is not essential that the student or practitioner should be familiar with the details of many staining processes, but the structure of the adult organs and the developmental possibilities of their constituent tissues must be known. The arrangement is excellent and will appeal to both teacher and student. It clarifies the subject of histology and also makes its study more interesting, a fact of no small importance in teaching. The nomenclature adopted is that published by the Committee of the German Association of Anatomists. Many new illustrations have been embodied in this edition.

**POKER JIM, GENTLEMAN,** and Other Tales and Sketches. By G. Frank Lydston. Cloth. Pp. 396. Price, \$1.00. Chicago: Monarch Book Company.

In his usual inimitable style, Dr. Lydston relates twelve short stories, one of which gives the title to the book. Many of these stories deal with the physician and his work, but are of such a character as to appeal particularly to the layman. They are well written and impressionistic, depicting phases of life with which the author shows he is familiar and which to the reader are always full of interest. "A Great City's Shame" vividly describes the scenes of the Chicago Iroquois Theater fire. Among the stories of more than ordinary interest are: "Johnny," "A Legend of the Yosemite," and, of course, the title story. Each holds the reader's interest till its conclusion, and then it leaves him much food for thought and retrospection. On the whole the book is one which can be read more than once, even though the endings of the stories is not such as the superficial reader expects to see. But then, these are incidents taken from life and not the children of a fertile imagination.

**THE MAKING OF AN AUTOMOBILIST.** By H. A. Grant, M.E. Flexible leather. Pp. 141. 39 Illustrations. Price, \$.50. Tarrytown, N. Y.: Maxwell-Briscoe Motor Co., 1906.

For the one who thinks he is able to run his own car or who wants to be able to do so, now or when he gets one, this book will be of value. It tells all about the various motors, explains the carbureters and their mode of action, methods of cooling, transmissions and clutches, ignition—in fact, all about the car and how to run it. It tells how to avoid trouble on the road, and how to get out of trouble should it occur. It is a book full of practical information for the automobilist, and the matter is presented in such a way as to be easily understood, even by a novice.

**ENTERIC FEVER IN INDIA,** and in Other Tropical and Sub-Tropical Regions. A Study in Epidemiology and Military Hygiene. By E. Roberts, M.B., D.P.H., Formerly Deputy Sanitary Commissioner, Northwest Provinces; lately Statistical Officer to the Government of India in the Medical and Sanitary Departments, etc. Cloth. Pp. 571. Price, 21s. net. London: Baillière, Tindall and Cox, 1906.

This is a study in epidemiology and military hygiene based on an experience in India and a careful analysis of statistics, largely those of the army.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

**NEW YORK** State Boards of Medical Examiners, Albany, January 29-February 1. Chief of Examining Division, Charles F. Wheelock, Albany.

**NEVADA** State Board of Medical Examiners, Carson City, February 4. Secretary, Dr. S. L. Lee, Carson City.

**KANSAS** State Board of Medical Registration and Examination, Topeka, February 12. Secretary, Dr. F. P. Hatfield, Grenola.

**NEBRASKA** State Board of Health, State House, Lincoln, February 13-14. Secretary, Dr. George H. Brash, Beatrice.

**Length of College Year at Kentucky School of Medicine.**—Dr. W. H. Wathen, dean of the Kentucky School of Medicine, writes us that the statement in regard to that college made on page 555 of *THE JOURNAL*, Aug. 25, 1906, saying that the curriculum embraced "four years of 28 weeks each," should read "four years of 30 weeks each."

**New Jersey June Examination.**—In the report of the examination given by the New Jersey State Examining Board, published in *THE JOURNAL*, Sept. 15, 1906, page 890, one candidate who was listed as a graduate of the Woman's Medical College of Ontario in 1896, grade 89.8, should have been accredited to the Woman's Medical College of Pennsylvania.

**Kentucky October Report.**—Dr. J. N. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, October 23-25, 1906. The number of subjects examined in was 12; total number of questions asked, 100; percentage required to pass, 70, but not less than 60 in any one branch. The total number of candidates examined was 13, all of whom passed. The following colleges were represented:

College.	PASSED.	
	Year Grad.	Per Cent.
University of Kentucky .....	(1906)	79, 88
College of P. and S., Chicago .....	(1906)	74
University of Louisville .....	(1906)	80
College of P. and S., New York .....	(1906)	84.5
Medical Coll. of Ohio .....	(1906)	84
University of Pennsylvania .....	(1906)	85.5
Miami Med. Coll. ....	(1906)	85, 86, 90
University of Tennessee .....	(1905)	79
University of Virginia .....	(1906)	77
Kentucky School of Med. ....	(1906)	77

Representatives from the following colleges were licensed to practice medicine Nov. 15, 1906, under the exemption clause without examination:

College.	No. and Year Grad.	
	(5, 1906)	(3, 1906)
University of Kentucky .....	(5, 1906)	
Louisville Med. Coll. ....		(3, 1906)
Hospital Coll. of Med., Louisville .....	(1, 1905)	

**Idaho October Report.**—Dr. J. L. Conant, Jr., secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Lewiston, Oct. 2-3, 1906. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 35, of whom 29 passed and 6 failed. The following colleges were represented:



## PASSED.

COLLEGES.	Year of Grad.	Gynecology.	Obstetrics.	Pathology.	Surgery.	Anat. and Hist.	Mat. Med. and Therapeutics.	Hygiene.	Theory, Pract.	Diagnosis.	Physiology.	Chem. and Tox.	Gen. Average.
Coll. of P. and S., San Francisco. ....	1906	74	86	69	64	83	78	85	71	77	76	83	77
Coll. of P. and S., San Francisco. ....	1905	80	89	82	77	87	84	96	77	87	80	68	82
Colo. School of Med. ....	1906	77	89	78	76	95	87	95	77	88	94	93	86
Colo. School of Med. ....	1906	76	86	75	79	89	77	93	72	81	88	75	81
Georgetown Univ. ....	1904	76	84	62	76	82	86	90	77	78	78	75	79
Rush Med. Coll. ....	1900	78	91	75	79	87	82	90	78	83	91	78	83
Rush Med. Coll. ....	1905	80	88	79	79	89	83	90	79	90	85	75	83
Rush Med. Coll. ....	1899	78	87	71	76	82	76	90	75	80	76	85	80
Rush Med. Coll. ....	1902	82	91	79	82	93	85	88	78	94	87	89	86
Rush Med. Coll. ....	1904	80	93	85	86	89	87	98	76	89	85	85	87
Coll. of P. and S., Chi. ....	1906	76	88	82	83	89	82	95	78	88	95	95	87
Northwestern Univ. ....	1906	74	90	74	82	94	82	90	77	82	72	67	81
University of Iowa ....	1895	80	86	77	76	85	83	95	81	75	76	68	80
Tulane University ....	1906	79	87	81	73	95	84	87	79	85	85	91	84
Detroit Coll. of Med. ....	1904	80	94	90	91	90	92	98	79	90	89	82	89
Detroit Coll. of Med. ....	1886	81	89	74	76	74	85	98	72	62	73	60	77
Univ. of Minnesota ....	1905	78	66	74	67	78	75	85	76	79	76	85	76
Univ. of Minnesota ....	1906	76	82	85	73	86	87	95	78	85	82	75	82
Chicago Hom. Med. C. ....	1880	80	94	79	80	81	94	100	80	79	78	66	83
Marion-Slms-Beaumont Med. Coll. ....	1898	81	73	67	69	88	80	86	71	78	79	89	78
Kansas City Med. C. ....	1897	76	88	75	72	95	86	84	77	84	96	76	83
American Med. Coll. ....	1906	77	89	70	72	86	100	90	75	78	66	20	75
St. Louis. ....	1906	77	86	69	76	82	80	90	74	78	86	70	79
Coll. of P. and S., St. Louis. ....	1900	74	87	61	74	78	76	80	73	69	88	70	75
Univ. M. C. Kan. City. ....	1906	82	90	84	84	84	86	100	76	90	80	84	85
Creighton Med. Coll. ....	1906	81	95	91	85	88	83	95	77	87	94	91	88
University of Oregon. ....	1906	81	88	77	77	89	77	89	76	83	92	92	84
Willamette Univ. ....	1906	81	88	77	77	89	77	89	76	83	92	92	84
West. Pennsylvania Med. Coll. ....	1888	81	85	62	75	81	81	95	78	78	67	67	77
Vanderbilt Univ. ....	1906	77	89	71	80	92	85	95	78	79	75	80	82
Keokuk Med. Coll. ....	1905	74	81	54	48	68	77	89	75	65	61	53	68
Kentucky Sch. of Med. ....	1886	73	75	16	62	26	68	85	79	31	21	27	51
Mississippi Med. Coll. ....	1895	54	12	16	34	34	50	50	38	38	38	22	22
Missouri Med. Coll. ....	1899	73	65	21	64	77	74	77	66	73	61	81	67
Univ. of Louisville ....	1883	59	93	41	73	80	77	95	76	74	47	62	71
Kansas City Homeo. ....	1895	74	85	36	62	78	87	90	75	72	75	61	72

**Louisiana October Report.**—Dr. F. A. Larue, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Oct. 19-20, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 26, of whom 19 passed and 7 failed. The following colleges were represented:

## PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., Chicago	(1883)	82.8
Louisville Med. Coll.	(1906)	75.2
Hospital Coll. of Med., Louisville	(1906)	75.85.2
University of Louisville	(1906)	83.8, 84.8
Kentucky School of Med.	(1906)	89.6
Flint Med. Coll.	(1905) 79.2; (1906)	80.6
Tulane University	(1906) 86.2, 88.6,	90.4, 91.4
Maryland Med. Coll.	(1906)	88.2
College of P. and S., St. Louis	(1901)	81.0
Memphis Hosp. Med. Coll.	(1898)	77.0
Vanderbilt University	(1903) 90; (1906)	94.2
University of the South, Sewanee	(1905)	89.6

## FAILED.

Hospital Coll. of Med., Louisville	*70.4 (1906)	69.2
University of Baltimore	(1904)	55
Flint Med. Coll.	(1904) 67.4; (1905)	70
Meharry Med. Coll.		*71.8
Dallas Med. Coll.	(1903)	70

\* Year of graduation not given.

**Mississippi October Report.**—Dr. J. F. Hunter, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 9-10, 1906. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 69, of whom 38 passed, including 20 undergraduates, and 31 failed, including 11 undergraduates. The following colleges were represented:

## PASSED.

College.	Number and year of grad.
Medical Coll. of Alabama	(1, 1898)
University of Kentucky	(1, 1905) (1, 1906)
Louisville Med. Coll.	(1, 1905) (3, 1906)
College of P. and S., Baltimore	(1, 1897)
Jefferson Med. Coll.	(1, 1905)
University of Nashville	(1, 1906)
Meharry Med. Coll.	(1, 1903) (1, 1906)
Memphis Hosp. Med. Coll.	(1, 1901) (3, 1906)
Medical Coll. of Virginia	(1, 1904)
McGill University, Quebec	(1, 1906)

## FAILED.

Harvey Med. Coll., Chicago	(1, 1905)
University of Louisville	(1, 1896)
Hospital Coll. of Med., Louisville	(1, 1906)
Kentucky School of Med.	(1, 1906)
Louisville Med. Coll.	(3, 1906)
Tulane University	(1, 1904)
Flint Med. Coll.	(1, 1906)
University of Nashville	(1, 1906)
Memphis Hosp. Med. Coll.	(1, 1903) (3, 1906)
University of Tennessee	(1, 1901)
Meharry Med. Coll.	(1, 1903) (3, 1906)
Chattanooga Med. Coll.	(1, 1905)

**Connecticut November Report.**—Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, Nov. 13-14, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 35, of whom 25 passed, 9 failed and one withdrew. The following colleges were represented:

## PASSED.

College.	Year Grad.	Per Cent.
Cooper Med. Coll.	(1891)	92.9
Yale University	(1904) 82.5; (1905) 80.3; (1906) 82.8,	83, 83.5
George Washington University	(1906)	79.3
Georgetown University	(1905)	76.8
College of P. & S., Chicago	(1905)	75.3
Baltimore Med. Coll.	(1905) 78.9; (1906)	79.4
Johns Hopkins University	(1905)	77.6
University of Maryland	(1906)	75.6
College of P. & S., Baltimore	(1906)	75.8, 77.5
Medical School of Maine	(1897)	75.
Harvard Med. School	(1894)	75.6
University of Minnesota	(1903)	75.1
Cornell University	(1905)	91.3
Albany Med. Coll.	(1904)	85.3
Univ. and Bellevue Hosp. Med. Coll.	(1903) 82; (1905)	87.9
College of P. & S., New York	(1906)	82.8
Jefferson Med. Coll.	(1895)	78.4
University of the South	(1905)	75.4

## FAILED.

FAILED.	
Baltimore Med. Coll.....	(1906) 65, 67, 70.1
Tufts Coll. Med. School.....	(1905) 71.6
College of P. & S., Boston.....	(1906) 43.9
College of P. & S., New York.....	(1904) 73.9; (1905) 68.6
Long Island College Hospital.....	(1888) 68.2
New York Univ. Med. Coll. ....	(1880) 64.8

**Massachusetts November Report.**—Dr. E. B. Harvey, secretary of the Board of Registration in Medicine, reports the written examination held at Boston, Nov. 13-14, 1906. The number of subjects examined in was 13; percentage required to pass, 70. The total number of candidates examined was 46, of whom 35 passed and 10 failed, while one did not complete the examination. The following colleges were represented:

## PASSED.

College.	Year Grad.	Per Cent.
Bennett Coll. of Ecl. Med. and Surg., Chicago	(1895)	70
Kentucky School of Med.	(1904)	71
Baltimore Med. Coll.	(1906)	74.8
Baltimore University	(1905)	70
Harvard Med. School	(1904) 82.5; (1905) 80; (1906)	76.3
Tufts Coll. Med. School	(1905) 70, 70; (1906) 71.1, 76, 76,	76.3, 77.5
Boston University	(1905) 77.3, 81.5, 85.5; (1906) 72.3, 76.6,	76.6
College of P. and S., Boston	(1906) 70, 74, 78	
Dartmouth Med. Coll.	(1900) 75.8; (1906)	75
Eclectic Med. Inst., Cincinnati	(1904)	72.8
Woman's Med. Coll., of Pennsylvania	(1905) 73.5, 77.6,	78.8
University of Pennsylvania	(1906) 70.3,	77.3
University of Vermont	(1906)	71
University of Virginia	(1905)	71.6
McGill University, Montreal	(1906)	75.8
Toronto University, Ontario	(1904)	77.1

## FAILED.

National Med. University	(1904)	49.1
Baltimore Med. Coll.	(1906)	59.8
Baltimore University	(1904) 65; (1906) 53.3, 55.8,	65.1
Maryland Med. Coll.	(1906)	61.5
University of the South	(1903)	62.8
Laval University, Quebec	(1904) 48.5; (1905)	62.3

**Nevada November Report.**—Dr. S. L. Lee, secretary of the State Board of Medical Examiners, reports the oral and written examination held at Carson City, Nov. 5, 1906. The number of subjects examined in was 14; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was two, both of whom passed. Sixty-eight candidates were registered on presentation of satisfactory credentials. The following colleges were represented:

## PASSED.

College.	Year Grad.	Per Cent.
Western University, London, Canada	(1906)	78
University of Edinburgh, Scotland	(1898)	79

## REGISTERED WITHOUT EXAMINATION.

College.	Number and year.
College of P. and S., San Francisco	(1, 1899) (5, 1906)
California Med. Coll., Ecl., San Francisco	(1, 1903) (1, 1906)
College of P. and S., Los Angeles	(1, 1906)
Cooper Med. Coll.	(2, 1897) (1, 1901) (3, 1905) (3, 1906)



Unlversity of California.....	(1, 1899) (1, 1902) (1, 1906)
Unlversity of Southern California .....	(3, 1906)
Denver and Gross Coll. of Med. ....	(1, 1894) (1, 1898) (1, 1905)
Unlversity of Colorado .....	(1, 1896)
Unlversity of Denver .....	(1, 1900)*
Georgetown Unlversity .....	(1, 1897)
College of P. and S. Chlcago.....	(3, 1905)
Rush Med. Coll. ....	(1, 1889) (1, 1901)
Jenner Med. Coll. ....	(1, 1903)
National Medical Unlversity .....	(1, 1899)
Illlnols Med. Coll. ....	(1, 1902)
Central College of P. and S., Indianapolis .....	(1, 1896)
Keokuk Med. Coll. ....	(1, 1892)
Kentucky School of Medicine.....	(1, 1897)
Baltimore Med. Coll. ....	(1, 1896)
College of P. and S., Boston.....	(1, 1906)
Saghnaw Valley Med. Coll. ....	(1, 1902)
Hahnemann Med. Coll., Kansas City.....	(1, 1901)
Barnes Med. Coll. ....	(1, 1896) (1, 1906)
Unlversity Med. Coll., Kansas City .....	(1, 1905)
American Med. Coll., St. Louis.....	(1, 1890)
Missouri Med. Coll., St. Louis .....	(1, 1894)
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.).....	(1, 1906)
Washington Unlversity, St. Louis .....	(1, 1898)
Unlversity of Nebraska .....	(1, 1905)
Creighton Med. Coll. ....	(1, 1905)
Bellevue Hosp. Med. Coll. ....	(1, 1889)
College of P. and S., New York City.....	(1, 1893) (1, 1896)
Mlaml Med. Coll. ....	(1, 1867)
Starling Med. Coll. ....	(1, 1888)
Eclectic Med. Inst., Cincinnati .....	(1, 1884)
Willamette Unlversity .....	(1, 1906)
Western Reserve Unlversity .....	(1, 1882)
Jefferson Med. Coll. ....	(1, 1877)
Vanderbilt Unlversity .....	(1, 1888)
Memphis Hosp. Med. Coll. ....	(1, 1902) (1, 1904)
Unlversity of the South .....	(1, 1901)
Unlversity of Fort Worth .....	(1, 1906)

\* In 1902 this school merged with Gross Medical College to form the Denver and Gross College of Medicine.

West Virginia November Report.—Dr. H. A. Barbee, secretary of the West Virginia State Board of Health, reports the written and oral examination held at Huntington, Nov. 13-15, 1906. The number of subjects examined in was 9; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 33, of whom 20 passed, including 1 undergraduate, and 13 failed, including 2 undergraduates. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
George Washington Unlversity .....		(1903)	88
Louisville Med. Coll. ....		(1906)	84
Rush Med. Coll. ....		(1897)	87
Hospital Coll. of Med., Louisville.....		(1904)	80
Baltimore Med. Coll. ....		(1899) 85; (1905)	82
Maryland Med. Coll. ....		(1906)	80
College of P. and S., Baltimore .....		(1906)	91
Woman's Med. Coll., Baltimore.....		(1901)	86
Unlversity of Maryland .....		(1906)	91
Cornell Unlversity .....		(1904)	93
Cincinnati Coll. of Med. and Surg. ....		(1897)	81
Jefferson Med. Coll. ....		(1906)	88
Unlversity of the South .....		(1904) 80, 89; (1906)	84
Medical Coll. of Virginia .....		(1906)	85, 88
Unlversity Coll. of Med., Richmond, Va. ....		(1899)	80

College.	FAILED.
Kentucky School of Med. ....	(2, 1905)* (1, 1906)*
Unlversity of Kentucky .....	(2, 1905)*
Hospital Coll. of Med. Louisville .....	(1, 1906)*
Unlversity of Loulsville .....	(1, 1906)*
Louisville Med. Coll. ....	(2, 1906)*
Maryland Med. Coll. ....	(1, 1906)*
Medical Coll. of Virginia .....	(1, 1906)*

\* Percentage not given.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Conjunctivitis. -

The most common causes of conjunctivitis in children, according to the *Practitioner*, are the Koch-Weeks bacillus, the Morax-Axenfeld bacillus, which produces a non-purulent form of conjunctivitis, the gonococcus of Neisser, and the pneumococcus of Fraenkel. In rare cases the streptococcus, the staphylococcus and the bacillus pneumoniae may be producing factors.

The treatment should first consist of warning the child's

parents of the necessity of isolating the child on account of the contagious nature of the disease and at the same time of insisting that all towels, cloths and sponges used by the patient should be kept exclusively for the patient and afterward boiled or burned.

Secondly, local treatment must be applied to the eye, from which the discharge should be carefully washed away four or five times a day. This procedure can be carried out, according to the *Practitioner*, by soaking a pledget of absorbent cotton-wool in a proper antiseptic solution and by gently squeezing so as to produce a continuous stream and allowing it to drip into the inner canthus. The patient should be instructed to lie down and the eye should be gently opened by the person bathing it.

The following lotions are recommended for this purpose:

R.	Hydrarg. perchloridi.....	gr. 1/16	30	1004
	Aquæ dest. ....	f3i		
M.	Ft. collyrium. Sig.: Apply locally. Or:			
R.	Acidi borici .....	gr. x	30	65
	Zinci sulphatis.....	gr. ii		12
	Aquæ dest. q. s. ad.....	f3i	30	
M.	Ft. collyrium. Sig.: Apply locally twice or three times a day. Or:			
R.	Sodii biberatis.....	gr. vi	40	
	Acidi salicylici.....	gr. ii	12	
	Aquæ dest. q. s. ad.....	f3i	30	
M.	Ft. collyrium. Sig.: Apply locally.			

In some cases a weak solution of silver nitrate is very useful. It is recommended in the following strength solution:

R.	Argenti nitratis.....	gr. ii	12
	Aquæ dest. ....	f3i	30
M.	Ft. collyrium. Sig.: One or two drops to be dropped into the inner canthus once or twice a day.		

It is also recommended that a little spermaceti ointment be painted along the margins of the lids with a clean camel's hair brush after all the discharge has been bathed away in order to prevent the lids from sticking together during sleep. The eyes should not be bandaged, as the discharge should be allowed to escape freely. Corneal complications seldom arise, although one or more phlyctenulae may occur.

Epilepsy.

The only preparation which is of service during an attack of epilepsy, according to Colbeck and Chapin in their "Science and Art of Prescribing," is amyl nitrite, which should be inhaled by the patient. Chloroform is sometimes employed, but not without danger.

Between the attacks a large number of preparations are of value. The following combinations are recommended:

R.	Potassii bromidi.....	gr. x-xx	65-1.20
	Liq. arsenicalis.....	m. iii	20
	Tinct. card. comp.		
	Syrupi aurantii, āā.....	f3ss	2
	Aquæ q. s. ad.....	f3i	30

Ft. mistura. Sig.: Two tablespoonsful three times a day after food.

In some cases a combination of bromids similar to the following has been found clinically to be very efficacious and more active than when any of the salts are given alone:

R.	Ammonii bromidi		
	Potassii bromidi		
	Sodii bromidi, āā.....	gr. v	30
	Syrupi aurantii .....	f3i	4
	Aquæ camphoræ q. s. ad.....	f3i	30

Ft. mistura. Sig.: Two tablespoonsful to be taken three times a day after meals. Or:

R.	Potassii bromidi.....	gr. x	65
	Tinct. belladonnæ.....	m. v-x	30-.65
	Syrupi aurantii .....	f3i	4
	Aquæ camphoræ q. s. ad.....	f3i	30

Ft. mistura. Sig.: Two tablespoonsful to be taken three times a day after meals. Or:

R.	Ammonii bromidi.....	gr. xv	1
	Liq. arsenicalis.....	m. iii	20
	Elix. simplicis.....	f3ss	2
	Aquæ menth. pip. q. s. ad.....	f3i	30

Ft. mistura. Sig.: Two tablespoonsful after meals three times a day. Or:



- R. Potassii bromidi.....gr. x 65  
Syrupi aurantii .....f3ss 2  
Infusi adonis vernalis q. s. ad.....f3ss 15
- Ft. mistura. Sig.: One tablespoonful three times a day after food. Or:
- R. Ammonii bromidi.....gr. xv 1  
Tinct. digitalis.....m. viii 50  
Syrupi aurantii .....f3i 4  
Aquæ camphoræ q. s. ad.....f3i 30
- Ft. mistura. Sig.: Two tablespoonsful three times a day after food. Or:
- R. Ferri bromidi.....gr. iv 25  
Potassii bromidi.....gr. x 65  
Syrupi simplicis.....f3ss 2  
Aquæ q. s. ad.....f3i 30
- Ft. mistura. Sig.: Two tablespoonsful three times a day after food. Or:
- R. Sodii boratis.....gr. xv 1  
Syrupi aurantii .....f3i 4  
Aquæ q. s. ad.....f3i 30
- Ft. mistura. Sig.: Two tablespoonsful after meals, in water. Or:
- R. Zinci phosphidi.....gr. 1/20 003  
Sacchari lactis.....gr. v 3
- M. Ft. capsula No. i. Sig.: One such capsule to be taken three times a day after meals. Or:
- R. Extracti cannabis indicæ.....gr. 1/4 015  
Lycopodii q. s.
- M. Ft. pillula No. i. Sig.: One such pill to be taken three times a day. Or:
- R. Argenti nitratis.....gr. 1/6 01  
Unguenti simplicis q. s.
- M. Ft. pillula No. i. Sig.: One such pill three times a day. In syphilitic cases the following combination is recommended:

- R. Potassii iodidi  
Potassii bromidi  
Ammon. bromidi, āā.....gr. v 30  
Potassii bicarb.....gr. xv 1  
Syrupi aurantii.....f3i 4  
Aquæ menth. pip. q. s. ad.....f3i 30

Ft. mistura. Sig.: Two tablespoonsful three times a day after food.

#### Migraine.

Some authorities associate migraine with epilepsy in its nature. Colbeck and Chapin recommend the following combinations in the treatment of this disease:

- R. Potassii bromidi.....gr. xx 120  
Syrupi aurantii .....f3i 4  
Aquæ camphoræ .....f3i 30

Ft. mistura. Sig.: Two tablespoonsful to be taken at once and repeated in an hour if necessary. Or:

- R. Tinct. cannabis indicæ  
Tinct. gelsemii, āā.....m. x 65  
Mucil. acaciæ  
Syrupi simplicis, āā.....f3i 4  
Aquæ q. s. ad.....f3i 30

Ft. mistura. Sig.: Two tablespoonsful at a dose and repeat in two hours if necessary. Or:

- R. Ammonii chloridi.....gr. xx 120  
Tinct. gelsemii.....m. xv 1  
Syrupi aurantii.....f3i 4  
Aquæ cinnamomi q. s. ad.....f3i 30

Ft. mistura. Sig.: One tablespoonful at a dose and repeated in three hours if necessary. Or:

- R. Liquoris arsenicalis.....m. iii 20  
Ammon. bromidi.....gr. v 30  
Syrupi aurantii .....f3ss 2  
Aquæ camphoræ q. s. ad.....f3i 30

Ft. mistura. Sig.: Two tablespoonsful at a dose after each meal. Or:

- R. Sodii arsenatis.....gr. 1/12 005  
Ext. cannabis indicæ.....gr. 1/6 01  
Ext. belladonnæ.....gr. 1/4 015  
Zinci valerianatis.....gr. ii 12

M. Ft. pillula No. i. Sig.: One such pill to be taken after meals. Or:

- R. Potassii iodidi.....gr. iv 25  
Ammon. chloridi.....gr. xv 1  
Syrupi aurantii .....f3i 4  
Aquæ cinnamomi q. s. ad.....f3i 30
- Ft. mistura. Sig.: Two tablespoonsful three times a day after meals. Or:
- R. Potassii iodidi.....gr. v 30  
Sodii salicylatis.....gr. xv 1  
Syrupi aurantii .....f3i 4  
Aquæ menthæ pip q. s. ad.....f3i 30
- Ft. mistura. Sig.: Two tablespoonsful to be taken three times a day after food.

#### Ground Itch.

"Ground itch" is a vesicular dermatitis, often ulcerating and probably due to the irritation produced by the penetration of larvæ of *Uncinaria americana*, together with local infection from organisms in the feces from which the larvæ come.

For such conditions, R. N. Green recommends that the parts be immersed in a 3 per cent. phenol solution, dried, and the following ointment applied:

- R. Acidi salicylatis .....3ii 8  
Pulv. amyli (corn) .....3ss 15  
Olei cajuputi .....3ii 8  
Ung. zinci oxidi.....3i 30  
Ung. petrolati q. s. ad.....3iv 120

M. Ft. unguentum. Sig.: Apply twice daily and avoid rubbing.

### Medicolegal

#### Requisite to Justification of Prescribing Cocain.

The Court of Criminal Appeals of Texas in another and later case of Blair vs. State than that reported in the Medico-legal Department of THE JOURNAL of Nov. 24, 1906, on page 1763, had evidence to the effect that the physician prescribing the drug, in this instance cocain, to an habitual user did so in good faith to relieve her from pain. But the court says that the state requires, before a physician can be relieved from the penalty of the act of 1905, regulating the giving of a prescription for cocain, that he must prescribe the drug for treatment of the habit; that is, for the purpose of curing it.

#### Unskilful Treatment No Reason for Reducing Damages.

The Supreme Judicial Court of Maine says that in the personal injury case of Hooper vs. Bacon it was claimed that for a part of the consequences the defendant was not responsible. The contention was that the plaintiff's injuries did not receive proper surgical treatment, and that, by reason of the want of proper care or skill on the part of the surgeon employed by the plaintiff, his injuries were greatly aggravated, and the consequences much more serious than they would have been otherwise. But, the court says, the law was against the defendant on this point. It was the duty of the plaintiff to use due care in the selection and use of means for his recovery. It was his duty to employ a surgeon of ordinary professional knowledge and skill, and to follow his necessary directions, and, if he did so, he would be without fault in that respect himself, and he would be entitled to recover compensation for all the damages sustained, though the surgeon may not have used the requisite skill, or may have erred in judgment, and by unskilful treatment have prevented the plaintiff from recovery from the injury as soon or as perfectly as he would have recovered under skilful treatment. The unskilful treatment by the surgeon, itself, if any there was, arose as a consequence of the original fault of the defendant.

#### Technicalities of a Malpractice Case.

The Supreme Court of Minnesota says that the plaintiff in the case of Awde vs. Cole and another brought an action to recover damages for alleged negligence on the part of the defendant physicians: 1. In the diagnosis of appendicitis; in the performance of the actual operation, and in the subsequent care of the wound. 2. In burning the plaintiff's leg after the operation, and in the subsequent treatment of that burn. The jury returned a general verdict for the plaintiff, and special verdicts finding that the defendants were not negligent in the performance of the operation or in the subsequent



treatment of the wound which it caused, and that the nurse, who put a hot stone in the bed in which the plaintiff was to be placed, whereby the burn was caused, was a servant of the plaintiff and not of the defendants. There was added to the answer to the last question "and at the time the plaintiff received the burns on his leg we believe the defendants were responsible for the actions of the nurse." The Supreme Court holds that this addition of the jury to its answer, respecting the responsibility of the defendants for the acts of the nurse, was properly regarded as a gratuitous and immaterial conclusion of law. It holds that the charge of negligence in diagnosis having been abandoned by total failure of proof, it was not an issue covered by the general verdict which a special verdict failed to negative. And it holds that, inasmuch as the charge of negligence in connection with the burn, as set forth in the charge of the court to the jury, was broad enough to cover responsibility by virtue of the relationship as well as by virtue of failure to take care after knowledge of danger, and inasmuch as the special verdict negatived only responsibility by virtue of relationship and not because of direct personal conduct, the trial court was in error in granting the motion for judgment for the defendants notwithstanding the verdict for the plaintiff on the ground only of the inconsistency of the general and special verdicts. But it gives the defendants permission to apply to the trial court for leave to make proper motion or motions for a new trial or judgment notwithstanding the verdict, on proper grounds, in accordance with this decision.

#### Malpractice Defense to Default Foreign Judgment.

The Supreme Court of Iowa says, in the case of Conly vs. Scanlin and wife, an action in Iowa on a foreign judgment, that the judgment sued on in Iowa was obtained against both defendants on default in South Dakota, the defendants not appearing or pleading in the action in South Dakota, which was on account for medical services rendered the defendants by the plaintiff. In the action in Iowa on said judgment the defendants filed separate counter-claims for malpractice in treating Mrs. Scanlin at the time the debt for medical services was incurred. The trial court (in Iowa) held that there had been an adjudication of these claims for damages in the rendition of the default judgment in South Dakota. It was error to so hold, a contrary doctrine having been established in Iowa, although there is a conflict of authority on the question in other jurisdictions.

#### Provides for Screening Cisterns and Oiling Water.

Chapter 113 of the Laws of Mississippi of 1906, provides that the board of supervisors may, in its discretion, make necessary appropriations for screening cisterns and other water containers, and fumigating and disinfecting houses where yellow fever existed, or to prevent the introduction of yellow fever by distributing coal oil where stagnant water may be found, such appropriation not to be made unless, in the opinion of the county health officers, such screening and fumigating or oiling is necessary. It shall be lawful for such health officer to enter the premises of any such place for the purpose of fumigating and disinfecting or oiling, and any person who shall refuse to allow such health officer to enter such place for the purpose of fumigating or oiling shall be guilty of a misdemeanor.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

January 5.

- 1 Plan of Organizing a Hospital System for the City of New York. S. Smith, New York.
- 2 \*Two Cases of Dementia Paralytica. J. W. Fisher, Middletown, Conn.
- 3 Intestinal Bacteria; How They Acquire Toxicity and How to Determine This Experimentally for Clinical Purposes. E. Paller, New York.
- 4 \*Epidemic of Grippe Followed by Pneumonia. A. Woldert, Tyler, Texas.
- 5 \*Throat Diseases Caused by the Misuse of the Voice. N. J. P. Van Baggen, The Hague, Holland.

2. **Dementia Paralytica.**—Fisher presents the results of a careful study of two cases. Autopsy showed, in the brain of the first patient an area of hemorrhagic degeneration in the corona radialis of the left hemisphere. This lesion began just anterior to the tip of the anterior horn of the left ventricle, extending posteriorly to the dorsal extremity of the caudate nucleus. The anterior limb of the internal capsule was also involved by this lesion. On examination of the brain of the second patient, there was discovered atrophy of both optic nerves and tracts, and the lateral geniculate bodies of each side were found to be about one-half normal size.

4. **Grippe and Pneumonia.**—Woldert has had the opportunity of studying cases of croupous pneumonia and grippe in a small rural district. From his observations he has drawn various conclusions, among which are the following: While grippe appears to be an infectious disease, not all of those who come in direct contact (such as sleeping in the same bed) contract the disease. The possible average period of incubation by air transmission is about seven days. An individual suffering with grippe should be warned against the tendency to develop pneumonia. Proper care should be exercised to destroy all sputa and fomites which may aid in the spread of grippe. Infection of the human system by the bacillus of grippe so lessens the natural immunity, or prepares the soil of man, that subsequent infection by the virulent diplococcus of pneumonia and consequent production of croupous pneumonia may more readily occur. The possible average period of incubation of croupous pneumonia by air transmission is about ten days.

5. **Throat Diseases Caused by Misuse of Voice.**—Van Baggen points out the symptoms common to clergymen's sore throat. He says that patients suffering from this disorder do not use their breathing, articulation, or vocal muscles normally. Harmonious coöperation among these three sets of muscles is lacking. Breathing is usually clavicular in these cases. The breath is the chief element in the production of voice and speech; thus the patient should learn in the first place the correct way to breathe, and the best method of using the breath in phonation. The combined diaphragmatic and thoracic breathing is recognized as the best way of breathing. No speaker who misuses his voice should take singing lessons to improve his speaking. The patient, before undertaking any exercises, must first go through a judicious medical treatment united with rest of the vocal organs.

#### New York Medical Journal.

January 5.

- 6 Bone Syphilis, Hereditary and Acquired. (To be continued.) R. W. Taylor, New York.
- 7 Marie's Views on Aphasia. F. X. Dercum, Philadelphia.
- 8 Where to Send Consumptives. J. O. Cobb, Los Angeles.
- 9 Malignant Disease of the Ovary. H. A. Duncan, Philadelphia.
- 10 Albuminuria of Prostatic and Seminal Origin. W. G. Young, Washington, D. C.
- 11 \*Treatment of Tuberculous Glands of the Neck by the Roentgen Ray. S. L. Feldstein, Philadelphia.
- 12 \*Metabolism of Spleen Nucleoproteid. H. M. Lefkowitz, New York.
- 13 Pardons for Diseased Convicts. J. A. Matlack, McNeil Island, Wash.
- 14 \*Formaldehyd in the Disinfection of Rooms. M. J. Rosenau, Washington, D. C.

11. **Roentgen Ray in Cervical Tuberculous Adenitis.**—The value of Roentgen ray treatment in tuberculous glands of the neck is summarized by Feldstein as follows: 1. They should be treated by the Roentgen ray when no softening or caseation has taken place. 2. Softened or caseous glands should be referred to the surgeon, and ought not to have Roentgen ray treatment. 3. Postoperative Roentgen ray treatment is important if there is any doubt of remaining glands which might be infected. 4. The Roentgen ray should be used for cosmetic reasons. 5. The size of the gland or glands does not influence the successful result of the treatment.

12. **Metabolism of Spleen Nucleoproteid.**—Lefkowitz believes himself justified in assuming that it is at least extremely probable that the percentage of nitrogen retained is in inverse ratio to the amount fed, in the case of spleen nucleoproteid.



14. **Formaldehyd Disinfection of Rooms.**—According to Rosenau the most serious limitations to the use of formaldehyd gas as a disinfectant are temperature and moisture. The gas can not be depended on in cold or dry weather. When the temperature is below 60 F., and the relative humidity of the atmosphere is below 65 per cent., the gas frequently fails to kill non-spore bearing organisms.

**Boston Medical and Surgical Journal.**

*December 27.*

- 15 Intolerance of Fats. D. L. Edsall, Philadelphia.
- 16 \*Simple Method of Treating the Appendicular Stump. H. Packard, Boston.
- 17 Removal of Foreign Body from Esophagus, Seven Weeks After Lodgment, with Aid of Roentgen Ray. D. D. Scannell, Boston.
- 18 An Unusual Case of Cerebral Abscess. T. C. Beebe, Jr., Boston.  
*January 5.*
- 19 Mens Sana In Corpore Sano. D. W. Cheever, Boston.
- 20 Medical Problems in the State's Service. C. A. Drew, Bridgewater, Mass.
- 21 \*General Peritonitis, Prolonged Irrigation of the Abdominal Cavity. L. R. G. Crandon and D. D. Scannell, Boston.
- 22 Dermoid Cyst of the Anterior Mediastinum. W. A. Griffin, Sharon, Mass.

16. **Simple Method of Treating the Appendicular Stump.**—In Packard's procedure after the appendix has been exposed and brought into the field of operation as far as circumstances will permit, the mesoappendix is ligated and divided in the usual way. An intestinal needle with fine silk, or Pagenstecher thread, is passed through the cecal coats on the meso side of the appendix, including the edges of the peritoneum which have been severed in the cutting away of the mesoappendix. The needle then takes up a dip of peritoneum just outside the mesenteric wound, skips over to the other side, takes up a corresponding dip and is tied. This constitutes the first step in the suturing, the remainder being a continuation of the same in the form of a right and left continuous suture, applied in such a way as gradually to embrace the circumference of the base of the appendix and at the same time bury it. After two or three passes of the needle, right and left, the appendix will be found to have assumed somewhat of an upward turn, i. e., if left to its own inclination it will turn upward spontaneously along the longitudinal band of the cecum. On seizing it with forceps and pulling gently, its base, or nearly the whole of the circumference of its base, emerges from the infolding portion of the cecal peritoneum which the suture has gathered up about it.

The next step is the amputation of the appendix, which is done as follows: The tip of the appendix is seized with a pair of forceps and enough traction is exerted to put the part well on the stretch. With a pair of scissors the appendix is cut short off at the base. If the suture has been correctly adjusted, the stump, or circumference of the opening resulting from the amputation, disappears at once—is buried. Two or three dips more of the needle in the same right and left manner completes the suturing, and the operation is done so far as relates to the appendix. Any form of scissors will suffice for the amputation, but Packard has found specially made ones with broad dishing blades, safer, in that the appendix, immediately on being severed may be dropped into them, and the whole—appendix, scissors and all—taken away from the operating table by the nurse. Packard has used this method of appendicular stump treatment in over 100 cases without a known instance of colon bacillus infection.

21. **Irrigation of Abdominal Cavity.**—For the purpose of thoroughly washing and draining the infected abdominal cavity, with the least injury to, and disturbance of, the abdominal contents, Crandon and Scannell have devised and use an apparatus which consists of a small reservoir (capacity 1 oz.) of nicked brass, supported on an aluminum plate, in its turn resting on the anterior iliac spines. From the bottom of this reservoir emerge four nicked tubes, 1 em. in diameter, easily removable and self-retaining. The tube first to be inserted (the hepatic tube) runs along under the abdominal wall, curves slightly, and ends hanging over the hepatic fossa near the hepatic flexure of the large gut. The second tube (the splenic tube) runs along beneath the abdominal wall to end over the splenic region. The third

tube (the pelvic tube) runs from the reservoir down into the pouch of Douglas in the female, or between the bladder and rectum in the male. The fourth tube (the appendix tube) extends along the abdominal wall to end over the cecum. Each tube, at its exit, is protected by two crossed pieces of nicked wire to prevent the intestine being sucked into the tube when siphonage is established. From the side of the reservoir runs a rubber tube three or more feet long. The top of the reservoir is a screw-top cap. Into the opening of each tube, at the bottom of the reservoir, may be screwed a brass plug to close one or several of the tubes if necessary. The instrument can be sterilized perfectly, there being no complicated parts.

The primary cause of the peritonitis is found and repaired or removed if possible. Through a median suprapubic incision three inches long, the hepatic and splenic tubes are inserted and pushed gently along, lifting the abdominal wall, toward their respective fossæ. The pelvic tube is guided by the finger in its proper direction; and the appendix tube in a similar manner. Each tube as it is put into place is snapped into its proper hole in the bottom of the reservoir. The bottle of salt solution is now connected with the distal end of the rubber supply tube of the reservoir, the fluid passes down through the reservoir out through each of the four tubes, and is allowed to run on in until the abdomen is distended and fluid begins to leak through the wound about the reservoir. The supply tube is detached from the water bottle, pinched at the end at the same time to keep it full of fluid, and is then lowered to below the level of the patient. This column of water in the supply tube at once establishes siphon drainage and the abdomen is drained at least till the end of one inner tube is above the level of the remaining fluid. This alternate flooding and draining of the abdominal cavity can be done often without disturbing the patient, the amount of pressure influx being regulated by the height of the supply bottle.

**St. Louis Medical Review.**

*December 29.*

- 23 \*Tuberculous Adenitis Treated with the Roentgen Rays. R. H. Boggs, Pittsburg.
- 24 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.
- 25 See abstract in THE JOURNAL, Sept. 15, 1906, page 888.

**Lancet-Clinic, Cincinnati.**

*December 29.*

- 25 Cessation of Menstruation as an Evidence of Pregnancy. M. A. Tate, Cincinnati.
- 26 Surgical Treatment of Trifacial Neuralgia. A. Schachner, Louisville.
- 27 Atheroma, or Endarteritis Deformans. N. I. Fraid, Cincinnati.

**St. Paul Medical Journal.**

*January.*

- 28 \*Operative Treatment of Prolapse of the Uterus, with Reference to Shortening the Uterosacral Ligaments. J. L. Rothrock, St. Paul.
- 29 \*Relation of Physiologic Chemistry and Microscopy to the Practice of Medicine. R. O. Beard, Minneapolis.
- 30 \*Function of the Vermiform Appendix. E. A. Hoefer, Clear Lake, S. Dak.
- 31 Case of Syringomyelia. C. R. Ball, Minneapolis.
- 32 Certain Physiologic Considerations of the Digestive Glands. F. S. Bissell, Maple Lake, Minn.

28. **Prolapse of Uterus.**—The method of operating for prolapse of the uterus which has been adopted by Rothrock may be described briefly as follows: If the uterus is enlarged, a curettement is first made, followed by amputation of the cervix, especially if it is elongated. In case there are decubitus ulcers in complete prolapse, the ulcers are excised, and the wound closed. In case there is prolapse of the anterior vaginal wall with marked cystocele, anterior colporrhaphy is always indicated. Following this the relaxed vaginal outlet is repaired by one of the various operations, depending on the case, always having in view the restoration of the torn or relaxed levator ani muscle. Having completed the plastic operations on the vagina, the abdomen is opened by a transverse curved suprapubic incision extending down to the rectus muscles, after the manner of Kustner's operation. The recti muscles are separated by a median incision, the flap of skin and fascia being held up out of the way by a retractor.

After opening the abdominal cavity the patient is placed



in the extreme Trendelenburg position, so as to allow the intestines to gravitate up into the abdomen. A large square of gauze is placed over them and they are easily kept out of the pelvis by a retractor. The patient is lowered to a horizontal position and the uterus grasped by a forceps and brought into the field of operation. By gently raising the uterus the uterine insertion of the uterosacral ligaments may be seen and grasped with a forceps. At a point from 3 to 5 cm. from the uterus, and with a strongly curved needle a fine silk suture is passed deeply into the inner surface of the ligament and is brought out near the free border. The needle is reintroduced on the same side of the ligament at a point sufficiently far back toward the sacral insertion to take up the slack. The suture is now tied, and if a wider adhesion is desirable, the suture may be reintroduced and carried through once more as before and again tied. If a more secure adhesion is desired, the points of approximation may be denuded of the peritoneum, but if silk is employed as suture material this is unnecessary. The folded portion of the ligament is now spliced to the side of the new formed ligament by a couple of interrupted silk sutures passing through the folds. The opposite side is now dealt with in a similar manner. Since 1903 Rothrock has employed this method of operating for prolapse in 15 cases, in several of which the prolapse was complete. In all the results have so far been excellent.

**29. Relation of Physiologic Chemistry and Microscopy to Medicine.**—Beard says that in the service of surgery and internal medicine alike, this branch of physiologic science is destined to fill an important rôle. It offers to the general practitioner an element of added interest and accuracy in clinical observation. To the expert it offers an opportunity which will become greater with its own rapidly increasing growth.

**30. Function of Appendix.**—Hoefer concludes that inasmuch as the intestinal tract is not complete in development until about the twentieth or twentyfifth year of life, and the appendix is well developed at the end of the first or second year of life, as well as the fact that an appendix shows no fibrous tissue increase within its submucous coat, the evidences of impending obliteration at the age of 20 years, seems rather convincing in the assumption that the appendix, if it has a function, must have its greatest physiologic activity during the period taken by the intestinal canal to become fully organized. Consequently, he takes the position that the appendix assists the general intestinal canal in a certain measure during its developmental period, or until the latter organ is well able to take care of itself, thus constituting somewhat of a compensatory function. What the direct value of this secretory function is to the economy or to the digestive process, he is unable to say, but he suggests that if the theory advocated by Bunge is in reality an accepted fact, the theory herein advocated must comparably be the same. Arguments and views in favor of this assumption are that a child of ten years of age is able to digest such food as is taken by an adult with as much facility as one in whom the intestinal canal is completely developed.

**The Military Surgeon, Carlisle, Pa.**  
*January.*

- 33 The Russian Red Cross Society. V. Havard, U. S. Army.
- 34 Statistics of Venereal Disease in the United States Navy. J. C. Wise, U. S. N.
- 35 The Walter Reed General Hospital of the United States Army. W. C. Borden, U. S. Army.
- 36 \*Steam Blast as a Mosquitocide. T. D. Berry, P. H. & M.-H. S.
- 37 Where Treatment of All Infected is the Surest Prophylactic Measure—the Problem of Epidemic Uncinariasis in Porto Rico. B. K. Ashford, U. S. Army.

**36. Steam Blast as a Mosquitocide.**—In seeking for means to exterminate mosquitoes safely and effectively, Berry conceived the idea that spraying live steam through a nozzle would do the work, and that a city fire engine would have a boiler adapted to the work; steam could not be obtained in it quickly and in large quantities. He obtained the use of an unused fire engine and a skilled engineer to operate it. The dome of the boiler was pierced and a valve stem inserted. To this could be attached the steam hose, 200 feet of which was

used and carried about on a hand reel. A team and driver was obtained, a crew of four to handle the hose and the plan was tried out. The first thing found was that the nozzle was too hot to hold. A long pole was attached to the nozzle, and in this way the steam could be carried directly against a ceiling. The engine was driven directly in front of a house, the hose carried into the yard and at a signal the steam was turned on; with a screech the steam would leap from the boiler to a distance of from six to twelve feet. This would last from ten to fifteen minutes, depending on the pressure in the boiler. When the certainty of its success was apparent, the steam pressure in the boiler was increased from 75 to 150 pounds pressure and some of this 150 pounds pressure was then transferred to the under side of galleries, stairways, archways, outhouses, half enclosed sheds, wash houses, chicken coops, and turned on trees, shrubbery, drains and gutters, and under houses themselves, when they were raised from the ground. In fact it was turned into every spot that could afford refuge to the stegomyia and yet could not be sufficiently enclosed to fumigate. Not all mosquitoes were killed by this blast, but it killed a great many stegomyia mosquitoes, many of them doubtless infected, which could not be reached in other ways.

In addition to the force of the blast, it was discovered that the heat could be utilized if in an enclosed space. When the nozzle was thrust into the top of a barrel of water and the cover quickly laid on the barrel, the temperature of the inside could be raised to the boiling point in a short while. Cisterns, too, were similarly treated but took longer to heat up. Berry says he does not know of a better and more efficient method to kill mosquitoes in cisterns and barrels, and this, too, without injury to the potability of the water.

**Archives of Pediatrics, New York.**  
*December.*

- 38 Classification of Gastroenteric Diseases on an Etiologic Basis. T. M. Rotch, M. Ladd and C. H. Dunn, Boston.
- 39 \*Acidified Milk in Infant Feeding. J. L. Morse, New York, and H. L. Bowditch, Boston.
- 40 Delivery of Milk and Its Care in the Home. G. Abbott, Philadelphia.
- 41 \*Diagnosis of Late Hereditary Syphilis in the School Child. G. De S. Saxe, New York.

**39. Acidified Milk in Infant Feeding.**—According to Morse and Bowditch buttermilk, buttermilk mixtures and milk mixtures acidified with lactic acid bacteria are safe foods for infants, whether well or ill. Infants can thrive and gain on them for considerable periods of time. The use of a routine buttermilk mixture, as has been the custom in the past, he thinks, is not so rational as that of an acidified milk mixture modified to suit the individual case, or of buttermilk modified by the addition of cream and milk sugar. The preparation of such acidified mixtures, while not difficult, is not very practicable for private work. These mixtures and buttermilk are almost always taken well.

The results obtained from acidified milk mixtures in cases of malnutrition and chronic disorders of digestion are not materially different from those obtained from the use of other preparations of milk of the same percentage. They are worthy of trial, however, in cases of intractable disturbances of digestion, because some cases do much better on them than on other forms of modified milk. Morse and Bowditch have found that practically the same, and in some instances better, results are obtained in these conditions with pasteurized buttermilk as with acidified milk mixtures. This fact suggests strongly that the good results which are obtained with buttermilk mixtures are due to their low fat content in combination with a large amount of proteid in an easily digestible form, and not to the acidity or to the action of the bacteria. Pasteurized buttermilk gives very good results when given as the first form of milk food after initial periods of water and starchy diets in acute intestinal indigestion and infectious diarrhea. Morse and Bowditch think it is possible that unpasteurized buttermilk will give even better results because of the action of the lactic acid bacteria on the intestinal flora. Fat free milk acidified with pure cultures of lactic acid bacteria ought, however, to be safer and more reliable than commercial buttermilk.



41. **Hereditary Syphilis in the School Child.**—Among 2,500 school children who were subjected to a thorough physical examination, Saxe found but 12 in whom physical signs justified a presumptive diagnosis of hereditary syphilis. Owing to the peculiar conditions of the investigation no family histories could be obtained. The children examined ranged from 6 to 16 years, and about equal numbers of boys and girls were studied. The children with hereditary syphilis ranged from 6 to 14 years of age. Five were boys and seven girls. All save one were deficient mentally; eight children showed Hutchinson's teeth; four showed the remains of syphilitic eye lesions and one showed an active keratitis. Three of the 12 had hydrocephalic heads. All showed retarded physical development, and seven of the total number showed associated rickety changes in the bones. Nine showed scars about the mouth; all had enlarged glands; two had lesions of the nose and none in the throat. Chorea was present in two. While hereditary syphilis does not seem to be common in the children of New York public schools, Saxe says, it constitutes an affection which must be looked for by the school examiner; and if sufficiently characteristic signs are found, he is justified in calling the family physician's attention to these signs as indicating a possible specific taint. The duty of the family physician in such cases is obvious.

**Ohio State Medical Journal, Columbus.**

*December 15.*

- 42 Surgery of Cervical Tubercular Lymph Nodes. R. Carothers, Cincinnati.
- 43 \*Intraperitoneal Tuberculosis. F. F. Lawrence, Columbus.
- 44 Treatment of Pulmonary Tuberculosis in Private Practice. J. P. Dewitt, Canton.
- 45 Physical Exercise in Lung Tuberculosis. C. G. Randall, Harveysburg.
- 46 \*Percussion Tenderness. A Symptom of Value in the Diagnosis of Pulmonary Tuberculosis. S. Iglauder, Cincinnati.
- 47 Tuberculosis. F. S. Baron, Zanesville.
- 48 Practical Use of the Cystoscope. S. S. Wilcox, Columbia.
- 49 Large Urethral Calculus. M. Metzenbaum, Cleveland.

43. **Intraperitoneal Tuberculosis.**—Lawrence is of the opinion that intraperitoneal tuberculosis is frequently a local disease, occurring much more frequently in the female than in the male. In a large majority of cases it is primarily visceral and the general peritoneum is secondarily involved. The surgical treatment is rational, sometimes agreeably surprising in results, and again bitterly disappointing. Early recognition and early operation will bring more certain results. Lawrence says that no case of intraperitoneal tuberculosis should be denied the benefit of operation, no matter how extensive, so long as there is no positive pulmonary or pleuritic involvement for the reason that in some apparently hopeless cases the patients fully recover. When there is a tuberculous peritonitis a sequel of tuberculous tubes, ovaries or appendix, the primary focus should always be removed. In these cases Lawrence has not found the mesenteric glands involved frequently, and when they are it is his judgment that operation accomplishes very little good. In tuberculosis of tubes and ovaries the adhesions are usually very firm, sometimes, though not usually very vascular and not infrequently involve loops of the small intestine, hence the greatest care is necessary to avoid serious injury to the bowel and at the same time to separate completely all adherent surfaces and to provide complete drainage. Drainage is the great factor in recovery and should be a drainage that drains, not one which obstructs.

46.—See abstract in THE JOURNAL, Jan. 5, 1907, page 80.

**Cleveland Medical Journal.**

*December.*

- 50 Newer Ideas of the Causes and the Treatment of Bright's Disease. A. C. Croftan, Chicago.
- 51 Ten Types of Ophthalmic Charlatanism. G. M. Gould, Philadelphia.
- 52 \*Two Hundred and Ten Cases of Acute Articular Rheumatism. J. Phillips, Cleveland.
- 53 Adult Flat Foot—Symptoms and Treatment. W. G. Stern, Cleveland.

52. **Acute Articular Rheumatism.**—In the 210 cases of acute articular rheumatism studied by Phillips heredity was a factor met in 7 per cent. of the patients. Endocarditis was the most common complication of rheumatism. Undoubted valvular lesions were present in 63 cases, or 30 per cent. In only 28 of these was the endocarditis of recent origin. In 56, or 89

per cent., the mitral valve was involved; the aortic valve was affected in 13, or 20.6 per cent. Both aortic and mitral orifices were involved in 11, or 17.4 per cent. Pericarditis occurred in 10 cases, of which two were fatal. In four of these there was effusion into the pericardium of varying amounts. As a rule the effusion was small.

There were 31 cases in this series in which a systolic murmur was heard either at the apex or base of the heart, with no appreciable increase in the area of cardiac dulness and without the murmur, when present at the apex, being transmitted into axilla. Pleurisy was noted in six cases, one of which was accompanied by effusion. Pneumonia was present in two cases, one of which was fatal. Tonsillitis developed during the illness or was present before in 38 cases, or 18.1 per cent. Nervous complications occurred in 13 cases. Of these four patients had delirium, in one of whom it seemed to be associated with the giving of salicylates. In another case it assumed the type seen in delirium tremens, the patient having previously had attacks of this disease. Chorea was associated with present or previous attacks of rheumatism in eight cases, or 3.8 per cent. These were all in children or in young adolescents. Serious meningitis was noted at autopsy in one fatal case. Subcutaneous fibroid nodules were observed in four patients. Erythema multiforme was seen about the buttocks and upper part of the thighs in three cases. Rheumatic purpura, appearing as a bright red petechial eruption over both shins and accompanied by considerable tenderness, was noted in two cases. Urticaria occasionally develops and sudamina are very common because of the excessive perspiration. In one case complicated by pneumonia marked jaundice was present.

**Ophthalmic Record, Chicago.**

*December.*

- 54 Immersion Treatment with Argyrol Solutions of the Purulent Ophthalmias. H. D. Bruns, New Orleans, La.
- 55 \*Primary Tuberculosis of Cornea. E. Smith and H. Gibbs, Detroit.
- 56 Fissures in the Membrane of Descemet Probably Due to High Myopia. C. A. Wood, Chicago.
- 57 Present Status of the Eye and Ear Tests for School Children. F. Allport, Chicago.
- 58 Treatment for Acute and Chronic Abscess of the Lachrymal Duct and for the Relief of Epiphora. J. W. Wamsley, Philadelphia.
- 59 \*Angioma of the Conjunctiva Successfully Treated by Injections of Absolute Alcohol. H. Gifford, Omaha, Neb.
- 60 Case of Non-Traumatic Plastic Iridocyclitis which Eventuated in Sympathetic Ophthalmia. G. F. Suker, Chicago.
- 61 Case of Scleritis. B. P. Croft, Greenfield, Mass.

55. **Primary Tuberculosis of Cornea.**—Smith and Gibbs report what they believe to be the first case of tuberculosis of the cornea on record, occurring in a woman aged 44. Through the transparent margin of the cornea a white growth could be seen filling about two-thirds of the anterior chamber, extending backward from the cornea. There was no evidence of corneal ulceration. There was no history of tuberculosis in the patient's family, nor any further appearance of the disease in herself. There has never been any abrasion of the cornea. The eye was enucleated. The diagnosis was confirmed by the microscope, although no tubercle bacilli could be found.

59. **Angioma of Conjunctiva.**—In the case reported by Gifford the injection of two or three drops of absolute alcohol caused the injected portions to assume a pale grayish-pink color, and after a week or ten days the tumor was much reduced in size. The injections were then repeated, the needle being carried part of the time one-half inch into the orbit along the inner side of the globe. After this alcohol was injected every two or three weeks for the next two months; at the end of this time the original tumor had practically disappeared, but now the conjunctiva from the outer third of the corneal margin to the external canthus, which had seemed normal, became dark red, and fearing an extension of the growth around the deeper portions of the globe, more alcohol was injected, three-fourths of an inch deep, along the inner wall of the globe and half an inch deep into upper and lower fornices. After this the improvement was steady, and when the patient went home there was no tumor visible, and the only trace of the former trouble was a moderate congestion of the inner half of the conjunctiva, which was steadily improving.



The injections were always made during light chloroform anesthesia and were followed by only moderate swelling and very little pain. At no time was there any sign of breaking down or necrosis on the surface. During the whole course of the treatment the only symptom that caused the least anxiety was a swelling of the left side of the face which developed two or three days after the last deep injections had been made into the orbit. The child seemed depressed and the cheek below the zygomatic process was rather puffy for several days, but this all cleared up without any special treatment.

#### Virginia Medical Semi-Monthly, Richmond.

December 21.

- 62 Treatment of Cancer. J. S. Horsley, Richmond.
- 63 Twenty Consecutive Abdominal Operations Performed at St. Luke's Hospital. E. N. Liell, Jacksonville, Fla.
- 64 \*Benefits of the County Medical Society. J. W. Freed, Staunton.
- 65 \*Surgical Treatment of Typhoid. W. R. Aylett, Newport News.
- 66 Management of Acute Appendicitis in Country Practice. M. P. Jones, Churchville, Va.
- 67 European Clinics and Clinicians. C. E. Barnett, Ft. Wayne, Ind.
- 68 A Case of Alcoholism. G. B. Simson, Webster Springs, W. Va.
- 69 Importance of Enforcing Proper Sanitary Conditions with Daily Medical Supervision of Prisons. C. V. Carrington, Richmond.

64. **Benefits of County Medical Society.**—Freed states that one of the greatest and noblest missions of the county medical society is its beneficent influence in overcoming prejudices and engendering good feeling among its members. If no other object were sought to be attained by the organization of the county society than to secure the friendly intercourse of all its members, the accomplishment of that alone would be ample compensation for all the time, money, labor and enthusiasm ever expended in that behalf. Many of the supposed wrongs are greatly magnified and often entirely imaginary. By all members meeting together more frequently and uniting in the various duties as society members, a better understanding will be brought about, and most of these annoyances will fade away. Some of these prejudices may rest on real or fancied breaches of the code of ethics, but it has been the experience of local societies that physicians who are reputed to be unethical before becoming members proved to be as ethical as the rest after joining the society. The county society, then, has the influence of suppressing unethical tendencies among physicians.

65. **Surgical Treatment of Typhoid.**—The favorable results obtained in serious cases, both surgical and medical, have led Aylett to believe that saline solution, by virtue of its antitoxic, feeding, stimulating and flushing effect, is useful in many cases in which it has never been tried. In several cases of general peritonitis following ruptured appendices, patients were saved by frequent (every three hours) irrigation of the peritoneal cavity for several days. Such cases led him to hope that good results would follow the intraperitoneal use of saline solutions in typhoid. In the first case in which Aylett tried this method a very small incision was made just under the ensiform cartilage, the tissues being deadened with a 2 per cent. cocaine solution. A rubber catheter was then introduced and nearly three pints of saline solution at a temperature of 103 F. were run into the abdomen. The patient complained of some pain and a sense of fulness, but these proved transient. Within two hours the temperature dropped from nearly 104 to 102.5 F. and the pulse dropped from 102 to 96. Six hours later the temperature was 102.4 and the pulse 92 and decidedly stronger. A large quantity of urine had been voided in the meanwhile. The next afternoon a pint of solution was introduced and at 6 o'clock the temperature was 102 and pulse 95. This was repeated three times. On the ninth day temperature and pulse were normal all day. Bowels moved freely about noon. For the next ten days there was no abnormality of temperature or pulse, nor were any sequelæ observed.

#### Southern California Practitioner, Los Angeles.

December.

- 70 Public Health of Our City During the Last Five Years. G. H. Kress, Los Angeles.
- 71 \*Altitude and Pneumonia. I. W. Brewer, Ft. Huachuca, Ariz.
- 72 Nutrition and Tuberculosis. C. C. Browning, Monrovia.
- 73 Strabismus in Children. B. F. Church, Los Angeles.
- 74 Housing Conditions of Los Angeles. T. Coffey, Los Angeles.
- 75 Tuberculous Disease of the Spine. P. C. H. Pahl, Los Angeles.

71. **Altitude and Pneumonia.**—From a study of the statistics of lobar pneumonia for the entire United States Army from 1870 to 1874, during which time there were among 24,349 men 768 cases of lobar pneumonia with 114 deaths, Brewer concludes that altitude has nothing to do with the mortality from lobar pneumonia; that latitude within the range afforded by the territory of the United States has nothing to do with the mortality; that the mortality among the colored soldiers is about twice as great as among white soldiers, 26.3 per cent. and 13.9 per cent. respectively.

#### Journal of the Arkansas Medical Society, Little Rock.

December 15.

- 76 \*Surgery in the Treatment of Gastric Ulcer. J. P. Runyan, Little Rock.
- 77 Carcinoma of the Uterus. C. R. Shinault, Little Rock.
- 78 Two Cases of Endometritis. E. L. Beck, Texarkana.

76. **Surgery in Gastric Ulcer.**—Runyan says that it is remarkable how quickly and rapidly a patient improves after a gastroenterostomy done for the relief of pyloric obstruction, the result of a simple ulcer. Some of the most miserable people on earth may be made the most happy by a simple operation. Runyan believes that it is little less than criminal to continue medical treatment after obstructive symptoms are present.

#### Physician and Surgeon, Ann Arbor, Mich.

November.

- 79 Medical Ethics and Etiquette. G. Dock, Ann Arbor.
- 80 Clinical Aspects of Paretic Dementia. I. H. Neff, Pontiac, Mich.
- 81 Gross Pathologic Conditions of the Urethra as Revealed by the Urethroscope. N. E. Aronstam, Detroit.
- 82 Medical Questions. E. S. McKee, Cincinnati.

#### Buffalo Medical Journal.

December.

- 83 \*Social Evil. D. Lewis, Chicago.
- 84 Diagnosis and Treatment of Accidental Hemorrhage. A. H. Wright, Toronto, Canada.
- 85 Why Minor Gynecologic Operations Fail of Anticipated Results. S. Goldberg, Buffalo, N. Y.

83. **The Social Evil.**—Denslow Lewis thinks that a common-sense view must be taken of the momentous subject of the so-called social evil. The sexual instinct, which is one of the most powerful guiding influences of humanity, can not be ignored. It must be most carefully and thoroughly studied, for it is this masterful instinct that makes prostitution possible. Lewis does not hold with some that it is mainly due to female degeneracy, but believes rather that man is the more to blame in the majority of cases. We should be just to the woman, even if she is depraved, she is often a victim of the existing social order, and he believes with Lecky that the prostitute is, in a sense, a guardian of virtue. He believes in segregation of the social evil in our cities, and that its recognition does not mean sanction or legal endorsement. The disastrous prevalence of venereal diseases forces on us the practical consideration of the subject. Methods of the past in combating the evil have failed, but he thinks that there is promise of good in the different lines of attack that are now being taken up, and sees our supreme hope in the educational methods now being adopted.

#### New York State Journal of Medicine.

December.

- 86 Surgical Treatment of Indigestion. E. S. McSweeney, New York.
- 87 Clinical Chemistry of the Blood in Various Diseases. H. S. Carter, New York.
- 88 The Fitting of Glasses. S. W. S. Toms, Nyack, N. Y.
- 89 Remote Heredity and Asymmetrical Development. G. O. Williams, Greene, N. Y.
- 90 History of the Medical Society of the State of New York. (To be continued.) J. J. Walsh, New York.

#### Bulletin American Academy of Medicine, Easton, Pa.

December.

- 91 Friendship of Dr. Nathan Smith and Dr. Lyman Spalding. J. A. Spalding, Portland, Maine.
- 92 Senility. A. L. Benedict, Buffalo.
- 93 Manual Training for Medical Students and Instruction in the Principles of Psychotherapy. G. H. Hill, Des Moines, Iowa.

#### Canadian Practitioner and Review.

December.

- 94 Relation of the Physician to His Pregnant Patient. W. P. Manton, Detroit.
- 95 Evolution of Medicine in Ontario. H. B. Anderson, Toronto.
- 96 Treatment of Diffuse Purulent Peritonitis. J. F. W. Ross, Toronto.
- 97 Faucial Tonsils, Abnormal Conditions and Treatment. J. Hunter, Toronto.



## St. Louis Courier of Medicine.

December.

- 98 Spasmophilia. J. Zahorsky, St. Louis.  
99 Uremia in an Infant, Simulating Meningitis. W. L. Johnson, St. Louis.

Journal of the Association of Military Surgeons, Carlisle, Pa.  
December.

- 100 Technic of a Yellow Fever Campaign. W. C. Rucker, U. S. P. H. & M.-H. S.  
101 Practical Sanitation with Mobilized Troops in the Field and in Semi-Permanent Camps. L. M. Maus, U. S. Army, and W. J. L. Lyster, U. S. Army.  
102 Medical and Sanitary Questions Met in Every-Day Life on a Cruising Ship of the Navy. M. H. Simons, U. S. Navy.  
103 Hand and Instrument Disinfection. J. C. De Vries, Brooklyn, N. Y.

## Medical Fortnightly, St. Louis.

December 10.

- 104 Gastrogenic Diarrhea. C. D. Aaron, Detroit, Mich.  
105 Interesting Problems in Ear, Nose and Throat Practice. R. Barclay, St. Louis.  
106 Pathologic Physiology. B. Robinson, Chicago.  
107 Talks to Recent Graduates. A. L. Benedict, Buffalo.  
108 Hysteria in the Male. P. J. Weber, St. Louis.  
109 Case of Friedreich's Ataxia. F. J. Weber, St. Louis.

## Journal of Mental Pathology, New York.

Vol. VIII, No. 1.

- 110 The Helweg-Westphal Tract. A. Glanelli, Rome, Italy.  
111 Hysteria Simulating the Syndrome of Brown-Séquard. P. Timpano, Rome, Italy.  
112 Physiologic Effects Following Successive Ablation of One Frontal Lobe and One Cerebellar Hemisphere. G. Mingazzini and O. Polimanti, Rome, Italy.  
113 Genesis of Sex. L. G. Robinovitch, Paris.

## New Orleans Medical and Surgical Journal.

December.

- 114 Origin of Sporadic Cases of Yellow Fever. G. E. Beyer, New Orleans.  
115 Malarial Hematuria. B. O. LeBlanc, St. Gabriel.  
116 Summary of Our Knowledge Concerning Stegomyia Fasciata. J. C. Smith, New Orleans.  
117 Grafting of the Cervix as a Cure for Ulceration. S. C. Landauer, New Orleans.  
118 Sudden Death with an Unexplained Symptom. C. W. Allen, New Orleans.  
119 Results in Some Cases of Pulmonary Tuberculosis Treated by the Sanitarium Method. W. A. Durel.

## Annals of Gynecology and Pediatrics, Boston.

December.

- 120 Ectopic Gestation. H. F. Quackenbos. (To be continued.) New York City.  
121 Non-Absorbable Ligature in Pelvic Surgery. F. C. Hammond, Philadelphia.

## Detroit Medical Journal.

December.

- 122 The Physician as a Character in Fiction. (To be continued.) C. B. Burr, Flint, Mich.  
123 Somnoform. T. J. Collins, Detroit.  
124 Simple Elixir as a Vehicle in Prescriptions Intended for Children. E. F. Heffner, Lock Haven, Pa.

## Denver Medical Times.

December.

- 125 Case of Cerebrospinal Meningitis. F. W. Kenney, Denver.  
126 Treatment of Cerebrospinal Meningitis. H. B. Whitney, Denver.  
127 Id. C. F. Shollenberger, Denver.  
128 Id. J. E. Courtney, Denver.  
129 Surgical Causes, Surgical and Other Non-Medical Treatment of Chronic Constipation. J. R. Hopkins, Denver.  
130 Calcium Sulphid in Gonorrhea. R. J. Smith, Smithfield, Utah.

## Utah Medical Journal.

December.

- 131 Reflex Neuroses from Eye Strain. D. C. Bryant, Omaha, Neb.  
132 Clinical History of a Few Gastric Ulcer Cases. H. D. Niles, Salt Lake City.

## Bulletin of the Johns Hopkins Hospital, Baltimore.

December.

- 133 Comparative Surgery. F. W. Bancroft, E. S. Cross, G. R. Henry, W. D. Gatch, J. G. Hopkins, A. R. Dochez, etc., Baltimore.  
134 Note on the Finding of Cocci in Bigemina. F. W. Bancroft and E. S. Cross, Baltimore.  
135 Chronic Endocarditis with Bloody Ascites in a Dog. G. R. Henry.  
136 Radical Cure of Prolapsus Vaginae in the Dog. W. D. Gatch, Baltimore.  
137 Six Cases of Infection with Filaria Immitis in Dogs. J. G. Hopkins, Baltimore.  
138 Hernia in Dogs. A. R. Dochez, Baltimore.  
139 Sarcoma of an Undescended Testis in a Dog. W. v. Gerber, Baltimore.  
140 Observations on Distemper. G. J. Heuer, Baltimore.  
141 Tuberculosis, a Social Disease. S. A. Knopf, New York.  
142 Influence of Aggressins on General Infection of the Uninjured Genital Tract of Animals. C. B. Towles, Baltimore.

## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**Correction.—Recognition of Blood and Seminal Stains.**—Hankin corrects an error made in a previous paper, an abstract of which appeared in THE JOURNAL, Dec. 8, 1906, page 1959. After the seminal stains have been treated with tannin solution and with dilute ammonia, they should be immersed for five minutes in a solution containing 1 in 10,000 potassium bichromate and 1 in 1,000 sulphuric acid. From this solution they are transferred to the cyanid solution, as described in the paper.

## British Medical Journal.

December 22.

- 1 Exanthem of Scarlet Fever and Some of its Counterparts, and the Clinical Significance of Skin Hemorrhages in Diphtheria. J. MacComble.
- 2 \*Physiology and Pathology of the Nucleus. J. G. Adami.
- 3 \*Classification and Experimental Production of Arteriosclerosis. O. Klotz.
- 4 Changes in the Nervous System Produced in Chronic Trypanosome Infections. F. W. Mott.
- 5 Treatment of Trypanosomiasis by the Colors of Benzidine. M. Nicolle and F. Mesnil.
- 6 Experiments with Vaccine Lymph. J. R. Ballah.
- 7 \*Bacteriology of Rheumatic Fever. J. M. Beattie.
- 8 Combining Properties of Opsonins of Normal Serum. R. Muir and W. B. M. Martin.
- 9 Acceleration of the Action of the Pancreatic Juice by the Salts of Calcium. E. Delezenne.
- 10 Nucleoprotein Immunity. S. P. Beebe.
- 11 \*Metabolism of Kreatin and Kreatinin. O. Folin.
- 12 Chemical Studies on Growth. L. B. Mendel.
- 13 Effect of Ions on Growth and Cell Division. B. Moore, H. E. Roaf and E. Whitley.
- 14 Physiologic Action of Certain Cholin Derivatives and New Methods for Detecting Cholin. R. Hunt and R. de M. Taveau.
- 15 Liberation of Phosphorous from Nuclein Compounds. F. H. Scott.
- 16 Active Alkaloid from Ergot. G. Barger, F. H. Carr and H. H. Dale.
- 17 Estimation of the Quantity of Chloroform in Blood and Tissues. M. Nicloux.
- 18 Micro-Chemistry of the Blood Plates. G. T. Kemp.
- 19 Transplantation of Blood Vessels and Organs. A. Carrel and C. C. Guthrie.
- 20 Evolution of Elementary Tissues in Relation to Physiologic Function. C. F. Hodge, O. P. Dellinger and F. N. Duncan.
- 21 Lymphatics of the Liver. P. T. Herring and S. Simpson.
- 22 \*Experimental Glycosuria. J. J. R. Macleod.
- 23 Excretion of Urine. V. E. Henderson.
- 24 Method of Investigating the Deep Ganglia and Tracts of the Central Nervous System (Cerebellum). R. H. Clarke and V. Horsley.
- 25 Electrical Excitation of Nerves and Muscles. L. Lapicque.
- 26 Physiologic Significance of the Convolutional Pattern in the Primates. F. W. Mott.
- 27 Conduction of Sensory Impressions in the Spinal Cord. S. Simpson and P. T. Herring.
- 28 Mechanism of Locked Jaw Produced by Tetanus Toxin. H. E. Roaf and C. S. Sherrington.
- 29 Vagus Reflexes on Esophagus and Cardia. S. J. Meltzer and J. Auer.
- 30 Various Forms of the Negative or Physiologic Venous Pulse. W. S. Morrow.
- 31 \*Acapnia as a Factor in Shock. Y. Henderson.
- 32 Chronic Suppurative Dacryocystitis and Its Radical Treatment. F. T. Tooke.

2. **Physiology and Pathology of Nucleus.**—Adami's paper brings out the dominance of the nucleus in all functions. For instance, in studying the process of fertilization it is found that the only matter contributed correspondingly by both parents is nuclear matter. Therefore, it is evident that the nuclear matter contains and determines, or controls, the inherited peculiarities of the individual; further, the conveyance is through matter contained in the chromatin loops, or chroma, while it may be that these individual loops, varying among themselves, determine particular condition. When the nucleus is removed, as in the red blood corpuscles, it is manifested that the nucleus is essential not merely for the vegetative activities, but also for the higher metabolic activities of the cell and their due co-ordination. The gross changes that take place in the nucleus during activity show that the nucleus is involved considerably in the functional activities of the cell, and the indications are that the higher syntheses, those associated with growth and those governing the specific enzyme actions of the different forms of cells, are determined and initiated by the nuclear matter, which possesses in itself potentialities superior to those of any ordinary constituent of the cell body.

3. **Experimental Production of Arteriosclerosis.**—Klotz' experiments show that there is a form of arteriosclerosis in ani-



mals in which a primary proliferation of the intima, including the musculo-elastic layer, is the prime feature. Klotz sums up his experiments as follows:

1. The effect of the high-pressure drugs (adrenalin chlorid, digitalin, and barium chlorid) on the arteries is a degenerative one, as was described by Fischer and Erb for adrenalin.
2. The muscle cells of the media are first attacked, while the elastic fibers of this layer are also involved later.
3. At a proper stage of the degeneration a fatty change can be demonstrated in the tissues, followed by calcification.
4. The middle zone of the media is always involved.
5. Occasionally secondary reactions occur in intima which are of a proliferative nature.
6. The effect of adrenalin is not abolished by lowering the blood pressure with nitroglycerin.
7. The aneurisms are produced as a result of the destruction in the media.
8. These experimental lesions are in every respect similar to the Moenckeberg type of arteriosclerosis.
9. The effect of diphtheria toxins on the arteries is similar to that of the adrenalin series.
10. Typhoid and streptococcus infections produce little destruction of tissue cells, but tend to stimulate cell proliferation in the intima and inner layer of the media.
11. Vessel changes are brought about by these infections, which correspond to arteriosclerosis, as described by Jores.

7. **Bacteriology of Rheumatism.**—Beattie's experiments have convinced him that the results obtained by injections of streptococcus are different from those produced by the *Micrococcus rheumaticus*, and that the latter can not be regarded as an attenuated streptococcus, nor is acute rheumatism an attenuated streptococcal pyemia. In uncomplicated cases of acute rheumatism the organism is not usually found in the blood or in the joint exudate. Where the arthritis is the principal manifestation of the disease, the organism may be missed altogether, unless several different areas of the synovial membranes are examined. Beattie's views have been published before and it is not necessary to repeat them.

11. **Kreatin and Kreatinin.**—A number of feeding experiments with these two substances have given Folin the following results in the case of normal men. Kreatinin given with the food is almost completely eliminated with the urine in the course of 24 hours. Kreatin given in moderate quantities (1 to 2 grams) together with a low nitrogen diet (starch and cream) is neither converted into kreatinin nor eliminated as unchanged kreatin or as urea. It is, in fact, not eliminated at all. When large quantities of kreatin (5 to 6 grams) are given, together with a low nitrogen diet, a small quantity of kreatin (1 gram) is eliminated unchanged in the course of 24 hours. The remaining larger part is not eliminated at all. When the system is thus flooded with kreatin, its normal daily kreatinin elimination remains unchanged. When kreatin is taken together with diets rich in protein a very large part of it (50 per cent.) is eliminated unchanged in the course of 24 hours. The kreatinin elimination is not affected. When very large quantities of meat (1,300 grams beef) are fed to a normal person the normal kreatinin elimination is but slightly increased (0.2 to 0.3 gram). Under the same conditions the kreatin elimination, ordinarily absent or too small to be detected, amounts to 3.5 to 4 grams.

22. **Experimental Glycosuria.**—The results of Macleod's experiments are summarized as follows:

1. On dogs rendered glycosuric by stimulation of the central end of the vagus, nicotin injections sufficient to cause blocking of the vagus produce a distinct fall in the amount of sugar in the blood. This diminution in blood sugar appears in from twenty to forty minutes after injection, and seems to pass off in about two hours.
2. Hemorrhage sufficient to lower the arterial blood pressure to about 50 mm. Hg. instead of causing a diminution in the percentage of blood sugar, causes a distinct increase. This increase is less marked when asphyxia is carefully guarded against by oxygen inhalation. The depression in reducing power of the urine after hemorrhage must therefore be due to some renal mechanism.
3. Stimulation of the peripheral end of the splanchnic nerves, or of the spinal cord below the fifth dorsal roots, causes no increase in the percentage of sugar in the blood.

31. **Acapnia, a Factor in Shock.**—Henderson thinks it probable that the hyperpnea induced by intense pain and the hyperpnea incident to some of the stages of anesthesia, by causing an over-ventilation of the blood, produces a condition of at least partial acapnia, and that acapnia is an important factor in the production of shock.

The Lancet, London.  
December 22.

33 \*Art and Medicine. L. Mark.

34 \*Heart Massage as a Means of Restoration in Cases of Apparent Sudden Death. T. A. Green.

- 35 \*Large Arterio-Venous Aneurism of the Neck Treated by Excision. J. Berry.
- 36 \*Three Interesting Heart Cases. R. G. White.
- 37 Treatment of Ovarian Prolapse by Shortening the Ovarian Ligament. V. Bonney.
- 38 \*Operation for the Cure of Prolapsus Ani and Internal Hemorrhoids. D. Newman.
- 39 Intussusception and Volvulus Occurring at Intervals in the Same Patient. E. E. Ware and L. G. Glover.
- 40 Influence of Calcium Chlorid on the Agglutination of Vibrios. M. Crendropoulo and C. B. S. Amos.

33. **Art and Medicine.**—In the concluding paragraph of this address Mark says:

The conclusion which we are led to by contemplating these pictures is that any place which medicine can have in art must be but a subordinate one and that it is often the better taste for the artist to hide some morbid detail. The true artist has to judge which details he had best make use of, just as he has to choose that particular moment of a scene which is the most interesting, the most pathetic, or the most stirring. When he has to deal with a subject with a morbid side it is essential for him to cultivate some of that reserve so noticeable in Greek art. He should "use all gently . . . he must acquire and beget a temperance that may give it smoothness." He must use his art not only to hide art but to hide unpleasant details. What we require of him is to stir up our finer feelings and to rouse our admiration. For it is the very joy of our heart to admire where we can and nothing so lifts us from all our "mean imprisonments, were it but for moments, as true admiration."

34. **Heart Massage as a Means of Respiration.**—Green believes that in suitable cases heart massage is of decided value to the practical surgeon. The kinds of cases in which it may be used with a fair prospect of success are:

- (1) Cases of primary arrest of the heart in a condition of acute dilatation from poisoning by an overdose of a powerful volatile drug, such as chloroform; (2) cases where the gradual accumulation of volatile poisons, such as chloroform, leads to primary paralysis of the respiratory and vasomotor centers followed by stoppage of the heart; (3) cases of asphyxia; and (4) cases of suspension of the functions of the vital centers from simple exhaustion or injury, and consequent stoppage of the heart.

The order of procedure in these cases of sudden heart and respiratory failure should be as follows

1. Immediate lowering of the head and the commencement of artificial respiration and tongue traction, taking care that a free access of air to the lungs is possible, and therefore implying tracheotomy if necessary.
2. If the abdomen is open, pressure on the abdominal aorta to confine the circulation to the upper part of the body. If it is not open the intravenous injection of adrenalin solution and the application of Crile's rubber suit or, failing this, tight bandaging of the limbs and abdomen.
3. The subcutaneous or intravenous injection of normal saline solution, partly to raise the blood pressure and partly to dilute any poisons which may be in the blood and tissues.
4. If the above methods have not been successful after being applied for from eight to ten minutes heart massage by the subdiaphragmatic method. This route should always be adopted, unless the chest is already opened or to be operated upon, as being the easiest way of access, the one fraught with least danger to the patient and the one which has given the greatest percentages of success. The time is fixed at from eight to ten minutes because eight minutes is the limit of the interval at which up to the present time a complete success has been obtained in man, and if it is exceeded the danger of the production of fibrillary twitchings, inability to restore consciousness, and the development of spasms in the voluntary muscles with consequent failure of the manipulations have to be taken into consideration. The unavoidable extension of this limit, should, however, be no bar to the adoption of the method, as very hopeful results have been obtained, even when 45 minutes have elapsed from the onset of the syncope before it has been tried.
5. After normal pulsation has returned to the heart, artificial respiration must be continued until spontaneous breathing has been restored or until circumstances make it improbable that such restoration will be obtained.

35. **Arteriovenous Aneurism of Neck.**—In the case reported by Berry the aneurism was composed practically of all the deep and most of the superficial veins of one side of the neck, with the exception of the internal jugular vein.

36. **Three Heart Cases.**—The first case reported by White was one of marked tricuspid stenosis in which the other orifices, with the exception of the pulmonary, were affected. The pulmonic orifice was normal and the valves were healthy. The aortic valves had formed a rigid cartilaginous diaphragm, with the exception of a very narrow slit, and the valves had coalesced completely. The second case was one of rupture of the heart, the result of myomalacia cordis, and the third case was one of chronic aneurism due to fibroid change. The aneurism was situated on the anterior aspect of the left ventricle near the apex.

38. **Operation for Prolapsed Rectum and Internal Hemorrhoids.**—Newman proceeds as follows:

A general anesthetic having been administered, the patient is placed in the lithotomy position with the knees well raised and the hemorrhoids or prolapsed rectum is fully reduced. Then, having explored the passage with the finger, a fenestrated speculum con-



taining the obturator is introduced to its full length; the obturator which prevents the mucous membrane from protruding into the lumen of the speculum during the introduction is then withdrawn. When light is reflected by a forehead mirror into the speculum the congested mucous membrane is seen protruding through the six openings in the speculum, the disc is then passed into the speculum to close the upper end of it, in order to prevent the mucous membrane at the end of the speculum from being accidentally scorched by the cautery. All the mucous membrane which protrudes through the opening of the speculum is freely cauterized with an iron cautery at a dull-red heat, and, if necessary, the speculum is cooled by allowing a stream of water to play on its interior for a few seconds between each application of the cautery. When the operation is completed six narrow strips of cauterized mucous membrane are seen, the surface of which is almost level with the metal of the speculum. The disc is now withdrawn; a half-grain morphin suppository is introduced and the speculum is firmly packed with gauze covered with vaselin, and against the outer end of the gauze the obturator is held, and over it the speculum is withdrawn. The gauze tampon is retained within the rectum, its free end alone showing at the anus. The after-treatment is small doses of opium by the mouth and very limited diet for a week, so as to give the lower bowel complete rest during that time. The external parts are kept well cleansed, the tampon is retained till it causes uneasiness, and on the seventh day a laxative is given.

**Australasian Medical Gazette, Sydney.**  
November 20.

- 41 Complications of Pregnancy. J. A. G. Hamilton.
- 42 Two Complications of Pregnancy. T. G. Wilson.
- 43 Cesarean Section for Epithelioma of Cervix Uteri. A. A. London.
- 44 Over-Contraction of the Uterus, Causing Difficulties in Labor, Overcome by the Use of Amyl Nitrite. C. H. Souter.
- 45 Spasmodic Dysmenorrhea. W. T. Chenhall.
- 46 Urethroscope, Its Development and Its Use. W. R. Fox.
- 47 \*Reintegration of the Absent Middle Third of the Tibia in a Child. T. Fiaschi.

47. **Reintegration of Portion of Tibia.**—In the case of a girl, 6 years old, the middle third of the right tibia was destroyed entirely as the result of extensive suppuration and subsequent operation. The gap was filled in by a band of cicatricial tissue devoid of any ossification, showing thus the loss of periosteum as well as of bone. Fiaschi filled in the gap by transplanting two flaps formed of skin, periosteum and bone, one being taken from the upper third of the tibia and brought down, the other from the lower third of the tibia and brought up. Each bony flap was of the thickness of the existing fibula. The result was eminently satisfactory.

**Presse Médicale, Paris.**

- 48 (XIV, Nos. 93-95, Pp. 741-764.) Development of Science in Persia. Emir F. Kahn. (Dev. scientifique en Perse.)
- 49 \*Experiences at Melun with Behring's Method of Vaccinating Cattle Against Tuberculosis. H. Vallée. (Vaccination anti-tub. des bovidés.)
- 50 Ocular Disturbances from Lead Poisoning. F. De Lapersonne. (L'oeil saturnin.)
- 51 Technic of Amputation of Cervix of Uterus. F. Jayle. (Amput. du col de l'utérus.)
- 52 \*Etiology of Tuberculosis in Children. J. Comby. (Et. de la tub. infantile.)
- 53 \*Uremia in the Tuberculous. P. Teissier. (L'urémie chez les tub.)
- 54 The Liver and Iron. J. Castaigne. (Le foie et le fer.)

49. **Vaccination of Cattle Against Tuberculosis.**—The experiences related in regard to the application of von Behring's method of antituberculosis vaccination demonstrate that it actually does enhance the resisting power of the animals in respect to tuberculous infection to a marked degree. It is also entirely harmless, but the resistance conferred does not seem to last more than a few months.

52. **Etiology of Tuberculosis in Children.**—Comby urges that greater attention should be paid to the protection of young children against infection with tuberculosis in the home environment. Human contagion is by far the most important factor in the spread of tuberculosis, and, to date, it has been the most neglected in official prophylaxis.

53. **Uremia in the Tuberculous.**—Teissier has noticed that in patients with chronic pulmonary tuberculosis complicated with insufficiency of the kidneys from any cause, there ensues a slow, complex, progressive general intoxication which entails uremic symptoms of a peculiar character. It is a chronic uremia assuming usually the respiratory or gastrointestinal type, but occasionally the cerebral type with subdelirium or coma. There does not seem to be any tendency to convulsions or epileptiform seizures, even in children, and the type continues unmodified. Differentiation of uremia in the tuberculous is sometimes difficult, as the physician is inclined to attribute to the tuberculosis the dyspnea or gastrointestinal disturbances or to accept the existence of meningitis when the insufficiency of the kidneys leads to subdelirium or coma.

**Semaine Médicale, Paris.**

- 55 (XXVI, No. 50, Pp. 589-600.) \*Inflammatory Tumors in the Abdomen Simulating Neoplasms. Lejars. (Les tumeurs infl. pseudo-néoplasiques de l'abdomen.)
- 56 (No. 51, Pp. 601-612.) \*Study of Plantar Reflex and Toe Sign. Noica and Sakelaru. (Le reflexe plantaire et le phénomène des orteils—signe de Babinski—au point de vue physiologique et physio-pathologique.)
- 57 Severe Anemia of Infectious Origin. (Les anémies graves d'origine infectieuse.)
- 58 General Enlargement of Glands an Early Sign of Certain Acute Infectious Diseases. (L'adénopathie généralisée comme signe de diagnostic très précoce de certaines maladies inf. aiguës. Signe de Vipond.)
- 59 Diagnosis of Cancer of Stomach from Predominance of Mononuclear Blood Cells in Stomach Content. R. Blanche. (Cyto-diagnostic du cancer de l'estomac.)

55. **Inflammatory Tumors in the Abdomen.**—Lejars remarks that operations are frequently undertaken for the removal of assumed cancers when the tumor proves to be merely the result of localized inflammation. The history of the case sometimes shows the evidences of an inflammatory process, and the tumor develops too rapidly for the assumption of malignant disease. Zones of softening, with final fluctuation and hyperleucocytosis, are both important signs of the inflammatory nature of the lesion. The patient must be interrogated in regard to a possibly overlooked brusque and febrile onset. If this can not be determined, the presence of a hard tumor, knobby and immovable, suggests cancer if there is any tendency to bleeding in the stomach or intestines, but the further history shows a tendency to reabsorption and retrogression of a merely inflammatory tumor. A cancer of the size and development of the tumor would generally be associated with more pronounced cachexia. Examination of the blood, several times repeated, may aid in the differentiation. In case of epithelioma there is reduction in the number of reds while the whites are increased in numbers. In cases of persisting doubt exploratory laparotomy with microscopic examination is necessary to avoid delay, but it must be borne in mind that the tissues are peculiarly friable in case of inflammatory processes, and that there is grave danger of lacerations and perforations during operative interference. On the other hand, the inflammatory process is liable to be extraordinarily benefited by the slight operation done with extreme care and gentleness.

56. **Plantar Reflex and Toe Sign.**—Noica concludes from his research on the plantar reflex that the center governing the external plantar reflex and abduction of the toes, and the Babinski toe sign is located in the fifth lumbar segment. When the reflex is limited to the muscles of the foot it is physiologic, but when it includes the muscles of the leg (Babinski sign) it indicates pathologic conditions.

**Archiv für klinische Chirurgie, Berlin.**

*Last indexed XLVII, page 2043.*

- 60 (LXXX, No. 1, Pp. 1-277.) Traumatic Osteomata, Callus Tumors without Fracture. Fritz König. (Traum. Osteome, fracturöse Callusgeschwülste.)
- 61 \*Cancer of the Rectum. J. Petermann. (Mastdarmkrebs.)
- 62 Wounds of Joints During Campaign in Manchuria. L. Bornhaupt. (Schussverletzungen der Gelenke im russ.-jap. Kriege, 1904-5.)
- 63 \*Suction in Treatment of Surgical Tuberculosis. Klapp. (Behandlung des chr. Tuberculose mit dem Schropfverfahren.)
- 64 \*Surgery of Tumors in Suprarenals. L. Bogoljuboff. (Zur Chirurgie der Nebennierengeschwülste.)
- 65 \*Hemolytic Reaction of Blood Serum in Malignant Disease. G. Kelling. (Neue hämolytische Reaction des Bluteserums bei malignen Geschwülsten und bei malignen Blutkrankheiten, und ihre diagn. und statist. Verwendung in der Chirurgie.)
- 66 Papillary Growths in the Gall Bladder. F. Pels-Leusden. (Pap. Wucherungen in der Gallenblase, und ihre Beziehungen zur Cholelithiasis und zum Carcinom.)
- 67 Firearm Wounds of Abdomen. W. v. Oettingen. (Schussverletzungen des Bauches nach Erfahrungen im russ.-jap. Kriege, 1904-5.)
- 68 Experiences with Dry Treatment of Wounds. Goldammer. (Erf. mit trockener Wundbehandlung im südwestafrikanischen Kriege.)
- 69 Intravesical Cure of Cyst of Ureter. B. Klose. (Eln auf intravesc. Wege durch das Operations-Kystoskop geheilter Fall einer Harnleitercyste.)
- 70 \*Surgery of the Heart. W. Wendt. (Zur Chirurgie des Herzens.)
- 71 Technic of Operative Treatment of Femoral Hernia. Sprengel. (Schenkelhernien.)
- 72 \*Silver Wire for Deep Suturing. Küster. (Silberdrahtnaht als percutane Tiefennaht.)
- 73 Method of Covering Gap in the Skull. C. Beck. (Ueber eine neue Methode der Deckung von Schädeldefecten.)

61. **Cancer in Rectum.**—Petermann reviews his experience with rectal cancer in 104 male and 51 female patients. A radi-



cal operation was performed in 70.9 per cent. of the cases, and 41.3 per cent. of the patients who survived the operation and its results have been permanently cured. This is a proportion of 27.8 per cent. permanently cured out of the total number of patients operated on.

**63. The Cupping Process Applied to Surgical Tuberculosis.**—Klapp has applied suction therapy in the treatment of tuberculous fistulas and tuberculous processes approaching the softening stage. The technic was that of the ordinary Bier-Klapp cupping procedures for local inflammation of any kind. The opening of a cold abscess, followed by application of a cupping vessel, was never followed by secondary infection in the experiences at the Bonn clinic. The granulations are never disturbed, and this leaves intact the natural ramparts against secondary infection. After aspiration of the pus and secretions the suction is continued and a limpid serum is constantly exuded, sometimes containing blood corpuscles and bacteria, in amounts reaching from 5 to 8 c.c. As all this fluid could not have been contained in the immediate part, it must have been aspirated from the surrounding regions and thus actually rinses out the region, flushing out the impurities. The procedure is repeated for about an hour daily, and proves a powerful protection against ascending infection from without. Unless this aspiration is applied, he thinks it would be a sin to open up a cold tuberculous abscess, but it is safe, he declares, to do so with suction therapy, and these abscesses need no longer be regarded as a *noli me tangere*. Inoculation of guinea-pigs with the contents of a tuberculous abscess being treated by suction showed that very few of the animals succumbed to tuberculosis later. A number of the animals died, but no tuberculous lesions could be detected in them. The benefits of suction treatment were so marked that some visitors to the clinic expressed doubt as to whether the lesion could have been of a tuberculous nature until shown other unmistakably tuberculous lesions elsewhere on the same patient. Excellent results have also been obtained in cases of synovial tuberculosis of the knee under treatment with hyperemia induced by large suction vessels supplemented by repeated punctures. The exudate is rapidly renewed, but with it come the antibodies.

**64. Suprarenal Tumors.**—Bogoljuboff reports a case in a woman of 42 cured by ablation of the tumor, and summarizes the other cases of the kind on record, discussing the best technic.

**65. Hemolytic Reaction in Malignant Disease.**—Kelling here describes a specific hemolytic reaction of the blood serum in case of malignant tumors and malignant disease of the blood. The reaction is a hemolysis of the blood corpuscles from a vertebrate animal of the same species whose embryonal cells have been incorporated alive in the patient's body. This reaction is constant and independent of the food, but it disappears after removal of the cancerous growth, although it recurs in case of metastasis. The same reaction can be elicited by injection of particles of the tumor into an animal. The hemolytic reaction gives the same results as the precipitation reaction. A positive response testifies to the presence of cancer. His views in regard to the origin of cancer from embryonal cells, ingested or otherwise incorporated, its prevention and serum diagnosis were mentioned in these columns on page 1733 of vol. xliii, 1904.

**70. Surgery of the Heart.**—Wendel describes a case in which he successfully operated, the young man having resumed hard work since without further inconvenience from a severe stab wound of the heart. He adds that 42 out of 102 injuries of the heart treated by operative intervention to date have been permanently cured.

**72. Silver Wire Suture for Percutaneous Deep Sutures.**—Küster gives the particulars of some cases in which he used silver wire after the abdominal wound had twice burst open in one case, and relates others showing the unreliability of other suture materials under certain circumstances. He passes the wire entirely through the abdominal wall, the sutures about 4 cm. apart. The wound is then sutured with catgut in tiers, and the wire drawn up and tied afterward. The advantages are that the lower parts of the wound are brought into close contact, while rupture of the hernia later is almost impossible,

even in case of suppuration. The wires can also be easily removed at any time.

**Beiträge zur klinischen Chirurgie, von Bruns', Tübingen.**

*Last indexed XLVI, page 1802.*

- 74 (XLIX, R. U. Krönlein Jubiläumsband.) Intestinal Functions After Extensive Resection of Small Intestine. C. Schlatter. (Darmfunktion nach ausgedehnten Dünndarmresektionen.)
- 75 Dislocation of Fractures. II. Zuppinger. (Dislokation der Knochenbrüche.)
- 76 Limits of Roentgen Differentiation. Id. (Grenzen der radiographischen Differenzierung.)
- 77 \*Surgical Treatment of Pneumothorax. L. Spengler. (Zur Chirurgie des Pneumothorax.)
- 78 Retrobulbar Surgery of Orbit. E. Köhl. (Retrobulbare Chir. der Orbita.)
- 79 Kidney and Ureter Surgery. A. Lünig. (Zur Nieren- und Ureter-Chirurgie.)
- 80 Experiences with Bottini Operation for Hypertrophied Prostate. R. Stierlin. (Erfahrungen mit der Bottinischen Operation bei Prostata-Hypertrophie.)
- 81 Bilateral Rupture of Biceps. P. Wiesmann. (Fall von doppelseitiger Bicepsruptur.)
- 82 \*Treatment of Exophthalmic Goiter. J. Michalski. (Therapie des Morbus Basedowii.)
- 83 \*Origin of Cutaneous Roentgen Carcinoma and of Carcinoma in General. M. O. Wyss. (Entstehung des Röntgencarcinoms der Haut und des Carcinoms im Allgemeinen.)
- 84 Cystic, Hemorrhagic Scrofulous Enlargement of Suprarenal. K. Henschen. (Ueber Struma suprarenalis cystica haemorrhagica.)
- 85 \*Surgery of Subcutaneous Laceration of Kidney. H. Brun. (Zur Chirurgie der subkut. Nierenzerreissungen.)
- 86 Fractures of Metatarsal Bones. C. Schlatter. (Frakturen der Mittelhandknochen.)
- 87 Case of Median Cleft. E. Monnier. (Fall von sogen. Median-spalte.)
- 88 \*Weather and Surgical Skin Infections.—Das Wetter und die chir. Haut-Infektionen. A. Wettstein.
- 89 Retention of Testicle. Schönholzer. (Kryptorchismus.)
- 90 \*Operative Treatment of Round Gastric Ulcer and Its Consequences at Krönlein's Clinic. F. Kreuzer. (Chir. Behandlung des runden Magengeschwürs und seiner Folgezustände an der K.'schen Klinik in Zurich, 1887-1904.)
- 91 Technic and Results of 137 Aseptic Operations on Stomach. C. Brunner. (Keimprophylaxe, Technik, Wundverlauf und Wundfieber bei aseptisch angelegten Eingriffen am Magen, 1896-1905.)

**77. Operative Treatment of Pneumothorax.**—Spengler writes from Davos to describe his operative cure of 10 patients with tuberculous pneumothorax. In 6 cases the pulmonary tuberculosis was cured at the same time. He treated 23 other patients with tuberculous pneumothorax in the same way, but was unable to effect a cure. This proportion of 30 per cent. cures far surpasses those published by other authors, Drasche, West, Rose and Mosheim having realized only from 0.5 to 16 per cent. of cures in a material ranging from 19 to 189 cases. The lung retains its elasticity, even under severe compression, for several months and expands after the pressure is removed.

**82. Treatment of Exophthalmic Goiter.**—Michalski has observed one case of spontaneous recovery from exophthalmic goiter. The affection came on suddenly and vanished in the course of a week or so. His rule of treatment of exophthalmic goiter is with change of air and serotherapy at first, supplemented, possibly, by hydrotherapy, electricity, psychic influences and internal, symptomatic measures. If this treatment does not show any benefit at all in the course of three or four weeks, he insists on operative treatment. The operation should be the least serious intervention possible to accomplish the desired result.

**83. Origin of Cancer.**—Wyss concludes from his research on the mode of development of cancer from excessive and protracted Roentgen exposures that the blood vessels gradually become smaller and finally entirely obliterated under the influence of the *x*-rays. The epithelial cells become obliged to obtain their nourishment direct from the adjacent cells or tissues, and thus they assume the character of parasites. This explanation of the origin of Roentgen cancer applies also to other kinds of cancer for which interference with the blood supply may be the primal cause. Roentgen cancers are particularly liable to develop on skin already the seat of some morbid process, such as erythematous lupus, and special care is needed in making exposures with such patients. He has had a case under observation in which a cancer developed on the part exposed in Roentgen treatment of lupus.

**85. Operative Treatment of Subcutaneous Laceration of Kidney.**—Brun advocates the retroperitoneal route in the lumbar region as offering the most ample access and the simplest con-



ditions for conservative treatment. If the case proves too serious for conservative measures, little harm has been done, while in less serious cases they can be easily carried out. In a case described, the kidney was torn completely across into the hilus on one side and more than half way on the other, separating it nearly into halves, the result of a fall from a ladder. The arteries were ligated and the halves sutured together again. The accumulated blood was wiped out without rinsing, and a Mikulicz tampon applied; the operation was completed in an hour and three-quarters. The signs of traumatic nephritis gradually subsided, the urine soon became normal, and the patient is now in apparently perfect health.

88. **The Weather and Surgical Cutaneous Affections.**—Wettstein has been studying the influence of weather conditions on the occurrence of furuncles and carbuncles. He noted a greater frequency at the beginning and end of winter and in midsummer. The frequency is determined by three meteorologic factors, he is convinced, namely, the temperature of the air, its humidity and the force of the wind. The temperature acts by its vicissitudes, the changes from cold to warm at different parts of the day, and by the extreme heat of midsummer. Humidity is also an important factor, the excess at certain seasons and the lack of humidity at others having each an unfavorable effect. Strong cold winds also favor the development of furuncles, but warm winds, he states, have an inhibiting influence. The more sunshine the less furuncles, as a rule. These influences are not manifested at the moment, but soon afterward, although sometimes their effects appear with amazing precision. The above findings were also noticed with felons and phlegmons. Long continued foggy weather, he declares, unmistakably increases the numbers of furuncles observed.

90. **Surgical Treatment of Round Gastric Ulcer in Krönlein's Clinic.**—Two hundred pages are devoted to this study of 116 cases of round ulcer, with the findings of recent examination of a large number of patients on whom operations were performed. No symptom was observed that can be called pathognomonic, but the duration of the troubles is an important aid for the diagnosis, especially in the comparatively mild cases. If the assumed "chronic gastric catarrh" persists for years in spite of internal treatment, an ulcer can be surmised, even if there are no traces of hemorrhage. Occasionally these patients with "chronic gastric catarrh" die of perforation of the unsuspected ulcer.

#### Berliner klinische Wochenschrift.

- 92 (LXIII, No. 45, Pp. 1443-1470.) Etiology of Paralysis of Inferior Laryngeal Nerve. Dege. (Lähmung des N. laryngeus inf.)
- 93 \*Status hemiepilepticus. M. Bernhardt.
- 94 \*Syphilis Affecting the Nervous System. H. Hübner. (Lues nervosa.)
- 95 \*Treatment of Cystitis with Alcohol. J. Sellei. (Behandlung der Cystitis mit Alkohol.)
- 96 \*Specific Treatment of Tuberculosis. E. Maragliano. (Die spez. Therapie der Tuberkulose.)
- 97 \*Intestinal Origin of Anthracosis of the Lungs. M. Cohn. (Die Lungenanthrakose und ihre Entstehung vom Darm aus.)
- 98 Examination of the Larynx and Principal Laryngeal Affections in Children. G. Finder. (Kehlkopfuntersuchung und Kehlkopfkrankheiten bei Kindern.)
- 99 (No. 46, Pp. 1471-1498.) Is there to date any exception to the rule that in case of intensive affection of the recurrent nerves of the vagus the abductors of the vocal cords manifest functional disturbances earlier than the adductors? O. Rosenbach. (Bei intensiver Affektion der Nn. recurrentes vagi die Abduktoren der Stimmbänder früher Funktionsstörungen zeigen als die Adduktoren?)
- 100 \*Chronic Icterus. Claus and Kalberlah. (Ueber chron. Icterus.)
- 101 \*Sahl's Desmoid Test of Chemical Functioning of the Stomach. L. von Aldor. (Ueber eine auf natürliche Art ohne Verwendung des Magenschlauches vorzunehmende Untersuchung des Magenchemismus.)
- 102 Combination of Plastic Induration of Penis and Dupuytren's Contraction. H. Neumark. (Plastische Induration des Penis und D'schen Kontraktur.)
- 103 \*Action of Radium Emanations on Human Body. S. Loewenthal. (Wirkung der Radiumemanation auf den menschl. Körper.)

93. **Status Hemiepilepticus.**—Bernhardt reports a case of severe hemiepilepsy developing in a woman of 35. The seizures recurred every half-hour and swallowing was difficult. When this stage was reached by the end of two months a crucial incision was made in the dura of the opposite side, but nothing abnormal was found then or at the autopsy the next day. He discusses the difficulty of proper advice by the physician in

such cases; no lesion or tumor may be found on operating and the condition may improve at any moment to relative health.

94. **Syphilis of the Central Nervous System.**—Hübner describes several cases of what is generally described as "lues nervosa," but which he thinks can be explained just as well by other factors as well as by the syphilis.

95. **Alcohol in Treatment of Cystitis.**—Sellei has found the bactericidal and astringent properties of alcohol very useful in treatment of cystitis, especially of gonorrheal origin and in patients with hypertrophied prostate. He rinses out the bladder with a 5 to 15 per cent. solution, increasing the strength gradually. At first he allows the fluid to run out of the bladder at once, repeating the rinsing every day to every second or third day. Later he allows the fluid to remain from 10 to 30 minutes in the bladder. The anti-catarrhal action of the alcohol is very pronounced and beneficial.

96.—See abstract on page 1965 of the last volume.

97. **Intestinal Origin of Anthracosis of the Lungs.**—Cohn's experiments failed to confirm the assertions of Calmette in regard to the intestinal origin of experimental anthracosis of the lungs.

100. **Chronic Icterus.**—Claus adds two to the list of 30 cases of chronic icterus which he has found on record. His patients were brothers. Enlargement of the spleen was a prominent feature in all the congenital cases, with slight enlargement of the liver. In the acquired cases the enlargement of the liver was more prominent. The various factors in the etiology are discussed.

101. **Desmoid Reaction.**—Aldor regards this test of the chemistry of the stomach as an index of the proteolytic power of the stomach rather than a test of the free hydrochloric acid. His experiences with it have been rather disappointing.

103. **Action of Radium Emanations on Human Body.**—Loewenthal reports tests made with water exposed to the action of radium in a covered vessel. The water was then ingested or air was inhaled through it. The reaction on the part of the sick differed from that observed in healthy persons and resembled somewhat the painful reaction to a course of mineral waters. The emanations seemed to be absorbed by the lungs and not by the skin; elimination occurred by way of the lungs and urine.

#### Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 104 (XXXII, No. 48, Pp. 1937-1976.) Pathologic-Anatomic Findings in the Eyes in 2 Cases of Inherited Syphilis. H. Schlimpert. (Path.-an. Befunde an den Augen bei 2 Fällen von Lues congenita.)
- 105 Spirochetes in Human Eye. H. Bab. (Beitrag zur Genese der Augenerkrankungen bei hereditärer Lues.)
- 106 \*Diagnostic Importance of Examination of Blood and Tissues in Syphilis. A. Neisser, C. Bruck and A. Schucht. (Diagn. Gewebs- und Blutuntersuchungen bei Syph.)
- 107 (No. 49, Pp. 1977-2016.) Infection of Man with Bovine Tubercle Bacilli. A. Weber. (Infektion des Menschen mit den Tuberkelbacillen des Rindes—Perisuchtbacillen.)
- 108 Agglutinins and Specific Immune Bodies in Gonococcus Serum. T. Vannod. (Agglutinine und Immunkörpern im Gon.-Serum.)
- 109 Coincidence of Positive Biologic Reaction and Presence of Spirochetes in Syphilitic Infants. H. Bab. ("Ueber syphilitische Antistoffe in der Cerebrospinalflüssigkeit von Paralytikern.")
- 110 Active Immunization of Man Against Typhoid. E. Friedberger and C. Moreschl. (Zur aktiven Imm. des Menschen gegen Typhus.)
- 111 \*Prescribing and the Pharmacopoeia. C. Bachem. (Arzneiverordnung und Pharmakopoe.)
- 112 Some New Secret Remedies, Specialties, etc. F. Zernik. (Neue Arzneimittel, Spezialitäten und Geheimmittel.)
- 113 The Physician's Residence. H. Schmieden and J. Boethke. (Das Arzthaus.) Commenced in No. 47.

106. **Diagnostic Research on Blood and Tissues in Syphilis.**—Neisser ascribes great diagnostic importance to the results of his study of the blood and tissues in syphilitics. With the aid of the "complement deviating" hemolytic blood test it is possible to distinguish in the extracts of organs and organic juices the presence of dissolved bacterial substance and also the presence of the antibodies produced by the organism. The antigen is the specific substance produced by the agent causing the disease, and induces the production of the antibody. A positive antigen reaction indicates the presence of the parasites of syphilis still in the body, and consequently the patient requires treatment. A positive antibody reaction alone, on



the other hand, indicates merely that the patient at some former time has sheltered the parasites of syphilis, and treatment to expel or destroy the parasites is not called for, as there is none left in the body, unless manifest symptoms of syphilis still persist or the disease has never been treated. He urges physicians to send for examination extracts of blood and organs, and specimens of serum or cerebrospinal fluid from suitable cases of syphilis, hoping to promote the study of the subject by extending the research. All such communications should be addressed to Dr. K. Zieler, Maxstrasse 1, Breslau. He is especially anxious to obtain for study and for practical differentiation extracts of tissues from organs of fetuses and children, placenta, excised glands and excised neoplasms in case of doubt as to the presence of syphilis; also blood extracts and serum from patients whose syphilis is still dubious, either owing to doubtful infection in the distant past or possibility of infection from recent opportunity for contagion, or in cases in which the symptoms suggest a possible syphilis without any known cause for contagion, and, further, in cases in which syphilis is known to have existed but in which it is important to determine whether or not the patient has been cured by appropriate treatment. The practical importance of differentiation and certainty in these cases, by means of the simple test in the hands of experts, is self-evident.

**111. Prescribing and the Pharmacopeia.**—Bachem has been investigating the number of drugs listed in the pharmacopeia which are never called for in prescriptions. His inquiries were made mostly in Bonn, and he found a considerable number of drugs which he thinks had better be dropped from the next edition of the pharmacopeia, owing to the fact that they are never called for or for other reasons. In his list of 17 or more he includes zinc acetate, elixir amarum, acetum aromaticum, etc., giving the reasons for omitting them. Leeches and surgeon's agaric, he states, should also be omitted from official publications, owing to the impossibility of rendering them aseptic. On the other hand he gives a list of nearly a dozen proprietary medicines which he thinks deserve a place in the pharmacopeia. He also suggests that the term "carbolic acid" should be dropped, as the substance is not an acid, phenol or carbolum being much more appropriate for an official work. The maximal dose for strychnin nitrate he would also reduce from the present 0.01 gm. to 0.005 gm. as the former is too close to the border line of toxic action. Certain potent drugs, as digitalis leaves, for instance, should be tested more carefully. If chemical tests are inadequate they might be supplemented by others, such as Fock's suggestion to accept as a standard the interval before the frog's heart comes to systolic standstill.

#### Münchener medizinische Wochenschrift.

- 114 (LIII, No. 48, Pp. 2329-2376.) Experimental Tabes in Dogs. W. Spielmeyer. (Exp. Tabes bei Hunden: Trypanosomen-Tabes.)
- 115 \*Gonorrhea in Men and Its Consequences for Married Women. W. Erb. (Zur Statistik des Trippers beim Manne und seiner Folgen für die Ehefrauen.)
- 116 \*Nervous Heart Affections and the Conception of Cardiac Weakness. L. Krehl. (Nervöse Herzerkrankungen und den Begriff der "Herzschwäche.")
- 117 \*Experimental Study of Action of Stasis Therapy on Infectious Processes. P. v. Baumgarten. (Experimente über die Wirkung der Bierschen Stauung auf inf. Prozesse.)
- 118 \*Conservative Operations for Myoma. H. Fehling. (Zur Berechtigung der kons. Myomop.)
- 119 \*Upward Extension of Spinal Analgesia. Dönitz. (Höhenausdehnung der Spinalanalg.)
- 120 \*Tuberculin Treatment of Pulmonary Tuberculosis. Hammer. (Tuberk.-Behandlung der Lungentub.)
- 121 \*Results of Opium-Bromid Treatment of Epilepsy. Keilner. (Erfolge der Opium-Brom-Kur.)
- 122 Backing Up of Urine Toward Renal Hilus. R. Geigel. (Rückstauung des Urins nach dem Nierenbecken.)
- 123 Proposed Modification of Regulations in Regard to Accident Insurance. F. Hackländer. (Vorschläge zu einer den Unfallprozess nicht retardierenden Unterstützung des Unfallverletzten.)
- 124 \*New Technical Terms Used in Works on Immunity, etc. Dieudonné. (Fachausdrücke aus der neuern Immunitätslehre.)

**115. Statistics of Gonorrhea in Men and Its Consequences for Married Women.**—Erb tabulates statistics from his general practice at Heidelberg which show that 45 per cent. of 2,000 male patients were entirely free from venereal disease. In another table he shows the effects on the wife of gonorrhea in the husband in 400 cases in which he has positive data on

the subject. He found that 93.75 per cent. of the women were free from any pelvic affection that could be attributed to gonorrhea. In 68 per cent. of these families there were two or three children, and in 25 per cent. four or more. The proportion of sterile marriages was less than 12 per cent., while in 44 cases there was only one child.

**116. Cardiac Neuroses.**—Krehl discusses the subject of myocardial and neurogenic cardiac disturbances. He urges more thorough study from the standpoint of psychology and psychiatry of individuals with heart disturbances. It is still a question whether cardiac disturbances, resembling the psychogenic, can occur in individuals free from psychic anomalies. If this question could be decided by competent authority, the clinic could then distinguish between psychic and psychogenic cardiac disturbances as Strümpell has accomplished for dyspepsia of this varied etiology.

**117. Experimental Study of Artificially Induced Hyperemia.**—Rabbits were injected with staphylococci, or tubercle or anthrax bacilli, and a constricting band was then applied above according to the Bier technic for stasis therapy. If the dose was not very large, the animals injected with anthrax bacilli did not seem to suffer from the injection, but the results were negative with tubercle bacilli. The staphylococcus processes healed much more rapidly than under normal conditions, but the passive congestion failed to prevent the development of the lesions. The factors that aid in the effect of the artificially induced hyperemia are evidently due, Baumgarten thinks, to the delayed absorption, to the dilution of toxins and to the lack of sufficient nourishment for the bacteria in the media, plus a certain bactericidal action on the part of the accumulated blood serum. The bacteria die very slowly and sometimes survive, which suggests starvation rather than vigorous bacteriolysis. Tubercle bacilli are not susceptible to the bactericidal action of the serum, and are also remarkably resistant to the effects of starvation.

**118. Conservative Myoma Operations.**—Fehling advocates early vaginal operations with anterior hysterotomy, and relates excellent results from this technic.

**119. Upward Extension of Spinal Analgesia.**—Dönitz writes from Bier's clinic to discuss various features of spinal anesthesia. He has found that the upward extension of the analgesia is dependent to a large measure on the amount of fluid injected, on the position of the patient after the injection, and on the conditions of the blood pressure inside the skull. When the injection is made on the reclining patient and he remains reclining, the anesthetized region is comparatively small and does not extend above the groin, as a rule, but when the injection is made on the seated patient, who then reclines, the change of position alters the center of gravity of the fluid in the spinal canal, and the anesthetic spreads higher. Raising the pelvis sends it higher still. When the pressure of blood in the arteries and veins in the skull becomes very high its walls can not yield, and the cerebrospinal fluid is driven out into the spinal canal. In case of heart defects, even extreme raising of the pelvis with resulting intense cyanosis of the face, is not accompanied by high analgesia. It did not suffice for even inguinal herniotomy in several such cases in his experience, with mitral insufficiency or other causes for venous congestion. It is possible that the cyanosis of the face may serve as an index of the dilatation of the veins inside the skull. He warns against spinal analgesia for patients who become thus cyanosed during a trial, preliminary raising of the pelvis, as this technic is almost certain to fail in such cases. When the blood runs out of the skull the cerebrospinal fluid rises into the skull and carries the anesthetic with it. One way to accomplish this, he states, is by applying a constricting band to the neck before the injection. On its removal, after the anesthetic has been injected, the cerebrospinal fluid rises. Another way to aspirate the fluid upward is by deep inspirations, then closing the nose, allowing expiration to proceed freely—a kind of reversal of Valsalva's experiment. This aspirates the blood out of the skull even when the pelvis is raised. Dönitz has never observed vomiting after a very high or total spinal analgesia. In elderly people, the anesthesia induced is more in-



tense and lasts longer and the after-effects are less than in the young. It may be said that the lower half of the lumbar sac for the elderly and the upper half for the young, is a good rule for spinal analgesia. It has been found inadvisable to try to restrict the analgesia to the field of operation. It is better to have it extend considerably beyond it, thus reducing the chances of failure. For operations on the perineum, especially in the elderly and in individuals with weak hearts, it is unnecessary to dilute the fluid. Consequently the injection is made reclining, and only 2 c.c. of fluid are injected, and the patient does not change his position. For operations on the legs, from 3 to 5 c.c. of cerebrospinal fluid are drawn into the syringe; for operations on the appendix or kidneys and for herniotomies, from 6 to 10 c.c. are aspirated and the pelvis is raised a little. For higher operations, a constricting band is applied to the neck and the anesthetic is injected in 10 c.c. of cerebrospinal fluid, after which the constriction is removed at once from the neck, and the pelvis raised to the extreme Kader position, with deep, prolonged inspiration. The dose of the anesthetic may be slightly increased in this case, he states, in order to prolong the analgesia.

120. **Tuberculin Treatment of Tuberculosis.**—Hammer has been treating tuberculosis with tuberculin during the last six years, and reports his experience with 100 patients. About 60 completed the full course and all were benefited, some to a remarkable extent. He remarks that this treatment needs to be individualized more than any other, but that, on the whole, the results are better than from any other method known to date "while we are waiting for von Behring to fulfill his promise." Hammer commences with 0.000001 gm., increasing by the same amount to 0.00001 gm. and then by this amount to 0.0001 gm. and so on till in the course of 55 injections the total amount injected is 5.999995 gm. The ideal is to keep always on the border line of a reaction. His patients were all working people and out-patients.

121. **Opium-Bromid Treatment of Epilepsy.**—Kellner has treated 85 epileptics at the Alsterdorf asylum for idiots and epileptics with a special course of opium and bromid, which has resulted, he states, in the cure of 22 of the 54 patients who completed the course. In 13 others the seizures have become very much less frequent and less severe, with intervals of several months and without contractions. Only 6 patients failed to profit by the treatment. He gives for 50 days 0.05 gm. extract of opium three times a day, increasing gradually until the maximum of 0.29 gm. is reached the fiftieth day; the next morning 0.3 gm. is given and the opium discontinued. He then commences with 2 gm. of a mixture of 1 gm. each of potassium bromid and sodium bromid with half a gram of ammonium bromid, taken in a glass of fresh seltzer water. This dose is taken at noon and again at night from the fifty-first to the fifty-eighth day, gradually increasing it to the maximum of 9 gm. daily, which is continued for months. During the course of opium he gives three times a day a tablespoonful of 1 per cent. solution of hydrochloric acid, and Carlsbad salts at need, with a light and predominantly vegetable diet, and a daily bath at 24 C. (75 F.) for 10 minutes the first day; 23 C. for 9 minutes the second day, and so on to a bath of 17 C. (62 F.) for 3 minutes the eighth day, repeating this without change for a week and then lengthening the bath by one minute until the maximum of 6 minutes is reached by the end of the 50 days of the opium course. The above dosage is for otherwise healthy adults.

124. **The New Technical Terms in Immunity Research.**—Several columns are devoted to definitions of the terms recently coined to express the new facts learned in research in immunity. They show that much confusion would be avoided if workers in different countries would accept the terms already conferred by some previous worker instead of inventing new ones for the same idea. Most of the terms are self-explanatory. "Alexin" and "cytase" are synonyms, and "allergie" represents the extra-sensitiveness to a reaction, as, for instance, the sensitiveness of the tuberculous to tuberculin. The substance that affects the bacteria or the blood cells, making them more sensitive, like a sensitized photographic

plate, is called variously the "sensibilisatrice," "Immunkörper," "Amboceptor," and "Praeparator."

Virchow's Archiv, Berlin.

Last indexed XLVII, page 2129.

- 125 (CLXXXVI, No. 2, Pp. 135-319.) Tuberculosis of the Arteries. O. Geissler. (Arterientub.)
- 126 Genesis of Tubercle in Kidney. K. Buday. (Ex.-histologische Studien über die Gencse des Nierentuberkels.)
- 127 Non-malignant Melanomata of the Skin. M. Tische. (Benigne Melanome — "Chromatophoroma" — der Haut. "Blaue Nevi.")
- 128 Melanoma of Spinal Cord. A. Hirschberg. (Chromatophoroma medullæ spinalis.)
- 129 Giant Cells with Nuclei in Margin in Sarcomata. R. Zipkin. (Riesenzellen mit randständigen Kernen in Sarkomen.)
- 130 Bone-Marrow Tumor Between Kidney and Suprarenal. O. Brian. (Eine aus Knochenmark bestehende Geschwulst zwischen Niere und Nebenniere.)
- 131 \*Congenital Impermeability of Biliary Passages. S. Fuss and B. Boye. (Kong. Unwegbarkeit der Leberausführungsgänge.)
- 132 Significance of Fibrogia Fibrils. A. F. Coca. ("Fibrogia" Fibrillen.)
- 133 Degeneration of Columns in Secondary Carcinomatosis of Spinal Membranes. E. Rehn. (Echte und falsche Strangdegeneration bei sek. Karzinomatose der Rückenmarkshäute.)

131. **Congenital Impermeability of Biliary Passages.**—Fuss and Boye have collected 39 cases from the literature and add the description of a case personally observed. The latter with 16 in the literature belong to a group of malformations in which, with normal gall bladder, part of the biliary passages was lacking. In another group of 7 the trouble was traceable to inherited syphilis, and in the rest to absence of a gall bladder. Fibrous nodules were found in the place of the missing gall bladder, assumed to be the relics of some intrauterine inflammation which had run its course during intrauterine existence. Such a process was discovered also in Wronka's case, with evidences of diphtheric inflammation.

Norsk Magazin f. Lægevidenskaben, Christiania.

Last indexed XLVII, page 1966.

- 134 (LXVII, No. 10, Pp. 1153-1248.) Two Cases of Bulbar Paralysis without Anatomic Findings. E. Krogh. (Bulbærparalyse uden anatomisk fund.)
- 135 \*Lucas J. Böer, M.D., 1751-1835. K. Brandt.
- 136 Anesthesia with Nitrogen Monoxid. J. Rygge. (Om lystgasknarkoser.)
- 137 Bronchitis, Asthma and Trigeminal Neuralgia due to Primary Irritation of the Nerves in the Nose with Secondary Vasomotor paresis. B. M. Behrens (Minneapolis).

135. **L. J. Böer.**—This historical sketch of an eminent German obstetrician of the early part of the last century gives an interesting picture of the times. He had charge of the Maternity at Vienna, and during his 39 years' incumbency the mortality from puerperal fever was only 1.25 per cent. of 71,395 births—a brilliant record for the days before Holmes and Semmelweis. His extreme care in watching over his patients caused his French colleagues to call him "a midwife in breeches."

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**STUDIES IN THE BACTERIOLOGY AND ETIOLOGY OF ORIENTAL PLAGUE.** By E. Klein, M.D., F.R.S., Lecturer on Advanced Bacteriology at the Medical School of St. Bartholomew's Hospital, London. With 89 Photograms. Cloth. Pp. 301. New York: The MacMillan Company, 1906.

**SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY.** An Introduction to the Study of Obstetrics and Gynecology for Medical Students and Practitioners. By W. P. Manton, M.D. Third Edition, Revised and Enlarged. Cloth. Pp. 136. Price, \$1.25 net. Philadelphia: F. A. Davis Company, 1906.

**DISEASES OF CHILDREN.** A Manual for Students and Practitioners. By G. M. Tuttle, M.D., Attending Physician to St. Luke's Hospital. Second edition, revised and enlarged. Cloth. Pp. 392. Price, \$1.50 net. Philadelphia: Lea Brothers & Co.

**WHO'S WHO, 1907.** An Annual Biographical Dictionary. Fifty-ninth Year of Issue. Cloth. Pp. 1958. Price, \$2.50. London: Adam and Charles Black; New York: The MacMillan Company, 1907.

**TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.** Vol. XVIII. For the Year 1905. Cloth. Pp. 293. New York: The Greenwich Printing Company, 1906.

**HYGROMEDRY.** By H. E. Wetherill, Fourth Edition, Revised, Enlarged, with Many New Plates. Pp. 82. Price \$2.50. Published and illustrated by the Author (3734 Walnut Street, Philadelphia).

**BEITRÄGE ZUR SYPHILIS-FORSCHUNG.** By M. von Neissen, Wiesbaden IX. Paper. Pp. 31.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII.

CHICAGO, ILLINOIS, JANUARY 26, 1907.

No. 4.

## Original Articles

### GOITER.

WITH PRELIMINARY REPORT OF THREE HUNDRED  
OPERATIONS ON THE THYROID.

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The general impression to be obtained from a review of the surgical literature of America would be that diseases of the thyroid gland are greatly on the increase. This is probably not the case, but the public has learned that operations on goiter are not as fatal as were supposed from the results obtained when operations were made as a last resort on patients suffering from this disease and in a moribund state. The fact is that the mortality attending the operation (excluding cancer and advanced cases of exophthalmic goiter) compares very favorably with other major surgery; and, in the hands of those experienced, with much of the so-called minor surgery.

### SURGERY OF THE THYROID.

The surgery of the neck never seemed to enjoy the popularity of that of the abdomen, and goiter operations are not even to-day sought by the majority of surgeons. Those who were competent did not sufficiently often encourage operative relief until the absolute necessity rendered the mortality so high as to be almost prohibitive. The lay impression became such that operative measures were permitted only in the most advanced cases, while semi-surgical, medical, mechanical and electric treatment flourished. In most cases death came slowly and was looked on as a relief from suffering, a result which satisfied everybody; but the death which follows operation is a shock to all, and in but few instances is there a consideration of the fact that medical treatment has previously failed. Neither is the urgent necessity of the operation nor the desperate condition of the patient taken into account, but the death is made a debit against the surgical side. Especially is this true in cases of exophthalmic goiter.

Surgery of the thyroid is one of the most satisfactory operations made, giving immediate relief with brief disability. The best known surgeon of to-day is Kocher, and wherever his name is mentioned the first thought connects it with the removal of goiter. It is through his monumental work in this line that his reputation traveled far and wide. Among ordinary goiters, in 70 operative cases before 1850, Kocher placed the mortality at 40 per cent. In 400 operations between 1850 and 1883, it fell to 15 per cent., and since 1883 has dropped to less than 3 per cent., Kocher's own being 0.4 per cent in simple cases. In Riverdin's report of the cases of death in 93 cases, respiratory conditions, suffocation and pneumonia caused 43 deaths, hemorrhage 19, infection 13,

shock and nerve injury 9, cardiac failure 6, while only 4 were from tetany and myxedema.

### DISEASES OF THE THYROID.

The diseases of the thyroid gland can be classed in a few groups—functional derangements, inflammations, hypertrophies and tumors. Each of these groups presents material for most exhaustive study, and very much has been written concerning them in monographs and books on the ductless glands and various types of hypertrophies and tumors. The present paper, being on the general subject of goiter, will discuss but briefly much of interest in relation to operative work.

In Europe there are certain localities which present such large numbers of people with goiter that the disease



Fig. 1.—Large cystic goiter measuring 31 inches in circumference, including neck.

is considered endemic, and, while it is said to be due to the use of waters from the mountainous districts, the disease is also endemic in some of the flat countries, as in the Indian Punjab and plains of Lombardy. Hereditary influences may also play a part. In the United States there are no such marked localities. The disease occurs in all regions and climates, among rich and poor, food and water having apparently no definite relation to its cause. Some regions appear to have more than their due proportion from possessing more accurate medical observers. The same may be said of exophthalmic goiter, which is often attributed to shock, with about the same proof that birth marks follow maternal impressions.



## THE THYROID GLAND.

*Development.*—The thyroid gland is developed from a median process of the pharyngeal hypoblast which bifurcates below and forms pyramidal lobes, i. e., the isthmus and part of each lateral lobe, the remainder being formed from lateral outgrowths from the pharynx. In most vertebrates they remain distinct, but unite in mammals, the various portions being fused in the human embryo at about the seventh week. In some cases the fusion is incomplete, and separate thyroid bodies are noticed laterally or below the normal location. In others one or more lobes may be missing. The foramen cecum in the tongue marks the point of inversion and the remains of a disappearing structure, the duct or tract of the gland. It is in these lines of inversion, like branchial cysts, that accessory thyroids are found, and in the upper tract especially are so often the cause of serious conditions, as when found in the tongue and also in the median line of the neck above the isthmus. The so-called pyramidal lobe is present in from 30 to 40 per cent. of all people.

*Anatomy.*—The thyroid body is somewhat like a horse shoe in shape and rests on the trachea, with one lobe on each side, connected below by the isthmus which crosses the upper tracheal rings. These lobes are about two inches long, being smaller at the upper pole. The right one is usually the larger, and the entire weight is from one to one and one-half ounces. The gland is invested by a thin fibrous capsule which divides posteriorly, a portion lining the posterior and inner surface, while a part passes to the opposite side behind the esophagus. This investment explains the production of pressure from tumor growths on both of these structures and the occasional appearance of tumors between them. Fibrous bands also unite the gland to the trachea, which cause the thyroid to move with it. Trabeculae of connective tissue pass into the gland structure and subdivide into the framework for the alveoli and small vesiculae and serve as a space for the lymph channels which extend throughout the gland, performing the function of the ducts of this organ, as has been pointed out by King, Horsley and Hürthle. They have shown that these channels contain the same colloid secretion as is found in the gland vesicles.

The blood supply of the thyroid, considering its size, is remarkable for its extent and also for the freedom of anastomosis. The superior thyroid artery from the ex-

ternal carotid supplies the upper pole on its inner side, dividing and entering the capsule. The inferior thyroid from the thyroid axis enters the capsule below at the hilus. The main veins are the superior, middle and inferior, although many others seem to develop in diseased organs. The nerve supply is from the sympathetic. In intimate relation with the right inferior thyroid artery is the recurrent laryngeal nerve, which lies in the space between the trachea and the esophagus, and is so often affected by pressure of tumors, by operation or scar tissue as to cause hoarseness. On the left side the recurrent is usually more deeply set and not in such close relation to the artery, as was pointed out by Sifton.

*Parathyroids.*—In each side of the neck behind or within the investing capsule of the gland are the parathyroids, two small gland-like bodies somewhat resembling in structure the suprarenals. Little is known concerning them, but they appear to be closely associated with the thyroid in function, and it is probable that when the whole of the thyroid body is removed and the operation is not followed by untoward consequences the patients have active parathyroids or accessory thyroids. It is claimed by Humphrey that a fatty degeneration of these bodies is found in exophthalmic goiter. I could not verify the statement. The experimental study of parathyroids would tend to show that they hold a most important position in the metabolism of the body. Their removal causes tetany and, as they are small, they may easily be removed on the back capsule of the extirpated gland. The removal of one or two in an operation for colloid goiter may not prove serious

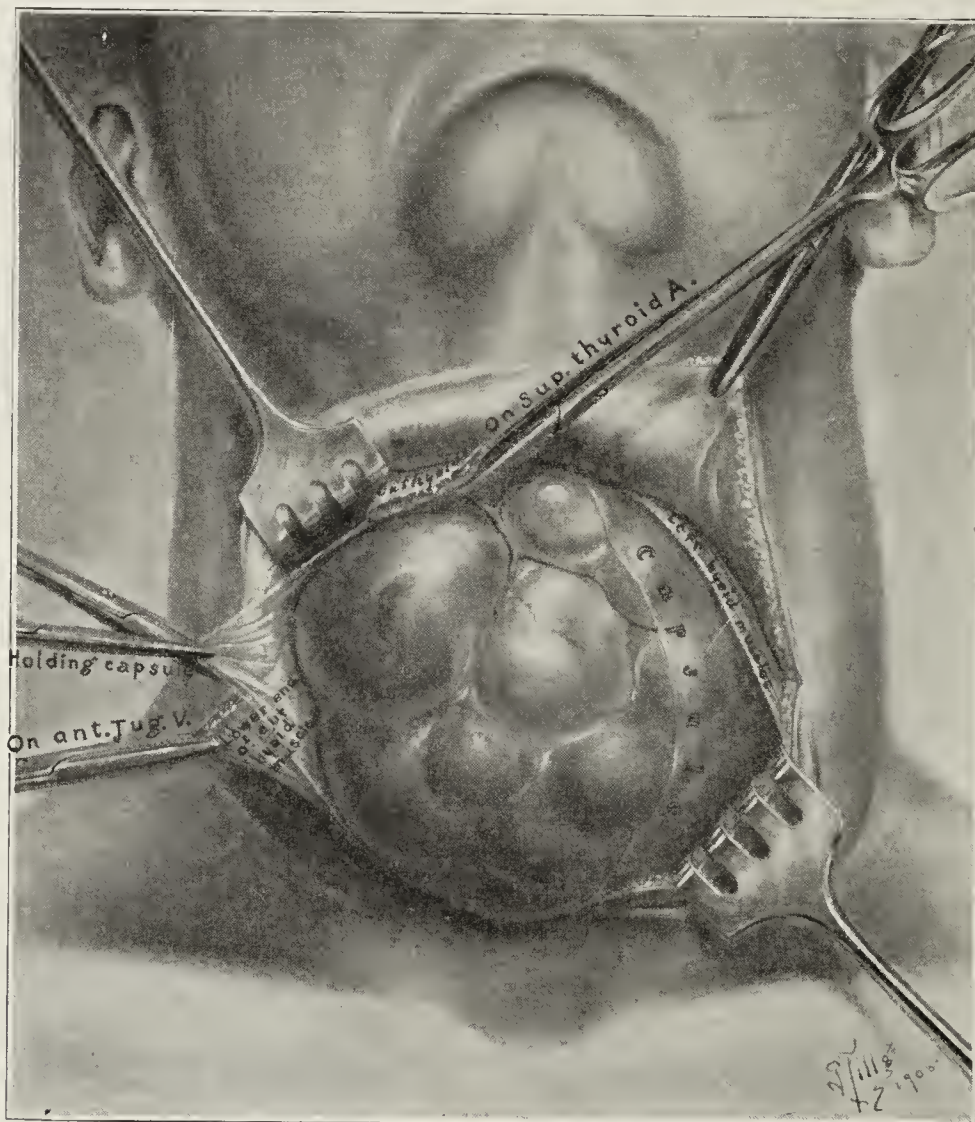


Fig. 2.—Enucleation of cystic goiter; capsule opened.

but in exophthalmic goiter it may prove most dangerous in adding to the shock. To some extent, we can see how enucleation of encapsulated goiters would seldom cause either tetany or myxedema, as a portion of the gland is left and the capsule protects the parathyroid as well as the laryngeal nerve.

*Function and Secretion.*—Much has been written on internal secretions and, while our knowledge has continuously grown, there is still very much to learn about the ductless glands. A consideration of the functions of the various structures of the body shows that they are controlled by accelerator and depressor nerves, the stimulating and inhibiting forces. Every muscle action to be effectively controlled is balanced by another which opposes it. In other words, there must be a constant equilibrium of forces. When we consider the effects of



the secretion of the suprarenal gland with that of the thyroid, it would seem that in several respects they oppose each other. Such a fact explains, to some extent, the condition of cretinism, in which from lack of a functioning thyroid there is an arrest of development. Through the unopposed action of the suprarenal bodies there is a capillary contraction with circulatory starvation which affects the cerebral cortex, as well as other tissues. The intermittent feeding of thyroid extract causes increased growth and general improvement in appearance, with considerable mental development. The mental development is only sufficient in most cases to convert a passive, helpless imbecile into an active, restless and destructive idiot.

#### HYPOTHYROIDISM.

The loss of the function of the gland seems to be cause for more serious consequences in the young than in those who have reached their complete development. Young adults who lose their entire thyroids will retrograde in intelligence, while the older individuals frequently develop myxedema, in which we have the myxedematous condition of the skin and subcutaneous tissues, dry skin, loss of glandular activity, loss of hair and mental dullness. Apparently these cases are often overlooked unless well developed. The thyroid increases in size commonly at puberty and in the latter months of pregnancy. Such enlargement usually subsides after a period. Oliphant Nicholson, of Edinburgh, speaks of the enlargement of the thyroid during pregnancy and of the fact as shown by Lange that those who do not have such enlargement have an increased tendency to albuminuria and eclampsia. Kocher reports 70 per cent. of cachexias in 34 cases of total excision. Garre reports 50 per cent. in 67 cases. Billroth had 52 cases develop tetany, with 9 deaths, and 11 developed cachexia. The London myxedema committee only found 24 per cent. in 224 cases of total excision. Considering the remarkable conditions which occur from a loss of the secretion of the thyroid, we are not surprised at the serious derangements from an oversecretion or an abnormal secretion.

#### EXOPHTHALMIC GOITER.

In 1835 Graves, and five years later Basedow more thoroughly, described the disease known by their names, or by the term exophthalmic goiter. These conditions may be described by various writers in a somewhat different way, yet they all undoubtedly mean the same con-

dition which is characterized by an excess of the activity of the gland. A better and more expressive term is hyperthyroidism. It occurs much more frequently in women than in men and the greater number are between 20 and 40 years of age. It is not markedly hereditary and, while shock may be a contributing factor, it is difficult to elicit a probable cause in the majority of cases.

There are several symptoms in exophthalmic goiter which alone may occur in other conditions, yet, alone or associated, lead the diagnostician to consider the possibility of exophthalmic goiter. They are the enlargement of the thyroid, tachycardia, exophthalmos, muscular tremor and general nervousness. The gland is usually enlarged, but may not be palpable in exceptional cases.

With the exophthalmos may occur von Graefe's symptom, the lagging behind of the upper lid in looking down, or Stellwag's sign, the retraction of the upper lid. Möbius described an occasional insufficient accommodation without diplopia. Exophthalmos may be absent in 20 per cent. of the cases. The heart action may vary from 90 to 180 a minute, a case of medium severity being about 120 to 140. Systolic murmurs are not uncommon. Muscle tremor is easily elicited even in mild cases by having the hand extended, finger spread, palm down.

Associated symptoms are excessive perspiration, occasional rise of temperature and digestive disturbances, chief of which are vomiting and failure to assimilate. Attacks of such diarrhea are not unusual. The onset of the disease may be rapid, that is, during a few days, or it may be over an extended period of

time before being noticed. Many medical men still consider the disease to be a probable intestinal toxemia and look on the goiter as a coincidence, although all of the symptoms may be produced in healthy individuals by feeding thyroid, and even exophthalmos is now recorded as occurring following the administration of dried thyroid for obesity. The gland in a typical case usually presents the true hypertrophy, a wonderful increase in cell activity and the cell areas in the vesicles are greatly increased in layers and by infolding. The cell form also changes in shape. The gland is dry and hard after removal as compared to the ordinary juicy colloid or adenomatous condition. The association of enlarged thyroid in these cases is not definitely understood.

In our work at St. Mary's Hospital, we have operated

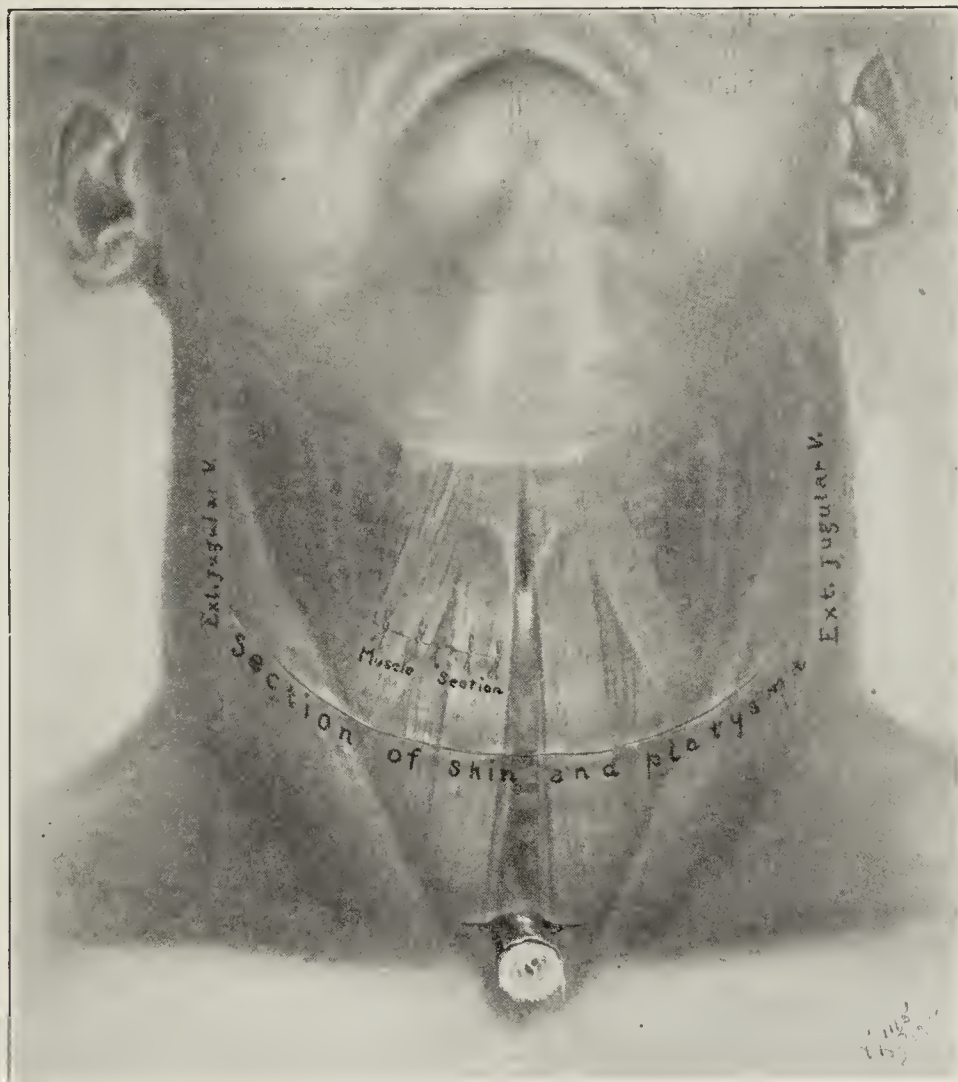


Fig. 3.—Muscle section higher than skin incision. Stab drainage.



on exophthalmic goiters which were hardly palpable and have been surprised at the increased size of the gland over the normal when exposed. After all it is a question of increased secretion, absorption and delivery by the lymphatics, not necessarily the retention and development of a tumor. If the exophthalmic gland was no larger than normal it would be many times more active. It is a question if the failure of lymph absorbents in certain areas may not, following hemorrhage or increased secretion, play a part in the production of some types of cysts. Exophthalmic goiter may occasionally develop in a case of goiter of long standing, and then there are diffuse areas of hypertrophy in the general tumor. The best classification of the exophthalmic type is: 1, vascular; 2, hypertrophic; 3, hyperthyroidism developing on previously existing goiter.

A fibroid condition of the gland may follow recovery from exophthalmic goiter, and the consequent loss of function later may cause myxedema. Ord and Mackenzie tabulated 56 medical cases of exophthalmic goiter which had lasted five years or been fatal. There were 10 recoveries, 11 made incomplete recovery, in 13 there was considerable improvement, 4 were unchanged, and 14 (25 per cent.) were fatal. Others make more favorable reports.

With the general hygienic and therapeutic treatment of exophthalmic goiter we like the action of belladonna. We also make use of the *x*-ray. From its known action on the lymphatics and the glands it exerts a favorable effect on the over-activity of the gland in exophthalmic goiter, and in some cases seemingly develops something of a capsule and partially changes the character of the tumor. While its effect may not be permanent it is a valuable adjunct in preparing advanced cases for surgical procedure. We have had no personal experience with the use of serum from thyroidectomized animals or milk from thyroidless goats. The cases and reports we have seen have given conflicting and not convincing evidence. J. Rodgers, of New York, is now experimenting with a thyroid serum which it is claimed is especially valuable in exophthalmic goiter. It is possible that much may yet come from autotoxic serum treatment.

There is a type of thyroid, usually enlarged throughout the whole gland, appearing at about puberty and during the succeeding ten years which Bloodgood calls simple goiter. In these cases dilated acini are filled with comparatively normal colloid. Similar conditions often occur in pregnancy. In most of them the tumor disappears without treatment. Obstinate cases can be cured by some external application or treatment with iodine or organotherapy. In fact, it is reported (Bull's system) that Kocher claims 90 per cent. of all goiters can be so improved by medical treatment as to render operation unnecessary.

Typical exophthalmic goiter may also exist as a symmetrical enlargement. The irregular enlargement may be adenomata, cysts or unevenly developed colloid goiter. Malignant disease in the thyroid also occurs in irregular enlargements, and Bloodgood states truly that when the disease has progressed so far that a differential diagnosis from benign tumor is possible it is also probable that it is too far advanced to cure. For patients with irregular nodular tumors early operation should be advised. Sarcomas may be more uniform in appearance and cystic. Most of the bulging tumors, evenly rounded and covering the front of the neck, are the cystic or colloid cystic type, with a heavy capsule, in which may be a thinned-out layer of the remains of the gland.

In some cases pressure atrophy seems to have destroyed all the gland, yet, as complete removal of these encapsulated masses or cysts does not often cause myxedema, it is probable that the system becomes accustomed to the very gradual withdrawal of the thyroid secretion. In three cases we have removed all of such encapsulated growths without cachexia, although it is possible that accessory thyroids were carrying on the function. One of the three was a large single cyst, the other two were cystic colloid, one measuring 22 and the other 19 inches across the tumor from one side of the neck to the other.

Loss of voice from tumor pressure occurs more often in malignant than in other tumors. The adenomatous growths, fetal and cystic, are common and represent a species of goiter frequently found in children and young adults. Cysts may follow hemorrhage, but more commonly develop from adenoma and colloid degeneration. Echinococcus is infrequent, but must be considered. The necessity of a second operation on goiter is rare, according to Bergeat, being required in only twelve cases out of 600.

Wolff states that when one-half of the gland has been excised for hypertrophic goiter the remaining half always diminishes. This is confirmed by Riverdin, Kocher, Poncet and Wöeffler. It has also been our experience. We do not believe in the semi-surgical treatment of goiter, that is, the injection, puncture and drainage methods which are nearly as dangerous as radical operative measures. Exothyreopecty or open displacement of goiter, Jaboulay's method, is merely mentioned.

#### THE RELIEF OF EXOPHTHALMIC GOITER.

The removal of the cervical sympathetic ganglia, as advocated by Abadie and Edwards and popularized by Jonesco and Jaboulay, we have not considered as effective as the operation on the diseased organ itself. Rehn's report makes it less than half as favorable. Surgeons do not seem to appreciate the effect of this operation and the ligation of arteries, also the experimental work on the parathyroids, in destroying the lymph channels which drain the thyroid. Division of the isthmus for the relief of pressure is not effective, as the pressure is on the sides of the trachea and not on the top except in cancer.

During the past seventeen years we have operated on 300 thyroids, with 11 deaths. Of these 110 were for exophthalmic goiter, with 9 deaths in all and but two in the last 64 cases. Two deaths in the early work were from accepting almost moribund cases as surgical risks. Among the remaining operations, representing cysts, colloids, adenomata and parenchymatous, including 9 malignant, tumors, there were but 2 deaths, 1 on the eighth day from pneumonia, the other from tracheal collapse following removal of carcinoma. One case was a large lingual thyroid, 3 were tumors of the pyramidal lobes, 2 only were accessory thyroids in the superior line of inversion, 2 were incisions and drainage for acute inflammatory conditions, 2 were for sarcoma.

We have been much pleased with the results of the surgery of exophthalmic goiter. Of those who survive the operation, 50 per cent. make an early recovery, 25 per cent. improve of the main symptoms during several months, and 25 per cent., while greatly improved, have occasional temporary relapses of the tachycardia and tremor. The exophthalmos is often one of the last symptoms to disappear.



**Anesthetic.**—The choice of an anesthetic is more often determined by the idiosyncrasy of the operator than the necessity of the case. There were 13 operations made with cocain infiltration. Of these 3 were completed with chloroform. While there are occasional cases in which local anesthesia may be necessary, we have noticed but little difference in the shock or general condition of the cases from the anesthetic employed. We now use ether anesthesia, preceded twenty minutes by hypodermic of  $1/6$  gr. of morphin and  $1/120$  gr. atropin. The table is placed in an elevated slanting position with the head up (reverse Trendelenburg). The tumor is rendered prominent by a roll beneath the neck if it does not interfere with respiration.

**Operation.**—We prefer the collar or transverse incision. In tumors of medium size this crosses the center of the tumor, in larger tumors it crosses the upper third and the lower flap is split vertically to the sternum if necessary.

The incision is through skin and platysma muscle, the flap being raised to expose freely the muscles covering the gland, namely, the sternohyoid and thyroid, the inner portions of the sternomastoid and omohyoid. In medium-sized growths muscle separation will permit of the delivery of the tumor. The muscle section of the sternohyoid and thyroid group, if made, should be near their upper attachment so as not to interfere with their nerve supply and also to break the line of scar formation from that part of the skin. After the removal of the gland, the severed muscles are carefully united by suture. The upper section also permits of early ligation of the superior thyroid artery which is the key to the situation.

The more firm and rounded tumors, with a strong capsule, can be readily enucleated after incising the capsule and penetrating the gland tissue to the cyst. We usually loosen the gland from the outside of the capsule first. On viewing the tumor, the true capsule has the luster and appearance of peritoneum. If one is not sure, incise between the vessels. Should hemorrhage be severe, lifting up the tumor by its capsule will reduce the bleeding until sutures can be placed for its control. In parenchymatous and colloid tumors we make extirpation of one lobe and the isthmus. After exposing it the upper pole is elevated and the superior thyroid artery is cut between the ligatures. The lateral veins are clamped and cut, the lower pole is elevated into the wound, incision is made along the outer posterior border, and the capsule is brushed off with gauze to the median line. As a rule, the inferior thyroid is now ligated close to the tumor as the capsule is brushed back. This leaves the nerve behind and usually out of sight. The isthmus is clamped and closed by suture. If the enucleation method for adenoma and cysts leaves a badly torn lobe it can be removed. Sometimes extirpation of one lobe is made and enucleation of cystic masses is done on the opposite side, after the method of Porta, Billroth and Socin. The resection method of Mikulicz was only employed in one case, but with good result. The ligation of the thyroid arteries as a method was not practiced. We avoid rough handling of the portion of gland to be left.

Should there be a large area of cut gland exposed it is burned over with carbolic acid, followed by alcohol, or often Harrington's No. 9 solution is applied over the cut tissues to close the lymph absorbents and favor drainage. If there has been but little traumatism we do not drain. Large incisions and large cavities we

drain temporarily. All exophthalmic cases are drained as freely as the most septic wound.

These cases absorb some wound secretion containing colloid, causing rise in temperature and increase of pulse the next day. To delay absorption, especially in exophthalmic goiter, patients are given large quantities of salines by the bowel directly after the operation and for the first two to four days. If not retained by the bowel, they are given subcutaneous administration.

The wound is closed by subcuticular suture, great pains being taken to unite the platysma to prevent spreading of the scar.

## OPERATION FOR THE SHORTENING OF THE BROAD LIGAMENTS.

AN ANATOMIC AND CLINICAL STUDY.\*

ARTHUR E. HERTZLER, M.D., PH.D.

KANSAS CITY, MO.

The material underlying this study was as follows: Forty adults and a larger number of pelves of newborn infants were dissected. Microscopic sections were made in various planes of the broad ligaments. Serial sections were made of these structures in fetuses of from three to six months, and also of pelvis of younger

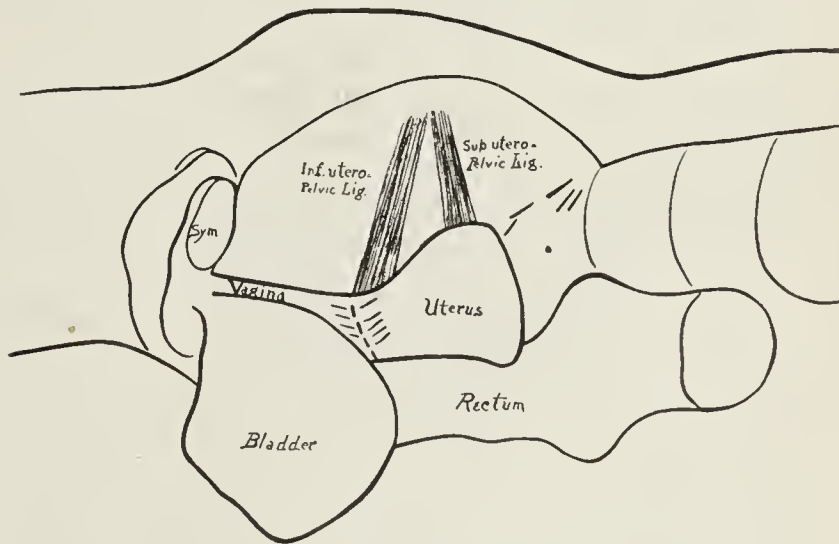


Figure 1.

embryos. The whole clinical study is based on 46 cases operated on in the past four years.

Works on anatomy are in accord in describing the broad ligament as formed of two layers of peritoneum. It is described in a recent work by my distinguished teacher, Waldeyer,<sup>1</sup> in a general way as composed of two serous layers, between which are vessels and nerves, many smooth muscle fibers and more or less connective tissue.

This generally accepted opinion becomes questionable when it is considered that the peritoneum, strictly speaking, can be dissected from the pelvis complete, except from the fundus of the uterus, leaving the ligaments intact. This furnishes indisputable evidence that the accepted description of the broad ligaments is inadequate, and that they are true ligaments.

In corroborating this statement the dissector must have a clear notion as to what is comprised by the peritoneum. It is incorrect to regard all the fibers below the endothelial layer of cells as comprising the peritoneum. I have in course of preparation an extensive

\* This article was received in July, 1906.

\* Read before the South Kansas Medical Society, April 18, 1906.

1. "Das Becken," p. 530.



exposition of this subject and a detailed discussion can not be entered into at this time. It may be anticipated, however, that I regard the peritoneum as composed of a layer of endothelial cells, an elastic layer and a thin layer of looser connective tissue. The actual thinness of the peritoneum can be appreciated by picking up a mesentery on the finger and noting the delicacy of the double thickness so presented. When this is kept in mind the statement that the peritoneum acts as a suspensory ligament nowhere under any condition will not seem extravagant. The peritoneum covers all the intra-abdominal suspensory ligaments but is nowhere identical with them. This is particularly true of the broad ligament, which is the strongest of them all.

When the broad ligaments are exposed, by the removal of the peritoneum, two bands are seen extending lateralward from the uterus. The upper one, arising from the cornu of the uterus, has its upper border immediately below the origin of the mesosalpinx. Its lower border extends from 5 to 15 mm. below the ovarian artery. The fibrous bands are arranged about this vessel for the greater part of its extent across from the pelvic brim. The lower ligament begins at the point of approach of the uterine artery to the uterus. A few

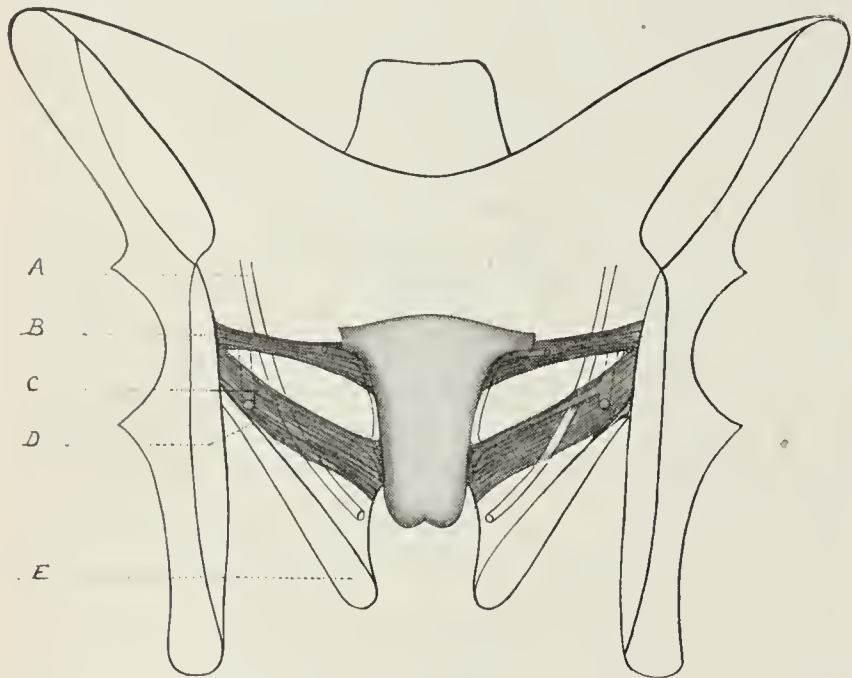


Fig. 2.—A. Ureter. B. Superior uteropelvic ligament. C. Uterine artery. D. Inferior uteropelvic ligament. E. Levator ani.

fibers pass above this vessel, as also above the ureter, but by far the greater part is below. At one time in the development no fibers are to be found above the artery and ureters but as early as the fourth month a few fibers pass above it. Below the entrance of the artery the ligament forms dense masses of fibers and continues to become more dense until the insertion of the vagina into the cervix is reached. At this point of insertion fibers unite with the upper portion of the vagina. These are not of great importance and are of relatively late appearance developmentally. The unimportance of these fibers, as well as those passing above the uterine artery, can best be appreciated by the ease with which blunt dissection from these structures can be made on the operating table.

The upper ligament extends directly lateralward from its point of origin to meet the wall of the pelvis at the white line or just above it. The lower band extends lateralward and upward, from the point of origin already described, to meet the pelvic wall immediately below the upper band. The fibers of the two bands intermingle at their attachment to the pelvic fascia. Some of the fibers pass upward above the pelvic brim

to become continuous with the retro-peritoneal fascia. The extent of the insertion varies in the different subjects dissected. Some experience is required to demonstrate them with facility. In subjects hardened in strong formalin no difficulty should be experienced. In fresh subjects the dissector is likely to lose a portion of the fibers in the removal of the peritoneum if care is not exercised. Figure 1, which is a faithful reproduction of a specimen preserved in my laboratory, gives a good idea of the size of these structures.

It would be more in accord with the usages of descriptive anatomy to describe the ligaments as arising at the white line and having their insertion in the cornu and utero-cervical junction respectively, but in dissection it is more convenient to begin the dissection at the uterine end of the ligaments. If it is desired to designate these structures by a separate name, that of superior and inferior utero-pelvic ligaments is suggested. Or, if it is desired to have names in harmony with the B. N. A.,

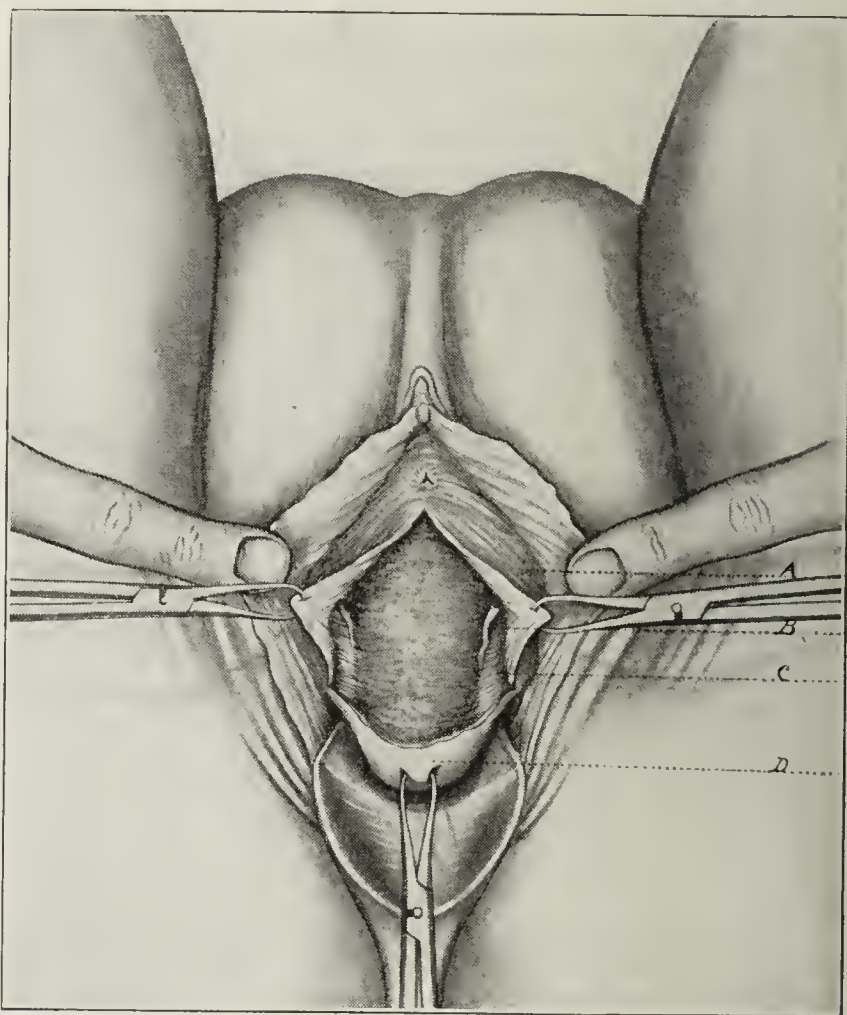


Fig. 3.—A. Ureter. B. Uterine artery. C. Inferior utero pelvic ligament. D. Cervix.

ligamentum utero-pelvicum superior and lig. utero-pelvicum inferior might be appropriate.

Microscopically these ligaments are composed of dense bands of fibrous tissue with an interlacement of smooth muscular fibers. The loose areolar tissue is situated, for the most part, subperitoneally and above the lower ligament. This statement can be best appreciated by the study of fetal pelvis.

The relation of the uterine ligaments to the uterus, as they concern us in a surgical way, may be understood by reference to Figure 2. It will be observed how the uterus is anchored by these structures and what the effect on the position of the uterus is when they are elongated, and conversely the effect on the descensus when the ligaments are shortened.

Figure 3 shows the ligaments as exposed by vaginal incision. They can be readily dissected out with the end of the finger and freed from the uterine artery and



from the ureter if desired; the latter, however, is not necessary. When loosened in this way the ligaments can be drawn out from 3 to 6 cm., depending on the degree of prolapse, without difficulty. Figure 4 shows the ligaments drawn out and attached.

To the experienced vaginal operator, familiar with pelvic anatomy, little more need be said. I have hardly done the operation exactly twice alike. The later operations have, however, been fairly uniform. A transverse incision is made in front of the cervix and the end of the ligament exposed by passing the finger between it and the vagina, thus getting below and behind it. It is then easy to follow it up as far as the uterine artery. With care the peritoneum can be lifted up without injury. In the earlier operations the artery was tied if the uterus was heavy and the patient near the menopause. If it is desired to do so the vessel can be tied extraperitoneally. After the exposure of the ligaments they are severed between two ligatures. The first ligature is passed as closely as possible to the cervix, the other 1 cm. or less lateralward. If the uterine artery

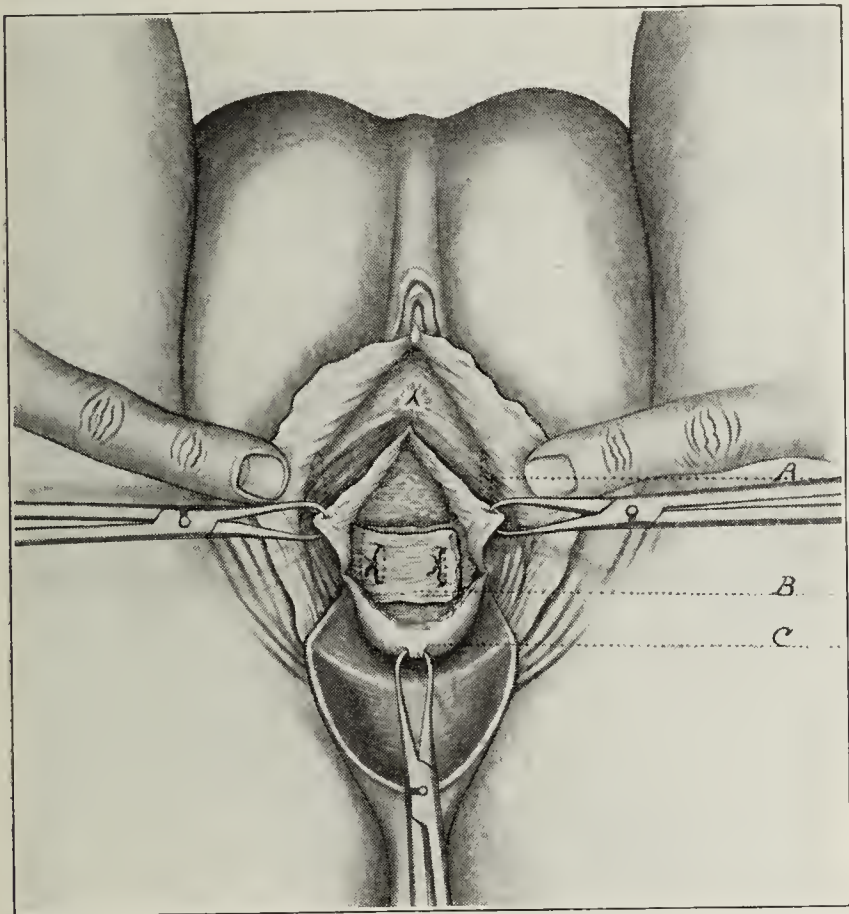


Fig. 4.—A. Ureter. B. Inferior uteropelvic ligament overlapping C. Cervix.

is tied this precaution is unnecessary. After free exposure of the ligaments they are overlapped as far as may be necessary to raise the cervix high enough. The method of overlapping is unimportant. An imitation of the method used by Mayo in umbilical hernia is satisfactory and easily applied. Pyoctannin gut is used for all sutures, plain gut for ligatures.

I have made use of this operation in all cases of prolapse. In cases of prolapse of high degree either a Dührssen fixation or a Freund-Wertheim has been added.

In patients in the child-bearing age I have added to this shortening of the uterine ligaments the shortening of the round ligaments to hold the fundus forward. This is done by a method believed to have some points of superiority. It is briefly as follows: A Wertheim incision is made over the pubes and the abdomen is opened according to his method. The pelvic contents are examined and given the needed treatment. The round ligaments are reached by retracting the lateral

angles of the wound thus exposing the external inguinal ring. A curved forceps is passed along the inguinal canal and passed into the abdomen and the ligament seized subperitoneally and dragged along the inguinal canal into the external ring. The grasp of the ligament within the abdomen is guided by the index finger of the left hand within the abdomen. By this method the peritoneum over the round ligament is not opened and there are no extraneous hands to cause trouble and only pre-existing openings are utilized. If the uterus is fixed by adhesions this operation must precede the shortening of the uterine ligaments, otherwise it is done afterward. As a matter of fact fixed uteri are usually not prolapsed, thus do not require a shortening of the uterine ligaments. The operative results have been satisfactory. I do not offer the operation as a finished product but I believe the operation is mechanically more correct than those now employed. As to the correctness of the anatomic observation I feel confident.

### A CASE OF CHRONIC OSTEO-ATROPHIC ARTHRITIS.\*

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PHILADELPHIA.

The extraordinary features presented by the bones and joints of the patient forming the subject of this communication justify, in my opinion, the publication of the case as an almost unique one.

*Patient.*—K. I., a woman aged 54, white, single, and a native of Ireland, is an inmate of the Philadelphia Home for Incurables.

*Family History.*—Her family history presents no features bearing any relation to her own condition. There is no history of rheumatism.

*Previous Medical Condition.*—The patient's previous history shows her to have been strong and healthy excepting for some undeterminable infection when she was about 10 years old. Her work was confined to household duties. At the time of the onset of the present trouble she was a woman of about 5 feet 3 inches in height, weighing in the neighborhood of 135 pounds.

*Present Illness.*—About twenty-seven years ago the patient noted some pain and stiffness in the right hip, coming on after a severe wetting. This disappeared within a few weeks, and for a year she was entirely well. At this time pain and stiffness occurred in the third toe of the right foot. Very shortly after, the right knee was similarly involved, and then successively, the right hand and wrist and the left wrist. Later, most of the remaining joints of the body were involved, and within a few months from the onset of symptoms in the toe, practically all the joints of the body were affected. There was some swelling, but pain on movement and stiffness were the most prominent features. The patient does not recall having had any fever at this time. About twenty years ago, approximately six years after the onset, the patient noted that the thumb of the right hand was becoming shorter, and soon after observed a similar process in all fingers of both hands. There was a gradual progression of this shortening until a few years ago, since which time she believes there has been no increase in the process.

*Physical Examination.*—The patient is an extremely small woman, sitting continuously in a chair with the trunk flexed at about a right angle to the thighs and the head slightly

\* From the William Pepper Laboratory of Clinical Medicine, Phoebe A. Hearst Foundation.



flexed. She is able to execute only the slightest movements of arms or head. The examination of the thoracic and abdominal viscera reveals no unusual features. On account of the inability of the patient to extend the body, the measurement of her height is impossible, but estimation places it at not more than 4 feet 10 inches. The examination of the bony framework and joints reveals the following: In the neck there is a lateral motion of approximately 5 degrees. Flexion and extension are limited to 10 degrees. There is very limited motion in the spine. Over the sternum, commencing an inch below the suprasternal notch, is a bony prominence, one inch in length and two inches in breadth, which shades gradually to the level of the surrounding tissue. The measurement from one acromial process to the other is ten and one-half inches. From the right sterno-clavicular articulation to the right acromion is five and one-half inches. From the left sterno-clavicular articulation to the left acromion is four inches. Both shoulders are completely ankylosed. The right elbow is ankylosed at an angle of 90 degrees. The left elbow permits of a motion from almost complete flexion to almost complete

in a slightly flexed position. In none of the larger joints can any bony outgrowths be determined by palpation.

The most interesting features in the case are presented in the fingers and hands. The fingers have, without an exception, become greatly shortened. Since this shortening is due apparently to bony change in which the soft tissues have not kept pace, the latter are thrown into folds, giving the phalanges an appearance of being telescoped into each other. Associated with this shortening of the fingers there is relaxation of most of the joints, so that the hands present, especially on manipulation, a most grotesque appearance. Some of the fingers can be extended to a right angle with the metacarpal bones, so that they give the impression of being nothing more than tags of soft tissue. The right hand measures from the wrist to the tip of the middle finger four and one-half inches; from the wrist to the distal end of the middle metacarpal bone two and three-quarter inches. The right hand measures from the wrist to the distal end of the middle metacarpal bone two and one-half inches. In the little finger of the right hand there is almost complete ankylosis at the second phalangeal



Fig. 1.—A radiograph of the right hand.



Fig. 2.—A radiograph of the left hand.

extension. There is marked relaxation of the bones entering into the left elbow so that a deep groove is visible both in the line of the articulation and extending from this downward between the radius and the ulna. The measurement from the acromion to the external condyle is ten inches on both sides. From the external condyle to the wrists is seven inches on both sides. Both hips are completely ankylosed, the right at an angle of about 110 degrees with the trunk, the left at an angle of about 140 degrees. Both knees are completely ankylosed, the right at an angle of 130 degrees and the left at an angle of 160 degrees. The ankle permits of approximately 25 degrees of motion in the direction of flexion and extension. There is no lateral motion. In the left ankle the flexion and extension are limited to 10 degrees. The toes on the left foot are moderately free. In the toes of the right foot motion is extremely limited. The right wrist admits of 10 degrees of flexion and extension. The left wrist is completely ankylosed

joint. In the fourth finger there is partial ankylosis in the first phalangeal joint. In the index finger there is partial ankylosis in the metacarpophalangeal joint. In all of the other joints of the right hand there is more than the normal amount of motion, due to the relaxation spoken of above. In the left hand there is slight limitation of motion in the distal joint of the little finger. In the third and fourth fingers there is considerable limitation of motion in the distal joints, and in the thumb there is almost complete ankylosis at the metacarpal articulation. In all the other joints of the left hand the relaxation is marked.

*Urinalysis.*—Clear, amber, slight flocculent sediment. Sp. G. 1024. No albumin. No sugar. A small amount of epithelium. Some W. B. C.'s. Some cylindroids.

*Blood.*—Hemoglobin, 84; R. B. C., 4,400,000; leucocytes, 10,560. Differential count: Polymorphonuclear neutrophils, 74 per cent.; eosinophiles, 1.8 per cent.; basophiles, 0.3 per



cent.; lymphocytes, 15.2 per cent.; large mononuclear leucocytes, 7.9 per cent.

The accompanying skiagraphs made by Dr. G. E. Pfahler, show the changes in size and form of the bony parts responsible for this remarkable clinical picture of the hands. The soft parts show the folds caused by the accommodation of the flesh to the changes in the bony parts. The joints, inclusive of the wrist joint, are all obliterated. The distal joints of the middle and ring fingers of the right hand, the distal joints of the middle, ring and little fingers of the left hand and the wrist joint are obliterated by fibrous or bony union, the remaining joints by reason of the absorption of bony tissue. Luxations are frequent. There are a few exostoses, notably at the proximal ends of the phalanges of the thumb of the right hand and at the proximal ends of the proximal phalanges of the ring and little fingers of the left hand. In the bones the most prominent features are a general rarefaction of the phalanges, apparently a result of lacunar atrophy. Many of the phalanges are atrophic and shortened and, as it were, pegged at one end. This is especially noticeable in the distal end of the proximal phalanx of the thumb, and the proximal ends of the middle phalanges of the ring and middle fingers of the right hand, and in the distal ends of the proximal phalanges of the middle, ring and little fingers of the left hand. The most profound changes are where entire phalanges have apparently been absorbed, giving radiographically no indication of the preservation of bony tissue. This is the case

At about this time he was suddenly seized with violent pain in the shoulders and hips. It was then that he noted the fact that his hands were growing smaller, since which time this process has been steadily progressing. The hands now show a marked atrophy of the phalanges, as in my case, and the consequent wrinkling of the skin, well described as "telescoping." The knees are almost completely fixed in a semi-flexed position. The shape of the joints is not altered and there are no osteophytes. No other joints are affected, but the patient thinks that there has been some shortening of the face. The only other noteworthy feature of the case is the fact that the patient's blood contained 15 per cent. of eosinophiles in a normal leucocyte count.

The case reported by Schultze,<sup>2</sup> although scarcely similar to mine, presents some features suggestive of the same type of case:

The patient was a woman, aged 39, who, when she was 27 years of age, first showed signs of a spondylose rhizomelique which became progressively worse. Associated with this was an atrophic condition of the bones, especially of the arms and fingers. The circumference of the wrist joint was 13 cm. and the width of the hand, exclusive of the thumb, 7 cm. The patient had a younger brother with pseudohypertrophic muscular atrophy, also showing some bony atrophy.

Without more exhaustive details it is impossible to



Fig. 3.—Photograph of a wax cast made from the right hand.



Fig. 4.—Photograph of a wax cast made from the left hand.

with the middle phalanx of the little finger and the middle phalanx of the index finger of the right hand and the proximal phalanx of the thumb and the middle phalanx of the index finger of the left hand. That the same process of absorption has occurred in other bones, of which, unfortunately, no skiagraphs could be made, there can be little doubt, as indicated by the measurements of the extremities, as given above, and by the undoubted decrease in height of the woman since the commencement of the disease.

A review of the literature presents but one case bearing any resemblance to the one here reported. In that case Watson<sup>1</sup> presented photographs and skiagraphs of the hands which show a resemblance to my case that is really striking. A brief summary of the case is as follows:

The patient was a man 47 years of age, who had enjoyed good health until he was 39 years old, when he had an attack of what was diagnosed as acute articular rheumatism. Soon after multiple tumors developed over the entire surface of the body. These were described by Crocker as of myeloid structure. Later these tumors gradually disappeared and at the end of two years the patient was entirely free from them.

assume any great resemblance between this case and the one here reported.

In practically all of the various types of cases included under the term rheumatoid arthritis, two pathologic processes are at work: a destructive process and a proliferative process. In one type of cases the proliferative changes predominate, resulting in fibrous ankylosis, or, if this fibrous tissue become ossified, a true bony ankylosis results, arthritis ankylopoetica (Ziegler). In another type the destructive and proliferative changes occur in a more equal distribution. We find first the central portions of the articular cartilages undergoing degeneration, at the same time proliferation occurring about its margins; later the ends of the bones coming into apposition by reason of the degeneration of the cartilage, undergo atrophy, partly from pressure, and later the opposed surfaces become compact and eburnated. At the same time a moderate amount of lacunar atrophy of the bone usually occurs. In this association of destructive and proliferative changes, however, no such degree of atrophy has been described as is found in my

1. Brit. Med. Jour., March 10, 1906.

2. Deut. Zeitschr. für Nervenheilkunde, vol. xxiv, 1899.



case. Moreover, this atrophy has occurred in many of the bones practically independent of proliferative changes. This extraordinary degree of atrophy suggests some influence other than those due to the local joint disease as playing some part in the process. The most rational consideration is naturally of some trophic disturbance, either primary or reflexly, induced by the joint disease. The determination of these factors must await further observation of similar cases and, above all, postmortem findings.

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## A NEW PRIMARY POSITION IN THE BLOODLESS TREATMENT OF CONGENITAL HIP JOINT DISLOCATION.\*

FREDERICK MUELLER, M.D.

CHICAGO.

(PRELIMINARY REPORT.)

About three years ago the bloodless treatment of congenital hip dislocation won notoriety and public attention in this country. Dr. A. Lorenz, the originator of the method, promised about 50 per cent. of anatomic

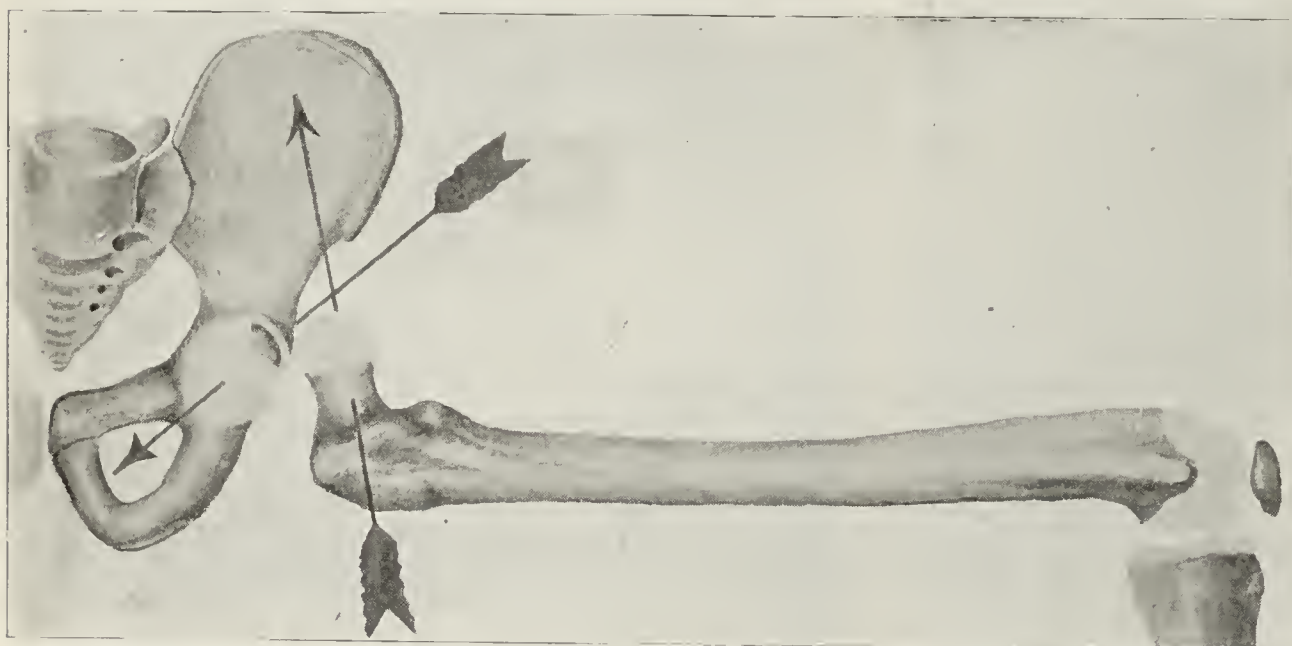


Fig. 1.—Diagram of a femur with considerable twisting of the upper femur end in the Lorenz primary position. The back of the femur (or rather what we call such in ordinary femurs) faces the frontal plane. The upper part of the capsule, which covers the head, is cut away in order to show the entrance to the pocket-shaped recessus through which the femur neck has to pass during the reposition. The axes of the pocket-shaped recessus and the femur neck are represented by arrows.

cures, a figure which is also proven by other statistics, provided that the operator masters the technic of the operation completely.

### LORENZ PRIMARY POSITION: ITS FAILURES.

But with the original Lorenz method, even the best technic and the most careful after-treatment can not prevent at least about 40 per cent. of subspinal positions, or, as they are often called, anterior superior re-dislocations.

For many years this fact has been known. In the beginning these partial failures in obtaining anatomic result have been attributed to various causes, such as extreme shallowness of the socket, poor technic or incapability of the method in fixing the head of the femur securely enough into the socket. Very soon, however, the real causes were found out, and the anatomic conditions of the upper femur end were made responsible for

these failures. The position of the femur neck against the shaft of the femur was recognized especially as being of the greatest importance for the prognosis of a given case.

In Munich, as early as 1899, Lange<sup>1</sup> alluded to these conditions, and as the subject of my paper is based on similar reasons, I may recapitulate Lange's conclusions in brief. Lange stated that the angle of inclination between the neck of the femur and the shaft, which, in normal cases, is something like 130 degrees, is in cases of congenitally dislocated hips mostly found either increased or decreased similar to the increasing or decreasing of this angle which we find in cases of coxa valga or coxa vera. The angle of twisting of the femur neck, that is, the angle which is formed by the axis of the neck and the horizontal axis of the femur condyles (seen in a vertical projection), is mostly found increased. In extreme cases it is nearly 90 degrees. Thus the femur neck, instead of facing the socket as in normal cases, looks straightforward by the socket in such cases of congenital hip joint dislocations, whenever we place the thigh in the normal position of the erect standing person. From this Lange concludes that the only fit primary position, that is, the position in which the cast should be applied, should be a medium abduction with intrarotation of the thigh.<sup>2</sup>

To these anatomic explanations I have very little to add, and this especially with regard to the conditions of the socket and the capsule. As we know, the socket is shallow in most of the cases. The capsule covers the empty cavity tightly, leaving an entrance only in the posterior superior quadrant of the socket. In this way a pocket-shaped recessus is formed by the socket and capsule known as "Pfannentasche." As its entrance lies in the posterior superior quadrant of the socket the axis of this recessus goes from above, behind and sideward to down, in front and inward.

Around the entrance of the recessus which is formed in its anterior part by the capsule fibers, and its posterior part of the upper rim of the socket the funnel-shaped upper part of the capsule is inserted which covers the head. In older cases the narrow part of the capsule which corresponds to the entrance of the pocket-shaped recessus is also often described as the hour-glass-shaped contracture of the capsule.

The possibility of curing any given congenital hip joint dislocation by holding the head of the femur in the socket in the pocket-shaped recessus has been proven beyond doubt, and likewise the possibility of producing the phenomenon of reposition in almost all cases, and yet we obtain only from 50 to 60 per cent. anatomic cures.

1. Lange: "Die Behandlung der angeborenen Hüftverrenkung," Sammlung klin. Vorträge N. F., No. 240, 1899.

2. For another discussion of the subject the reader is referred to Schede: "Die angeborene Luxation des Hüftgelenkes," Ftschre. a. d. Gebiete der Röntgenstr. Supplement No. 3.

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



To explain this enigma one has to consider that the above-mentioned twisting of the upper femur end is to be found in at least about 50 per cent. of all cases of congenitally dislocated hips, and that in the original primary position advocated by Dr. Lorenz such a deformed femur neck, respectively femur head, can not stay securely in the socket or the pocket-shaped recessus, as shall be explained in the following lines:



Fig. 2.—Diagram of a femur neck with considerable twisting of the upper end in the new primary position. The arrows (representing the axes mentioned in Figure 1) form an angle not to exceed 45 degrees, which is always compatible with a secure fixation of the femur head within the pocket-shaped recessus.

Let us suppose for a moment that we have a thigh the axis of the neck of which is twisted for about 90 degrees against the axis of the femur condyles. We suppose, further, that by means of the Lorenz maneuvers we were able to reduce the head in the socket and place now the femur in the so-called Lorenz primary position, the rectangular abduction, where the interior condyle of the femur faces the frontal plane. If the femur neck is twisted as presumed, it now necessarily runs in a vertical direction, nearly parallel to the longitudinal axis of the body.

Recapitulating what was said about the axis and the entrance of the pocket-shaped recessus, we see immediately that our femur head can not possibly stay in the socket or pocket-shaped recessus, after the placing of the thigh in the Lorenz primary position.

The reason is evident: The head and the neck of the femur can only be introduced and stay in the pocket-shaped recessus if the axis of the neck of the femur and that of the pocket-shaped recessus run in the same direction. We comply with this postulation perfectly by making the reduction when we bend the thigh rectangularly, rotate it slightly inward, extend it and press against the trochanter, thus pushing the head into the pocket-shaped recessus.

If we then place the thigh in the Lorenz primary position, we find that the axis of the femur neck instead of running from sideward, above and behind to down inside and front, runs from downward straight upward, that is, in an almost opposite direction.

Therefore, in the Lorenz primary position such a femur head can stay only with a part of its circumference within the pocket-shaped recessus, if at all, and only slight mechanical causes may effect redislocation. Such causes come into play later on when the children walk. All the jerks, which are caused by the walking in the cast, are transmitted by means of the knee-joint and thigh to the femur neck and head of the femur. As the neck of the femur runs from below in an upward direc-

tion, all the jerks must therefore have a component running in the same direction, and this component strives to push the head of the femur over the superior rim of the acetabulum. By these constant efforts the cartilaginous superior rim of the socket may be ground off and lowered, and the result is an anterior superior redislocation which becomes apparent when the cast is removed.

#### AUTHOR'S PRIMARY POSITION.

These experiences have induced me to discontinue the Lorenz primary position and to adopt a primary position, the value of which is based on the above-quoted mechanical reasons.

This primary position, which I like to call a neutral rectangular abduction, is derived from the position of reduction by simply placing the thigh in rectangular abduction in such a way that the knee cap looks toward the frontal plane. The position of the knee cap serves in this way for

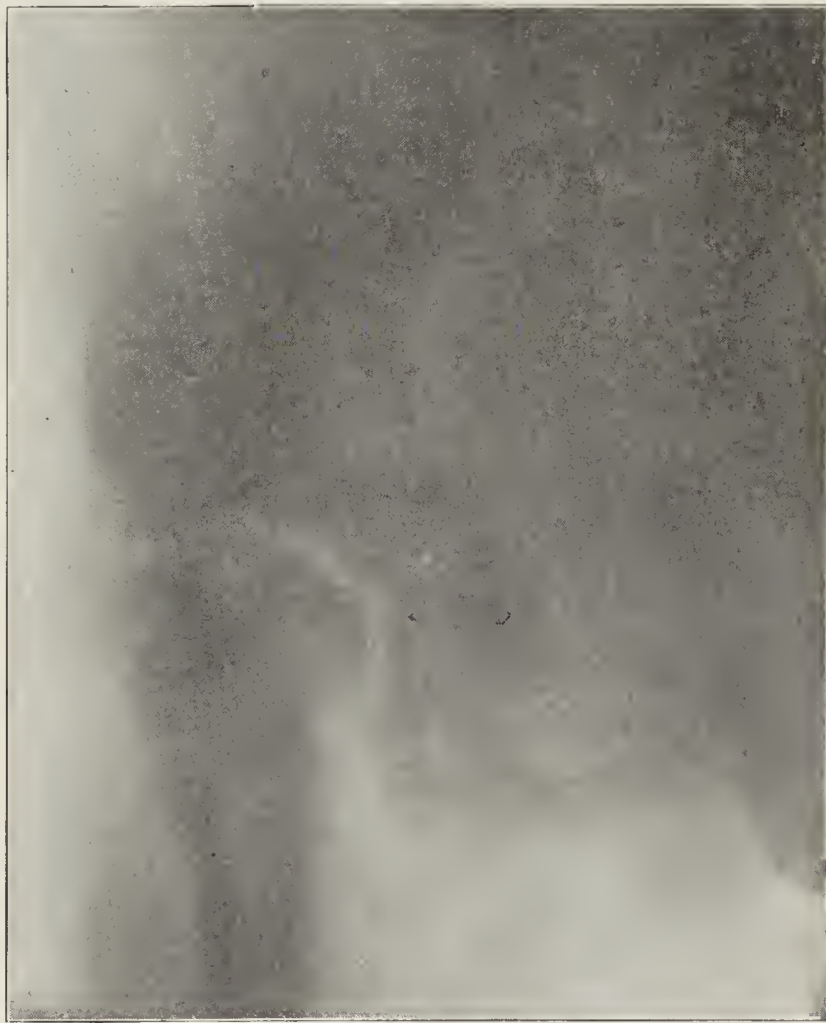


Fig. 3.—Case 1: R. S., 8½ years, girl; congenital dislocation of the left hip. First operation performed in Buda Pest (Hungary) 1900; result: posterior superior redislocation. Second operation performed in Chicago (Dr. A. Lorenz) May, 1903. Result: posterior superior redislocation. Third operation performed in Chicago (Dr. F. Mueller). Thigh placed in new primary position, October, 1903. Picture taken in April, 1906. The picture shows how deep a socket was formed in the last two years.

the determination of the position of the femur neck. Taking into consideration the fact that the angle of twisting of the upper end of the femur varies from 30 to 90 degrees, and bearing in mind the



oblique direction of the axis of the pocket-shaped recessus, I may say that the angle formed by the axis of the femur neck and the axis of the pocket-shaped recessus is in the new primary position in no case larger than 45 degrees (in average cases, however, mostly from 15 to 30 degrees), thus guaranteeing a more than sufficient stability. In this position the head of the femur is therefore fully emerged into the pocket-shaped recessus and the axes of the neck of the femur and the pocket-shaped recessus correspond to each other as near as possible. This position is maintained by means of a cast, which reaches as far as the ankle joint or the toes. After the first days the cast around the knee joint is cut away and a pair of hinges are inserted which allow the joint all motions.

#### RESULTS.

The results which I obtained with this new primary position are most satisfactory. One case, for instance, which was operated on twice before, one time by Dr. A. Lorenz, both times, however, with the result of a superior posterior redislocation, gave a complete anatomic result after the third operation, at which I applied my new primary position. The x-ray picture (Fig. 3) shows this beautiful result now two and a half years after the operation. Many other cases in which there was not the slightest stability at the time of the operation furnished the same wished-for results with normal gait of the patients. In consideration of these facts I believe that the methodic application of my new primary position will furnish fully 100 per cent. of anatomic cures after the hips have been reduced.

A very important advantage of my modification is that it does away with the brutal widening of the capsule after the operation; also the after-treatment is very much simplified, and the ectrorotation of the thigh and leg, which remains after the correction of the Lorenz primary position for good, is entirely avoided. The efficiency of the new primary position has been further proven by my attempts to transform subspinal positions into anatomic ones by re-operation.

The results gained were surprising, as all the cases thus treated showed a central reposition after the second operation. If one considers that in the United States alone there must be at least about 1,000 cases of congenital hip joint dislocations in which the original Lorenz method could furnish but a partial cure, and if one stops to consider that all these patients have now the possibility of getting an anatomic result, one can conceive the importance of this improvement of the method.

However large the number of cases may be in which the original Lorenz operation furnished only an anterior superior redislocation and which may derive the benefit of a complete cure from the new primary position now, yet its importance lies in the future where a general application of it should make the reposition of the congenital hip joint dislocation a method giving always ideal results without any restrictions by any conditions.

FOR THE DISCUSSION, SEE PAGE 357.

**Subcutaneous Injections of Cocain in Vomiting of Pregnancy.**—Sokolsky reports that after the failure of all the usual measures, in a case of incoercible vomiting of pregnancy, he injected 1 c.c. of a 1 per cent. solution of cocain in the epigastric region. Benefit was apparent at once, and a complete cure was realized in the course of 8 injections. Cited by the *Semaine Médicale*, October 3.

## SOME VARIATIONS IN THE FRONTAL SINUSES.\*

M. H. CRYER, M.D.  
PHILADELPHIA.

In 1897, and at various other meetings of this Section, I have had the pleasure of demonstrating some variations in the shape and position of the frontal sinuses. In 1902, Dr. A. Logan Turner published a work containing a most valuable and comprehensive description of these sinuses, with many of their variations. He also read an excellent paper<sup>1</sup> before this Section at Atlantic City in 1904, in which he stated that "the frontal sinus is not a



Figure 1.

simple chamber." He also spoke of "the existence in many instances of incomplete bony septa and partitions in its interior gives rise to one or more diverticula or recesses," and claimed that failures in operations have been caused by non-recognition of such recesses. With these and work of members of this Section, Drs. Freudenthal, Richards, Holmes, Myles and others, one would suppose the subject to have been exhausted. But seeing cases of diseased frontal sinuses which would not yield to treatment through the natural outlet, ostium frontalis, I undertook a closer study of the variations in the anatomy of the parts, finding, as a result, skulls with greater



Figure 2.

variations of recesses, pockets and diffusions than had been previously seen by myself or described. The result of some of these dissections I now present.

The typical frontal sinus as described in the text-books on anatomy is familiar to all, but those who make of this region a special study know that this description does not begin to cover the ground. The frontal sinus as it

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Operative Treatment of Chronic Suppuration of the Frontal Sinus," THE JOURNAL A. M. A., 1905, XLIV, p. 346.



actually exists is of infinite variety. It not only varies in different individuals, but in the same person one side will differ entirely from the other. There are skulls in which frontal sinuses do not exist; there are other skulls in which there is but one sinus. In the latter event, the sinus may be very small, or it may extend from one of the external angular processes to far beyond the median line of the frontal bone and upward to a point above the level of the frontal eminences or backward over the orbit to near the optic foramen. In other cases the sinus

portion could be called ethmoid cells invading the frontal bone, for they, like many other pneumatic spaces, are invasions into their different regions from the ethmoid labyrinth.

The anterior ethmoid cells are those which invade the frontal region and form the frontal or supraorbital sinuses and have their outlet near the anterior portion of the hiatus semilunaris. Some of the supraorbital sinuses are formed from the middle ethmoids and have their outlet into the hiatus semilunaris somewhat posterior to



Figure 3.



Figure 4.



Figure 5.

may spread outward and backward and terminate in the great wing of the sphenoid bone; it may not only extend into the ascending portion of the bone, but also downward and backward until it becomes one common cavity with the anterior ethmoid cells and the maxillary sinus.

Text-books give two as the usual number of frontal sinuses, each having an independent outlet into the nasal chamber, but there are specimens which show no sinus whatever, there are others with one, two, three,

those from the anterior cells. Occasionally supraorbital sinuses will be found arising from the posterior ethmoid cells, and in such cases their outlets would be into the third or fourth meatus. When two frontal sinuses exist, the septum between them is complete except in

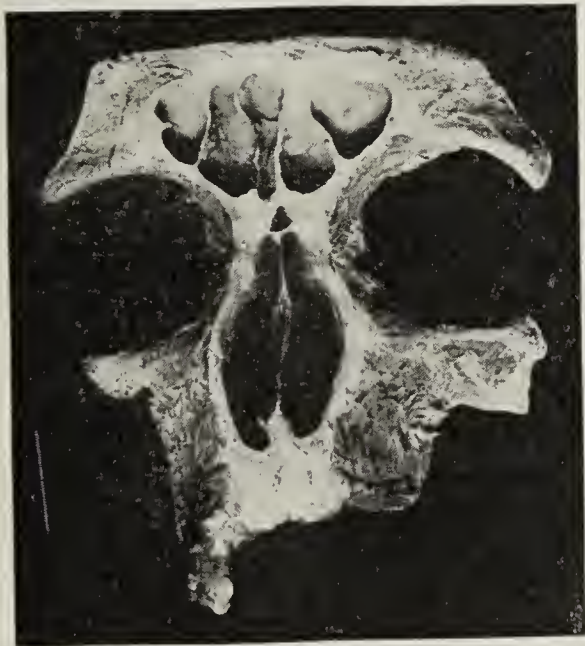


Figure 6.

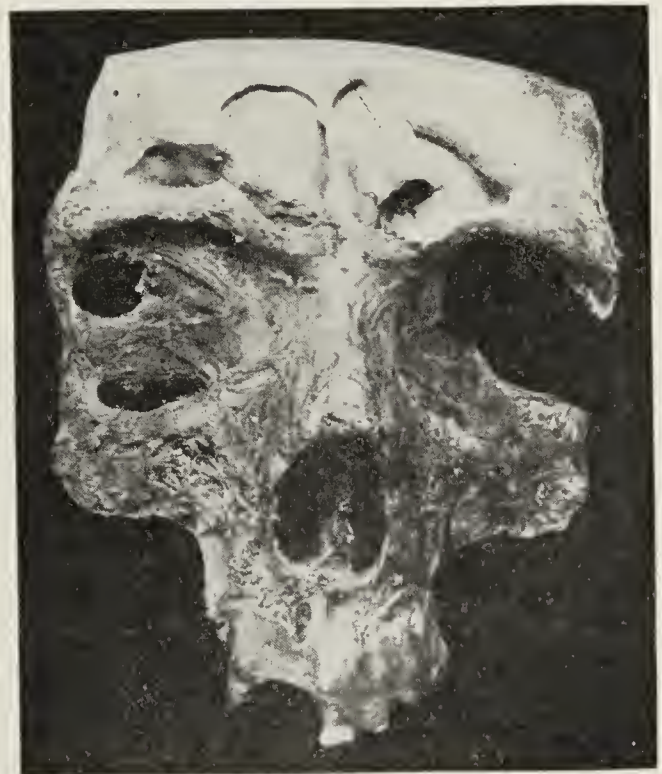


Figure 7.

four, and even five, all of the ascending portion of the bone and each having its independent outlet. These portions which pass over the orbit might be called supraorbital sinuses, especially if they have a complete separation and an independent outlet from the one which occupies the ascending portion of the bone. Some of our writers are inclined to treat these sinuses as ethmoid cells which have invaded this region; but, following the same reasoning, frontal sinuses found in the ascending

very rare cases; in the great number of examinations made, only a few of these exceptions have been found, and they were apparently of pathologic origin. Two are among the specimens shown.

I have found two cases in which the internal plate or wall of the sinus has been incomplete. Dr. Makuen, Chairman of the Section, in his annual address at Saratoga in 1902, reported one of these cases in which I had found that the inner plate was lacking and the frontal



sinus had become filled with brain tissue, or, in other words, the brain had developed forward into the sinus. The other case is that of a negro in whom the bone forming the inner wall had apparently been resorbed, leaving nothing but membranous tissue for the division between the brain area and the sinus. There are also cases in which the frontal sinuses have formed and then

right sinus measures horizontally 35 mm., the left 30 mm.; the depth of the right sinus is 42 mm. and the left 35 mm.

Figure 4 shows three complete frontal sinuses with three individual outlets and two complete septa. The two lateral sinuses pass backward well over the orbits.

Figure 5 is made from a skull that has four frontal

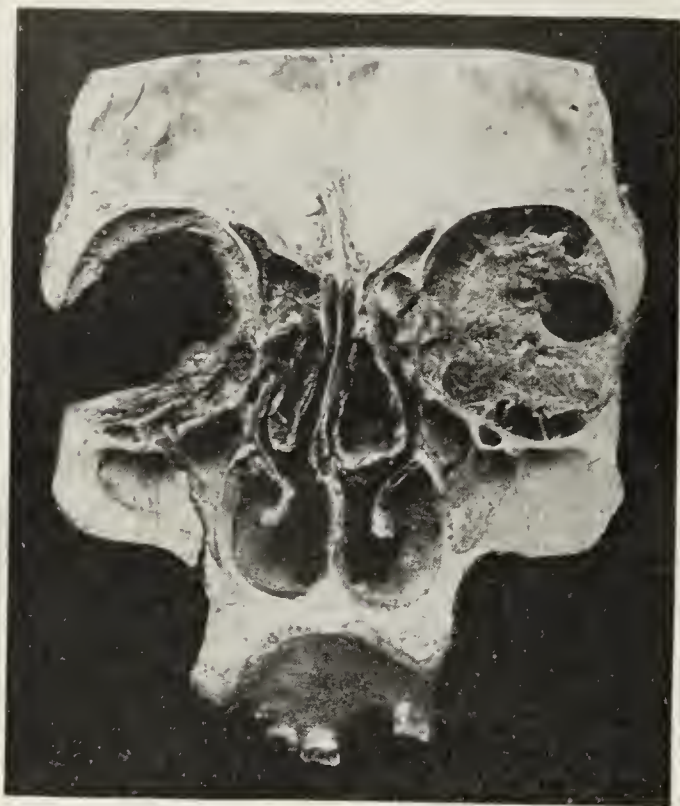


Figure 8.



Figure 10.

so-called ethmoid cells have apparently pushed upward into them. A number of illustrations will further demonstrate these variations.

Figure 1 is made from two sections taken from the supraorbital region of the skull. The upper figure shows that the anterior portion of the frontal bone has been removed from the region of the superciliary ridges, exhibiting no indication of the sinus in the ascending portion of the frontal bone. The lower picture shows no evidence of the sinuses passing into the horizontal portion or over the orbits.

Figure 2 is made from a specimen having only a right

sinuses, with four independent outlets and three complete septa. Some writers would class the two middle sinuses as anterior ethmoid cells which had invaded the frontal bone. If these cells should exist without the



Figure 9.



Figure 11.

frontal sinus, which extends unbroken far over to the left. This sinus extends partly over the orbit and has but one outlet.

Figure 3 shows two rather typical frontal sinuses with two outlets and a complete septum near the median line. There is also one partial septum in each sinus forming two pockets near the external angular processes. The

two larger sinuses they would then be called frontal sinuses by the same person.

Figure 6 is made from a specimen containing five sinuses and having four complete septa. Four of the sinuses extend well upward to about an equal height.

Figures 7 and 8 are anterior and posterior views, respectively, of a specimen with two frontal sinuses of un-



equal shape and size, with the septum nearly in the median line but somewhat curved in its formation. On the right side there is apparently an enlarged ethmoid cell pushed or "blown up" into the frontal sinus. This cell or pocket has its independent outlet into the hiatus semilunaris. In the left frontal sinus there is a larger balloon-shaped cell partly divided by an incomplete septum; it has two outlets into the region of the anterior ethmoid cells. If the middle turbinates of this specimen be examined, they will be found to contain two large

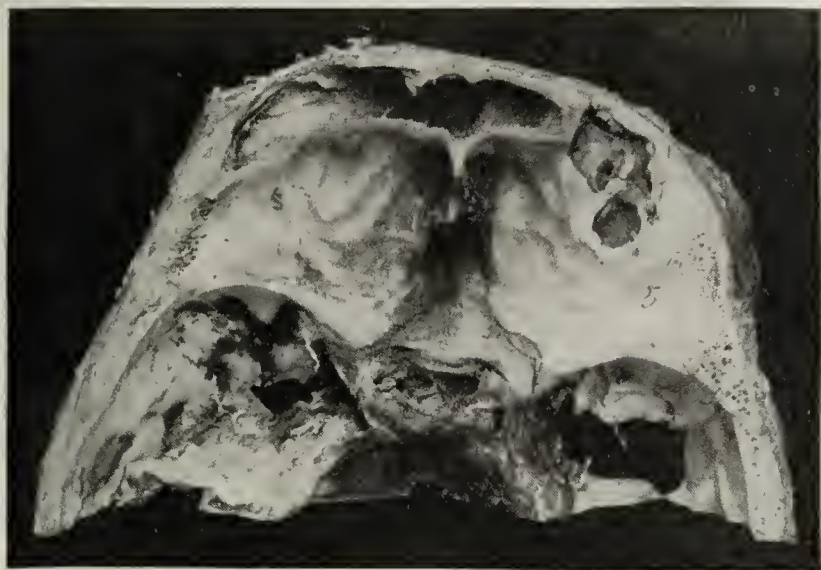


Figure 12.

cells, that on the right being especially large. At the upper and inner corners of each maxillary sinus there is a deep pocket, the infraorbital sinus.

Figure 9 is a posterior view made from a specimen having two large frontal sinuses with a complete septum. The right sinus extends back over the orbit and down through the region of the anterior ethmoid cell, continuing into the maxillary sinus and making one com-

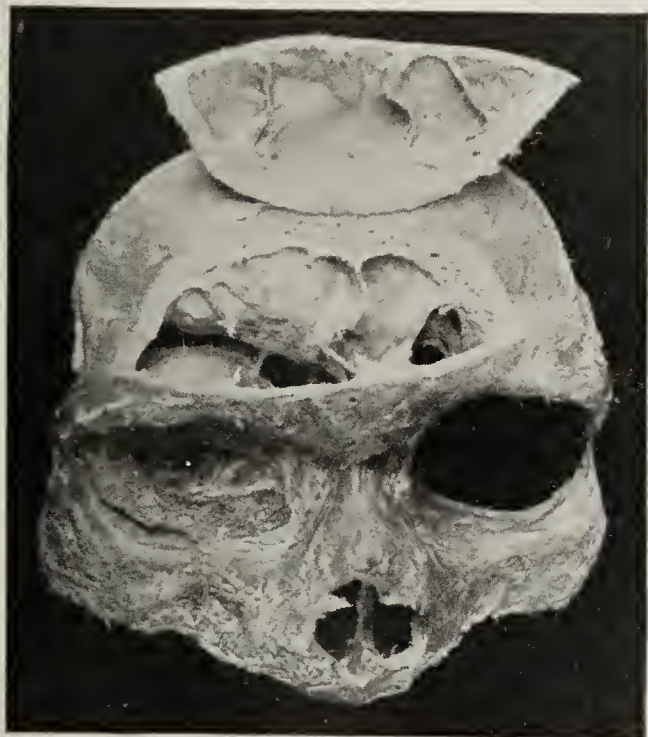


Figure 13.

mon cavity of the frontal sinus, the anterior ethmoid cells and the maxillary sinus.

Figure 10 is from a skull having two large frontal sinuses. From the appearance of the picture there are three sinuses, but the septum on the right is incomplete, making but one sinus on that side. Consequently the right sinus is very large and extends from the right external angular process transversely well over to the left side, measuring 65 mm. Its depth from the top to its

outlet is 45 mm. and it extends well back over the orbit 40 mm. The left sinus extends outward to the external angular process and backward to about one-half the distance of that on the right side.

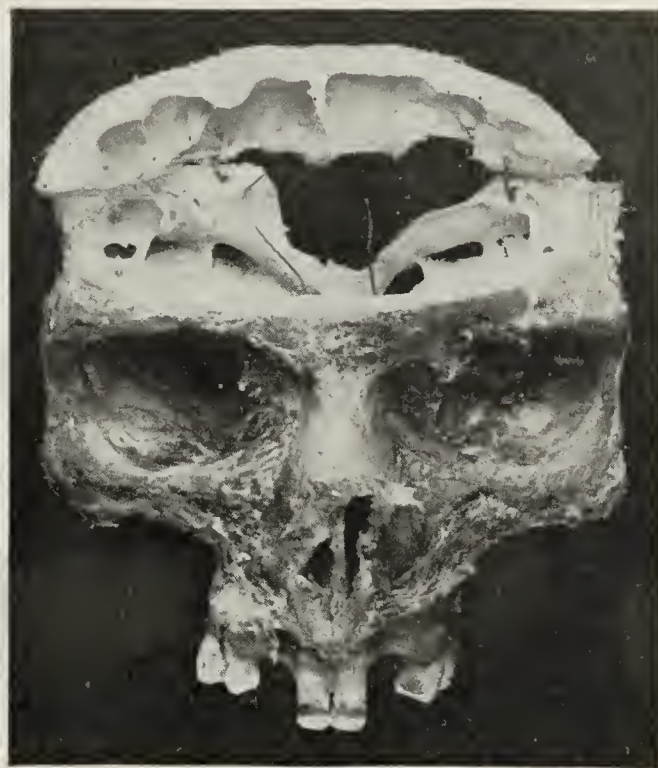


Figure 14.

Figure 11 is made from a section showing two very large frontal sinuses, the septum having a deflection toward the left side. The central portion extends higher than the frontal eminences, reaching upward 44 mm. ( $1\frac{3}{4}$  inches) above a line drawn across from the arch of the orbits. Such a conformation would be an important factor in performing craniotomy in the endeavor to reach the anterior portion of the anterior lobe of the cerebrum, as the frontal sinus should be avoided in all brain sur-



Figure 15.

gery on account of danger of infection to the brain from the sinus. There is marked depression of the sinus over the longitudinal venous sinus.

Figure 12, from a horizontal section above the orbits, shows a transverse section of a large left frontal sinus, measuring 67 mm. from the left external angular process to a position over the center of the right infraorbital foramen without a septum. The right frontal sinus, measuring 40 mm., has small, several incomplete, nearly horizontal septa, making a number of horizontal pockets.



Figure 13 is made from a transverse section of the face with a portion of the bone removed to expose the frontal sinuses. That on the right is extremely large, extending from the right external angular process over toward the left and measuring 67 mm., leaving but a slight space for the left frontal sinus, which measures

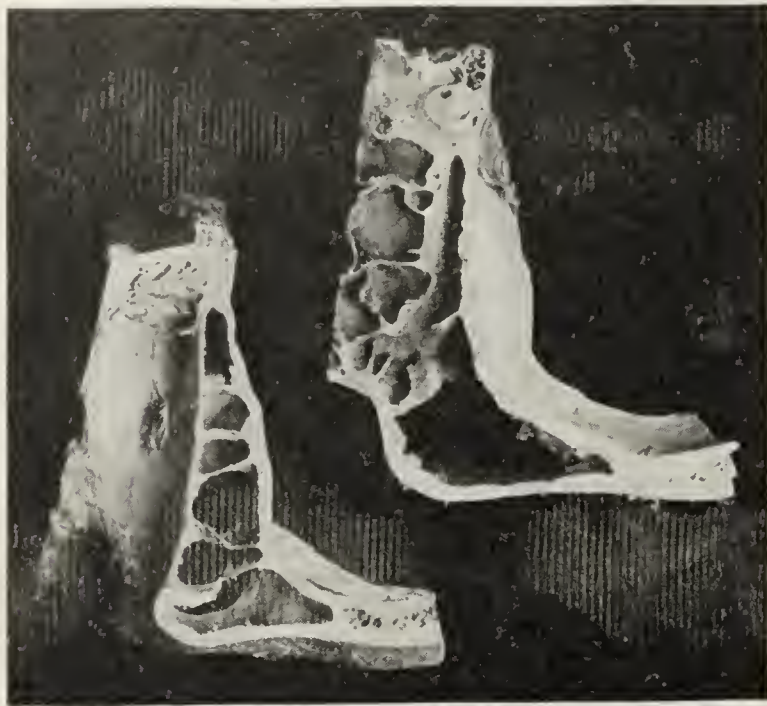


Figure 16.



Figure 17.

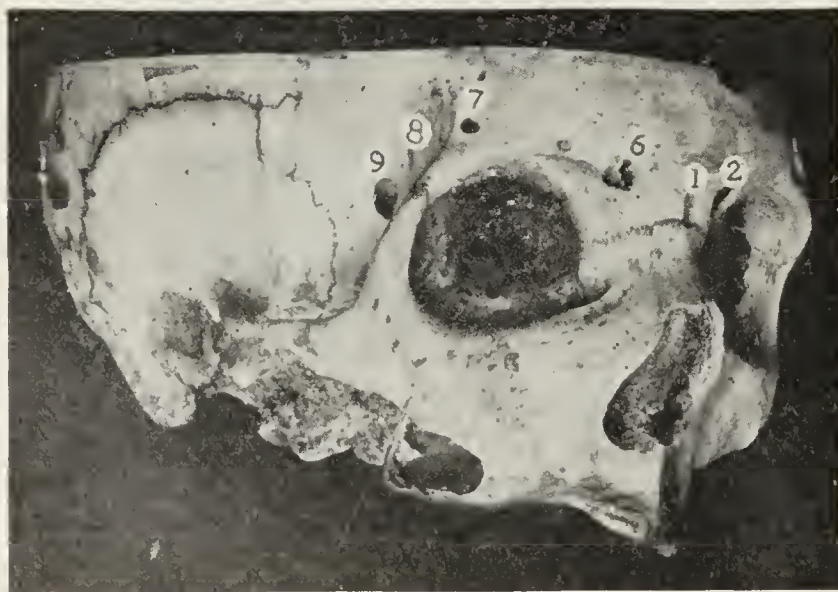


Figure 18.

15 mm. The septum between these sinuses has an inclination of about  $45^\circ$ . The right sinus also extends well back over the orbit and into the crista galli.

Figure 14 is made from a transverse section of the

face with a portion of the bone removed, showing two very large frontal sinuses which extend backward over the orbits, where they are divided by several incomplete septa. They also extend downward and communicate directly with the maxillary sinuses. The right and left sinuses measure horizontally 50 mm. and their depth is 40 mm.

Figure 15 is a posterior view of the frontal sinuses showing two incomplete septa. The incompleteness of

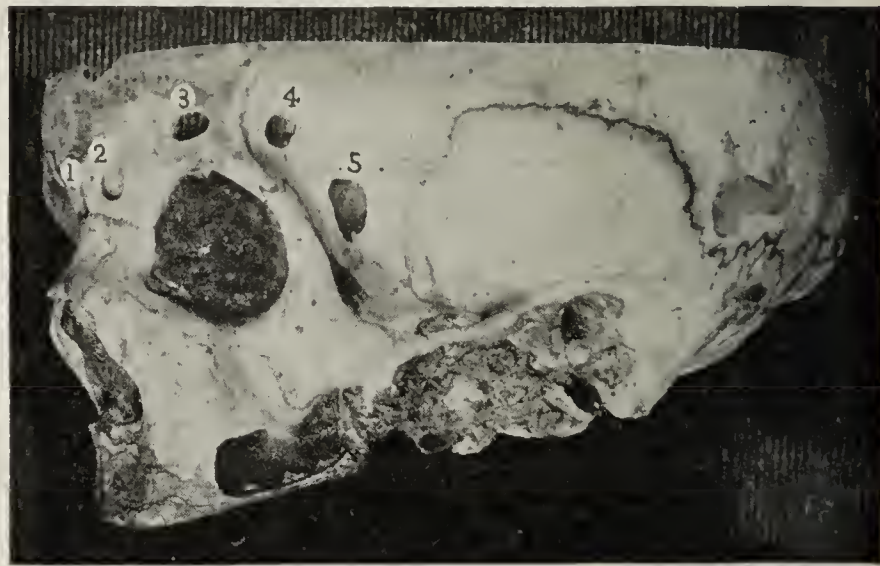


Figure 19.

the septa is more than likely due to pathologic conditions.

Figure 16 is made from two specimens showing lateral views of the frontal sinuses. The lower picture is a sagittal section cut near the center of the orbit, showing in the anterior portion a lateral view of the frontal sinus



Figure 20.

divided into five pockets, all of which have one common outlet. The sixth or posterior cell communicates with the upper meatus of the nose. The upper picture is also a sagittal section cut to the median line of the os planum of the ethmoid bone. It shows a frontal sinus extending backward nearly to the optic nerve which is seen in position in the optic foramen. The frontal sinus



of the specimen passes over the orbit and is also divided into several pockets.

The skull pictured in Figures 17, 18, 19 and 20 has the largest pneumatic spaces of any skull I have dissected, not only of the frontal sinus, but of the supra-orbital, ethmoidal and maxillary sinuses. The frontal sinuses may be described as commencing in the right temporal fossæ at a point near the articulation of the frontal bone with the great wing of the sphenoid (see point marked 8, Fig. 18). It extends forward and across the skull to the opposite side, then a little backward, terminating near the left great wing of the sphenoid (see point marked 4, Fig. 19). The frontal portion of this great space is divided into four compartments, three of which have a separate outlet, while the fourth is connected to one of the others by a small foramen which is placed low down in the sinus.

As already stated, the right frontal sinus commences at a point marked 8, in Figure 18, in the temporal fossæ and extends upward, forward and inward to near the nasion, measuring 55 mm. The right supraorbital sinus commences in the zygomatic fossa (see point marked 9, Fig. 18) or in the right wing of the sphenoid bone; it passes upward, forward and inward over the orbits (see point marked 7, Fig. 20). Its outlet is in the anterior and lower portion of the right frontal sinus. It measures in length 55 mm. There are also several other sinuses or cells over the anterior portion of the orbits with independent outlets (see points marked Nos. 2, 4, 5, 6, Fig. 20).

The left frontal sinus commences in the temporal fossa at a point marked 4, in Figure 19. It then passes upward, forward and to the right to the wall forming an intermediate frontal sinus. It measures 48 mm. The sinus is divided into two compartments by a septum lying at an angle of 35 degrees from the horizontal. At the lower and median end of this septum there is a small foramen which allows the two compartments to communicate with one common outlet into the nasal chamber. The left supraorbital sinus commences in the great wing of the sphenoid bone and passes slightly upward, inward and forward over the orbits. The outlet empties into the anterior portion of the nasal chamber. Immediately back of the nasion and glabella there is an intermediate sinus with an independent outlet. It is cuboidal in shape, its lateral and anteroposterior measurements are 10 mm.

The sphenoidal sinuses are large, extending well forward and laterally over and under the optic nerve, leaving but a thin portion of bone separating the nerve canal from them. The sinus extends backward and downward to the basilar process of the occipital bone (see points marked 3, 8, 9 and 10, Fig. 20). The two sinuses measure laterally 44 mm., anteroposteriorly 33 mm., depth 44 mm. The maxillary sinuses are extraordinarily large. In one there is a large, incomplete, membranous septum. The right sinus measures in its greatest depth 44 mm. and diagonally from before upward and backward 55 mm. The left sinus is 55 mm. in its greatest height and diagonally backward, upward and forward 65 mm.

It will be claimed by some that the specimens here illustrated are freaks or great exceptions. I can not so classify them. They are all from my own dissections within the past 15 years. I regret that I have no means of knowing how many skulls have been sectionized during that time, but I believe that if a thousand of the skulls which come to our dissecting rooms were examined

by sectioning, a collection showing equal variations with those here described would be made; and if a thousand skulls of persons affected with diseased pneumatic sinuses were examined the variations would be found much greater and more common. If surgeons who treat this region had some way of determining the character of these sinuses in the patient their treatment could be given on a more scientific basis.

External "landmarks" to indicate the true character of these sinuses are commonly lacking, and examination through the nasal fossa will give but a slight idea. Transillumination has been used with some success, but it is not sufficiently accurate for complicated cases.

#### RADIOGRAPHY.

Radiograms of this region have been made for several years with much improvement. Dr. Coakley, of New York, showed some very fine ones in Philadelphia last year. Several radiographers in Philadelphia are doing good work along this line.

It has been demonstrated by all who have investigated the pneumatic spaces intimately that they exist in an infinite variety of sizes, shapes and positions, so that even clinical experience counts for little, as no two cases present like conditions. It is evident that a good radiogram, if stereoscopic so much the better, is one of the most reliable witnesses for the surgeon's dependence in diagnosing the character and the disease of the frontal sinus region.

1623 Walnut Street.

FOR THE DISCUSSION, SEE PAGE 358.

## TUMOR OF THE RIGHT VERSUS TUMOR OF THE LEFT FRONTAL LOBE OF THE BRAIN.

### A COMPARISON OF THE SYMPTOMS OF THE PREFRONTAL AREAS.\*

WILLIAM C. KRAUSS, B.S., M.D.  
BUFFALO, N. Y.

At the meeting of the American Neurological Association, Washington, D. C., May 4 to 6, 1897, I presented a paper<sup>1</sup> and specimen showing a glioma situated at the base of the second frontal convolution on the right side of the brain; to-day I present a glioma occupying the same relative position on the left side of the brain. The specimen exhibited to-day, however, is a recurrence of the growth, the original tumor having been removed by operation Nov. 10, 1905, by Dr. Roswell Park of Buffalo, N. Y.

In comparing these two tumors or lesions of the frontal lobes of the right and left hemispheres respectively, I wish to call attention to the fact that while the right frontal tumor called forth no localizing symptoms, the left frontal tumor was characterized by pronounced mental disturbance and loss of the capability of writing and printing.

#### CASE REPORTS.

##### AUTOPSY.

CASE 1.—Glioma of the Right Frontal Lobe of the Brain. Autopsy. (Abstract.)

Patient.—A carpenter, aged 31, suffered with pain in the

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Glioma of the Right Frontal Lobe of the Brain." Trans. Am. Neurol. Assn., 1897; also, Jour. of Nervous and Mental Disease, February, 1898.



head for two years, accompanied with dizziness and nausea. During the intervals he would be occupied in a pharmacy, copying labels (Fig. 1). The pain becoming more severe and oftener, he was brought to me for examination, September, 1896. Mental faculties were intact, demeanor was normal; optic neuritis was more pronounced in right eye; there was no deviation of tongue; no paresis of any extremity. Diagnosis was made of brain tumor, probably in the right frontal lobe. Death occurred, and autopsy revealed a glioma of the right frontal lobe.

In reporting the case I said: Inasmuch as the left side of the brain, especially the frontal and temporal lobes, contains important centers not present on the right side, may not the centers presiding over reason, memory, intelligence, or the higher psychical states be more localized in the left frontal lobe close to the centers of speech and writing, which are the two great channels through which the intelligence of the being is made manifest to the external world? The close proximity of the centers of speech and the centers presiding over those organs (articulatory) by means of which speech is possible; also the proximity of the centers of writing and those presiding over the movements of the fingers by which writing is possible, might suggest a like proximity of the centers of intelligence, and those centers through which the intelligence of the individual is expressed, namely, of speech and writing; all these are located in the left frontal lobe of the brain.

CASE 2.—Glioma of the Left Frontal Lobe of the Brain; Operation; Removal; Recurrence; Autopsy.

*Patient.*—J. P., aged 35, farmer, married, was admitted to the Buffalo General Hospital Oct. 10, 1905, suffering with "terrible headaches and some loss of reason."

*History.*—No reliable or complete family or personal history

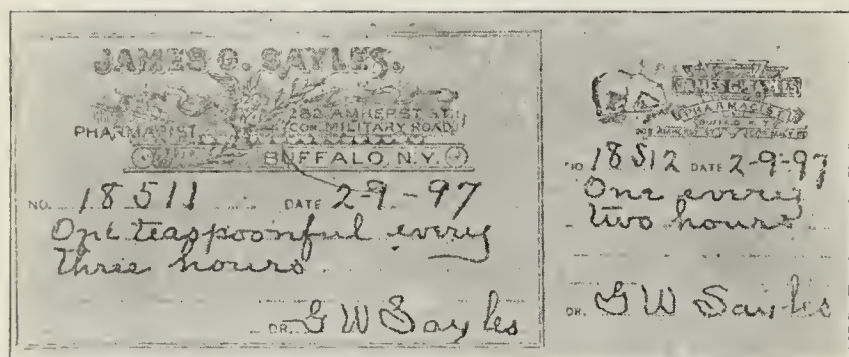


Fig. 1.—Case 1. Glioma of second frontal convolution; right hemisphere. Specimens of handwriting.

could be obtained from the patient, on account of his mental dulness and lack of memory, and it was a question whether the State Hospital was not the proper place for his confinement. The following family history was obtained from an old school friend, and the history of the disease from his physician, Dr. McKee, Sugar Grove, Pa.:

*Family History:* Father died suddenly at 60 from kidney trouble, probably Bright's disease. Mother is living, in fairly good health, but presents a neurotic history. One brother is living, aged about 50, always deaf; is a bachelor and of retiring disposition. Three sisters living; one is married and is subject to epilepsy "heart spells." She has distinct aura and epileptic seizures and has one child with similar attacks. She had one son 22 years old, who died this last summer in an epileptic seizure. He was free from these attacks until 15 years old, when he had some accident. One sister is unmarried, odd, peculiar, not bright; has probably hysteria and epilepsy. The third sister is married, but not much is known about her. Nothing is known of maternal or paternal ancestors.

*Personal History:* Patient had rubcola and parotitis early, probably scarlatina, without any complications; has had no illness of any importance since childhood. Positively no history of syphilis or gonorrhea is obtainable. Patient has always been of regular habits, not a drinking man, but has smoked considerably for years. There is no history of any injury to head. Patient had a convulsive seizure seven or eight years ago, cause unknown. He was always odd or peculiar, but good-natured; has always been a farmer, was married at 23, had one child 3 years old, and separated from his wife after 5 years.

Wife has the child; it is not known if his health has been worse since. His nephew died this summer in an epileptic seizure, and patient's condition has been growing worse.

*Present Illness.*—This began about nine months ago (January or February, 1905), with intense headaches, marked biliousness and periods of unconsciousness, one spell lasting about 24 hours. He suffered no other pain save the persistent headaches, which continue up to the present time. His appetite was good, even voracious at times. There was no history of nausea or vomiting or of any dizzy spells. There had been no weakness of the extremities. He had been able to walk for miles and has done hard work on the farm for years.

*Examination.*—This shows a well-nourished, well-built man, weighing about 160 pounds, 5 feet 10 inches in height.

*Face:* Features were blank, the lines of intelligence were somewhat effaced. Pupils were equal, but reacted sluggishly to light. Movements of orbits were normal. Tongue was heavily coated; no deviation; breath was foul, teeth were in good condition. Uvula hung in median line. No facial asymmetry

Worked for E A Baker

Fig 2.—Case 2. Glioma of second frontal convolution; left hemisphere. Specimen of patient's writing several years before the onset of symptoms.

existed, both sides functionated equally; there was no difficulty in swallowing. Heart and lungs showed nothing abnormal; abdominal organs offered nothing noteworthy.

*Extremities:* Muscles were fairly well developed; there was no edema of ankles or legs.

*Reflexes:* Patellar tendon reflex of right leg was normal, that of left slightly exaggerated. No ankle clonus nor Babinski's sign was obtainable; strength of both legs was about equal. There was no disturbance of sensation about legs or body. The gait was somewhat staggering, unsteady, mildly atactic. Speech was slow, measured scanning, as if the words did not come freely. Inquiry into the mental condition failed to reveal any delusions or hallucinations; there existed, however, a mental obtuseness, dulness, with loss of memory, mental confusion, loss of attention, with perseveration and verbigeration. For example, asked when he was born, he replied "1864"; asked when he was married, he replied "1864;" when he

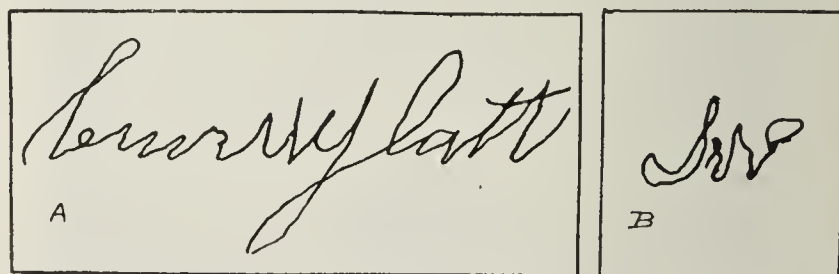


Fig. 3.—Case 2. Before operation. Patient's attempts at (A) writing and (B) printing.

entered the hospital, he replied "1864." It is impossible to convince him of his error in regard to this date. The mental confusion along with the severe headaches, which were frontal, led to a suspicion of brain disease, and an eye examination was made by Dr. Lucien Howe of the hospital staff, who reported:

October, 13, 1905: "Right eye, optic neuritis, first stage; swelling does not extend far into the retina. Hemorrhages are not abundant. Right vision =  $\frac{1}{2}$  with atropin + 1.25 diop. sph. vision =  $\frac{1}{2}$ . Left optic neuritis second stage; swelling extends into retina. Hemorrhages into retina abundant, extending to equator of the globe. Left vision =  $\frac{1}{6}$  + 1.25 diop. sph. vision =  $\frac{1}{6}$ . Replies of patient are not sufficiently reliable for test of field of vision."

October 14, patient declared that he saw better with the right than with the left eye. Romberg's symptom was slightly present. The right patellar reflex was normal; the left, how-



ever, absent. No difference in the gait was noted. He walked about the ward and by-rooms with the same atactic movements, staggering at times, but prevented from falling. Blood examination showed: Erythrocytes, 6,150,000; leucocytes, 11,500; hemoglobin, 85 per cent. Repeated examinations revealed no abnormal constituents in the urine.

October 22: Patellar reflexes were present on both sides; there was no ankle clonus nor Babinski's sign, and no evidence of any paralysis of the face or extremities. A marked dementia was present.

During the following week no marked change was noted, except that the patient fell to the floor several times. On October 30, I made a careful examination with the following results: Mental condition was approaching a dementia. Head was not specially sensitive to percussion, but was sore, especially over the left frontal region; head was symmetrical; no scars were present on the scalp. Face was regular but expressionless. Facial muscles contracted equally on both sides; tongue was protruded without deviation, the uvula was not deflected; swallowing was not difficult; respiration was regular; there was no disturbance of the senses of taste, smell or hearing, nor of sensation in the face, eyeball, mouth or pharynx. Arms were well developed, equally strong, no evidence of any localized atrophy; grip of hands was good, about equal on both sides. No tremor of the hands was visible; fingers were mobile; there was no atrophy of the thenar, hypothenar eminences or of the interossei muscles. Ophthalmoscopic examination revealed a double optic neuritis, more marked on the left side. There was nothing further abnormal about the eyes. The patient answered all questions slowly, carefully, and with deliberation. He read aloud the words in a newspaper distinctly and named correctly objects shown him. No alexia was present. He said he had always been able to write and print distinctly, and was given a pad and pencil which he took in a natural manner with the right hand (being right-handed)

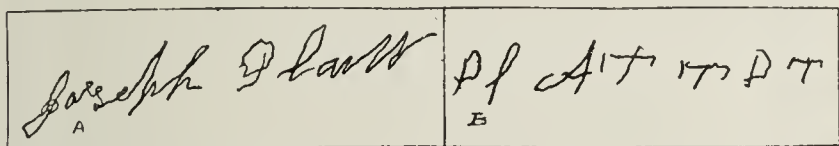


Fig. 4.—Case 2. After operation. Patient's attempts at (A) writing and (B) printing.

and made efforts to write; after some seconds the hand moved without tremor, and after much hesitation and with constant urging, the attempt was made, the last four letters of the word Platt were alone legible; the other letters were merely connected, more or less curved lines. Five minutes were allowed for this attempt. Patient was then asked to print his name, and the result after five minutes' interval was a perfectly illegible tangle of strokes. The patient appeared confused and ill at ease during these trials. He acted as if he knew but could not execute.

Abdominal and cremasteric reflexes were present; there was no loss of power of legs. Gait somewhat atactic, resembled that of cerebellar disease, and has been described by Bruns as due perhaps to a partial or complete interruption of the fibers of the frontocerebellar tract, which brings into association the prefrontal lobe with the opposite cerebellar hemisphere.

**Diagnosis.**—A brain tumor affecting the left frontal lobe, and especially the first and second convolutions, was the diagnosis made and reported to the house staff. A consultation was held the following day, attended by Drs. Stockton, Cary, Rochester, Long, Putnam and myself. My colleague, Dr. Putnam, and myself strongly urged the necessity of an operation, and steps were taken to secure consent of the relatives. On November 1 he was presented before the College Clinic by Dr. James W. Putnam, who noted the following facts: Right patellar reflex was somewhat sluggish; left, somewhat exaggerated. There was hesitancy of speech of the expulsive type. Patient stated that he was born in 1864, married in 1864, that current year was 1864 and that father and mother both died in 1864 (mother was then living). Dr. Putnam's conclusion was that the patient was afflicted with a tumor of the frontal lobe of the brain.

On November 6, patient was visited by his wife and sisters

during the afternoon. When asked at eight o'clock that same night, he said he "did not know who was here," and when questioned specifically, said he did not remember that his wife or sister had been to see him.

**Operation.**—Consent having been obtained, he was transferred to the surgical ward and placed under the charge of Dr. Roswell Park, whose report follows:

**Operation.**—Nov. 10, 1905, at Buffalo General Hospital, in clinic, under chloroform, I laid up a large horseshoe flap over the left frontoparietal region, including skin and periosteum. Then, with Doyen instrument, I made four openings, finding the skull very thick and very hard, so much so that it was impracticable to raise a bone flap, even if I had desired. These openings were connected by chisel and, in this way, I exposed an area of dura, irregularly, nearly two inches square. The dura seemed somewhat discolored. Opening it, I came down on a soft tumor, which apparently had not so much displaced the brain substance as involved it, since all around the margin I could distinguish between normal brain tissue and diseased. The growth was soft and vascular, and was connected with the overlying dura by slight adhesions, there being no firm union between them. I began removing this morbid tissue with a large sharp spoon, and by the time it was all removed had made a cavity in the frontal lobe of the size practically of a pullet's egg. With sharp spoon and with scissors I cut away that which seemed diseased and came down to brain which seemed healthy, but there was no abrupt line of demarcation. Hemorrhage was at no time serious and yet oozing was copious. I used adrenalin two or three times and checked



Fig. 5.—Case 2. Glioma of left frontal lobe.

the oozing, and finally put in a tent of gauze which was packed with other gauze slightly sopped in balsam. This was all brought out through the opening on the dependent side of the incision. The dura was closed with secondary sutures, as was also the scalp, the bone between having been entirely removed. During the afternoon, patient required salt solution twice—not that his condition was alarming, but it seemed wise to administer it. Examination of the tumor substance showed it to be a vascular glioma.

Following the operation, the patient seemed to clear up mentally somewhat, so that he answered questions with more responsiveness than before the operation. Headaches disappeared, pupils were normal, strength of arms and legs was good and equal on both sides. There was still a constant repetition of the number 1864 as before the operation.

November 26: General condition was improved; wound externally was nearly healed, but a bulging about the size of a hen's egg was palpated at the site of the previous tumor. (See specimen of writing.)

Dec. 3: The tumor over the site of operation increased steadily in size, pulsated and was soft and fluctuating. A considerable discharge of debris resembling broken down brain substance trickled from the dependent portion of the wound. Temperature was 104; pulse, 100.

December 6: Patient lay in a semi-conscious condition, and did not reply to questions. Temperature was 103; pulse, 100.



December 10: General conditions were rapidly failing; there was profuse discharge from the wound. Patient did not reply to questions; seemed to have some pain. Temperature was 104.5; pulse, 120.

Gradually the symptoms increased, and the patient died on Dec. 15, 1905, of a secondary meningitis.

*Autopsy.*—This was made the following day by Dr. Nelson G. Russell whose report follows: "Depression about 2 inches in diameter with lower margin about  $1\frac{1}{4}$  inches from median line. Scar of incision about 4 inches long, semi-circular, beginning about 3 inches above and 1 inch anterior to external auditory meatus, extending almost to median line, with discharge of creamy looking material. On removing scalp an opening in skull about  $2\frac{1}{2}$  inches in diameter was found; adhesions of dura to scalp; considerable greenish yellow pus. Dura adherent around edges of wound. Surface of brain seemed a little opaque. Considerable purulent exudate at base, extending down the cord. Left frontal lobe showed an irregular, soft mass, about size of hen's egg. Externally, soft and exuding considerable purulent material.

Anatomic Diagnosis: Septic meningitis and tumor of the left frontal lobe."

The tumor consisted of an irregular rounded mass occupying the prefrontal lobe of the left hemisphere, extending laterally from the basal surface of the hemisphere to the precentral convolution. In its cephalocaudal diameters it occupied the whole of the second, or medifrontal convolution and part of the first or superfrontal convolution. It measured 7.5 cm. laterally and 6 cm. in its cephalocaudal diameter. It did not in any way impinge on the third or subfrontal convolution (cap of Broca) nor on the hemisphere of the opposite side. The tumor was dense, firm, the ectal surface roughened with shreds of dural tissue and products of suppuration attached to it. In contrast to the original tumor which was infiltrating, this recurrent tumor was distinctly enucleable with rounded, smooth surfaces from the adjacent healthy brain tissue. (Fig. 5). The other lobes as well as the base of the brain presented no anomalies. The convolutions were distinctly marked and well rounded, the arteries of the base and cortex were not atheromatous and no signs of any previous brain lesions were discoverable. A microscopic examination of this secondary or recurrent tumor has not yet been made. The original tumor was a very vascular glioma.

In this case two sets of symptoms are present: First, general, and second, special or localizing, which point decisively to a brain tumor, involving the second frontal convolution of the left hemisphere of the brain. The general symptoms, headache and optic neuritis, in a measure were also localizing, inasmuch as the left frontal region was more sensitive on percussion than the right; although this is not to be considered with too much attention, and existing alone and by itself, would not be of any significance, yet when considered with the other symptoms, it is important.

The early appearance of choked disc and especially the advanced degree of the optic neuritis of the left disc, as compared with the right, is an index of localization well recognized by all workers in brain pathology. Nausea and vomiting and dizziness were not reported or complained of at any time, but a symptom perhaps allied with the vertigo, namely, the atactic gait as pointed out by Bruns existing in frontal lobe tumors, was a noticeable feature in this case. The ataxia and unsteadiness became so intense that the patient repeatedly fell to the floor and was eventually restrained in bed.

The localizing symptoms were very manifest. The existence of mental apathy and severe headaches, were the symptoms which brought the patient to the hospital. The mental apathy resembled a mild type of acute dementia without delusions or hallucinations. Perseveration and verbigeration were present throughout his stay at the hospital both before and after the operation, and are well recognized symptoms of mental hebetude.

Loss of memory, of ideation and the lack of expression of the face, were features pointing to mental involvement, more pronounced than the ordinary mental symptoms generally present in brain tumors wherever situated. There was no distinctive aphasic condition. The speech was slow, hesitant, somewhat scanning—not due to any disturbance of the motor speech center, but to the mental sluggishness. A very important symptom, and one which makes the case almost the counterpart of the one reported by Herman C. Gordinier of Troy, in which a localizing center for writing was not only assumed but accepted in the second frontal convolution of the left hemisphere, was the *agraphia*<sup>2</sup> which was present both for writing and printing, but more marked for printing, before operation. After the removal of the tumor, the *agraphia* partially subsided, although a goodly portion of the base of the second frontal convolution was excised at the operation—whether transference to the right side, as in cases of aphasia, with injury to the third left frontal convolution took place, must remain conjectural.

At no time was there any paralytic condition of the right arm, hand or fingers, or any localized epilepsy of these parts. The condition of the patellar tendon reflexes varied somewhat, but there was no persistent exaggeration, ankle clonus or Babinski's sign. Compared with the tumor of the right frontal lobe, it differed in two important particulars: First, in regard to the mental condition; second, in regard to the condition of *agraphia*.

#### I. MENTAL CONDITION.

The interest attached to cerebral localization has been absorbing to a large number of investigators, each of whom has labored faithfully to map out some particular field as the center of some special function. To Gall, and later to Spurzheim, much credit is due for their efforts to connect function with brain development. Gall succeeded to his own satisfaction in labelling the regions of the brain with the names of the habits or actions he found associated with the development of the special parts, Spurzheim labored for a more abstract conception of the functions of the cerebral areas, and declared that Gall studied merely the abuses of the mental faculties; thus phrenology, a much-abused but useful science, became the forerunner of the modern conception of brain localization. The point of departure or the leave-taking of the two, however, was most abrupt. The former regarded external contour only in its relation to underlying attributes, or the exposition of character by the development of the brain and skull; the latter sought by experimental researches and clinico-pathologic deductions to connect certain areas of the brain cortex with physical and psychic activities and functions inherent in all, according to the scale of development and special aptitude of the organism under observation. The regions of the brain presiding over the psychic functions have been gradually narrowed down by exclusion, to the prefrontal and the occipital lobes. The cerebellum was early excluded, and all observers from the days of Willis and Flourens are practically agreed that the cerebellum plays no part whatever over the mind, instinct, intelligence, sensibility or special senses; these functions belong to the cerebrum alone, and remain unaffected even in the most severe of cerebellar affections.

Tumors located in the cerebrum call forth certain peculiar mental symptoms, which are common to all lobes with the possible exception of the prefrontal, and

2. Am. Jour. Med. Sci., September, 1903 and May, 1899.



here these symptoms in many cases appear to be accentuated. Mendel<sup>3</sup> describes these symptoms as follows:

1. Hallucinations, appearing at different times and quickly disappearing, sometimes connected with the localization of the tumor (visual hallucinations in tumors of the occipital lobe, etc.), and are often recognized as deceptions.

2. The diminution of intelligence and of memory, often expressed as a certain laziness and indolence, easy forgetting, a certain stupidity with a peculiar blank expression of the countenance. Sometimes a silly, foolish state, moria, appears.

3. A certain yielding disposition, facile irritability, laughing, weeping.

Perfect clinical types with massive hallucinations, with melancholic or paranoic delusions, epileptoid twilight states are rare; oftener there is progressive dementia, especially when there are multiple foci. As a rule, the psychic disturbances of brain tumors are distinguished by being generally connected with considerable feeling of disease and by the appearance of more or less clearness in the intervals between the attacks, in cases in which delusions and sense deceptions are abundantly produced. A local diagnosis cannot be made from the psychic disease unless it may be said in general that focal diseases of the frontal lobes very frequently call forth psychic alterations.

Broca was the first definitely to establish a constant relation of a special center to a special function, and the cap of Broca, or the base of the third left frontal convolution, is synonymous with motor speech. Hughlings Jackson asserted that limited areas of cortex would be found to preside over special organs, and that the destruction of these areas would result in loss of the corresponding function. Soon thereafter Fritsch and Hitzig demonstrated the centers for voluntary motion, and exempted the region about the central or Rolandic fissures from participation in the purely intellectual functions of the mind. Charcot and the School of the Salpêtrière; the English school, led by Ferrier, Horsley, Beevor, Semon, Schäfer and others; the German school, with Wundt, Munk and Goltz at the head, further exempted the parietal, temporal, sphenoidal, and probably the whole of the occipital lobes. The field then has been narrowed down to the prefrontal lobes as the seat of the intellect. This theory, advocated early by Wundt, has been accepted for many years, and has been borne out by anthropologic research, by clinical pathology, by comparative anatomy, and by physiologic deductions. Of late years, the limitation of the intellectual faculties of the mind to the left prefrontal lobe has been argued; among others, by myself in 1897;<sup>1</sup> by Charles Phelps<sup>4</sup> in 1902; by Charles W. Burr<sup>5</sup> in 1903; and by Mills and Weisenburg<sup>6</sup> in 1906.

Phelps made a very careful review of the work done by observers in this field, beginning with Bouillaud in 1825, citing many cases of others, and reports in detail 18 additional cases to those already published by him in which traumatic or pathologic lesions of the frontal lobes resulted in varying phases of mental derangement. Seeing that the posterior portions of the frontal lobes are known to control special motor functions, mental control becomes localized to the prefrontal region, while the con-

clusions from previous investigations point to the seat of such control as being in the prefrontal region of the left lobe rather than the right. Also laceration of the left frontal lobe appears to be the only traumatic lesion occasioning direct loss or derangement of intellectual function, and the deeper the laceration the more mental default preponderates over mental aberration; while in recovering cases, in which the lesion may be regarded as irritant rather than destructive, mental aberration is more frequently noted than mental default. Three cases reported by other observers are quoted in which extensive destruction of the right frontal lobe occurred without alteration of the mental faculties, while the famous "crowbar case," in which the lesion was in the left prefrontal region, and a case reported by Obici and Tambroni of glioma of the left prefrontal lobe, are referred to as showing mental disturbance. In every instance but two out of 295 cases, in which the history was verified by necropsy, extensive laceration of the prefrontal region of the left frontal lobe was characterized by abrogation of mental power, while more superficial injury manifested itself by mental aberration.

By the study of these cases Phelps feels justified to present three propositions: 1. The more absolutely the lesion is limited to the left prefrontal lobe, the more positive and distinctive are the symptoms of mental default. 2. The integrity of the mental faculties remains unimpaired in right frontal lesion, though it involves the destruction of the entire lobe, or even extends to the entire hemisphere. 3. The exceptional instances in which seemingly opposite conditions exist, are always reconcilable on more careful examination, with the assertion of an exclusive control of the mental faculties residing in the prefrontal region of the left side. He says:

If, then, the same nature and degree of proof which is deemed sufficient for the localization of other cerebral functions, may be accepted in case of the mental faculties, their center of control has been established.

After a critical review of the subject and the study of a case of unusual interest because of the strict limitation of the lesion to the prefrontal lobe, Mills and Weisenburg say:

We hold to the view that the highest mental faculties or functions have their material representation in the prefrontal lobes of the brain, and especially in the left prefrontal lobe.

In fifty cases of tumor of the prefrontal area analyzed by Williamson,<sup>7</sup> the mental symptoms were generally well marked, and in many cases were the most prominent and earliest symptoms. His results are as follows: There was a condition of mental decadence with a dull mental state, a loss of power of attention, a loss of memory, a loss of spontaneity; the patient took no notice of his surroundings and slept during the greater portion of the day, or was semi-comatose in thirty-two of the cases. There was loss of memory, mental failure, but the patient was cheerful in six cases. The patient was suspicious and suffered from delusions, which were occasionally violent in one case. The patient was irritable and violent in one case. The patient was generally asleep, and irritable when awake in two cases. The patient was ambitious, excitable, and had loss of memory in one case. There was slowness of mental processes, and the patient was simple and childish in one case. There were mental anxiety, childishness, hallucinations, suicidal tendencies in one case. The mental condition was not stated in five

3. Text-book of Psychiatry (Translation by Krauss).

4. Am. Jour. Med. Sci., April and May, 1902.

5. Philadelphia Med. Jour., Jan. 31, 1903.

6. THE JOURNAL A. M. A., Feb. 3, 1906.

7. Brain, 1896, p. 346.



cases. Seventeen of these lesions involved the right lobe, twenty-two the left, and eleven both lobes.

Ferrier<sup>8</sup> states the symptoms of disease of the frontal lobes as follows: Mental inactivity, forgetfulness, lack of judgment, decided change in character, irritability of temper and unusual stupidity, an inability to concentrate the attention, to think connectedly and continuously, to learn easily, to exercise self-control, and lastly, a state approaching mild dementia without delusions, in which the patient may become dirty and disregard all restraints of decency.

Naturally some opposition has developed to this localization of the intellectual faculties. In 1902 Müller<sup>9</sup> and Schuster,<sup>10</sup> and in 1904 von Monakow<sup>11</sup> each dissented from the view that the prefrontal lobes are more interested in mental activity than other parts of the brain, and that tumors situated in this area need not cause disturbance of the higher psychic function. Mills and Weisenburg<sup>6</sup> claim that clear distinctions are not made as to the character of the psychic disturbances caused by tumors located in various parts of the brain. The chief sources of fallacy would seem to be: 1, that sufficient stress is not laid on the fact that owing to the painful and exhausting character of brain tumors, mental disturbances in the broad sense may occur because of the irritation and exhaustion produced by these lesions; 2, it is not clearly brought out that tumors of the posterior association area or concrete memory field of the brain will necessarily cause some disturbances of mentality, especially those in the domain of orientation and in the sensorial field; 3, that tumors anywhere situated may cause mental disorders simply through the disturbance or impairment of association which must result; 4, sufficiently close attention is not paid to the particular point that the psychic disorders caused by prefrontal tumors are especially those of the higher intellectual functions, and that in many of the cases studied the normal mental status of the individual is not properly taken into account; and, 5, the fact is not recognized that in tumors situated in one of the prefrontal regions, especially in the right, the individual's intellectual faculties may be largely preserved because of the integrity of the corresponding region of the other side.

The argument has been advanced that inasmuch as insanity is a disease of the mind, it must therefore be limited exclusively to the prefrontal lobe of the left hemisphere, if this theory be correct. But the mind is the sum total of the faculties and functions of the brain cortex; therefore, insanity must be considered a diffuse disease of the brain cortex with special exaggerated phenomena due to irritation of the different cortical centers, as e. g., the optic center, the auditory center, or motor centers, thereby calling forth the special function of these centers as visual hallucinations, auditory hallucinations, motor unrest and the like. Although the pathology of the functional psychoses is still undecided and unsettled, there are organic brain diseases producing grave mental disturbances which have a definite and constant pathology, and among these none is better known and understood than paresis. The symptomatology of this disease is a typical decadence of the intellectual faculties, terminating in a profound dementia or even amentia. The lesion in paresis, as determined by the investigations of Mendel, Mott, Mickle and others, is situated exclusively in the

frontal lobes and the left is more affected than the right. In speaking of the pathology of paresis Mendel says:

The weight of the brain in paretics is generally diminished, and as a rule, the right hemisphere weighs more than the left.

Of late there has been some trend of opinion favoring the posterior or occipital lobes of the brain as being those chiefly involved with the higher mental processes. This view is based on the following claims: First, as Gratiolet pointed out, the posterior lobes are of later development in the individual man, and thus it is inferred they are the least needed for the purely animal functions;<sup>12</sup> second, they are proportionately more developed in man than in the lower animals, and they exist only in the higher vertebrates; third, in intellectually lower races the posterior lobes have been observed to be proportionately smaller; in some of the bushmen they fail to cover the cerebellum; fourth, in some of the lowest mental grades within the lines of civilization, the posterior lobes are the smallest, especially so among idiots.

That the occipital lobes are concerned in the higher psychic activities is the opinion of many of the English investigators. For instance, Bevan Lewis<sup>13</sup> says:

I have repeatedly observed in cases of senile insanity, with excessive wasting of these regions, such as results in a peculiarly pointed frontal lobe, an association during life of extreme torpor and somnolence.

He further says:

There are cases in which, as Hughlings Jackson teaches, profound dementia accompanies lesions of the posterior parts of the brain, confirming the observation of Rosenthal, that the psychic disturbances resulting from tumors in the posterior lobes are far more frequent than from corresponding growths in the anterior and middle lobes.

Professor Carpenter, Bastian, Schäfer and others contend that the posterior lobes are the most important parts of the brain for intellectual purposes.

In the majority of instances animal experimentation has favored the frontal lobes as the seat of habits or tricks taught them, or perhaps we may say instinct.

Very recently Mr. Shepherd Ivory Franz<sup>14</sup> has published some very interesting experiments on cats from the physiologic laboratory of the Harvard Medical School. He taught the animals simple habits and then cut away portions of the brain. His conclusions are:

1. After a bilateral lesion in the frontal lobes the habits are lost.
2. The effect can not be explained as due to "shock," for other brain lesions are not followed by loss of habits.
3. Unilateral lesions of the frontal areas are usually followed by a partial loss, or, rather, a slowing of the association process.
4. Habits once lost after removal of the frontal lobes may be regained. After a second operation they are again lost, and may be regained a second time.
5. Only newly formed habits are lost after such lesions. Inherited and long standing habits seem to be retained.
6. The emotional condition of the animal is practically the same after as before the operation.

It is generally conceded, however, that the frontal lobes alone are an index to a person's intellect, and their mass has to be judged by all the measurements which are used for the estimation of the size of the body; that the head may be small in a person of wisdom, provided frontal lobes are relatively the most prominent.—(Hollander.)

From a careful observation and intimate knowledge of the illness of the two patients whose histories I have presented, and without reiterating, but simply emphasizing the argument made in 1897 anent the contiguity of the

8. Quoted from Starr, Dercum's "System of Nervous Diseases."

9. Deutsch. Ztschr. f. Nervenhk., 1902, xxi 3 and 4.

10. "Psychische Störungen bei Hirntumoren," Stuttgart, 1902.

11. Ergebnisse der Physiologie, III No. 2, 1904.

12. In apes, however, they are the first to develop.

13. Brit. Med. Jour., Sept. 29, 1883.

14. Am. Jour. Physiol., Oct. 1, 1902.



centers of the intellectual faculties, and the articulatory and motor centers of the right hand, and wedged between these the centers of speech and writing, all located in the frontal lobe of the left hemisphere, it is only logical, therefore, to assume that the center of the intellectual faculties is here located, and I believe that future clinico-pathologic studies and results of animal experimentation will confirm this view.

It would be an interesting clinical fact to prove whether in left-handed individuals this center would be found in the right prefrontal lobe, the same as we assume that the center of speech is there located in left-handed individuals, and whether in slowly progressing disease of the left frontal lobe it will be possible for the right lobes to take on the functions which we are trying to make the left frontal lobe possess. These are interesting clinical questions, and no doubt will be as conclusively solved some day, as was Broca's theory regarding the center of motor speech.

## II. AGRAPHIA.

In the exhibit of handwriting, the patient suffering from glioma of the right frontal lobe (Case 1) was able to write distinctly, correctly and legibly. The labels which he copied the day previous to his death are models of penmanship and intelligence, and I doubt not but that they are more legible than the physician's prescriptions which served as the copy (Fig. 1).

In the patient suffering with glioma of the left frontal lobe (Case 2) the attempt at writing before the operation resulted in a series of connected, ill-formed lines, with only the last four letters of his name legible; while in attempting to print his name it ended in an absolute impossibility. Five minutes were allowed him for each attempt. After the operation some improvement was noted in writing; although crude and irregular, it is possible to read the same. In printing he has recovered the shape and form of the letters, and although repeating some, which may be a mental difficulty, the same is also legible (Figs. 2, 3 and 4). The literature on this subject has been carefully scrutinized of late by Dr. Gordnier of Troy, N. Y., and it is unnecessary to repeat what he has so well written. This case seems to help to prove the existence of a writing and printing center in the base of the second frontal convolution of the left hemisphere, in close proximity to the center of the right hand, through which writing is ordinarily made possible.

## CONCLUSIONS.

1. The prefrontal lobe of the left hemisphere is in all probability the seat of memory, reason, intuition and judgment or the higher intellectual faculties.
2. A distinct center for writing and printing exists in the base of the second frontal convolution of the left hemisphere.

FOR THE DISCUSSION, SEE PAGE 359.

**Effect of Posture on Kidney Functioning.**—Some recent experiments by Jaques are related in the *Province méd.*, No. 35, 1906, which show that kidneys enfeebled by disease functionate differently as the patient stands or reclines. It is important to examine the urine after the patient has been standing or walking and again after he has been reclining. In 14 out of 15 nephritic patients the amount of urine increased to three times its former amount as the patients reclined, and the elimination of urea and of chlorids was increased in 14, and of the phosphates in 5. In 9 patients the proportion of albumin in the urine also subsided to a marked extent. As convalescence progresses the difference between the urine of the various postures becomes less and less pronounced.

## SOME WAYS TO PREVENT THE SPREAD OF TUBERCULOSIS.\*

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At present, the importance of this subject is sufficiently recognized as to require no discussion in a paper before a body like this. The literature of the subject is so great and the time at our disposal so short that no attempt at completeness of review is justifiable. Especially, it is impossible within the time limit to present any statistical study or to give the data on which our opinions may be founded. Therefore, I shall briefly discuss some features of the following three topics:

1. The direct reduction of the opportunities for infection.
2. The promotion of the individual powers of resistance.
3. Educational influences at our disposal.

### REDUCTION OF OPPORTUNITIES FOR INFECTION.

The tubercle bacillus is now almost unanimously accepted as the efficient and the specific cause of tuberculosis. The few dissenters from this accepted view may be ranked with those championing the antivaccination fight and the antivivisection fanaticism—individuals whose training in both logic and the biologic sciences is so deficient as to deprive their utterances of all weight of authority.

It is not here necessary to enter into any discussion of the biologic characteristics of the tubercle bacillus, its pathogenetic properties, and the anatomic results of infection with it. It may be assumed that we are all sufficiently familiar with them for the purposes of this paper.

The antituberculosis propaganda to-day is very largely a war against the tubercle bacillus, efforts being devoted to its destruction and to the reduction of opportunities for infection with it. The success of the plan as adopted in New York City and in some other cities, the former being the most notable—with the general principles of which it may also be assumed we are all familiar—has been so striking that it may now be fairly questioned whether any community is justified in further hesitation in putting it into operation. Beginning with a tentative request for voluntary notification, it now includes compulsory notification of all cases of tuberculosis and the coöperation of the board of health with the physician whenever this is desired in matters of diagnosis, education, supervision and care, not only of the patient, but also of his family, and the improvement of his surroundings.

The opening wedge is the question of notification. In many communities, professional opinion will not support compulsory notification. Of course, without this support any attempt at compulsory notification will be a failure. The experience of New York, however, demonstrates that a short period of voluntary notification may be shortly followed by compulsory notification with practically the unanimous commendation of the medical profession. In every community, therefore, the consensus of professional opinion should be obtained and that form of notification receiving its approval promptly put into operation. Notification alone, however, ac-

\* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



completes nothing except the accumulation of statistical material, and to be of any benefit, must be accompanied with the other measures which are its legitimate outgrowth.

The question of isolation of the tuberculous patient has been the subject of considerable difference of opinion. To-day it may be accepted as an established dictum that the consumptive is not necessarily a source of danger to others, but he may become a pest and a plague if he is either ignorant or vicious. If he is careful of his sputum there is no occasion for his isolation, and the enforced partial isolation, due to the phthisiophobia now rather wide-spread, is a cruelty and a hardship to the sick without being a protection to the well.

It is different, however, if the patient scatters his bacillus-laden sputum indiscriminately, either because of the debility due to the advanced stage of his illness, or to ignorance, carelessness, or that form of viciousness which leads its possessor to have no regard for the welfare of his fellow men. In such cases it is proper for the state to intervene and to place the patient in such hospital or detention institution surroundings that the opportunities for increasing the danger to himself or to others shall be reduced to the lowest possible minimum.

It is not too much to say that wherever practical patients should be advised to seek sanitarium treatment. I can not refrain from adding my testimony to the mass of evidence already accumulated in its favor. My experience, fortified by my seven years' connection with the National Jewish Hospital for Consumptives in Denver, is that we obtain better results, as a rule, in sanitarium practice than we can in private practice. This is largely due to the absolute regulation—call it arbitrary, if you will—of the patient's daily conduct. So much for the patient. For the people, the sanitarium exercises a very great influence as an educational institution. Not only does the patient learn how to conduct himself for his own benefit and the protection of his neighbors, but when he leaves the institution, its teachings are spread among all with whom he comes in contact.

Of great potential value are the tuberculosis hospitals and dispensaries. These, in addition to the care of the sick, form centers from which the lines of battle against the spread of the disease radiate. In addition to the medicinal and dietetic treatment, the instruction to the patient and his family by word of mouth of the physician, by judicious circulars, by the ministrations of visiting nurses, by the investigations of medical inspectors, may be very prolific of benefit, as is evidenced by the experience along these lines of New York, Cincinnati, Baltimore, and many other cities.

Among the poor, and they furnish the greater number of victims to tuberculosis, the family and children's clinic meets a growing necessity. Every member of a consumptive's household should be examined at intervals for evidence of infection—every member should be regarded as an object of suspicion. In the few municipalities in which such work has been systematically attempted, it has been shown that tuberculosis much more frequently makes multiple appearances in the family than is generally suspected. My own case records show not a few instances in which husband and wife or parents and children have been so affected.

Too great stress can not be laid on the subject of disinfection of quarters which have been occupied by consumptives. Nearly every one acquiesces in the contention that rooms in which consumptives have died and in which one in the later stages of the disease has lived

for some time should be fumigated, and the laity generally have a not unnatural prejudice against occupying such rooms. It is not the fact of the death, however, nor the advanced stage of the disease, which is the potent factor. It is the contamination by the sputum. We do not know that the tubercle bacilli have any increase in virulence as the victim's strength wanes or become so much more numerous as to make that a matter of any great importance; we do know, however, that patients whether in the higher or the lower classes, may be careless with their sputum.

I have seen dried sputum on wall paper months after it has been deposited. I have seen newspapers tacked or pinned against the wall near the bedside for the patient to expectorate on without having to exert himself, and the copious, yellow, purulent sputum running down and dropping on the floor, there to form pools and gradually to dry. I have seen in hotels and lodging houses people by no means of the lower, or ignorant, or vicious classes, as generally estimated, expectorate on the carpets, careless because these were property of some one else, and without a thought of the possibility of danger to themselves or to any one else. Such being the case, the disinfection of rooms in hotels and lodging houses should be required by ordinance, and prospective tenants should, as a routine matter, require the same from landlords.

In all cities the dust menace is no slight one. The pavements and streets are the receptacles for sputum from untold numbers of consumptives, as well as those healthy or suffering from some other disease, and for offal of various kinds. This matter lies for days and becomes dry and pulverized, to be raised by every breath of air and inhaled without cessation by the helpless passerby. In the country, this is of minor importance because the sources of contamination are so few comparatively and the intervals so great that sunshine and air are able to complete their task of disinfection. Not so in the city, however. Here the danger is a constant and an increasing one. Not a few epidemics of acute disorders of the respiratory tract have been traced to such causes and it is not unreasonable to assume that many cases of tuberculous infection are due to the same etiologic factor. It behooves every municipality, therefore, to investigate carefully and to apply the means of lessening this evil to a minimum.

I purposely omit any discussion of the subject of the possible transmission of tuberculosis through the ingestion of milk or meat from tuberculous cattle.

#### INDIVIDUAL POWER OF RESISTANCE.

Inasmuch as the tubercle bacillus is practically ubiquitous we can not expect the crusade for its destruction ever to be absolutely successful. Although we recognize to the fullest extent that the tubercle bacillus is the sole and only exciting cause of tuberculosis, it does not follow that if every tubercle bacillus in existence at any definite period of time were absolutely destroyed the disease which we recognize to-day as tuberculosis would thereon necessarily vanish from the face of the earth never again to reappear. While we do not at present believe in a *generatio de novo* in the sense contended for before the days of modern bacteriology, and while we do not believe in a special creation of each species which might be repeated, all those who accept the doctrine of evolution must accept the possibilities implied in that doctrine. The tubercle bacillus is closely allied to certain other micro-organisms for which no pathogenetic properties have as yet been determined. We can not definitely



exclude the possibility that it has been evolved from some of them, or the possibility that fresh and independent strains of tubercle bacilli are to-day, under favorable circumstances, being so evolved from them, or will in the future continue to be so produced. Some peculiar idiosyncrasy or predisposition of an individual host may be necessary for such evolution, but who can doubt that, with the infinite variations existing in the individuals of the species, such condition of special adaptability of the host may and does repeatedly occur.

Such being the case, and the absolute destruction of this germ not being feasible, it is, indeed, fortunate for the human race that the question whether an individual will contract the disease or not is a matter of relative dosage—it depends on whether or not the seed will fall on a suitable soil and in sufficient quantities to produce a crop.

In view of such a fact we can readily see the necessity for turning our attention to the strengthening of the powers of resistance inherent in the individual, as well as to attempting as widespread a limitation of the opportunities of infection as possible. I desire to lay special stress on this subject in this paper because in the past, in the endeavor to prevent the dissemination of the tubercle bacillus, there has been a marked tendency to overlook this subject and to allow it to sink into obscurity.

In this field, the physician has practically an unending duty before him. Before any impress of effectual character can possibly be made on the population in general, the medical profession must be thoroughly saturated with the subject. The physician must recognize the necessity for increasing his own knowledge of all the varied causes predisposing to the disease. He must acquire for himself a greater familiarity with those indications which in early life, even years before the onset of any symptoms of the disease, point out the probability of the individual contracting tuberculosis. He must give much more attention to prognostic diagnosis of the at present healthy individual than he has in the past and must cultivate a greater acuity in the recognition of what may be called the pretuberculous or early tuberculous stigmata—those peculiarities of physical growth and development which indicate a tuberculous predisposition or diathesis. Then, and only then, will he be prepared to be a teacher of the people who will not be without influence.

The strengthening of the constitutional powers of resistance implies the employment of all the possible resources of public, general, and personal hygiene. The discussion of such subjects in general, without individual personal application, usually passes over the heads of the people without making the impress the subject deserves. When, however, the physician can say to individual members of his clientele, in the privacy and with the emphasis of a personal conversation: "You, or such and such a member of your family are more apt than others to contract tuberculosis, because ancestry, family history, or physical configuration indicates a distinct lack of diminution of the natural powers of resistance," and is able to point out to him the stigmata on which he is able to base such conclusion, he has at once an interested hearer, and is more apt to be able to accomplish the carrying out of a proper hygiene. The *argumentum ad hominem* is an effectual one.

As stated, the strengthening of the constitutional powers of resistance calls for the marshalling of all hygienic resources—the proper regulation of public and private life, public and private sanitation, regulation of the daily

conduct, exercise, the securing of an abundance of fresh air, sunshine, sleep, etc. The consideration of each of these subjects individually, I do not care to enter into at this time, but I do wish to lay particular stress on two of them—the dietary and the condition of the home and the workshop.

The present day in educational fields may well be designated as the elective era. The courses offered in our high schools as well as in our higher institutions of learning, present a bewildering array of elective studies. Even our grade schools are not entirely free from this. No matter what field of life the developing citizen is expected to occupy, the pupil would seem to be supposed to have a better knowledge than the instructors, individually or collectively, of what will best satisfy the needs of his future career.

To a certain extent, also, is this anomalous condition carried into the walks of our daily and still younger life. The modern education of the child would appear to be largely a yielding to its inclinations and a submission to its whims. Obedience is not to be exacted and punishment, no matter how temperate nor how much deserved, must not, under any considerations, be inflicted for infractions of the rules of civilized life or even for moral shortcomings.

*Diet.*—In the matter of diet, which specially concerns us here, the doctrine is rapidly growing among the laity, that the child's likes and dislikes should determine what its food should be; that the individual will have a desire for what is good for it; and that what one dislikes will not be of any benefit. There is a tendency for the average modern mother not to attempt to discover whether a dislike is founded on an actual incompatibility between the special individual and a special article of diet (i. e., a personal and physical idiosyncrasy) or an acquired repugnance due to purely accidental circumstances or even to a fancied distaste which may have originated from a mere whim of the child or may have been the simple result of suggestion more or less often repeated. In either case, "the poor dear" must not be forced to eat that which it does not want to eat, no matter how wholesome the article of diet may be and no matter how marked may be the indications of its need in the given individual.

As a result of this mistaken idea as to physical education, we have growing up an increasing number of individuals of finicky dispositions and perverted tastes. How often among our tuberculous patients do we meet patients who say: "Doctor, I just can not drink milk." or: "Doctor, I can not bear to look at an egg, and I can not touch meat!" In a great majority of such cases, careful investigation will reveal that this is the result of a defective dietetic régime and education in early childhood, the period of life which really offers the least difficulties in the matter of establishing correct and reasonable tastes. As is well known, it is not difficult to get children to take with relish foods and medicines which would cause some hesitation, to say the least, on the part of an adult. It is also not difficult to start and to establish in them, as the result, simply, of repeated suggestions, an at first fictitious, but later confirmed and real repugnance which later can never be overcome and which, in the case of certain diseased conditions, may be a detriment of no mean importance, or which, in itself, may predispose to the establishment of certain pathologic affections.

These facts are what render this subject of importance to us. Every physician who has an at all extensive practice among the tuberculous, knows that it is just these



finicky patients who present to him the greatest difficulties in the conduct of their cases. It may not have attracted his attention, but a little investigation will convince him of the truth of the fact, as well as of its importance, that these very finicky individuals—finicky as to diet—form a very considerable proportion of our consumptive invalids, perhaps a larger proportion than is the case with any other diseases, and certainly a much larger proportion than exists among the populace in general.

We all recognize the fact that diet and the tolerance of a proper diet are of the utmost importance in the treatment of tuberculous invalids. From the foregoing it would appear that a proper diet throughout life is also of the utmost importance in the prevention of the disease.

A proper diet, as a little investigation will show, means not only a sufficiency as to quantity, but also a sufficiency as to diversity. It is the patient who can eat everything who stands a good chance of getting well. So too, it is the individual whose diet for years has been a perverse one, who could not eat meat, to whom eggs were distasteful, who could not stand milk, who was infected with the vegetarian or the two-meal-a-day fad, or some other as unfortunate delusion, who stands a good chance of becoming ill of tuberculosis. It behooves us as physicians, therefore, to let our influence be steadfastly felt in opposition to defective dietetic education.

Not less important than the kind and amount of food necessary for the preservation of the health of the people is the matter of the manner of its preparation. It has more than once been forcibly shown that the existence of so very few good cooks among the lower classes has a powerful influence in the development of intemperance so prevalent in the same circles. With equal force it may be argued that this same fact has the same influence in the production of a predisposition to tuberculosis. Poverty and filth seem to be inseparably connected. It can not be expected that the slattern will be a good cook. The greasy frying pan is but a symbol of the entire practice of cookery in the family in which it exists, and is always associated with dyspepsia, malnutrition, and the whole host of physical ailments, not the least of which is tuberculosis, connected therewith.

*Tenement Houses.*—During many years much has been added to the literature concerning the tenement house and its necessarily concomitant evils, social, moral and physical. To-day it may be accepted as an incontrovertible fact that tuberculosis is essentially a house disease. It is associated with the home and the workshop. In our larger cities the tenement house becomes a most important factor in the propagation of this disease. Much has been written on this subject and too much can not be written until these evils have been reduced to the utmost possible minimum. I simply mention this subject so that, through very familiarity with it, we may not be tempted to overlook it, and thus to overlook one of the most potent elements in the propagation of the disease in question. In all cities in which the tenement exists, tenement regulation must not be allowed to become a dead issue. The building regulations must be such as to insure the maximum feasible amount of comfort to the individual and the maximum provision for the physical hygiene of the occupant. In this is included, of course, provision for securing a maximum amount of sunshine and ventilation not subject to the whim of the individual. (In the matter of sunshine, it might be suggested that the almost universal custom of having the streets run in the direction of the cardinal

points of the compass is an unfortunate one. If the directions were diagonal to these, as is the case with the down-town streets of Denver, this would insure the possibility of the access of sunshine to every outside room of every building, no matter on which side of the street located, unless overshadowed by some extraneous object, such as an adjacent building.)

Those inhabiting cities in which the large tenement house does not exist to any considerable extent may fall into the error of thinking that the tenement evil does not exist for them. A little observation will show that what may be called "tenementism in the small home" is also omnipresent. In all towns in which poverty exists—and where is the one from which it is absent?—there is a certain tendency for the poorer classes to crowd together in the older, smaller, and least hygienic, and least favorably situated houses. The smaller tradesmen will have their homes in the rear of their stores. Too often we find these latter to be deep, narrow, low-ceiled rooms on the first floor, without windows on the sides, the only possibility for ventilation existing in a single front door, a back door, and possibly a single window in the rear wall, which usually abuts the alley and is overshadowed by a similar wall just opposite. Across the middle of the room, to separate the store from the living apartment, is built a partition reaching within a few feet of the ceiling. With such limited opportunities for ventilation and the usually total absence of sunshine from the living rooms, who can wonder that the members of the family present the typical appearance of the typical tenement-house inhabitant!

Let us add to this that in these store-homes, as well as in the smaller houses frequented by the poor, there is the dangerous practice of overcrowding. We can readily find in these, just as well as in the large tenement house, from six to ten people sleeping in one room having ventilation accommodations for not more than two or three. This being the case there is little wonder that all the evils of the tenement house may flourish in communities in which no tenement house exists.

*Workshop.*—The workshop is another of the places to which tuberculosis clings. It is a well recognized fact that certain trades or kinds of work furnish an unusually large quota of tuberculous victims. In some cases this is true regardless of surroundings or the character of building in which this work is carried on. In many other instances, however, they are the trades which are carried on in the so-called "sweat-shops," the trade itself not being intrinsically unhealthy. Allow a tuberculous workman to be employed in one of these for a short time, careless as to his habits, and a focus of infection is established from which a crop of victims is inevitable.

These facts are so well established that they need but to be mentioned to bear with them the suggestions for their correction. The tenement inspection laws should be extended to the small home, at least in such cases in which tuberculosis has made its appearance. Tenement inspection laws and factory inspection laws should be so exact and their execution so efficient that little opportunity may be left for self injury through ignorance, or danger to others through ignorance, carelessness, or wilful neglect.

*Disinfection of Premises Before Renting.*—It has been suggested that for prospective tenants to demand from the agent or owner what has been termed "a clean bill of health" for the house sought to be rented; i.e., a certificate from proper authorities that no case of infectious disease has existed in the house, or that the latter had



been efficiently disinfected since vacated by the last tenant, would greatly diminish the number of cases of tuberculosis acquired by house infection. This is undoubtedly true, and more emphasis might be laid on this element of the propaganda of education of the people. If the demand for clean bills of health were to become a popular habit, landlords would be compelled to furnish them in self defense. It may also be suggested that such be made mandatory in the case of tenement houses, the tenement-like home, and the workshop. If such were universally required regardless of the health-character of previous tenant or employé, no hardship would be worked on the sick. Otherwise, however, it would become more and more difficult for the tuberculous patient to secure quarters for himself, and to the landlord the consumptive would become more a *persona non grata* than the most unruly of children.

*Preservation of the Child.*—Of preventive inoculation or vaccinate procedures against tuberculosis, not more than simple mention need to be made now. The data at our disposal at the present time are entirely too few to justify a conclusion of any sort, either favorable or unfavorable, as regards the possibilities of accomplishment in this direction.

The preservation of the child against tuberculosis, especially in the presence of tuberculosis in other members of the family, is no slight task. The susceptibility is greater in earlier years, therefore, the necessity for greater care in the home. The tuberculous mother should be taught the dangers of nursing her infant, or of testing its food by tasting. The danger from creeping on the floor should be emphasized. The necessity for improved hygiene in the matter of food, ventilation and outdoor life should be dwelt on.

In this connection, the problem of child-labor naturally arises. My own position is that no child of tender years should be compelled to enter into the struggle for existence. Should this not seem to others to be unqualifiedly tenable, it may at least be maintained as incontrovertible that the character of the tasks which may be imposed on the child should be carefully scrutinized, those forms of work which may be shown to be physically injurious should be absolutely prohibited, and the hours of such labor as may be permitted most exactly regulated and adjusted to the child's delicate powers.

Closely allied to the subject of the preservation of the child is that of strengthening the race by caring for the future generation. Here, again, is the lower classes which we must take into consideration. The so-called modern or new woman can scarcely be regarded as a child-bearing animal and may, therefore, be disregarded here. Her interest in the coming generation is a negative one, to say the most. It is the woman of the poorer strata who is prolific, and with her, too, the problem of labor is a serious one. Too great strain on her forces saps her vitality and an impaired constitution is the hereditary result. The same strictures apply here as apply to child labor. It is the duty of the commonwealth, as a matter of self-defense, to reduce this economic evil to its minimum and, by educational and legislative means, to counteract as far as possible, the detrimental influences constantly made more pressing by the constantly increasing struggle for existence.

*Restriction of Marriage.*—In connection with this subject of the future generation, I wish to touch on one subject which of late years has been made somewhat more prominently public than usual. Recently bills have been introduced into several legislatures looking into the restriction of marriage among certain classes of defec-

tives, tuberculous invalids being included in this designation. Fortunately, none of these measures has met sufficient support to secure their enactment. I say fortunately, because the prospects which they hold forth are utterly fallacious. Even though it be granted that the children of consumptives are necessarily defective and of detrimental influence on the race, which is far from conceded, the measures proposed would utterly fail to produce the results sought. The provisions are too easily eluded. To forbid marriage in one state does not prevent its accomplishment in an adjoining state. To prevent marriage in all states would not prevent procreation; it would simply place a premium on illegitimacy of children. Would the end result be an improvement?

#### EDUCATIVE INFLUENCES.

But the barest mention may now be made of the educative influences, and that of only a few, as this paper has already exceeded the bounds intended for it. The first of these is legislation. Ordinances against promiscuous expectoration can not fail to have an influence much greater than simply the possibility of punishment for a misdemeanor would indicate; so, too, will legislation with reference to notification, possible isolation, inspection and disinfection. They keep the attention of the people alert to the dangers of transmission.

Antituberculosis societies may also be of great advantage, whether national, state, county, or purely local, through the prominence given the subject and the association of the medical profession and the laity working together for a single purpose. The possible effect can not be measured now. Whether our anticipations regarding them will ever be fully realized only time can reveal.

The possible influence of the lay press is very great, much greater than the actuality. There are several reasons for this condition. In the first place, their functions are numerous; there must be a great diversity and division of efforts; purveyors of news, their editors can not reasonably be expected to keep hammering at the one subject as is requisite in a campaign of popular education; furthermore, being conducted by and the contributions being made by lay people, it is impossible to avoid much erroneous matter unless there should be a closer alliance with the medical profession than heretofore, an alliance which it seems to be very difficult to establish.

Of the greatest potential power is the public school. We have scarcely begun to exploit its possibilities. There systematic and correct instruction might readily be given in courses extending throughout all grades, giving the rising generation a groundwork of practical hygiene which would prove of much greater value to the nation than many of the branches to which much attention is now given. It would not only be the rising generation which would profit by this, but also the present generation. What the school children carry home they impart to their patients, particularly in branches which the child recognizes as applying to all the members of the family.

It is a matter of congratulation that some of the labor and fraternal organizations are also turning their attention to the uprooting of tuberculosis in their efforts to improve the condition of their members.

When we view the antituberculosis propaganda from all its view points, when we consider it in all its bearings on the community at large, we are forced to accept the conclusion that a duty of unmeasured magnitude is ours whether we will or not. It is a duty which no others can assume and, therefore, all the more our duty as members



of the medical profession to be instant in season and out of season in laboring with the people and for the people, looking to the elimination of the most important of the diseases afflicting mankind at present.

With all our enthusiasm, however, and with all our sense of the imperative nature of this study, we must not fail to recognize the fact that our efforts must be tempered with good judgment lest we do harm while attempting to benefit. To a certain extent we have been carried away in the past and a phthisiophobia has arisen which is in itself harmful, useless and cruel, and which it will be difficult to allay. It is our bounden duty to combat this as an error at the same time that we are striving to disseminate correct information which will also be effective.

## A PLEA FOR CREMATION IN TUBERCULOSIS AND SIMILARLY INFECTIOUS DISEASES.\*

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The first modern cremation took place in Italy in a furnace invented by Professor Brunnetti, of Padua, in 1869. The year 1874 saw a number of cremations in Breslau and Dresden. Since then the movement has grown gradually and to-day there exist crematories in nearly all civilized countries excepting Russia and Turkey. Our country in 1900 had twenty-seven crematories, one in each of the following cities, San Francisco having two, Los Angeles three. I mention them in the order of their establishment:<sup>1</sup>

Locality.	Year of establishment.	No. of cremations Dec. 31, 1901.
Fresh Pond, N. Y.....	1885	3,903
Buffalo, N. Y.....	1885	484
Troy, Earl County, N. Y.....	1890	146
Swinburne Island, N. Y. (under the charge of the health officer of the Port of New York).....	1890	106
Waterville, N. Y.....	1893	38
St. Louis, Mo.....	1888	1,054
Philadelphia.....	1888	914
San Francisco, Odd Fellows.....	1895	1,535
San Francisco, Cypress Lawn, Cal..	1893	632
Los Angeles, Cal. (three).....	1888-1906	1,352
Boston.....	1893	1,057
Cincinnati, Ohio.....	1887	647
Chicago.....	1893	695
Detroit.....	1887	371
Pittsburg, Pa.....	1886	216
Baltimore.....	1889	180
Lancaster, Pa.....	1884	95
Davenport, Iowa.....	1891	134
Milwaukee, Wis.....	1896	178
Washington, D. C.....	1897	109
Washington, Le Moyne.....	1876	42
Pasadena, Cal.....	1895	55
St. Paul, Minn.....	1897	55
Fort Wayne, Ind.....	1897	14
Middletown, Conn.....	....	....
Total.....		14,012

### ARGUMENTS IN FAVOR OF CREMATION.

It is, of course, well known that in truly oriental countries, as in East India, cremation is the most prevalent method of disposing of the dead. The arguments in favor of cremation have been presented again and again. The insanitary and dangerous conditions surrounding many graveyards are well known to the unbiased sanitarian and careful investigator. A physician (Dr. Adams) of this very city of Boston spoke, more than twenty years ago, the following impressive words on this subject:

The Christian churchyard is often a contracted plot of ground in the midst of dwellings literally packed with bodies, until it becomes impossible to dig a grave without disturbing human bones, and the earth becomes so saturated with foul fluids and the emanations so noxious as to make each churchyard a focus of disease.

*Inhumation and Contagion.*—Medical history is full of incidents showing that contagious and infectious diseases have been propagated from superficially buried bodies which had succumbed to infectious diseases through a washing away of the soil of cemeteries and through disinterment of the individual graves or the removal of the burial ground.<sup>2</sup> Men and beasts alike have been known to become diseased and have died from such sources.

Mr. T. Spencer Wells, in speaking on cremation before the British Medical Association in 1880, said that water derived from sources near graveyards, being often neither cloudy nor stinking, but rather enticing and popular, like the water of the Broad Street pump in 1874, has carried cholera to those who drank it. Later on he asked: "How often may typhoid fever not have been caused in this way? Who can tell?" We know that this source of typhoid fever is very frequent. I have it on the authority of Prof. A. E. MacDonald, formerly medical superintendent of the Manhattan State Hospital, that a few years ago on Blackwell's Island an epidemic of typhoid fever among the inmates and employes of that institution had been distinctly traced to drinking from a well, the water of which passed through ground in which the victims of a previous typhoid epidemic had been buried. The closing of this well stopped the epidemic as if by magic.

I have no evidence that any real harm has ever been done by the emanation of obnoxious gases arising from putrefaction, but minor diseases such as diarrhea and simple dysentery seem, according to Bermingham,<sup>3</sup> to be produced by the suspension in water of earthy and animal organic matter (calcium and magnesium sulphates and chlorids, calcium and ammonium nitrates and large quantities of sodium and magnesium chlorids). The constant prevalence of dysentery at Secunderabad, in Deccan (India), appears to have been partly owing to the water which percolated through a large graveyard. The late Dr. J. Lewis Smith, New York, in an address before the New York Academy of Medicine, related the case of a grave-digger who, after having reopened the graves of persons who had died twenty-three years before from diphtheria, contracted the same disease from this source and finally fell a victim to it. Bianchi, quoted by Cobb,<sup>2</sup> demonstrated that the fearful reappearance of the plague at Modena was caused by excavations in ground where, 300 years previously, the victims of the pestilence had been buried.

But it would seem that neither floods nor disinterments are necessary for the pathogenic micro-organisms to work their way to the surface and then be the cause of the propagation of dangerous infectious diseases. Pastenr's experiments in regard to splenic fever of cattle (charbon) and Domingo Freire's in regard to yellow fever in Rio Janeiro, and Dr. Burton's report in 1853 also regarding the spread of yellow fever, are sufficient evidence of this. Thus it would seem that the burying of any body which has succumbed to an infectious disease, such as cholera, yellow fever, typhoid fever, diphtheria, tuberculosis, etc., will always endanger the liv-

\* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. This table was prepared by Mr. Sumner, president of the Odd Fellows Cremation Society, San Francisco. The author made a few additions, bringing the table more up to date.

2. Cobb: "Earth Burial and Cremation."

3. Bermingham: "The Disposal of the Dead." 1881.



ing. The seemingly innocent earthworm plays, according to Pasteur and the more recent experiments of Lortet and Despeignes, a very important rôle as an intermediary in bringing to the surface living pathogenic micro-organisms. The two latter gentlemen's observations refer particularly to Koch's bacillus of tuberculosis. Earthworms are capable of ingesting and ejecting the tubercle bacilli without the micro-organisms losing their virulence. The worms swallow earthy matters, and after separating the digestible or serviceable portion they eject the remainder in little coils or heaps at the mouth of their burrows. In dry weather the worm descends to a considerable depth and brings up to the surface the particles which it ejects. It would thus seem that even the deeper burial of the bodies is no guarantee that living infectious micro-organisms will not be brought to the surface.

In all prevailing epidemics of yellow fever the cremation of those who have succumbed to it has proved one of the efficient means of controlling the spread of the disease. Nelson<sup>4</sup> says:

The oldtime Spanish possessions of the Main and West Indies export typhoid fever as regularly as India rubber, coffee and tobacco.

As a remedy to check the ever new crops of the yellow fever germ, he advocates the Holt quarantine system on the one hand and cremation on the other.

Cremation has been advocated for all infectious diseases by any number of physicians and sanitarians. It is only since the above-mentioned experiments of Lortet, Galtier, Gartner and Schottelius that tuberculosis has been included in this list of diseases. These experiments have demonstrated that the tubercle bacillus can resist putrefaction for years and be brought to the surface by the earthworm. Elsewhere<sup>5</sup> I have referred to the resolution adopted at the third Congress for the Study of Tuberculosis in Paris, 1894, for recommending the obligatory cremation of all individuals who had died of tuberculosis. This motion was not carried. I feel that it would be presumptuous for me, after the Paris failure, to ask you, the representative hygienists and sanitarians of this country, to discuss this subject from just the same point of view with the hope of passing favorable resolutions. I do not plead for your support in the matter regarding cremation for tuberculosis alone, but for all the far more infectious and communicable diseases as well.

#### ECONOMIC ADVANTAGES OF CREMATION.

Furthermore, I do not plead with you for cremation only on the ground of a sanitary measure. I claim that this simpler and more expedient way of disposing of the dead would be an economic advantage to many individuals and to every community at large.

In an address to the Chicago Medical Society, in advocacy of cremation, Dr. Charles W. Purdy made some striking comparisons to show what a burden is laid on society by the burial of the dead. According to his carefully prepared estimate one and one-fourth times more money is expended annually in funerals in the United States than the government expends for public school purposes. Hundreds of acres of land are annually consecrated to the burial of our dead. In many instances and particularly in the vicinities of large cities burial lots are at a premium. In some of our fashionable

cemeteries in New York you can not buy the few feet of ground needed for the slow, loathsome decomposition of your body for less than \$1,000.

I have been led in my work in tuberculosis to become an ardent advocate of cremation, especially in our large communities and particularly for people in moderate means or the really poor. I am free to confess that the danger of propagation of tuberculosis through the graveyard as compared with other diseases is comparatively small. But the thousands of acres which, near large cities, are devoted to the dead and are thus useless we need for the living. How many a model tenement house where people might get light and air could be built if the dozen or more graveyards of many of our large cities were laid out in building lots surrounded by little parks and playgrounds, where the living children could play and the living mothers and wives of our laboring men could get a breath of air, which it is so difficult to get in the present crowded conditions of the average tenement districts? Would not this mean prevention of tuberculosis and other diseases due to overcrowding among old and young alike?

In my labors among the consumptive poor I have always been painfully impressed with the fearful expense which the ordinary funeral, including the buying of a burying lot, entails. Consumption is an expensive disease. If the patient does not get well within a year, if the disease becomes chronic and incurable, there is invalidism, loss of earning capacity often for two, three and more years. When the end comes there is no end to the expense. A costly coffin, expensive ceremonies and a costly burial lot sap in many cases every resource of the relatives. I have known poor people to go into debt for the sake of a decent funeral, for which it took years to pay. In view of such experiences, which all physicians practicing among the poor must have had, are we not justified, is it not our duty to plead for the relatively inexpensive disposition of the dead by cremation and for simple funerals? Before leaving the subject of funerals and funeral ceremonies I must call attention to the many serious illnesses which are contracted constantly by the mourners who take part in the funerals and stand by the open grave with uncovered heads in all kinds of weather. This danger is done away with by holding the service in the anterooms of the crematory.

*Cremation and Inhumation Both Processes of Oxidation.*—How does cremation differ in its essentials from inhumation? The one is a slow and the other a rapid process of oxidation, a simpler, surer, purer manner of rendering ashes to ashes, dust to dust, a sweeter, cleaner process of rosy heat instead of festering corruption, which may, through wells and springs, bring disease to the living. It is true it is not a common method, and it is said to be not in accordance with the Scriptures and with orthodox teaching, but so-called orthodoxy is no longer considered infallible, and the number of advocates of cremation among clergymen, philanthropists, educators and even tender women, who prefer this to any other disposal of our mortal remains, is constantly increasing. When one has seen the speedy, clean process of disposing of the body by modern methods of cremation, he rarely fails to become converted to it. Says an eyewitness:<sup>6</sup>

I have stood before the threshold of the crematory with a fluttering heart and trembled at the thought of using fire beside the form of one I loved. But when, in obedience to his

4. Nelson: "Yellow Fever," *The Twentieth Century Practice of Medicine*, p.

5. Knopf, S. A.: "Tuberculosis," *The Twentieth Century Practice of Medicine*, vol. xx, p. 214.

6. Wills, William Le Moyne: "Sanitary Aspect of Cremation," *Southern California Practitioner*, vol. 1, No. 4.



own dying request, I saw the door of the incinerator taken down, its rosy light shine forth, and his peaceful form, enrobed in white, laid there at rest, amid a loveliness that was simply fascinating to the eye and without a glimpse of flames, or fire, or coal, or smoke, I said, and say so still, this method, beyond all others I have seen, is the most pleasing to the senses and most grateful to the memory. And as I turned away from the incinerator, where we had left the body of our friend, it was pleasant to think of him still resting in its rosy light, enveloped by what seemed to us as floods of purity. When all was over, nothing remained but a few fragments of calcined bones and delicate white ashes and dust, perfectly pure and odorless.

#### INDORSEMENTS OF CREMATION.

I wish I could give you the expressions of opinions which have appeared from time to time in articles on this subject. In a publication entitled "Opinions on Cremation" strong pleas and expressions of high approval are given by hundreds. Among the names which appear there I cite only a few:

Prof. Felix Adler, New York.  
William Waldorf Astor, New York.  
Rev. Samuel L. M. Barlow, New York.  
Dr. N. E. Brill, New York.  
Rev. Edward Everett Hale, D.D., Boston.  
Hon. Abram S. Hewitt, New York.  
Rev. R. S. MacArthur, D.D., Calvary Baptist Church, New York.  
Rev. R. Heber Newton, D.D., New York.  
Rt. Rev. Henry C. Potter, bishop of New York.  
Dr. Edward M. Sternberg, surgeon-general U. S. Army, Brooklyn.  
Charles F. Wingate, sanitary engineer, New York.  
Ella Wheeler Wilcox, New York.

Of the many great men who, true to their convictions, made provision that their bodies should be cremated and whose mortal remains, in accordance with their request, were incinerated, let me mention only the following:

Prof. Samuel D. Gross, one of the greatest of surgeons.  
Gen. William Ludlow, U. S. Army.  
Robert G. Ingersoll, philosopher and fearless agnostic.  
Percy B. Shelley, poet.  
Anton Seidel, musician.  
John White Chadwick, Unitarian divine.  
George E. Waring, Jr., the skilful engineer and sanitarian.  
Dr. Peter Dettweiler, my own beloved teacher, the creator of modern phthisiotherapy and founder of the first sanatorium for the consumptive poor.

#### AUTHOR'S QUESTIONNAIRE.

To get direct answers which I could utilize for this paper I sent out a number of letters to well-known clergymen, educators, sociologists, sanitarians and physicians. The following three questions were asked:

1. Do you or do you not approve of cremation from a sanitary point of view?
2. Do you or do you not think it a social and economic advantage to the individual and the community at large to have cremation take the place of inhumation?
3. Do you or do you not object to cremation from any other point of view (legal, religious or ethical)?

Nearly all my letters were answered with cordiality, and I desire to express herewith my deep appreciation and thanks to all my correspondents who have thus honored me and have been helpful by bringing their opinions to bear on this important subject. Many of the answers were highly interesting, and I hope I will be permitted to publish them in full in connection with a second article on this subject. For to-day I content myself by simply mentioning the names and giving their answers collectively and refuting, as far as I can, the

few statements which were expressed adversely to cremations.

#### ANSWERS FAVORABLE TO CREMATION.

To questions 1 and 2, concerning approval or disapproval of cremation from a sanitary and economic point of view, the following answered approvingly, and to question 3, asking for an expression of opinion regarding the possible legal, religious or ethical objections, a negative reply was received from the same:

Miss Jane Addams, Hull House, Chicago.  
Prof. Frank Billings, M.D., LL.D., Chicago.  
Dr. John W. Brannan, president board of Bellevue and Allied Hospitals, New York.  
Prof. Nicholas M. Butler, president Columbia University.  
Prof. Edward T. Devine, Ph.D., LL.D., secretary of New York Charity Org. Society.  
Hon. Robert De Forest, former tenement-house commissioner, New York.  
Prof. Irving Fisher, Yale University.  
Prof. Franklin H. Giddings, Columbia University.  
Rev. Emil G. Hirsh, Ph.D., Chicago.  
Prof. A. Jacobi, M.D., LL.D., New York.  
Prof. E. G. Janeway, M.D., LL.D., New York.  
Prof. W. W. Keen, M.D., LL.D., Philadelphia.  
Hon. Herman L. Kudlieh, former magistrate, New York.  
Ernest J. Lederle, Ph.D., consulting sanitary expert, New York.  
Comptroller H. A. Metz, New York.  
Dr. A. E. Maedonald, formerly superintendent of Manhattan State Hospital for Insane.  
Prof. T. M. Prudden, M.D., LL.D., New York.  
Prof. F. C. Robinson, president of American Public Health Association, Brunswick, Maine.  
Prof. D. B. St. John Roosa, M.D., LL.D., New York.  
Rev. Thomas R. Slieer, minister of All Souls' Unitarian Church, New York.  
George A. Soper, Ph.D., consulting sanitary engineer, New York.  
J. G. Phelps Stokes, New York.  
Prof. James Tyson, M.D., LL.D., Philadelphia.  
Prof. William H. Welch, M.D., LL.D., Baltimore.  
President R. S. Woodward, Carnegie Institution, Washington, D. C.  
Surgeon-General Wyman, Washington, D. C.

President Eliot, of Harvard, writes that he approves of cremation from a sanitary point of view and has no religious, legal or ethical objection to this mode of disposing of the dead, but in his opinion the option should be open regarding question 2. He thinks that in different communities different answers will be given to the question whether it is a social and economic advantage to the individual and the community at large to have cremation take the place of inhumation.

Prof. W. W. Keen, M.D., LL.D., Philadelphia, who answered questions 1 and 2 in the affirmative and No. 3 in the negative, permitted me in addition to publish the following letter:

You are at perfect liberty to state that my own body will be cremated with the knowledge and consent of my children. You are also, of course, at liberty to state (because cremation at that time created more remarks than it does now) that in accordance with the understanding between my dear wife and myself her body was cremated also. I feel very strongly in reference to the advisability of cremation and am, therefore, perfectly willing that my personal and family arrangements shall be known, although ordinarily I should shrink very much from making public such private family affairs.

The Hon. H. C. Kudlieh added to his approval of cremation on sanitary and economic grounds the following important expression concerning the possible legal objection:



Evidences of crime may be destroyed by cremation, but it is conceivable how, with proper regulation, this may be reduced to a minimum.

Mr. Andrew Carnegie, while not expressing any opinion on the sanitary, legal, religious or ethical aspect, wrote as follows:

I think cremation is fast becoming necessary, especially near large cities.

Dr. A. H. Doty, Health Officer of the Port of New York, wishes to emphasize his approval of cremation only in cases in which persons died from infectious diseases.

The Hon. H. A. Metz, comptroller of New York, expressed approval of cremation from every point of view, but particularly in relation to large communities.

The well-known sociologist and philanthropist, J. G. Phelps Stokes, wrote me the following interesting letter:

I am pleased to say that I regard cremation as the most rational method of disposing of pauper dead. The present system in operation in the public burying-grounds of this city appears to me to be indefensible. I think any citizen of New York who would visit the potter's field on Randall's Island would be overcome with horror at the appearance of the pauper trenches there and at the methods in vogue. In expressing approval of cremation for the pauper dead I would make exception, when practicable, in cases of such as might, prior to their deaths, express deep religious or other conscientious objections to it.

As to the balance of population, I should regard cremation as of social and economic advantage to the individual and the community only in so far as the individual and the community might approve of it. I should not approve of enforced cremation against the will of the individual, except in cases of an extreme nature, as, for instance, of virulent contagion, when the safety of the community might require it. I have no objection to cremation on legal, religious, ethical or other grounds.

Dr. Thomas Darlington, commissioner of health, New York City, answering question 1, regarding sanitary aspect of cremation, approvingly writes:

The application of the principle is not easy. The first step in any great reform is the important one. Perhaps the most feasible recommendation I can make is this: To advocate the cremation of the unclaimed dead at the morgue, instead of burying them, as at present, in the potter's field. This would be an entering wedge and would prove, perhaps, a wise beginning. Gradually the system could be further applied as opportunity offers.

Professor Janeway kindly wrote as follows:

There is but one valid objection to cremation, and that is on medicolegal grounds; cremation would destroy evidence of poisoning in case such had happened. This should thoroughly be provided for by rigid examinations of facts preceding death in case of cremation and also of body, if need be.

President Woodward, of the Carnegie Institution, Washington, D. C., wrote:

With respect to your query about cremation, I would say that this process of disposition of the dead seems to me to be worthy of approval from all points of view, sanitary, social, economic, legal and ethical. It does not necessarily follow, however, that it would be wise to seek immediately to put in operation a change so radical as the general adoption of cremation would be. Here, as in other matters, we must learn a lesson from the general process of evolution and be content if improvement comes only painfully slowly.

Many well meant reforms have failed of approval by reason of over zeal of reformers and by reason of a general lack of appreciation of the benefits of the reforms. My impression is that the best way to impress the advantage of the reform in question on society at large is for the reformers themselves not only to advocate the reform but to offer themselves as object lessons. This I am willing to do in my own case.

To the main objection to cremation, such as is graphically pointed out by Professor Janeway in the preceding letter, I have almost the same answer as he and Judge Kudlich were good enough to express. I would go one step further and make a thorough post-mortem inspection of the entire body and a chemical examination of the stomach and intestines with an official report of the findings obligatory in all cases, before a certificate for cremation is granted.

The Rt. Rev. David H. Greer, bishop-coadjutor, was good enough to send the following letter, which speaks for itself:

I must confess that cremation is a subject which has interested me a good deal, and yet I have not come to any positive conclusion about it. From a sanitary point of view it certainly is much better than inhumation, but from a sentimental point of view (and the sentiments of the persons more immediately concerned must be regarded at such a time) I have some misgivings about it. I should prefer cremation for myself, but not for one of my family.

#### ANSWERS NOT FAVORABLE.

In justice to the few of my correspondents adverse to my views I feel that before closing I must reproduce the essentials of their letters.

Dr. E. L. Trudeau, director and founder of the great Saranac Lake institution, the Adirondaek Cottage, had the kindness to write as follows:

I have given the subject of cremation no special thought and I have no very decided opinion about it. On legal, religious and ethical grounds I am opposed to it.

The replies of Judge Alfred E. Ommen to the respective questions were:

1. Yes, but purely from a sanitary point of view.
2. I presume from a financial standpoint cremation is cheaper and has the advantage of leaving land now used for inhumation to be used for houses and other purposes.
3. From a legal standpoint there are many objections that may be raised against cremation. For example, the determination as to whether a person has been murdered or not. Often people are found dead under some suspicious circumstances. An investigation is made and nothing is found. The body is buried and then a month or two later a number of things arise that prove murder. It needs only the confirmation of an analysis or examination of the body. If there were cremation this evidence would, of course, be destroyed; and murderers like Carlyle Harris, Dr. Buchanan and Patrick would have gone free.

I am also frank to state that, not from any religious standpoint, but purely from the standpoint of sentiment and affection, there is something unnatural to me in the burning of a human body and the entire obliteration of any remains, except a handful of ashes. I know that there are many people who look on such a state of mind as maudlin sympathy, yet at the same time I feel that a flower-covered grave keeps many a man straight and causes memory to go back and produces feelings and conduct toward his fellowmen which he would not ordinarily have.

As I said, the proposition from a sanitary and a financial standpoint is a good one, and if that were all I believe the world would adopt it immediately. You know that this world is getting to be colder and colder all the time, and we are becoming very practical and plain, matter-of-fact. The rush for money, power and glory is stifling all those ethical and grand qualities that many of our ancestors possessed. Our home influences are waning and to me it is a very serious situation. I am very much inclined to cling to anything, even though possibly insanitary and more expensive, that will stir in men and women better feelings and cause them to halt in the mad chase for power and wealth. Of course, you might say that a grave can be made by simply burying an urn containing ashes. If that were done that would occupy land and the question would resolve itself into one of sanitation.



## OBJECTIONS CONSIDERED.

To my esteemed friend Dr. Trudeau's objection to cremation on religious and ethical grounds I make no reply, except to honor him for his high sentiments. To Judge Ommen I feel particularly grateful for his elaborate reply. Concerning his legal objection I refer him to Dr. Janeway's letter, and what I said above about postmortem examination of the body as a whole and the chemical analysis of stomach and intestines of all bodies before cremation. In reply to the pessimistic sentiments expressed—for example, that this world is growing colder and colder—I must take issue with my good friend.

Those of us who are interested in practical philanthropy will bear out my statement when I say that, on the contrary, there never has been so much practical good done to our less fortunate fellow men as in our time. More noble men and women devote their lives to the amelioration of suffering now than at any other time in the history of mankind. When the Hon. Alfred E. Ommen enters on ethical aspects and speaks of sentiment and affection I feel that my own power of expression will not be sufficient to convince him. I simply wonder what he means when he speaks of cremation as something unnatural, and why he considers it an entire obliteration.

How can a sentiment which is purely imaginary be of real benefit to mankind? The only uplifting influence that could come from a grave would be from the thought that there was something left there to be loved. One look at the real contents of a grave would remove this sentiment forever. It is the memory of the loved one, the influence of his noble actions, the results of his goodness that remain to guide, help and uplift us. The grave merely symbolizes this through our early associations and religious training. Could not ashes and an urn symbolize this as well as decay and corruption and a mound of earth? Has not our immortal Longfellow, poet and seer, told us:

"Dust thou art, to dust returnest, was not spoken of the soul."

The following beautiful words from the Rev. Thomas R. Slieer on the subject will, I know, answer Judge Ommen's objections to cremation on ethical and sentimental grounds much better than I, with only a medical training, could possibly do:

I approve of cremation as a means of returning by the quickest possible process the chemical constituents of the body to the earth, to which that body is nearly related. The decay of the grave is combustion. It seems rational to accomplish in three hours what is badly done by the slower processes in thirty years. Nothing seems to me a more direct affront to Nature than hermetically to seal up a human body and then place it in the ground, as though one defied Nature to have access to that which belongs to it. I think no one can witness the incineration of a human body without feeling that a clean flame has sincerely and quickly disposed of the only part of the body which can be consumed, leaving the remainder to be returned to the earth as it was. I do not see how there can be any religious objection to cremation, except from the standpoint of those who believe in the resurrection of the physical body; but as all intelligent students now who believe in immortality rather believe that you can not bury a man and that eternal life is a condition and not a place, this objection from the religious standpoint must soon disappear. Feeling, as I do, that all the real relations are spiritual, and that everything else is incidental to the communion of one human soul with another, I shall be glad to see the time when society shall more generally approve of disposing of the house of life by means

which shall remove its decaying structure quickly and with the least danger to the survivors. The fundamental proposition in my thinking is that man has a body, but man is a spirit. I have always felt that the seabird that flew back and forth over the flame in which Shelley's body was consumed on the shores of the Mediterranean might very well typify a liberated soul which stayed its flight awhile to watch its cage consume.  
16 West Ninety-fifth Street.

[FOR THE DISCUSSION ON THE PAPERS OF DRs. HOLDEN, HAYNES AND WHEATON (PUBLISHED JANUARY 19) AND BEGGS AND KNOPE, SEE PAGE 360.]

## THE OPSONIC CONTENT OF THE BLOOD OF INFANTS.\*

SAMUEL AMBERG, M.D.

Associate in Pediatrics, Johns Hopkins University.  
BALTIMORE.

In 1901 Moro<sup>1</sup> pointed out that the bactericidal power of the blood serum of breast-fed infants markedly exceeds that of artificially fed ones. It was thought of interest to determine the opsonic content of the blood of infants raised under different conditions; particularly as the recent researches of Wright, his pupils and other investigators here and abroad seem to show that these substances which prepare the bacteria for phagocytosis play an important rôle in the defense of the organism against certain forms of bacterial invasion. The method employed to determine the opsonic content of the blood was that described by Simon and Lamar,<sup>2</sup> and I adhered the more closely to this method, as I intended to compare my results with those obtained by Simon in adults. Furthermore, the method of Simon recommended itself for another reason. The work can be carried out without assistance and without continued comparison with normal individuals.

## PROCEDURE.

Briefly, the procedure is as follows:

The serum is diluted with a 1 per cent. saline solution in a proportion of 1 to 20 by means of a pipette used in the counting of white corpuscles. Then twice nine divisions of the pipette are put in a small glass tube. In preparing a dilution of 1 to 40 nine divisions of the dilution 1 to 20 are mixed with nine divisions of the saline solution. The tubes are then charged with bacteria directly from an agar tube. Lastly, the equivalent of 6 divisions of an emulsion of blood corpuscles containing the leucocytes is added from a specially calibrated pipette. In this manner the total amount of fluid contained in each tube corresponds to 24 divisions of the pipette. The blood corpuscle emulsion is obtained in the usual way. The blood is taken up in a 0.1 per cent. solution of ammonium oxalate in 1 per cent. solution to prevent coagulation. The blood corpuscles are sedimented and washed three times with 1 per cent. saline solution with the help of the centrifuge. Finally, the supernatant fluid is pipetted off as completely as possible and the sediment is stirred up. The charged tubes are kept in the incubator for one-half hour. Smears are made and stained with alkaline aqueous methylene blue, so that the red blood corpuscles remain unstained. Then the percentage of leucocytes which have taken up bacteria is determined.

In most cases 50 cells were counted and this proved sufficient, since the counts of the first 25 cells agreed

\* From the children's department of the Johns Hopkins University.

\* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. "Biologische Beziehungen zwischen Milch und Serum," *Wien. klin. Wochschr.*, 1901, p. 1073. The objections of Schutz (*Jahrb. f. Kindh.*, 1905, lxi, p. 122) do not seem to be valid, since his method of experimentation does not seem to permit of a comparison with the work of Moro.

2. *Johns Hopkins Hosp. Bull.*, January, 1906, xvii.



very well in the great majority of cases with those of the second 25. In some instances, particularly when this agreement was not good, as many as 200 cells were counted. In a number of cases not only the percentage of phagocytizing leucocytes was determined, but at the same time the number of bacteria taken up by the single leucocytes were counted. The average number of bacteria taken up by a leucocyte designates the phagocytic power (Wright). Thus it was found that in cases in which, in a dilution of 1 to 20, 100 per cent. of the leucocytes had taken up bacteria the values for the phagocytic power showed a great difference from those obtained when the serum was employed in greater concentrations. For instance:

Serum.	Percentage of phagocytosis.	Phagocytic power.
I. Concentrated .....	100	23
1 to 20.....	100	10.5
II. Concentrated .....	100	19.5
1 to 20.....	100	11.2

In cases in which the percentage of phagocytosis in a given dilution is very high, it may become necessary either to determine the phagocytic power or to employ higher dilutions in order to establish striking differences between the sera to be examined.

In 31 instances the phagocytic power was determined at the same time with the percentage of phagocytosis and the average phagocytic power was calculated which corresponded to the percentage of phagocytosis in the following manner:

Percentage of phagocytosis.	Phagocytic power.
90 to 100 (exclusively.)	9.7
80 to 90	5.6
70 to 80	4.3
60 to 70	3.8
50 to 60	2.6
40 to 50	2.2
30 to 40	1.4
20 to 30	1.0
10 to 20	0.5

This table seems to indicate that, as a whole, a correspondence exists between the percentage of phagocytosis and the phagocytic power. It must be mentioned, however, that the individual values for the phagocytic power in the different groups showed rather considerable variations. This is probably due to the fact that the method employed does not permit an exact comparable determination of the phagocytic power. Thanks to the kindness of Dr. Potter, I was able to convince myself that the time which the serum is permitted to act on the mixture of bacteria and corpuscles, as well as the number of bacteria added, play an important rôle in regard to the number of bacteria taken up by the leucocytes. In the method I employed, the time consumed in the preparation of the single tubes was not the same for all the tubes, and the number of bacteria added in our experiments is necessarily subject to more or less wide variations. Whether these factors operate to the same extent in the dilutions employed is questionable.<sup>3</sup> Nevertheless, it is very probable that, as a rule, a correspondence exists between the percentage of phagocytosis and the phagocytic power, particularly in the class of cases which I observed. In spite of the inherent crudeness of the method, the table may be taken as an expression of this relation without paying attention to the exactness of the figures.

In all my experiments the tubes were kept in the thermostat. for one-half hour, but from the following experiments it does not seem to make a material difference in regard to the percentage of phagocytosis whether the time of incubation is one-quarter or one-half hour.

3. These factors do not seem to play an equally important rôle in regard to the percentage of phagocytosis, at least not within limits easily to be controlled.

	One-half hour.	One-fourth hour.
Serum I. 1 to 20, 88 per cent.		92 per cent.
Serum I. 1 to 40, 50 per cent.		50 per cent.
Serum II. 1 to 40, 4 per cent.		6 per cent.

Heating the serum to 59 C. for ten minutes prevented the phagocytosis completely. For instance, a serum one-half diluted gave a phagocytosis of 100 per cent., while after heating no phagocytosis occurred.

A large number of control experiments were conducted, using saline solution in place of serum. Frequently these controls were entirely negative, but in a number of instances one or two cells were counted as positive. These cells contained one or two cocci, rarely as many as four. It was not always certain whether these cocci were actually in the cells, but these cells would in all probability have been counted as positive in the regular counts. In the figures given in my tables it was not deemed necessary to make any corrections, as this possible error seems to fall well within the errors of the method.

ANALYSIS OF CASES.

Although it is well known that different bacteria are not equally susceptible to phagocytosis I used only the *Staphylococcus citreus*. This seems to be permissible, since Simon<sup>4</sup> has found that if the percentage of phagocytosis for a normal serum is high for one kind of bacterium it is correspondingly high for others, while the absolute values for the different organisms may vary considerably. It must be noted that we are not dealing here with immune opsonins and that cases of infection with *Staphylococcus citreus* are not very common so far as I am aware. The total number of cases examined was 45. In only a few instances could the examinations be repeated, on account of the strong objections of the mothers.

The average percentage of phagocytosis in 20 normal adults was determined by Dr. Simon with the *Staphylococcus citreus*. He found for the dilution of 1 to 20, 37 per cent.; for 1 to 40, 9 per cent. The highest values for 1 to 20 were 72 per cent.; for 1 to 40, 42 per cent. The lowest for 1 to 20 was 12 per cent.; for 1 to 40, 0 per cent. But there are individuals who present rather constantly higher values. Thus my own serum gave repeatedly for 1 to 20 88 per cent.; for 1 to 40, 50 per cent. In a few other individuals still higher values were obtained.

GROUP 1.

No.	Age, days.	Color.	Sex.	Weight, gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1 a	5	W.	M.	3740	Gaining weight.....	96	84	88
1 b	12	...	M.	4135	.....	90	81	99
2	6	...	M.	3590	Gaining weight, slight icterus...	92	78	85
3	20	Y.	F.	3750	Gaining weight.....	98	88	90
4	3	...	F.	3150	Gaining weight.....	100	70	70
5	10	C..	F.	3952	Gaining weight.....	98	76	78
6	16	W.	M.	4360	Gaining weight, admitted.....	90	66	73
7	9	C..	M.	3350	Gaining weight.....	92	40	43
8	9	C..	M.	3500	Gaining weight.....	92	68	73
9	5	W.	M.	4330	Gaining weight, strong.....	62	30	48
10*	45	W.	M.	3620	Admitted not well nourished; eruption on scalp.	48	14	29
Average.....						87	61	

\* About one and one-half months.

My own cases may be divided into several groups. The first group is composed of 10 breast-fed infants varying in age from 3 days to about 11½ months. These babies were inmates of the maternity ward of the Johns Hop-

4. Jour. of Exp. Med., viii, 1906, 6; also Am. Jour. Med. Sci., 1907 (about to appear).



kins Hospital, and I express my indebtedness to Dr. Williams and to his staff for the courtesy with which they placed the material and their laboratory at my disposal. Some of the members of this group had received occasionally some additional feeding besides the breast. But the breast feeding always greatly preponderated. Case 10 showed the lowest values. This infant was admitted to the hospital 3 or 4 weeks after birth with a weight of 3,500 gm. The state of nutrition was rather poor, but no special lesions could be made out. The other babies were all doing well. The average values of these cases are higher than those for normal adults. Wright<sup>5</sup> states that the phagocytic power of the newborn infant equals about that of the mother. If we should be permitted to assume that the percentage of phagocytosis of the

GROUP 2.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1	4	W.	F.	...	Mild pertussis; overfeeding; good nutrition.	90	50	56
2	4	W.	M.	3175	Vomiting; squamous eczema; two days no food.	94	66	70
3	4	W.	M.	5640	Irregular prolonged nursing; strong; good nutrition.	90	58	64
4	4	W.	M.	6435	Overfeeding; rachitis; exudative diathesis.	46	14	30
5	2	C.	M.	3800	Lues; rachitis; overfeeding.	68	42	62
6	1 1/4	C.	F.	2040	Lues, rachitis; slight overfeeding; poorly nourished.	32	16	50
7	9	W.	M.	8420	Mild bronchitis.	82	48	59
8	8	W.	M.	5895	Rachitis; bronchitis; irreg. feeding; always weak and cross; temp. 99.4.	56	28	50
9	3	W.	M.	5440	Pertussis moderately severe; mild bronchitis; overfeeding; temp. 99.4.	44	14	32
10	9	W.	M.	...	Right ear running; right cervical glands enlarged; pale; mild bronchitis; well nourished; temp. 99.	96	80	63
Average.....						70	42	

mother's blood coincides with the values for normal adults, as determined by Simon,<sup>4</sup> we would find an analogy for a discrepancy between the mother's and infant's blood in the results of Moro.<sup>1</sup> He found that the bactericidal power of the serum of the newborn before feeding equals that of the placental serum, while later on it increases markedly.

GROUP 3.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1	11	C.	M.	6520	Breast and oatmeal; rice., etc.; temp. 99.2.	74	48	65
2	2	W.	M.	5160	Rachitis; fairly well nourished; breast and cow's milk diluted; constipated.	64	6	9
3	6 1/2	W.	M.	6150	Breast, since two weeks, plus diluted cow's milk; rachitis.	100	64	64
4	3	C.	M.	3175	Breast and condensed milk; infiltrated areas on head; wasting since two weeks.	42	10	24
5	3	C.	M.	...	Breast and cow's milk; cranio-tabes; well nourished; feeding irreg.; vomiting; constipation.	16	3	
6	7	C.	F.	7340	Breast, since three months, plus oatmeal bread, potatoes, etc.; slight rachitis; strong, well looking.	53	40	75
Average.....						58	28.5	

The second group is composed of 10 breast-fed infants which were brought to the Johns Hopkins Hospital Chil-

dren Dispensary, ranging in age from 3 weeks to 9 months. These infants were suffering from different ailments, but their temperature did not exceed 99.4. In this group also additional feeding was given occasionally, but not regularly. The low values of Case 6 were obtained in a poorly nourished syphilitic baby 5 weeks of age. Here we have apparently to deal with a secondary malnutrition. Of interest is Case 4, with a phagocytosis of 46 per cent. and 14 per cent., respectively. Although the weight here does not indicate any disorder of the nutrition, nevertheless the anemia, an itching urticaria-like eruption of the skin, together with a scaly itching eruption and multiple areas of infiltration of the scalp with enlargement of the cervical glands and an erosion of the skin near the back of the head, may perhaps be taken as symptoms of the exudative diathesis of Czerny,<sup>6</sup> in which a diminution of the normal immunity is supposed to exist.

The third group is composed of six cases, which received regularly, besides the breast, some other food. The age varies between 2 and 11 months.

The fourth group is composed of 13 artificially fed babies, mostly fresh or condensed milk being used in these cases. The age varies between 10 weeks and 15 months.

GROUP 4.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1 a	4	W.	F.	4250	Seven weeks breast, then cow's milk, in diff. modif.; gaining weight; slight gen. glandular enlargement; rachitis; slight emaciation; vomiting; temp. 99.4	82	32	39
b	4.5	W.	M.	4220	Doing poorly; temp. 98.6.	38	16	42
2	2.5	W.	M.	3345	Emaciated; diff. modif. of cow's milk; lues.	...	38	
3 a	3	W.	F.	5045	Condensed milk; intertrigo; eruption of skin.	98	78	80
b				5160	Cow's milk.	100	72	72
4 a	9	W.	F.	5045	Breast five wks., then cow's milk; rachitis; poorly nourished.	56	22	34
b				5215				
c				5070	Not doing well.	58	10	17
5	13	W.	F.	9130	Breast eight months, then condensed milk and careful table diet; slight rachitis; looking very well.	70	54	77
6	6	W.	F.	6125	Breast two mos., mixed feeding to three and one-half mos., then cow's milk 99.4°; since one wk. condensed milk; bronchitis.	70	14	20
7	2.5	W.	M.	...	Condensed milk; irregular, mild bronchitis; disorder of nutrition due to excess of carbohydrates.	14	8	
8	4	W.	M.	3430	Condensed milk; disorder of nutrition; carbohydrates.	10	8	
9	11	W.	M.	6095	Breast two wks., condensed milk. Lues, <sup>2</sup> spec. fam. history; 99°.	18	2	
10	3	C.	F.	3290	Diluted cow's milk; slightly emaciated.	90	22	55
11	3	W.	F.	2780	Condensed milk; emaciated.	60	22	36
12	15	W.	F.	6040	Breast three mos., cow's milk, the condensed milk, then cow's milk; temp. 98.9; "Milchnährschaden." <sup>6</sup>	48	24	50
13	6	C.	F.	5670	Breast two mos.; cow's milk according to directions.	42	20	48
Average.....						49	25	

Cases 7 and 8 are of special interest. Both infants presented the clinical signs of a disorder of nutrition, e. g., alimentation, due to excess of carbohydrates, as described by Czerny and Keller.<sup>7</sup> In both cases the percentage of phagocytosis is very low. This result would well support the clinical observation that the resistance of these infants toward infection is markedly dimin-

5. Proc. Royal Soc., 1904, lxxiv, p. 147.

6. "Die Exudative Diathese," Jahrb. f. Kindhkl., 1905, lvi, p. 199.

7. "Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie," ii.



ished. Both were raised on condensed milk. But the infant in Case 3, which gave the highest values, was also raised on condensed milk, but in that case the symptoms attributable to a faulty diet were very mild. Therefore, there must be other factors besides the food which influence the opsonic content of an infant's blood.

The fifth group is made up of six cases, the age varying between 3 and 20 months. In four of these cases the temperature exceeded 100, while the other two cases were too abnormal to be taken into consideration in the other groups.

GROUP 5.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks,	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1	20	W.	F.	7770	Rachitis; measles; ulcerative stomatitis; bronchitis; temp. 103.4°	92	56	61
2 a	4	W.	M.	6350	Art. fed; rachitis; bronchitis; left ear running; enlargement cervical glands; temp. 103.8.	51	26	46
2 b	...	...	...	6125	Temp. 101. ....	84	32	38
3	3	W.	F.	...	Breast; intertrigo; papular vesicular eczema of limbs and trunk; temp. 101.6.	96	41	43
4	20	W.	F.	8364	Mixed feeding; indigestion; temp. 101.4.	92	64	70
5 a	6	C.	F.	...	Breast; accessory fingers on both hands; lues; hydrocephalus.	86	22	20
5 b	...	...	...	4395	Losing weight. ....	74	16	22
6	7	W.	F.	3715	Breast; emaciated; anemic; liver and spleen much enlarged; leukopenia.	66	14	21

The febrile cases were not classified in the other groups, since it is known that in acute diseases the phagocytic power may vary considerably, and Simon frequently found high values in such cases.

RESULTS.

Summing up the results obtained in our series of investigation, we have as average values for the percentage of phagocytosis:

	Average per cent for		Highest per cent. for 1:20.	Lowest per cent. for 1:20.	Highest per cent. for 1:40.	Lowest per cent. for 1:40.
	1:20	1:40				
Group 1. Breast-fed hospital cases. ....	87	61	100	48	88	14
Group 2. Breast-fed dispensary cases..	70	42	96	32	80	14
Average for Groups 1 and 2. ....	79	52	...	..	..	..
Group 3. Mixed feeding. ....	58	29	100	16	64	3
Group 4. Artificial feeding. ....	49	25	100	10	78	2

A distinct advantage exists in favor of the breast-fed infants. But if we consider the individual values in the different groups and compare particularly the highest values of the different groups with each other, it is apparent that our results can not be brought in parallel with those of Moro.<sup>1</sup> This author found that the serum of even very weak breast-fed infants exceeds in bactericidal power that of babies artificially fed and doing well. Furthermore, when a breast-fed infant with a serum of high bactericidal power had been fed on the bottle for two weeks the bactericidal power of its serum had decreased considerably. From his experiments the high alexin content of the breast-fed infant's blood seems to be directly a function of the breast milk, and he assumes the presence of alexogen substances in human milk. Some of the high values which are obtained in Group 4 do not permit us to bring the high opsonic content of the breast-fed infant's blood in direct relation to the human milk. While the kind of food may exercise

a certain influence, other factors must enter into consideration. The state of nutrition seems to be one of these. Within certain limitations we may take the weight of an infant as an indication of the state of its nutrition. Since, with the exception of the first group, the birth weight could only be ascertained in a few cases, I will here only cite striking differences.

In Group 1 the lowest values were obtained in Case 10, which in relation to its age shows decidedly the lowest weight. In Group 2, Case 6 holds the same position as Case 10, Group 1, and here, too, the values were low. In Group 4 are 3 infants, each 3 months of age, and the values are: Case 3, average weight, 5,100; 1 to 20, 99 per cent.; 1 to 40, 75 per cent. Case 10, weight, 3,290; 1 to 20, 40 per cent.; 1 to 40, 22 per cent. Case 11, weight, 2,780; 1 to 20, 60 per cent.; 1 to 40, 22 per cent. While in these cases the lowest weight does not coincide with the lowest values, nevertheless the greatest weight certainly is combined with the highest values.

But while we have cases indicating the state of nutrition as a factor in regard to the opsonic content of the blood of infants, there are other cases which do not show this influence very distinctly. Thus in Group 1 is Case 9, a case in which the infant, according to its weight and its clinical aspect, was in a very good state of nutrition. Nevertheless the values obtained in this case were relatively low. In Group 2, Case 9 gave low values, in spite of the good weight. In Group 3, Case 5 gave the lowest values, although the baby seemed to be well nourished. In Group 4, Case 4 gave relatively high values, although the infant's weight was low for its age. Therefore, it is probable that still other factors enter into consideration besides the state of nutrition as expressed in the weight of the baby.

Case 4, Group 2, may be taken as one of exudative diathesis. This disorder is supposed to represent a congenital abnormality of the constitution. Although it is not permissible to draw any conclusion from a single observation in a single case, nevertheless this observation may indicate a factor which may govern the opsonic content of the blood, a faulty constitution. Only in a few cases a reliable family history could be obtained, so that no information can be obtained in regard to possible hereditary influences on the opsonic content of the infant's blood. It must be left to further investigations whether the so-called inherited predisposition of the offspring, for instance, of parents suffering with tuberculosis may find a manifestation in the opsonic content of the child's blood.

The average values obtained in my cases exceed somewhat those obtained by Simon<sup>4</sup> in normal adults. Since Simon has shown that a longer period of abstinence from food tends to lower the opsonic content, a possibility exists that the more frequent feeding of infants may to some extent account for this observation. In Case 2, Group 2, the baby's weight was 3,135 gm., and the values recorded are for 1 to 20, 94 per cent., and for 1 to 40, 66 per cent. This baby had received the breast once within 48 hours, and that within the first 24 hours. It vomited promptly. The rest of the time it had been kept on water slightly sweetened with sugar. It was impossible to repeat the examination, so the possibility exists that the usual values may have been higher. Nevertheless it does not seem very probable that the influence of the fasting was a very marked one in this case. In Case 3, Group 1, the values which represent an infant of about the same age but of a higher weight were for 1 to 20, 98 per cent., and for 1 to 40, 84 per cent.



In the last column of the tables the values obtained for the dilution of 1 to 40 are expressed in the percentage of those obtained for 1 to 20. This calculation was omitted in cases in which the values for 1 to 20 were very low. In Group 1 this percentage was the lowest, where the absolute values were the lowest. In Group 2 the same holds good, with the exception of Case 6. In Group 3, Case 2 gave a phagocytosis of 64 per cent. for 1 to 20 and of 6 per cent. for 1 to 40. The value for 1 to 40, expressed in the percentage of that for 1 to 20, is 9 per cent., and this is the lowest value of this series. The difference is here very pronounced. In the other cases of this group the lowest value coincides with the lowest value for the phagocytosis. In Group 4, Case 1 is of interest. Here the absolute values differed markedly on two different examinations, while the percentage of the values for 1 to 40 in relation to those for 1 to 20 did not differ materially. Case 6 of this group corresponds to Case 2 of Group 3. The meaning of the values tabulated in the last column of the tables is not clear.

In summing up results, we must be careful in drawing conclusions from the data given. The dispensary material does not furnish an ideal material to reach final results, and the small number of cases in which the examinations could be repeated makes itself felt very disagreeably. Furthermore, it was impossible to obtain normal infants on which a series of observations covering a longer period of time could be taken, and such a series certainly is very desirable. Therefore, I offer these results only tentatively and more as a basis for further investigation.

Since the blood of normal individuals contains a certain amount of opsonins which are able to prepare a large number of different micro-organisms for phagocytosis, and since these opsonins seem of importance in the defense of the organism against various infections, it seems necessary to determine, if possible, the conditions which govern their amount in the blood of normal individuals. Keeping in mind the restriction mentioned above, the results may be summarized as follows:

1. The opsonic content of the infant's blood does not seem to follow the rules laid down by Moro<sup>1</sup> for the bactericidal power of the blood.

2. The average values for the opsonic content of the infant's blood exceed those laid down by Simon<sup>4</sup> for normal adults.

3. A distinct advantage seems to exist in favor of the breast-fed infant. This advantage does not seem to be dependent as much on the breast feeding as such, but it seems to be dependent to some extent on the state of the nutrition of the infant and perhaps on the constitution.<sup>8</sup>

8. In the Herter lectures delivered in Baltimore in October, 1906, Wright cited the results obtained in the Great Ormond Street Hospital, London, England. Seventy-two infants were examined with regard to their opsonic index for streptococci in order to determine the best time for the operation of cleft palate. It was found that the opsonic index was high (corresponding to that of the mother) during a certain time after birth; then a decided drop was noted with an increase later on. If my results are calculated with regard to the age solely the following results would be obtained: From birth to 1 month (10 observations), 1 to 20, 91 per cent., and 1 to 40, 67 per cent.; 1 month to 2 months (1 observation), 1 to 20, 48 per cent., and 1 to 40, 14 per cent.; 2 months to 3 months, 1 to 20, 45 per cent. (4 observations), 1 to 40, 22 per cent. (5 observations), 3 months to 4 months (6 observations), 1 to 20, 50 per cent., and 1 to 40, 26 per cent., 4 months to 5 months (5 observations), 1 to 20, 60 per cent., and 1 to 40, 31 per cent.; 6 months to 7 months (3 observations), 1 to 20, 71 per cent., and 1 to 40, 33 per cent. These results seem to bear out the observations made in the London Hospital. But with exception perhaps the first month the individual values of the different periods vary too much to permit the conclusion that the opsonic content is dependent on the age solely.

## SUPERSTITION IN TERATOLOGY.

WITH SPECIAL REFERENCE TO THE THEORY OF  
IMPRESSIONISM.\*

EDWIN TAYLOR SHELLY, M.D.

ATCHISON, KAN.

Man has always and everywhere been the plaything of the supernatural, a helpless rodent under the cruel claws of the black cat of superstition. Now and then an individual has escaped from his tormentor, but for the vast hordes of humanity this has been impossible and continues so in varying degree in every inhabited portion of the globe to this day. To the whims and caprices of gods of its own making has mankind too easily been led in the past to attribute every misfortune and every unusual natural phenomenon. No wonder, therefore, that the ancients often accounted in this way for the startling and sometimes hideous defects and deformities known to teratology.

### ANCIENT TERATOGENIC THEORIES.

In the very earliest ages of the world it is probable that some of the terata were themselves deified, or were considered the progeny or at least the simulacra of the gods. Euhemerus was an ancient historian who accounted for the deities of Hellenic mythology by regarding "myths as traditional accounts of real incidents of human history." In this way euhemerism accounts for the teratologic appearance of many of the heathen gods and demi-gods, and we may, therefore, euhemerize Polyphemus into a cyclops fetus; the Centaur into a hydrocephalic calf; Atlas into a case of occipital encephalocele; Prometheus into a fetal exomphalos, etc.

Another theory held that monstrosities were created by the gods purely for their own amusement. This mudpie theory is supposed to survive in such terms as "freak of Nature" and "sport" in botany.

But this theory soon gave way to the monitory or minatory theory which kept a very firm hold on the minds of men for many ages. Monsters were a divine warning or threat and called for the propitiation of the offended diety, whether heathen or Christian, and the deformed infant soon came to be regarded as the proper sacrificial or propitiatory offering to the displeased celestial magnate. Even the mother at times met the same fate as her defective child.

Another theory regarded the appearance of a monster as an awe-inspiring manifestation of the glory and power of God.

Ever since earliest Christian history many persons have looked on the birth of a monster as a penalty for sins committed, a gruesome anthropomorphism still rampant among the ultra pious everywhere.

Associated with the belief in the teratogenic power of the Deity was the idea that evil spirits also possessed this power, and Ballantyne declares that the history of the effects of this notion is so "full of sad, revolting, repulsive and almost incredible incidents that no good purpose can be served by lingering over it, this darkest fancy of the dark ages."

Since the very earliest times the moon and the stars and their changing positions in the sky have been looked on as teratogenic causes. Those ancient experts in divination, the Chaldeans, felt so proficient in their art that they considered it an easy matter to tell not only what stellar combinations caused certain monstrosities, but

\* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.



how the future in turn might be read by the appearance of monstrosities; that is, they lost "the supposed cause of the phenomenon in the supposed effect," and monsters became heralds or portends. This art of prophesying future events by the appearance of monstrosities is known as teratology and was practiced very extensively in Mesopotamia 2,000 B.C., as is shown by remarkably well-preserved and well-executed teratoseopic tablets which have been unearthed by Assyriologists at Nineveh.

Belief in stellar influence on fetal development survived long after the fall of Babylon, and the abandonment of the special Chaldean horoseopic tables. In Alexandria, astrologers of the Second century made very specific claims in regard to the power of the moon, stars and planets as teratogenic factors; and the scholasticism of the middle ages was saturated with this belief. In the Seventeenth century a Danish philosopher ascribed monsters to comets which he regarded as celestial tumors that at times fell to the earth and assumed the shapes and forms of fetal monstrosities. The control which the moon was once supposed to exercise at times over the product of conception is preserved in the word "moon-calf," an embryo or fetus made monstrous through the influence of the moon.

But supernatural agencies were not the only powers invoked as teratogenic factors by the ancients. Because they knew nothing of the microscope, the existence of the ovum and the spermatozoa was unknown to them. In their defective embryology only the semen and the menses were regarded as factors in reproduction, but different writers credited them with possessing varying degrees of influence in reproduction and, therefore, also in teratogenesis. One view of the subject was enunciated by Aristotle as follows:

The blood of the menses is the marble, the semen is the sculptor and the fetus is the statue.

With all these ancient teratogenic theories was associated another one, the hybrid theory, which regarded monsters as resulting from intercourse between different kinds of animals and between man and brutes. Not only the gods of Olympus but the humblest mortal might be the author of a half-man and half-brute; and it was not until the Eighteenth century that we find this theory seriously opposed.

#### THE IMPRESSION THEORY IN MODERN TEXT-BOOKS.

All the foregoing theories of the past have practically been abandoned, at least by modern physicians; but there still remains to be noticed another ancient theory, that of impressionism, which has been more fortunate in this regard, as its popularity has been maintained throughout all the centuries from the days of Jacob down to the present time. It is thus described by Ballantyne:<sup>1</sup>

When reference is made to the maternal impression theory in teratogenesis, probably there is scarcely any one who thinks of it in any sense save in that old and extravagant one which demands belief in an absolute similarity between the thing producing the impression and defect or anomaly resulting therefrom.

The remainder of this paper is to be devoted to combating this superstition, and if an analogy be demanded for appearing before a body of Twentieth century scientific physicians with a formal attack on a popular superstition, it must be looked for in the lamentable fact that popular Twentieth century obstetric text-books written by highly respected Twentieth century obstetric authorities still defend and uphold this superstition.

The latest edition of a text-book written by a Philadelphia professor of obstetrics contains the following remarkable deliverance on this subject:

Maternal impressions may affect the embryo or fetus. . . . There are well-authenticated cases of congenital defects or peculiarities which bear too startling a resemblance to the cause of the impression on the mother during pregnancy, to be dismissed as mere coincidences. One of my patients, less than six weeks pregnant, was on one occasion, seized by the ear and dragged about the room by her enraged husband. The child, born at term, had a triangular piece lacking from the lobe of the corresponding ear. . . . Profound impressions on the mother certainly influence the psychical development of the offspring. The idiocy of Barnaby Rudge, due to maternal shock and fright, is fiction founded on fact. The horror of King James at the sight of a naked sword may well have had its origin in the murder of Rizzio before the eyes of pregnant Queen Mary.

A text-book written by another Philadelphia professor of obstetrics contains the following iridescent gem on this subject:

There is certainly more than mere coincidence in the fact of fright and shock and the subsequent malformation or marking of the fetus. The well-known "elephant man" of England and the "turtle man" exhibited in the United States, with other instances, are familiar evidences of this anomaly.

In the text-book of a New York professor of obstetrics we find the following ebullition of sewing-circle science:

There is no doubt that the mental state (of the expectant mother) may be the cause of modification in the physical, the intellectual and the moral characteristics of her offspring.

Here is the illumination thrown on this question by another New York professor of obstetrics in his text-book:

Instances pointing to the connection between, or dependence of, congenital deformities, both physical and mental, on maternal impressions are too numerous to be completely dismissed as coincidences.

In view of the fact that the maternal impression theory is only seldom called into question and seems to be considered by eminent obstetric authorities fully adequate to account for any physical or psychic defects which may appear in the new-born child, or may even develop in later years, is it any wonder that our popular magazines and journals contain at times, serio-comic articles by lay writers, overflowing with advice and suggestion for the expectant mother? So confident and so specific are their directions that too often the mother is led to believe that she has it easily within her power during pregnancy to mold very accurately the tastes, disposition, character, physical development, and intellectual endowments of her unborn offspring.

#### THE IMPRESSION THEORY COMBATED.

The maternal impressionist has but one argument with which to bolster up his position, the *post hoc ergo propter hoc* argument. A shock or fright is experienced by a pregnant woman; her child is born with a defect which, to a more or less powerful imagination, is found to resemble in some way the cause of the maternal shock or fright; therefore the unpleasant incident caused the "mark."

To the unscientific mind such reasoning seems fully admissible. By such a mind the thousands of occasions on which expected "marks" fail to appear in spite of profound maternal shock during pregnancy are forgotten; and the hundreds of cases in which "marks" do occur, but in which the mother can recall no event or shock to which she can attribute the "mark," are totally ignored. When, however, in the case of some unstable,

1. "Antenatal Pathology and Hygiene."



neurotic woman, a coincidence of maternal shock and fetal mark or defect does occur, the impressionist mind can see only a case of cause and effect.

But perhaps physicians are somewhat excusable for not questioning the validity of such reasoning. Possibly the pall of empiricism has rested on the medical mind for so many centuries that it can not be lightly thrown off. At all events, the character of some of the literature contributed to medical journals would seem to indicate as much. A doctor uses a certain therapeutic measure a few times; his patients get well, and, lo, a valuable discovery in therapeutics is promptly heralded! *Vis medicatrix nature?* Not on your life!

As a worthy example for not a few modern obstetricians who are still laboring under the thralldom of an irrational empiricism, let us point to Blondel of England who, nearly two centuries ago was sufficiently brave and enlightened to declare:

There are so many odds against the imagination theory, that the cases related in its favor can never overbalance those which are against it. They may be compared to an accidental hit of a dream, or the predictions of a fortune teller, which now and then are accomplished.

How can the maternal impression theory account for the occurrence of the innumerable congenital anatomic anomalies found in every dissecting room in organs and structures of which the mother is usually entirely ignorant? Knowing as we do how totally depraved some beings may become, how can we explain, if the truth of the impression theory be granted, the absence of "farms" for the production of human monstrosities for exhibition purposes?

Ballantyne summarizes his views on the causation of monstrosities as follows:

They are the result of disorderly embryology, of disturbed ontogenesis and organogenesis. Many of them are arrested developments and represent stages which ought to have been temporary in ontogenesis, but which have remained stationary while other and neighboring parts were pursuing the path of normal development. In the case of some of them, at least, the amnion would seem to act by pressure, and so delay, or altogether stop, the progress of events in ontogenesis. The amniotic influence, in its turn, may be the result of the action of toxins, poisons and mechanical states which delay the formation of the amnion; or possibly these substances and states may act directly on the embryo and alter its nutrition, and consequently its development and growth.

Other monstrosities, and more particularly those by excess and double terata, may be due to morbid causes acting on the blastoderm before embryonic life begins, or on the ova and the spermatazoa before or during impregnation. On the other hand there are minor monstrosities or malformations which may, perhaps, be produced in the fetal period by the action of intrauterine pressure, or external traumatism; for it must be remembered that certain parts of the organism are still in the formative or embryonic stage, although the organism, as a whole, has passed into the fetal phase. Finally, it is not impossible that the same ultimate causes may be active in all the three periods of antenatal life, although the results are so strikingly different. In all this there is much that is uncertain, obscure, dark; but perhaps

A light

Will struggle through these thronging words at last.

Teratologists have found that there is not a single malformation known to the human species that has not a corresponding malformation in the lower animals, both wild and domesticated. Malformations also occur among birds, reptiles and fishes, and even in crustaceans and in insects. Analogous malformations also appear in the vegetable kingdom where single and double monsters abound, developments which result from arrested,

defective or excessive formative energy, and which even a New York or a Philadelphia professor of obstetrics might hesitate to ascribe to the influence of maternal impressions.

The unfortunate structural aberrations found in teratology originate very early in intrauterine development. Consequently, when a deformity or malformation occurs it often happens before the woman is aware of her condition and practically always long before the maternal mental impression to which the abnormality is ascribed takes place.

RELATION BETWEEN MOTHER AND FETUS ONE OF CONTIGUITY, NOT OF CONTINUITY.

If anatomists may be believed, the relation between mother and fetus is never one of continuity, but only one of contiguity; for immediately on the maturing of the human ovum and its expulsion from the Graafian follicle, the solution of continuity becomes complete and remains so even though fecundation occur and the ovum be anchored to the womb for future growth and development. The physiologic relationship between mother and embryo is so feeble that were it not for the practical difficulties involved, an impregnated human ovum might be transferred from one womb to another without interrupting the growth of the embryo, as has already been done in the case of some of the lower animals.

Later, when the placenta appears, Nature establishes a membranous barrier between the blood of the mother and the blood of the fetus through which communication can occur only by means of osmosis; and in order, apparently, to make the product of conception doubly secure against dangerous maternal nervous shocks or influences, no connection at any time exists between the nervous system of the mother and that of the fetus, not even one of contiguity, as both the cord and the placenta are devoid of nerves.

A maternal nerve force, in order to reach the nervous system of the fetus, would consequently be compelled to leap across a vast nerveless chasm—surely a preposterous assumption. Indeed, the setting hen, patiently hatching her chicks, is physiologically no more separated from her chicks than is the mother from her unborn child. The mother supplies her expected offspring with heat, nourishment and an abiding place; the hen does no less. If maternal impressions can be transmitted in the one case, they can also be transmitted in the other. What is it that saves the mother's own tissues, in immediate contact with her nervous system, from meeting at times with the grave structural catastrophies which her marvelously potential nervous organism is said to inflict on her unborn child? Why is it that the psychic dynamics called forth by the sight of a rat or a neighborhood fire never produce an angioma on the body of the expectant mother?

While Nature is never charitable or forgiving, she is also never unjust; therefore, it is not likely that she gives the female parent any greater power to determine the character and constitution of the offspring than she gives the male parent. If it were otherwise, the influence of the father on his child would be largely subservient to the excessive nervous and mental impressionability of the mother during pregnancy. This would be unfair to both parents and to the child, and is therefore probably untrue.

Should the contention be made that fetal defects might at times result from the same forces which are called into activity during a display of the phenomena



of hypnotism or of telepathy by their being involuntarily projected by the mother into her unborn child, it may be met by the statement that the exercise of the power of hypnotism usually presupposes the conscious action of the will of the operator and at least the "subconscious," if not the conscious, submission of the will of the one operated on. Even conceding the correctness of the violent assumption of the mother's competency as an operator in hypnotism or telepathy, how can we admit the existence of voluntary submissive powers, even the most subliminal, in a being that has not yet crossed the threshold of conscious existence?

#### BALEFUL EFFECTS OF THE IMPRESSION THEORY.

Practically all modern obstetric text-books contain the latest important findings in regard to the development of the embryo and fetus; their authors seem to understand the subject thoroughly. This same knowledge has long since led teratologists to lose all faith in impressionism, but, curiously enough, no such effect has been noted in the case of certain obstetric authors who seem unable to cast off this moldy old belief of the fathers, the grandfathers, and the grandmothers.

One of the baleful effects of the prevalence of this belief among medical men, as pointed out by Ballantyne, is the influence which it has on the study of teratology. Cases of congenital deformity which should receive careful, scientific investigation afford only an excuse for idle speculation concerning the kind of mental processes the mother must have experienced in order to produce a certain fetal accident; or the reporter sees nothing in a so-called mark but a fanciful resemblance to some animal, fruit, vegetable or other object.

In view of the fact that underestimation of our excellence in every department of human knowledge and achievement has never been a very conspicuous trait among us as a nation, it is not surprising that European scientists can very poorly disguise their astonishment or suppress their ridicule at the prevalence of a belief in the theory of maternal impressions among some of the leaders of American medicine.

Indeed this state of affairs ought to be the source of the keenest chagrin throughout the profession in this country; and the medical pew should demand so loudly and so urgently of the medical pulpit that it cease to preach this impossible dogma in order that the absurdity may soon be banished from our obstetric text-books and be relegated to the lumber-room long since prepared for child-bed fever, the prophylactic buckeye and pow-wow.

Are not the burdens, apprehensions, and indispositions of the average sensitive, expectant mother already great enough without our making her wrongfully believe that she must also assume the awful, crushing responsibilities entailed by belief in the theory of impressionism?

Surely, the constant aim of friends and accoucheur should be to smooth her way wherever possible, to guard her diligently against the real and the fancied pitfalls of expectant motherhood, and, last of all, to make the racking culmination of her waiting season as safe and bearable as may be. But such a tolerable estate can not be hers if superstition's ugly form be suffered to beset her every step and to threaten her awaited babe with hideous marks and shapes. 'Tis true that mishaps, such as these, do now and then occur; but when one does appear, the broken-hearted mother should promptly be assured that such a calamity can never be ascribed, with truth, to fancy, fright, or fear. To be the mother of an

ill-shaped child is harrowing enough without the heartless, unjust charge that she herself, perchance, is most to blame for her misfortune and her babe's.

Grievously to deplore the fact that we ourselves are most to blame for the tenacity with which this medievalism still holds sway throughout our land, is well; but that is not enough. Led by men like Piersol, Cooke and Bacon; like Woodruff and DeLee, no earnest member in our ranks should hesitate to help with righteous zeal to dissipate this gross anachronism, this hideous specter of a cruel, barbarous, superstitious past.

FOR THE DISCUSSION, SEE PAGE 363.

#### THERAPEUTIC USES AND DANGERS OF THE ROENTGEN RAYS.\*

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The value and power of therapeutic agents and methods are determined by the results obtained by those competent to use them. Judged by this standard, the Roentgen rays have established their value as a powerful therapeutic agent. A distinction must always be made in judging results between deficiencies in the method and defects in the technic of its employment. As a therapeutic agent, the rays have proved themselves to be potent stimulants, alteratives and even destroyers of tissue. They produce results, that can not otherwise be obtained, by influencing metabolism. They stop pathologic processes, cause the absorption of pathologic tissue, stimulate normal processes of growth and repair and restore the tissues to their normal state.

These effects were first recognized by their injurious action, but their therapeutic value has been carefully studied and determined. Efficient methods have been developed for guarding against their injurious effect, while a breadth of therapeutic application has been found that is only limited by the technic of their use. They influence the general processes of nutrition and metabolism by their action on the trophic nerves, the blood vessels, and, apparently, by a direct action on the cells themselves. Not only is the field of usefulness wide because of this systemic action, but it is also varied because of the complex character of the agent, its effects varying widely with the quality and quantity that is employed.

The physiology of its action is so complex that any attempt at accurate explanation is impossible. It can only be judged by its results, like many other remedial agents. Its explanation is intimately bound up with the complex problems of biology and the unexplained forces of electricity.

More accurate knowledge can be expected when the function of the ion, in biology and in the chemical processes of metabolism, is understood. Science is tending that way by the recognition of the radiant property of matter, the part played by the ion and electric charges in chemical combinations; the varying effects produced by the cat-ions and an-ions in the chemistry of biology and physiology.

These discoveries followed to their logical conclusions must sooner or later explain the rôle played by the radiant energy of the ions, if they be ions, that proceed from the Roentgen tube and produce such marvelous clinical results. Whether these ions act directly on the cell,

\* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



combining with those in its composition, or only act by stimulating metabolic processes or by developing anti-ferments in the tissues, it is impossible to determine.

To appreciate the logical rationale of the application of this remedy to so many and varied conditions, and also the reason why such a great diversity in results can be obtained, the complex character of the Roentgen radiations must be more clearly understood.

The qualities of the ray are commonly subdivided into groups depending on their power of penetration and with it their variation in therapeutic effect. There is, however, no common agreement as to these subdivisions, and there can not well be, as there are many rays of varying quality in every bundle proceeding from a tube, and each quality is roughly recognized by the preponderant number of rays in a given bundle. The composite is, therefore, recognized by the more prominent quality. These qualities vary from rays that do not penetrate appreciably to those that know no obstruction. The therapeutic action of the rays is apparently dependent on this varying power of penetration for its variations in quality, as their effect is apparently in proportion to the amount of the bundle of rays absorbed in the diseased area. Thus the most effective rays in treating skin and superficial lesions are those of low penetration that are absorbed in the skin. The more completely they are absorbed in the superficial tissues the less danger will there be of atrophy, telangiectases and other late injury of the skin, which can generally be avoided by these refinements in technic. On the other hand, in treating sarcoma rays of higher penetrating power must be employed to be most effective, as the tissues are dense, difficult to penetrate and absorb rays of even high penetrating power. Thus the quality must be adapted so that the rays will be absorbed by the pathologic tissues.

The therapeutic effect varies also with the quantity or volume of rays employed, again adding to the complexity, stimulant, alterative or destructive effects being produced by the same quality depending on the quantity and method of application. For example, in a case of alopecia areata, in which the hair follicles have not been destroyed, mild doses will stimulate the renewed growth of hair; stronger doses, in quantity, will cause any remaining hair to fall out injuring the nutrition of the hair follicle; while a still stronger dose would destroy the hair follicles and the skin with them. All these varied actions have their appropriate fields of application to be determined by clinical experience.

The Roentgen therapist is therefore dealing with a most complex and powerful agent that can be most harmful when ignorantly employed, stimulating the pathologic process instead of retarding it, or destroying normal tissues when stimulation only is needed. Its complex character and varying effects, due to qualities and quantities difficult to measure, make its effective employment most difficult, especially as these varying factors must be governed by the therapist in producing this agent while he is employing it. Special technic is demanded to employ the apparatus to produce this agent, to recognize the qualities and to measure the quantity. Clinical experience is essential to adapt the qualities to the individual patient, and to recognize the effect and vary the technic to suit the case.

There are a number of known factors that can be approximately measured, any of which if altered vary the effect produced.

Like all light waves, the Roentgen rays vary in their intensity inversely as the square of the distance from

their source. The distance of the tube from the patient is, therefore, a factor in determining the strength of the dose; it also varies in an appreciable degree the physiologic effects. The length of the exposure is also a variable factor one long exposure producing an entirely different effect from the same length in time, given in repeated doses, while a cumulative action can be produced by repeated exposures of sufficient strength. Thus the number of treatments a week is another factor. These are the variable factors outside the tube. The quality and quantity of rays given off by the tube are the most difficult factors to measure. The resistance of the tube and of the secondary circuit, as measured by a parallel spark in air is a relative measure of the quality of the rays, since the penetrating power varies in a ratio proportionate to this factor. The volume of current passing through the tube varies, however, inversely with the resistance, so that the quantity of rays given off is difficult to measure.

Various penetrometers have been devised for measuring the penetrating power of the rays, while a milliamperemeter in the secondary circuit measures the amount of current passing through it, and gives a valuable relative measure of the quantity of rays produced.

Many devices and methods for measuring the chemical effect of the rays or their ionizing effect during a treatment have been advocated. These are inaccurate measurements of the physiologic effect, as the ratio of chemical and physiologic action has not been determined and is not even known to be proportionate.

I<sup>1</sup> have adopted and described a method of approximately measuring and writing the dose employed in terms of measurements that can be readily made. Though not absolutely accurate, it gives a working method by which clinical results and their method of production can be recorded and compared by various workers. The same method was advocated by Walter of Hamburg at the International Roentgen Congress, 1905, and received hearty support.

By this method the dose can be written in a seemingly algebraic formula or equation,  $X$  (the dose) = 10m., 8", 2" g, 2 ma. 8B. This means a ten-minute treatment, with the platinum of the tube eight inches distant from the patient and a vacuum equivalent to two inches of air in a parallel spark gap, with two milliamperes of current in the secondary circuit and a degree of penetration equal to No. 5 of the Benoist scale.

Any variation in any one of these factors produces a marked variation in the quality or quantity of the dose. Any one of these factors might have to be varied to suit the dose to the individual case, while different effects would be produced according to the frequency of its application. As illustrative cases of sharp contrast let us compare the treatment of a grave case of malignant disease, threatening the life of the patient, and one of pustular acne.

Malignant disease must be attacked with as great severity as the patient's physical condition will permit. The full physiologic effect of the Roentgen rays must be used. The quality would depend on the nature and situation of the growth. The quantity would only be limited by the toleration of the patient. A carcinoma of the face or neck threatening the life of the patient must have heroic treatment. Rays that would penetrate and be absorbed would be used with the tube close to the patient and giving out a large volume of rays. The treatments would be given daily with a massive and

1. American Medicine, Dec. 3, 1904.



cumulative effect to produce necrosis of the diseased tissues. A complete cessation of treatment would follow the appearance of the dermatitis while the patient would be kept under observation and the toxic condition resulting from increased metabolism carefully watched and combated. This dose would be repeated till all malignant tissue had been destroyed and then light stimulant treatment would be employed to hasten the healing. The successes achieved in apparently hopeless cases have been due to such energetic treatment, not necessarily so severe. The dermatitis and even necrosis are nothing compared with the fatal result that would otherwise follow.

A severe or painful dermatitis is not necessary if patients are brought in time. With proper dosage the dermatitis is seldom severe, and then only in malignant disease in which a proportionate benefit always follows.

Severe cases, however, demand severe measures. Salivation is of little moment in tertiary syphilis, if by its production the patient's life has been saved. It is useless in any grave condition to expect to produce beneficial effects unless the remedy or drug employed is made to produce its full physiologic effect.

The contrasting ease of pustular acne must be treated differently as the indications for treatment are principally cosmetic. The skin must be carefully guarded against a dermatitis. A mild stimulant and locally alterative action is all that should be produced. The rays must all be absorbed in the superficial tissues to prevent injury to the deeper structures of the skin and resulting deformity. Rays of low penetration in moderate volume suffice to produce absorption and healing without scar formation.

These variations in the technique of treatment are as numerous as the diseases treated. A mastery of this technique founded on wide clinical experience and a realization of the varied physiologic effects produced by the variations are essential to the production of valuable and reliable results.

An absence of this essential knowledge for the effective application of this complex powerful physical therapeutic agent is an easy explanation for many of the failures to produce results prominently reported.

An examination of some of the cases reported will show that they have been treated by assistants of the reporter, since his prominence in other fields of medicine makes it self-evident that he could not personally have given them the necessary time. This is one of the lesser causes of failure, for a graver danger and certain cause of failure in diagnosis and treatment is the unskilled non-medical assistant who runs the x-ray machine as well as the dynamo in some hospitals.

The complexity of this therapeutic agent makes it impossible for the physician to prescribe the dose and to get valuable results through the medium of an assistant. He can be assisted in giving the treatments, but only personal knowledge and clinical experience in observing physiologic effects, when personally employed for the benefit of the patient under his own eye, can secure the most beneficial results.

Inexperience can be noted in the reports of those writers who expect results that could be obtained only by a miracle. The Roentgen ray method is not Christian science. Definite physiologic effects are to be produced and they can only be obtained by sufficient dosage applied often enough to be effective. The stimulation of absorption, of retrograde metamorphosis, of reconstruction and, in fact, any natural physiologic process de-

mands time for its accomplishment. Growth is slow and yet its stimulation must be sufficiently frequent to produce results. This remedial agent acts like any other on the tissues and demands time. The number of treatments often reported as ineffective are insufficient for the gravity of the case and undoubtedly were not given in sufficient strength to produce the necessary physiologic action. In cases in which apparent stimulation of malignant growth has been reported it undoubtedly took place because the rays were employed with a half-hearted timidity that resulted in stimulation. This is one of the grave dangers of Roentgen ray therapy that it is often, through ignorance, employed in a dose that stimulates malignant disease, while a sense of security that is false keeps the patient from adopting operative measures that would be of benefit.

None but cases of superficial malignant disease, as epitheliomas and rodent ulcers, should submit primarily and solely to Roentgen treatment. All other cases should be submitted to early operative removal of the malignant tissue, followed by immediate postoperative Roentgen treatment. Surgical operation and Roentgen treatment are mutually beneficial and supplementary. The removal of the mass of pathologic cells lessens the amount of absorption and the consequent danger of severe toxemia following Roentgen treatment. This toxemia or autointoxication is one of the gravest dangers and greatest difficulties in treatment. It is an evidence but not an essential of effective treatment and is also an indication for its temporary suspension. Operation in sarcoma or atrophic scirrhus is not advised since Roentgen treatment has been most effective in cases not operated on and there is less liability to metastasis.

The Roentgen treatment is undoubtedly beneficial to surgical intervention in malignant disease. In a recent paper the difficulties encountered in operating after Roentgen treatment were discussed. The pathologist's report of the case discussed and the opinions of the surgeons participating in the debate all agreed that the lymph channels were found converted into solid cords that made operation difficult. This result was produced by 28 treatments. What more could be desired; the avenues of infection were closed. If this result can be secured after operation by so short a course of treatment the Roentgen ray is of the greatest value as an adjunct of surgical operation.

While the field of successful therapeutic application of the Roentgen rays is ever widening, it undoubtedly has its limitations, it produces regular physiologic actions and can no longer be considered a miracle worker.

In hopeless malignant cases from the surgical standpoint the patients are sent for Roentgen treatment. Palliation is all that can be expected, and the patient or some member of the family should be told so. These patients should not be deluded by a false hope and their deaths laid to inefficient treatment by the Roentgen rays. They are too frequently told they will be cured by operation when the known mortality is proof to the contrary. Surgery is not a certain cure for malignant disease. Instead of consigning these individuals to a fancied security from which a rude awakening is almost certain, they should be advised to employ all means that will guard against recurrence. This truth is not so cruel as an awakening when it is too late. They should be sent immediately after operation for a course of Roentgen treatment to destroy any minute foci that remain after the operation and for the effect on the lymphatic channels. The Roentgen method has demonstrated its po-



tency in inoperable recurrences and apparently hopeless cases. It should be given the opportunity to benefit patients when there is a possibility.

The dangers that accompany the employment of the powerful agent have been minimized and can practically be excluded in the hands of competent therapists. The dermatitis produced in therapy is always within limits and is never serious, unless the severity of the condition treated demands severe measures, and the benefit to be derived is proportionately great. Intelligent individuals and physicians in particular should not speak of  $x$ -ray "burns" as necessary or common in Roentgen treatments. There is a vast difference between the acute necrosis produced by an overdose of powerful  $x$ -rays in an attempt to take a picture by a novice and the progressive tanning of the skin by carefully adapted dosage in Roentgen therapy; a difference as great as that between the actual cautery and a mustard plaster, both of which have their place and uses in therapy and neither of which should be entrusted to the unskilled.

The increased metabolism which has been demonstrated as a result of Roentgen treatment is not a danger in skilful hands, but a great power for good and a valuable therapeutic force.

The gravest danger from the Roentgen rays lies in their promiscuous employment by those who have not been taught their use or the knowledge of their physiologic action and therapeutic effects.

The production and application of the Roentgen rays as diagnostic and therapeutic agents should be taught to medical students by practical laboratory and clinical courses. Their employment on the human subject for diagnostic or therapeutic purposes should be limited to qualified practitioners, that is to those licensed by state boards to practice medicine and dental surgery.

Action to this effect has been taken by recognized bodies of medical men in Vienna, in Berlin and in Paris, by the German Roentgen Society and by the Academy of Medicine in Paris.

## THE ROENTGEN RAYS IN SUPERFICIAL LESIONS.\*

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The Roentgen rays, as a therapeutic agent in the treatment of superficial lesions, has attained an important place. The lesions which have been successfully treated are varied. This is accounted for by a careful study of the physical properties and the physiologic action of the rays. No therapeutic agent should ever be employed without first studying its physiologic action and the amount necessary to produce the desired effect. In order to appreciate the value of the agent it is necessary to understand that the rays are not all of uniform energy and that those given off by a low and a high tube have a very different action on tissue. For instance, a light which is most efficient in acne, would be useless in the treatment of tuberculous adenitis.

In a general way the vacuum might be subdivided into five degrees for the treatment of the various diseases, ranging from a point where the tube is so low that the rays have very little penetration, but are very rich chemically, to a vacuum where the rays have great penetration, traveling several hundred feet from the tube, and are not rich chemically. One of the greatest drawbacks

to the progress of radiotherapy in the past has been the careless and inaccurate application of the rays, little attention being given to the degree of vacuum, tube distance and exciting energy. There is not a drug in the Pharmacopeia which is more powerful, more flexible, or more efficient when properly prescribed, nor more dangerous when used carelessly.

One of the frequent remarks heard is: "I always give a small dose to be on the safe side." Now, is there anything more ridiculous than a physician employing an agent about which he knows practically nothing, or is afraid to give the required dose to produce the necessary physiologic action? Then, when the patient does not improve, the agent is deemed inadequate when the operator is merely incompetent. If strychnia or digitalis were employed without producing their full physiologic action, the failure would not be blamed on the drug. Any graduate of medicine can do surgery, but unless he has had experience and judgment he can not secure good results, and yet when he graduates from college he is better prepared to do surgery than to do radiotherapy.

One should understand the action of the rays, know the tissues first affected, what changes take place, and the exact process of repair. Then the operator is able to determine the disease in which the  $x$ -ray may be expected to be beneficial or harmful. Any haphazard use of the rays should be condemned.

That the Roentgen rays have a selective action on epithelial cells should no longer be questioned. Therefore, the tissues composed of epithelial cells will be acted on long before the surrounding structures are affected, and this explains how a chain of lymphatic glands will undergo a degeneration with almost an entire obliteration without seriously influencing the surrounding tissues. All tissues which have undergone pathologic changes react more quickly and intensely.

The editor of the *Archives of Roentgen Rays* sums up the physiologic action of the rays as follows:

The activity of development of the cellular constituents of a part and the amount of cellular proliferation modify the reaction. The more active the cellular proliferation, the more readily do the cells respond to irradiation.

The stage of maturity to which the cells have attained has a decided influence on the cellular reaction. In the case of epithelial and endothelial cells it has been found both experimentally and clinically that cells that are fully matured react less readily than those still in the process of development. In the case of lymphocytes and leucocytes, degenerative changes are advanced by full maturity, while arrest of development and retrogressive changes are the lot of the immature.

That the nature of the cells produced has a modifying influence on the reaction has been too repeatedly pointed out to be here dwelt on. The only appreciable result of irradiation on the red-blood corpuscles is a decrease in their physical resistance; no alteration in the hemoglobin has yet been established. The white cells, on the other hand, are very susceptible to irradiation; the leucocytes show marked degenerative changes, mainly in the direction of the fragmentation of the nucleus. The protoplasm of the cells, more particularly of the polynuclear variety, undergo a degenerative change, being broken up into small masses, which refuse to stain or stain badly. This plainly shows that their evolution is hastened.

The epithelial cells of the body, both cutaneous and parenchymatous, are affected in proportion to their vitality. . . . The more embryonic forms of cells are more easily affected, a retardation in development preceding degenerative metamorphosis. Where healthy structures are exposed to the action of the rays, the primary changes of degeneration and destruction of the epithelial cells have been found to precede proliferation of the connective tissue, the vascular changes being a late manifesta-

\* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



tation of irradiation. The destruction of the Malpighian corpuscles and cellular elements in the spleen, as noted by Heinecke, is a well-known illustration of the influence of irradiation on the organs built up of lymphatic tissues.

In applying the rays it is hardly necessary to state that the severity of reaction can be varied from a mild erythema to a necrosis, according to the kind and amount of energy absorbed. With a modern apparatus it is possible to regulate the dose to produce the desired effect with a great deal of accuracy and to avoid accidental dermatitis with a degree of certainty.

The biologic action of the Roentgen ray on superficial diseases has been summed up as follows:

1. Stimulation of the tissues in atrophic conditions—affections like alopecia areata. Here caution must be used not to get more than stimulation.
2. Alterations of metabolism, such as eczema, psoriasis or any other of the indurated inflammatory skin diseases in which it is necessary to cause absorption of the inflammatory products.
3. Atrophy of the skin and its appendages—affections like acne, where it is necessary to decrease the size or functional activity of the sebaceous gland or the sweat glands, as in hyperidrosis.
4. Destruction of the microbes in living tissues—lupus vulgaris, etc.
5. Destruction of certain pathologic formations—tuberculous adenditis and overgrowths, as in goiter.

#### ALOPECIA AREATA.

The most efficient treatment of alopecia has always consisted in the application of slightly irritating drugs, which stimulate the function of the papilla and surrounding tissues. Drugs have a very superficial action and often prove useless. Stimulation can be produced by the Roentgen rays, which penetrate deeply, and have proved efficient when the other remedies have failed. In this connection I will report the following case:

Miss M., referred by Dr. Jackson, had alopecia areata for two years, and was apparently cured by stimulating medication. When it recurred she was referred for x-ray treatment. Ten exposures of the Roentgen rays apparently cured the disease and the good result has persisted.

#### PSORIASIS.

Many favorable results have been reported, as well as a few failures. The reports of the various operators are not very uniform in this obstinate disease, which is undoubtedly due to the technic, as one will report that only the mildest form of treatment is required, while another will advocate intense radiation. The treatment usually requires a considerable length of time, as it often covers large surfaces and has a great tendency to recur. I have treated four cases with Roentgen ray and the average time in three cases in which an apparent cure was produced covered six months. These were among twelve or more cases treated by various methods. It certainly requires perseverance on the part of the patient and the doctor in order to effect a cure in the chronic cases.

We should not use the Roentgen rays in all the milder cases of psoriasis without first trying the other remedies, not because the rays are not efficient, but because the treatment is not so irksome.

Mr. G., aged 44, had psoriasis for eighteen years, and during this time he had learned that he could treat himself with chrysarobin, as well as could any physician. He had tried almost all the remedies ever used for the treatment of psoriasis. The disease covered the greater portion of the body. Treatment was given three times a week for three months and then irregularly for six months, when all the lesions had disappeared.

During this time, seventy-eight treatments were given. It is now eighteen months since the last treatment was given and there has been no recurrence of the disease. No drugs were used nor was any other treatment taken during this time.

#### ECZEMA.

Some cases of chronic eczema have responded to the Roentgen rays, while in others the treatment was not efficient. The classes of cases mostly benefited are those in which there was inflammatory exudate and the stimulation of the rays caused the absorption of the exudate. The rays should not be employed when the disease is caused by an irritant or when there is a systemic derangement, until these causes have been remedied. If the treatment will do nothing more it nearly always relieves the itching for the time being. In this connection I will report the following case:

Mr. D., aged 55, had suffered with squamous eczema of the face for ten years. The skin was thickened and the glands under the chin were enlarged. All other treatment had only alleviated the symptoms. Twenty treatments caused a disappearance of the disease.

#### KELOIDS.

The treatment of keloids by the Roentgen rays has been more successful than any other method up to the present time. At the last meeting of the American Roentgen Ray Society, a paper on keloids was read, and the author and those discussing the subject mentioned thirty-one cases in which the rays had been employed successfully. It has been shown that it requires considerable time to cure keloids, and that rays should be employed of such a character as to stimulate normal tissue processes and to promote absorption. A ray which would be destructive if given in large doses, as in the treatment of carcinoma or tuberculous glands, would not be efficient. This certainly accounts for failures in the past. Several operators have advocated the removal surgically, and then the administration of a course of treatment to prevent recurrence. Usually this does not seem necessary. Among the cases of this condition is the following:

Mr. B., aged 27, was referred by Dr. Morgan for treatment after a keloid of the cheek had been twice removed and each time promptly recurred. X-ray treatment was given three times a week for three months and then a few irregular treatments during the next two months, when the lesion had entirely disappeared.

#### ACNE.

Radiotherapy is unquestionably a valuable agent in the treatment of acne. Excellent results have been obtained in many obstinate cases which resisted all other methods. Acne vulgaris yields to the treatment much more readily than acne rosacea, but by persistent treatment good results have been secured in the latter condition. Sometimes it is surprising how quickly pustular acne will disappear under the influence of the rays given off by a very low tube. I have had the best results when a mild degree of dermatitis has been produced, but I do not believe that there is any other skin disease in which the operator should be more careful not to produce too severe a dermatitis, for in that case the skin becomes tanned and wrinkled. The dose of the rays in acne depends on the condition of the patient and the severity of the disease. I believe that nearly all the failures are due to faulty technic.

The following case of pustular acne was referred by Dr. Kerr after the patient had been treated with the usual remedies without benefit:



Miss W., aged 23, had pustular acne for twelve years, and had been little benefited by any treatment. X-ray treatment for three months caused a complete disappearance of the disease. It is now two years since the last treatment was given and there has been no recurrence.

Many similar cases would serve to illustrate the same course of recovery.

#### TINEA AND FAVUS.

In tinea and favus the Roentgen ray has proved a useful epilating agent. By proper radiation more or less complete epilation can be secured, and with this a complete disappearance of the foci of infection. Care must be exercised not to cause permanent alopecia. In many places in Europe sufficient rays are applied at one séance to complete epilation, but I believe that it is safer to give this dose in eight or ten sittings. The hair usually falls out in from fifteen to twenty days after the treatment. The scalp then should be treated by the usual methods, such as washing with naphthol soap, or daily application of a 20 per cent. iodine solution. Regrowth of the hair usually begins in from six to eight weeks.

In the treatment of tinea tonsurans and favus, Sabouraud concludes that both diseases are amenable to the Roentgen treatment, which lasts weeks only, in place of years, as under the old method. Radiotherapy has been successful in this manner in sycosis. The following case will illustrate this group:

Mr. C., referred by Dr. Miller, had sycosis involving the right eyebrow and part of the beard. There were two large infiltrated patches about the size of a dollar, and another somewhat smaller. During this time the disease had been very resistant to treatment. After eight exposures to the Roentgen rays, marked improvement was noticed and in two months the disease was apparently cured.

#### TUBERCULOUS ADENTITIS.

In the treatment of tuberculous glands, the results obtained by the use of Roentgen rays will compare favorably with those from any other method, as a large proportion of the patients can be apparently cured. The treatment usually requires about three months, at the end of which the glands have undergone a degeneration, leaving a hard fibrous nodule, which, as a rule, never gives any further trouble. The radiation must necessarily be intense with the tube placed at least 12 inches from the surface, in order to influence the whole of the diseased area. The important part of the treatment is to have a tube placed the proper distance, giving off rays, rich chemically, and with the proper degree of penetration.

Miss B., aged 18, referred for x-ray treatment, had been operated on six months previously and when she came a very unfavorable prognosis was given. There was a glandular mass in the right side of the neck extending from the ear almost to the clavicle. There were two masses about the size of a hen's egg. It was with difficulty that the patient could move her neck and she was very much emaciated. After nine treatments she became comfortable and began to improve in general health, while the glands began to reduce in size. Sixty treatments were given in six months, when all the smaller glands had disappeared and the two larger masses were reduced to about the size of a hickory nut, hard and freely movable. Treatment was then discontinued, and two months ago, one year after the last treatment, this patient was in about the same condition.

Now the question arises, in the cases in which these hard nodules are left, whether it is advisable to have them removed or not.

No further attempt should be made with the x-rays, as the epithelial tissue, which is easily influenced by the rays, has undergone a fatty degeneration. The fatty

substance is absorbed, leaving the fibrous stroma. I believe that these should be left alone and watched carefully.

#### GOITER.

Many cases of goiter have been greatly benefited by the Roentgen rays. This is what should be expected from the structure of the thyroid gland after a careful study of the physiologic action of the rays. A certain few cases of goiter which resisted other forms of treatment have responded readily to the rays. The treatment will usually relieve the annoying symptoms, reduce the size of the gland, and in some instances apparently cure the patient. It can hardly be expected to reduce the size of the gland to normal when there is immense tumor. The rays most likely reduce the gland by fibrous degeneration. This requires intense radiation, with the tube placed at least 12 or 15 inches from the surface of the skin.

Many cases would serve to illustrate the benefit derived from the Roentgen rays after other remedies had proved useless.

Mrs. A., aged 35, had goiter for four years and had taken the usual medicinal treatment without much benefit. Pressure symptoms had developed, and the growth was rapidly increasing in size. Treatment was given three times a week for two months, when all the annoying symptoms had been relieved. Treatment was continued for two months longer when the gland was reduced to about one-third the size than when treatment was begun. It is now two years since she was exposed to the rays and during that time she has had no annoying symptoms.

### THE TREATMENT OF MALIGNANT GROWTHS BY THE ROENTGEN RAYS.\*

ENNION G. WILLIAMS, M.D.

RICHMOND, VA.

In the field of Roentgen ray therapy we are still a band of pioneers endeavoring to discover the possibilities of this new and mysterious agent. Its first decade has been productive of much new and valuable knowledge concerning the therapy of those diseased conditions which have heretofore proven most obstinate to all forms of treatment.

We should be slow to condemn the ray because it has not fulfilled the expectations of the early enthusiasts, or because the results and observations of different operators have varied so greatly. It is only natural that the results should differ when we consider how great are the variations in the agent itself and the methods of application. What it has undoubtedly accomplished should be our standard and the beacon light to guide us in establishing its real value.

To determine the value of the ray as a therapeutic agent we have to consider, first, the factors concerned in the production of the ray and the methods of application in treatment; second, the physiologic and histologic changes due to the ray, and third, the nature and location of the growth to be treated.

First of all one must appreciate the great variability in the different qualities of the ray, that is, its penetration and also its intensity and effective energy. This variability is readily exemplified in the taking of radiographs with different machines. Some static machines will require minutes to do what some coils will do in the same number of seconds. Furthermore, the ray being a form of radiant energy conforms to the law of

\* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



varying inversely as the square of the distance, or in other words, to have the efficiency at ten inches the same as at five the exposure must be four times as long. Lack of appreciation of these facts will of necessity bring about a great variation in results.

Another serious obstacle in the development of this work has been the fact that there is as yet no unit or standard to measure the different qualities of the ray. Such a standard is necessary in order to record an exposure accurately, and to duplicate a treatment. This, however, can be done approximately. We may assume that the radiant energy from the tube is proportional to the electrical energy flowing in the tube circuit. We will therefore have a measure of the radiant energy if we know the amperage and voltage of the tube circuit. The voltage may be approximately estimated by the length of the equivalent spark gap in this circuit. It is then necessary to note further the duration of the exposure and the distance of the anode from the exposed surface if we wish to measure and to record the amount of radiant energy received by the patient.

The penetrative quality of the ray is dependent chiefly on the resistance in the tube circuit, including of course the tube itself, and is measured by the voltage or the equivalent spark gap.

The volume or intensity of the ray is dependent chiefly on the amperage. With a proper appreciation of these factors all variations in the quality of the ray may be obtained and approximately measured and recorded.

The above principles have been eminently satisfactory to me and practically indispensable in accurate radiographic and therapeutic work.

The property of the ray with which we as therapists are concerned may be called the physiologic efficiency. To a certain extent, this is in proportion to the energy given off from the tube. It depends more, however, on the degree than on the total quantity. This is more apparent in the bactericidal influence; one strong intense exposure may destroy bacteria whereas a number of weaker exposures will not do so, although the total amount of energy may be the same. It is on the same principle that one strong blow may accomplish what numerous small blows or a continuous pressure will not accomplish, although in each the total energy expended may be the same. The principle is analogous to the coagulation of albumin by heat. Albumin only coagulates when the heat is applied at a certain degree. The degree of heat is necessary. In the same way, a high degree of radiant energy can accomplish results that could not be accomplished by a smaller degree of radiant energy although longer continued. This seems to me to be true notwithstanding the fact that the physiologic effect of the ray is to a large extent cumulative, that is, the effect of one treatment persists for many days, and subsequent exposures during this time are superadded.

The physiologic efficiency, or the influence of the ray on the tissues, is determined by observation and study of the tissues exposed. Dead organic matter seems not to be affected by the ray. The effect on the living tissues varies from stimulation to complete abolishment of the vital principle and the changes incident thereto. If we knew the physical nature of the ray and if we knew the physico-physiologic nature of that principle that constitutes the difference between living and dead protoplasm, we could probably explain the action of the ray. It is a temptation to draw on one's fancy for a possible explanation. Can it be that the vibration periods of the ray are similar to the vibration periods of the atomic

or subatomic activities which constitute the vital principle in a mass of protoplasm, and that the action of the ray is analogous to the influence of music in stirring to activity or putting to silence a tuning fork by sympathetic vibrations?

Certain it is that the action of the ray seems to influence the vital force. It does not immediately affect the tissues as do mechanical, chemical or other physical agents, such as heat. The only immediate results are functional ones, such as the relief of pain. The changes which are brought about in the tissues develop slowly and are such as would occur in consequence of the taking away of their life. Life resides only in cells. It is the cells that we find chiefly affected by the ray. The other elements of the tissues probably are affected indirectly.

It is observed that the ray affects living normal tissues in the following order: The epithelial cells of glands, hair follicles, the skin and those lining the blood vessels and to a very much less extent the cell and fibers of muscle and connective tissues.

We would conclude, therefore, that the elements of the tissues that are most affected are the cells and in the proportion as they exhibit the manifestations of life, and that the tissues themselves are affected in proportion as they have cells and in proportion to the activity of the cells.

The tissues that have the largest proportion of vitally active cells are those of malignant growths, particularly the carcinomas. We, therefore, see the specific or selective action of the ray on these growths.

Sarcomas contain a larger proportion of intercellular material and more blood vessels. The cells have less vital activity, as evidenced by the fewer mitotic figures. They are as a rule more deeply seated. These facts would explain why more carcinomas than sarcomas have been healed by the ray.

Benign tumors are composed chiefly of intercellular substance with a small proportion of cells which are not very active. Such tumors are therefore only slightly or not at all influenced by the ray.

We conclude that in the treatment of tumors by the ray the result depends on the constituent tissues of the tumors and on their accessibility to the proper quality of radiant energy. Since we have shown that the tissues composing the malignant growths are especially susceptible to the ray, success in their treatment depends on their accessibility to the proper ray.

For superficial malignant growths unless they have invaded adjacent bones and cartilages the ray should be used because when rightly applied the result is so uniformly successful. Its application is painless, there is less scar and deformity and a recurrence is in proportion to the thoroughness of the treatment. Carcinomas on the lip or connected with any mucous membrane should, in my opinion, be excised, because for some reason they seem to be especially resistant to the ray.

For malignant growths of the deeper structures, including the breast, radical surgical procedure should be recommended. It is but rational that the surgical operation should be followed by sufficient exposures to the ray to destroy malignant cells that may have been left. It is possible to destroy such cells an inch or two from the surface, and the patient should have every possible chance to have the malignant cells completely eradicated or destroyed. Recurrent growths of the breast often yield readily to x-ray treatment, because the recurrence is so near the surface. The prognosis in these cases depends on whether the neighboring glands or the thoracic cavity are invaded.



In conclusion I would reiterate that we have in the Roentgen ray an agent that has a selective destructive action on the tissues of malignant growths and that the prognosis in their treatment depends on the ability to reach such growths with the proper quality and quantity of this agent.

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[FOR THE DISCUSSION ON THE PAPERS OF DRs. LEONARD, BOGGS AND WILLIAMS, SEE PAGE 364.]

## STARCH SUGAR (GLUCOSE AND GRAPE SUGAR) AS A FOOD ADULTERANT.

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The fact that starch can be converted into dextrose and allied bodies by the action of dilute acids was discovered nearly a century ago, but long remained unappreciated as to its commercial value. Its manufacture on a large scale has been pursued for over 25 years and it is now an industry of great importance and extent. Like many other industries of large output, it has passed into the control of a trust, and the quality of the material is not much influenced by competition.

### MANUFACTURE OF STARCH SUGAR.

On the large scale, the starch is usually treated with dilute sulphuric acid. The conversion, essentially a process of hydrolysis, differs in degree according to the conditions of operation. In commerce, two types of product are usually recognized: glucose, the syrupy form, and grape sugar, the solid form. Commercial glucose is not of constant composition; it is probable that its exact analysis has not yet been made, but it is known to contain a considerable proportion of one of the dextroses, with more or less dextrins, maltoses, non-fermentable carbohydrates and nitrogenous matters. The solid form (grape sugar) usually contains more dextrose and less of the other ingredients. In the United States corn starch is the main source of these products, but any starch will yield them; potato starch is employed in Europe. Many dilute acids will produce the transformation.

Apart from some limited special applications for which it is alone suitable, commercial glucose and grape sugar are almost entirely employed as adulterants and substitutes for natural carbohydrates. Its employment for such purposes began to be extensive soon after its manufacture on the large scale was undertaken, and the question of its permissibility was, therefore, raised.

### REPORT OF COMMITTEE OF 1884.

In 1884, a report was made to the Commissioner of Internal Revenue, by a special committee of the National Academy of Sciences, which had made an investigation at the request of the commissioner. This report expressed the opinion that commercial starch sugar is not harmful. So far this constitutes the principal official utterance in this country, and as, like the land of Sir Joseph Porter, "it is characteristic of this happy country that official utterances are regarded as unanswerable," glucose has been almost unrestricted in its use in food products.

An examination of the original report of the committee shows that the investigations on which was based the decision as to the non-harmful action of these articles in

food were entirely insufficient according to modern standards of physiologic inquiry. This does not reflect on the ability of the members of the committee. They proceeded according to the light available at that time. After some dissertation on the history of the manufacture, the report gives analyses of commercial samples. The committee was not unmindful of the imperfections of analytic methods. At the time of the inquiry very little was known about the unfermentable carbohydrates.

The physiologic inquiry was limited to some feeding experiments on a medical man who volunteered for the purpose. Samples of commercial glucose, which had been analyzed as far as possible, were fermented and the residual extracts were taken in considerable quantity for two months by the experimentee, in whom no subjective or objective symptoms of illness were noted. No details are given of any clinical tests applied by the members of the committee or any one else to determine the physiologic condition during the experiments in comparison with the condition in a previous period, nor of any record of inquiries as to metabolism. It would seem from the report that the only information was that the experimentee felt well during the test period, and, as he was a young man and presumably a vigorous man, the test was a superficial one. A capital mistake in the composition of the committee was the lack of a clinical expert. The members of the committee, without exception, were chemists not working in physiology.

The experiments throw no practical light on the effect of starch sugar, as such, used freely and for considerable time. It must be borne in mind that the physiologic action of such an article must be considered from both negative and positive points. Its direct effect as an article of food is one question; its indirect effect as substituting, and thus eliminating from diet, a standard article is another question. Starch sugar might be uninjurious in itself, but as its principal function is to exclude cane sugar from our diet the balance of the food ration is disturbed and physiologic harm may be done. The older notion, often quoted, that starch sugar is substantially identical with the normal digestion products of starch and cane sugar is now not available, for it is known that commercial starch sugar is very different from such products. It is the use of starch sugar as a substitute and adulterant in confections, desserts and syrups, and not its use in the fermentation industries, that is the most important, although, as will be seen below, the latter use must not be overlooked.

### INJURIOUS CHARACTER OF STARCH SUGAR.

In the light of modern methods of inquiry, the report of 1884 can not be taken as of value in determining the permissibility of starch sugar in food. I base this statement not merely on the evident insufficiency of the physiologic data presented therein. These are, indeed, wholly insufficient as a basis for the conclusions of the report; but the more serious objection to the decisions of the report is that it takes no account of the possible contaminations of the commercial article, contaminations which are apt to occur in any product involving the use of sulphuric acid, or acids made by its aid, since this acid is especially liable to contain arsenic and lead, two of the most dangerous and insidious of the metallic contaminations of food. The extensive poisoning in England a few years ago by arsenical glucose and brewing sugars is typical of these dangers to public health. The general opinion that such products are harmless led to their unrestricted use, and an unnoted change in the source of the sulphuric acid used for



transformation introduced arsenic into the product from which it was conveyed to the fermented beverages in which those products were used. Many cases of chronic arsenical poisoning were thus developed. It is not at all unlikely that many similar cases there and elsewhere escaped observation or diagnosis, and that lead poisoning has in the same way been caused and overlooked.

The pertinency of this criticism has been well shown in the revelations brought about by the prosecutions recently undertaken by Dr. Warren, Dairy and Food Commissioner of Pennsylvania. Information coming to him that glucose furnished by the American trust, which now practically dominates the American market for starch sugar, was contaminated in many cases with appreciable amounts of sulphuric acid, he caused an investigation to be made, especially by two chemists of the department, C. B. Cochran of Westchester and C. H. LaWall of Philadelphia. Many samples of the candies and of commercial starch sugar were tested, and the objectionable impurity was found in a large proportion. It was found in the lighter colored samples of glucose and grape sugar, and it is not doubted that it is introduced by and through a bleaching process, for darker products, free from the acid, are easily obtainable. In a circular recently issued by the trust, the presence of this acid and its introduction as a part of the regular operation is frankly admitted, but the language suggests to an uninformed person that its introduction was in the regular manufacture, whereas it is a subsequent treatment to improve the appearance of the product.

The objectionable character of the sulphurous acid or its salts as ingredients of food is now established. Several experimenters have pointed out their poisonous nature. The experiments of Harrington are among the more recent and leave no doubt as to the importance of prohibiting absolutely the sale of foods or beverages containing more than very small amounts of such substances. From a theoretical point of view one would expect such unfavorable results, for the sulphites are well known as protoplasmic poisons of high activity.

The fact that the trust has consented to pay all the numerous fines in Pennsylvania, to withdraw the offending product and to market no more of it does not, in my opinion, justify the closing of the general issue. The abandonment of the recently instituted proceedings is, of course, merely a legal question, but I refer to the inadvisability of allowing unrestricted use of starch sugars, based largely (as it seems to be) on the conclusions of the report of 1884. The free use of such materials keeps the community in constant peril; their shortcomings as artificial products are not similar to the shortcomings of a natural product and the unavoidable contact with a crude acid, which, if not a form of sulphuric acid, is probably prepared with its aid, involves both the negative and positive dangers to which I alluded above.

In the light of facts at hand it appears, therefore, reasonable to demand that a careful inquiry shall be made into the uses of starch sugar, and the degree to which such use is made is merely to secure cheapness or convenience in manufacture. If there are purposes for which this product is alone applicable, they are probably very few and limited. It would seem good hygiene and good political economy to forbid its use in all cases in which it merely cheapens the food or beverage, for no substantial good is accomplished by reducing the cost of stable food articles by substitution or adultera-

tion. As in the case of oleomargarin and cottonseed oil, the alleged benefit to the poorer classes is wholly illusory.

## THE ANTIGONOCOCCUS SERUM OF ROGERS AND TORREY IN EPIDIDYMITIS.

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In the latter part of November, 1905, H. L., aged 34, a patient of mine at the Good Samaritan Dispensary had been coming for two or three weeks with a primary attack of gonorrhea, when he began to have pain, redness and swelling in the right knee joint. This continued for three days, when I noted that the patient was a very sick man. The knee was much enlarged with an unusual amount of effusion, and I advised him to remain at home in bed and offered to attend him personally at his home, if he would do so. As he was unable to remain at home without working, I sent him to Gouverneur Hospital as being the nearest. A week from that day he walked into the dispensary a perfectly well man, so far as his knee was concerned. In surprise I asked him what they had done to him at the hospital and he replied that they had injected something into his arm for four days and that he had received no other treatment. What this was, I could not even guess, until I read Dr. Rogers' paper on "The Treatment of Gonorrheal Rheumatism by an Antigonococcus Serum" and recognized in his Case 2 the patient I had sent to the hospital. While the serum had had such a startling effect on the man's rheumatism, it had had but little effect on the urethral trouble. Gonococci were present in considerable numbers in the slight urethral discharge, and he remained for some time under my care for an involved prostate and posterior urethritis.

It occurred to me that the serum should be of value in cases of epididymitis, if it were used early enough. Dr. Torrey at the Loomis Laboratory kindly furnished me with the serum as I needed it. Its method of manufacture is given in Dr. Torrey's very interesting paper, page 261, in the same issue of THE JOURNAL with Dr. Rogers' Paper.<sup>1</sup> The serum was furnished in sealed glass tubes containing 2 c.c. Some of the serum furnished me was obtained from rabbits and latterly it was obtained from goats. As Dr. Torrey remarked, if the goat serum was found to be of value, its manufacture would be very much less expensive than that obtained from rabbits.

I am aware that several who have tried the serum in gonorrheal rheumatism have not been impressed, and I have heard that it has proved a failure in epididymitis. But this, I think, is to be expected; until the serum has been tried under many varying conditions, until it has been found under what conditions the most potent and valuable serum can be obtained and also under what conditions we can look for success or for failure, there must be cases which will furnish wearying failure. Nevertheless, a remedy which will accomplish what I saw in the case reported above, is too valuable to be lightly thrown aside.

Before it became time to present the results of my work in this paper, I had hoped to have had twice as much material from which to draw inferences as I have: nevertheless, I feel sufficiently encouraged to keep on with its further study.

While making use of the serum, I did not omit any

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of the methods of treatment which have been found of use. In the early stages a 10 per cent. guaiacol ointment with vaselin is used, covering with a fold of gauze, rubber tissue and a carefully fitted suspensory and renewed as often as may seem to be of use; later ichthyol ointment 10 per cent. or ichthyol and glycerin equal parts of each; also injections of argyrol in the deep urethra, when these could be borne. Some patients do well when local treatment is continued, while others do better if all local treatment is suspended. It is a question of judgment.

I treated 13 cases in all, of which only two disappeared; one patient was sent to the hospital and the other did not return after the first treatment. The other eleven were followed the entire time of their trouble. Eight of the patients were treated practically within twenty-four hours of the beginning of the epididymitis, three had had their trouble three or four days. Those having it longer were not treated with the serum, for I believe that, if it is to be effective, it must be employed as early as possible.

I am aware that the number which I present is too small to admit of positive conclusions on account of the varying degrees of severity in the affection itself. Nevertheless, when one has been treating these cases for a number of years, he is in a position to draw conclusions from a smaller number than is possible without that experience. Then, too, without any previous guide one has to learn how often and how many times it is necessary to use the remedy. Three of the patients received two injections twenty-four or forty-eight hours apart, made an apparent complete recovery within a few days and then suffered a slight relapse which required another injection (which, if used before, would very likely have prevented a relapse).

Three of the patients received two injections, four received three, two received four, and two received five injections. The injections were given, as Dr. Rogers gave his, subcutaneously in the back of the arm, the arm being scrubbed with a solution of bichlorid or biehlorid and alcohol. The syringe used was the "Sub.-Q." with a long reinforced needle of 25 gauge. Needles and syringes were always boiled after use, and the needles could be used several times; when they became dull they were thrown away. Some of the cases presented no local reaction, in others there was considerable local edema and some painful reaction, but nothing worse, no abscess, no disagreeable reaction. Sometimes I was loath to re-inject an arm still swollen, so in one case I injected subcutaneously over the abdomen, as we do with the diphtherine antitoxin, but the patient complained of marked pain and soreness for several hours over that site and I did not try it again.

In all the cases but two the patients had no pain after the fourth day except in the three who relapsed. In five patients there was no trace of the disease after complete recovery, no nodule left; in four there was a slight nodule left, and in two there was a large rather soft mass left about the epididymis. Four of the cases were of a severe type from the start. Six of the patients received serum from the rabbit, one from rabbit and goat, and four from the goat.

On a review my impression of these cases is that the serum exerted a distinct effect in all the cases, that the course of the disease was modified by it to a marked degree. The duration of the disease was distinctly

shortened, and in several of the cases the quickness of recovery was remarkable.

#### CASE REPORTS.

The record of cases is as follows:

\* CASE 1.—J. S., aged 23, seen March 5, 1906, had a gonorrhea of three weeks' standing. Epididymitis began twenty-four hours before but he was unable to get out of bed; the following morning he pulled himself together and got to the office.

*Examination.*—Discharge had stopped. Left epididymis exquisitely painful, pain out of proportion to the amount of involvement. Epididymis only slightly swollen, but extremely painful on pressure.

*Treatment.*—After the dressing was applied, there was considerable relief. Injected 2 c.c. of serum (171). Considerable relief all day. On March 6 he went to work. On March 7 the urethral discharge which had stopped since March 4 returned. There was very little sensitiveness when the dressing was applied. Second injection given (171). On March 10, the sixth day, the discharge was slight, urine in both glasses cloudy. The epididymis was to all appearances entirely well, a very slight thickening at this time being left in the tail of the epididymis. Injection omitted. On March 15 patient came with slight return of pain and swelling, a distinct relapse. Third injection of serum given (170). Two days later, on March 17, epididymis had almost returned to normal. On March 31 there was no trace of there having been an inflammation.

CASE 2.—Dispensary case, March 12, 1906, Ph.D., 24 years old, had gonorrhea for two months, this being the second attack. Epididymitis began 24 hours before, pain in left epididymis and cord very severe.

*Treatment.*—First injection (170). March 13, less pain. March 14, no pain. Nodule left in epididymis; second injection (170). March 17, hard nodule left in testis; no pain; no injection. On March 24, patient having been absent one week, came with a relapse. Pain was slight and swelling slight in epididymis, but there was considerable pain in the cord, especially in inguinal ring. There was also marked frequency and urgency. Third injection of serum (181). After this for about two weeks patient complained of pain in inguinal canal, but no further injections seemed to be necessary. He was working full time. When seen in the early part of April, a small nodule was still left in the epididymis. He was seen last in May; no trace of the disease left.

CASE 3.—L. S., aged 62, had gonorrhea for five weeks. He had had epididymitis 24 hours, on March 12. Right epididymis much enlarged, very painful and tender.

*Treatment.*—First injection (170). On March 14 less pain, epididymis not so tender; second injection (170). Patient remained quiet at home during the intervals of treatment. March 16, no pain; epididymis hard, but not nearly so tender on pressure; third injection (175). March 19, epididymis slightly reduced in size, improving; fourth injection (175). March 21, no pain, injection omitted. On March 28, i. e., at the end of the second week patient went about in comfort, but the epididymis continued markedly thickened. This was a severe type of case, but I felt sure the serum rendered him more comfortable as to pain, and cut short the trouble.

CASE 4.—L. K., 19 years old, dispensary case, March 12. First attack of gonorrhea, was of 7 weeks' duration. Two weeks before he was threatened with abscess of prostate, which gradually subsided. He had had epididymitis for three days and remained at home during that time. Epididymis of left side was very large and very painful. Cord also involved.

*Treatment.*—First injection (170). March 14, still much pain, but somewhat less than before, as evidenced when handling the testicle while applying the dressing; second injection (170). March 16, still considerable pain; case evidently of a severe type; besides, injections were not made till third day of attack. Third injection (175). On March 19 patient did not appear; was seen at his home; had high fever and pain in the cord. March 21, he came to dispensary; still great pain in the cord. Pain in epididymis has, however, been absent since March 17. Fourth injection (175). March 24, no pain, patient cheerful and better, no injection. March 26, improving, epididymis greatly reduced in size, patient moves about easily. April 2,



very slight nodule left. May 4, all signs of trouble have entirely disappeared.

CASE 5.—J. P., 22 years old, was seen March 24. He had had epididymitis for three days, gonorrhea two weeks, primary attack. Epididymis large and painful.

*Treatment.*—First injection (175). March 26, better, no spontaneous pain, swelling reduced one third; second injection (181). March 28, pain very slight, no injection. March 30, still improving, no injection. April 28, slight nodule still left.

CASE 6.—W. W., was seen March 31. He had had internal medication for thirty-one days; primary attack. Patient drove a truck and did heavy lifting. He had had epididymitis for 24 hours, swelling slight, but pain intense.

*Treatment.*—First injection (187). April 2, no pain when quiet, but great pain when he moved about or rode in the cars (patient came a long distance for treatment, from East New York); second injection (187). April 6, no injection, as both arms were swollen; swelling in epididymis was enormous. April 9, less pain in testicle on handling, swelling reduced one-half. April 16, beginning pain in right epididymis; third injection (187); left side still improving. April 19, right side all right, no trace of trouble on that side, but left side had again increased in size; pain returned to some degree on moving. April 26, left epididymitis greatly improved, but cord had become involved and very painful at inguinal ring; fourth injection (goat serum). May 3, pain at inguinal ring greatly diminished fifth injection (goat). Swelling in epididymis reduced one-half again. Patient took a hot bath every other day. May 17, he had had no pain for two weeks, the swelling was soft, but large, no hard nodules; patient returned to work. May 23, he felt all right. This case was the worst of the series; nevertheless, patient made a distinct gain after each injection. The necessary long car ride was a great handicap.

CASES 7 and 8.—The next two patients received only one injection each. One was sent, by his own request, to the hospital, as he could not remain at home without working. The other did not return.

CASE 9.—B. R., 27 years old, was seen April 27. He had had gonorrhea three weeks; epididymitis 24 hours, swelling large and painful.

*Treatment.*—First injection (200). April 28, patient said he felt better; no pain, size the same; second injection (200). April 30, no pain, swelling reduced to one-third of former size; third injection (200). May 2, no pain, nodule only left; fourth injection (200). Patient went to work. May 7, slight return of pain and swelling; fifth injection (200). May 9, no pain; patient continued at work. May 12, slight induration left in tail of epididymis, but no swelling of tissues surrounding it and no pain. May 19, no trace in epididymis.

CASE 10.—J. F., 19 years old, was seen May 10. He had had gonorrhea three weeks, primary attack, and epididymitis 24 hours. Epididymis was very painful, pain running up to inguinal ring. Process in early stage.

*Treatment.*—First injection (goat). May 11, on coming to the dispensary patient felt no pain, but was obliged to wait an hour before my arrival; he became restless and pain set in again; second injection (goat). May 12, no pain, swelling in epididymis of moderate size; no injection. May 15, not seen for three days, pain again returned slightly. Epididymis was more swollen, but not very tender to pressure; third injection (goat). May 16, one week since beginning of attack; no pain, swelling reduced, no injection. May 17, no pain, patient felt perfectly well. Nodulation was very slight; patient not seen since.

CASE 11.—S. W., 21 years old, seen on May 10, had had gonorrhea two months (multiple attack), epididymitis three days. It began slowly and insidiously, was then very painful, but not much swelling.

*Treatment.*—First injection (goat). May 14, swelling almost gone. No pain. Testicle painted with ichthyol and glycerin, equal parts, dressing applied; no injection. May 16, patient felt so well yesterday that he went to work. At night had return of severe pain in epididymis and cord, and complains of severe spontaneous pain. Tenderness in handling not marked and there is only slight swelling; second injection (goat). May 17, pain greatly diminished, very little swelling; third injection

(goat). No further injection made after this; when last seen, very slight thickening of epididymis noted.

CASE 12.—H. L., 35 years old, was seen May 15. Eight years ago had epididymitis with an attack of gonorrhea. Present attack of gonorrhea began four weeks ago; epididymitis began yesterday. Two injections were made with goat serum on May 15 and 16. May 17, almost no pain, swelling much smaller. May 22, only slight thickening, no pain.

CASE 13.—M. F., 28 years old, was seen May 22. He had had several attacks of gonorrhea. Present attack began five weeks ago. He never had epididymitis before the day previous. He complained of great pain, but process was in early stage, not much involvement. Two injections were given with goat serum on May 22 and 23. May 24, no pain, very slight trace of thickening. May 28, no trace.

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## LEGISLATION FOR VITAL STATISTICS IN THE UNITED STATES.

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The condition of registration of vital statistics in the United States has long been a reproach to this country. In a recent discussion in the Royal Statistical Society of England a speaker casually remarked: "In the United States the vital statistics are almost worthless." And he was right, so far as concerns vital statistics covering the country as a whole, and showing, as do those of other civilized countries, the birth rates and death rates from year to year.

The importance of vital statistics, both from a legal standpoint and for the purpose of effective sanitary administration, is not altogether overlooked by us. Certain states have long made effective use of such data. One of the oldest and most efficient systems of registration in this country is that of New Hampshire, and Dr. Irving A. Watson, secretary of the State Board of Health, says in his last report:

All sanitary calculations are based on vital statistics. Without them health officers would be groping in the dark so far as the results of their work are concerned. Sanitary legislation would be largely of a hit-or-miss character. Scientific methods could not be formulated for the suppression of disease. The importance of a given malady as a cause of death could not be determined—in fact, vital statistics are the measure by which we gauge and weigh, with approximate exactness, the movement of a population; whether increasing or diminishing, the mortality from different causes, the effect of seasons, climate, occupation, locality, and other environments on which the health of individuals and communities depends.

The health authorities of Pennsylvania, after long experience in attempting to do sanitary work without a well-equipped system of registration as a basis, adopted the following resolution which has since resulted in the enactment of one of the best registration laws now on the statute books of any state and the admission of Pennsylvania into the registration area:

*Resolved,* That the achievement of the registration of all deaths, with their causes, immediately after their occurrence, and the prompt return of certificates of death from local registrars directly to the central bureau of vital statistics which shall constitute a part of the organization of the State Board of Health, thereby giving the sanitary authorities of the state timely information of the exact prevalence and distribution of disease, is the most important of all sanitary measures and should be unremittingly urged until successfully carried out in this state.



While we have no vital statistics for the United States as a whole, we have returns of deaths from certain states having effective laws and from certain cities in non-registration states where there has been effective local registration. It is gratifying to know that the proportion of population thus represented in what is called the "registration area" is increasing, as shown by the following statement:

Year.	Population of continental United States.	Population of registration area.	Per cent.
Census year, 1879-80.....	50,155,783	8,538,366	17.0
Census year, 1889-90.....	62,622,250	19,659,440	31.4
Census year, 1899-1900...	75,994,575	28,807,269	37.9
Calendar year, 1900.....	.....	*30,765,618	*40.5
Calendar year 1906.....	.....	*36,846,981	*48.5

\* Population and percentage according to census of 1900.

We have thus reached a point where nearly one-half of the entire population of the United States is represented by mortality statistics, and if we pay suitable attention during the next few years to the enactment of wise legislation in the various states not yet included in the registration area this proportion should be largely increased and the time be in sight when the entire United States shall possess adequate registration of deaths.

In the appended tabular exhibit may be seen just what states constituted the registration area in 1900, and how many have been added since that date. The column showing those not yet accepted as registration states is of special interest, since in many of them inadequate or ineffective laws for this purpose now exist, and in a large number of them the legislatures are now in session, by which proper laws or amendments to existing laws can be enacted.

#### HOW CAN THE MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION AID?

Briefly, the members of the American Medical Association can be of great service in helping to advance the day of reliable vital statistics in this country in two general ways: (1) By encouraging and helping the state authorities, chiefly members of the state boards of health, who are now advocating the adoption of effective legislation; (2) by discouraging the adoption of measures that experience has shown to be wholly inadequate for the purpose for which they are proposed. Some physicians and members of this Association are also members of state legislatures, and as such may be able to render very effective service in helping to secure good and to ward off bad legislation for vital statistics.

As to the interest of the Association as an organization, I am glad to say that the accurate registration of vital statistics was one of the very first objects which it desired to promote. I find in Vol. I of the Transactions of the Association, for 1848, a report "on behalf of the Standing Committee on Registration of Births, Marriages and Deaths," in which reference is made to an address which was adopted during the preceding year and transmitted, in accordance with the instructions of the Association, to the "authorities of all the United States." Many reports were made by this committee and much of value was accomplished before the Civil War interrupted their labors. I can do no better than to quote and emphasize the concluding paragraphs of the report submitted under date of April 25, 1858, by Dr. Edward Jarvis, "one of the committee on registration":

"As now this system [of registration of vital statistics] is well established and in operation, in Kentucky, South Carolina, Virginia, New Jersey, Connecticut, Rhode Island, Massachusetts and Vermont, eight states, and as Maine and Michigan have taken the preliminary steps for this purpose, and men of science, and even politicians, are using their influence in other states for this object, there is much reason to believe that their example will be followed, and that state after state will, in the progress of time, follow in the same path, until finally, and, we trust, at no distant period, the system will be adopted, and this record of life and death be made complete, throughout our nation.

*"It will be necessary for this purpose that the Association bodily, and all of its members individually, publicly and privately, at home and everywhere, use their influence unceasingly until the whole is accomplished."*

It is interesting to note that the first three states named by Dr. Jarvis are southern states, although not a single southern state belongs to the registration area to-day. The health authorities of Virginia, however, recently adopted a resolution similar to that adopted by Pennsylvania, and bills for the registration of vital statistics will be introduced during the present legislative sessions in North Carolina and perhaps in other southern states. It is of great importance that this section of the Union should be adequately represented. Organic laws or amendatory acts are contemplated for Missouri, Kansas, Minnesota, Wisconsin, North Dakota, Montana, and Washington, besides a reference to the subject in the constitution of the new state of Oklahoma under which effective legislation can later be enacted.

#### WHAT ARE THE NECESSARY PROVISIONS OF A REGISTRATION LAW FOR DEATHS?

Experience has shown that certain methods will give satisfactory results for the registration of deaths in this country, and that certain methods will not. Is it wiser to adopt methods that have been tested and uniformly found to give good results, or to adopt certain other methods, that have likewise been tested again and again, and uniformly proved to be worthless? Theoretically this proposition ought not to require much argument, but in practice it does; the same old ineffective plans are still brought forward to-day, and the statute books of certain states are likely to be cumbered with so-called vital statistics laws that can not possibly prove other than futile and absurd.

Following are the necessary elements of a satisfactory registration law for deaths, as formulated by a committee of practical registration officials representing the American Public Health Association and coöperating with the Bureau of the Census, and which, since their publication in 1901, have afforded a safe and efficient guide for legislation and have greatly aided in the extension of the registration area:

1. Deaths must be registered immediately after their occurrence.
2. Certificates of death (standard form) should be required.
3. Burial or removal permits are essential to the enforcement of the law.
4. Efficient local registrars (properly compensated) are necessary.
5. The responsibility for reporting deaths to the local registrar should be fixed.
6. The central registration office should have full control of the local machinery, and its rules should have the effect of law.
7. The transmission and preservation of records should be provided for.
8. Penalties should be provided (and enforced).



In the above list, the two items neglect of which is most frequently responsible for failure are indicated by italics. The others are equally necessary, but when, in the examination of a law, it appears that there is no requirement for a burial or removal permit before any disposition is made of the body, or that no local registrars are provided, and properly compensated, by whom such permits can be issued, then it is seldom necessary to inquire further as to why deaths are not fully recorded. The burial permit is the absolutely necessary check on the registration of deaths and the only one by which efficient and complete operation of such a law can be secured. If registration is deferred, and undertakers are allowed to inter or to remove bodies without permits, with the understanding that the deaths shall be registered or enumerated at some subsequent time, the result will be that many deaths will never be registered. The immediate local registration of deaths, with the safeguard of a burial or removal permit, necessarily implies that there shall be a local registrar to receive the certificate of death and to issue the permit. This official should have a limited district, and should exercise supervision over it, under the general direction of the central registration office of the state. Only in this way can it be certain that no deaths escape registration through violation of the law, and the central office can thus be able to insure uniform and complete registration for the entire state area. Returns of the original certificates of deaths should be made monthly by the local registrar to the state registrar, affording the most authentic and satisfactory legal records and statistical data for sanitary purposes.

In lieu of this system it has been enacted many times, and always in vain, that deaths should be reported directly to the county health officer, county clerk or other county official. A county officer can not be expected to act as a local registrar of deaths, since it is unreasonable to expect that undertakers should take certificates of deaths to him from distant parts of a county and obtain permits before interment or removal. Physicians will not report deaths completely to a county officer, no matter what penalty is imposed. It is very undesirable that local registrars should report to any county officer, since it only results in delay in the transmission of the returns to the central registration office of the state and serves no good purpose whatever. A registration law can not be satisfactorily enforced through county officers, but only directly by the central office through the local registrars, each of the latter being thoroughly acquainted with and responsible for his limited district. County records may be maintained for legal purposes, if already existing, by means of transcripts or otherwise so that the system will not interfere, as at present, with successful registration.

I have entered somewhat into detail in regard to this matter, because the pernicious county system of attempting to collect vital statistics—it has never yet successfully collected them in a single one of the many states in which it has been tried—is one of the stumbling blocks that are continually thwarting efforts to secure adequate legislation. Its inherent unfitness for this purpose should be understood by all persons interested in better laws. This antiquated and discredited plan was a part of the old Pennsylvania law of 1851. It resulted in utter failure, and it will be a failure if adopted by any state in its legislation of 1907, as it has been time and time again in various states during the intervening years. There is no necessity for wasting further effort

on measures that have invariably proved futile and which only hinder the adoption of proper laws. Hence the great advantage of having all such proposed legislation carefully studied by members of this Association who

#### STATUS OF EFFECTIVE REGISTRATION OF DEATHS, 1906.

Registration States, 1900.		Added as Registration States, 1906.		Not yet accepted as Registration States.	
State.	Population, 1900.	State.	Population, 1900.	State.	Population, 1900.
		California. .	1,485,053	Alabama. . .	1,828,697
Connecticut	908,420	Colorado. . .	539,700	Arizona . . .	122,931
Dis. of Col..	278,718			Arkansas . .	1,311,564
				Delaware . .	184,735
Indiana. . .	2,516,462			Florida . . .	528,542
Maine . . . .	694,466			Georgia. . .	2,216,331
Mass. . . . .	2,805,346	Maryland . .	1,188,044	Idaho . . . .	161,772
Michigan. . .	2,420,982			Illinois . . .	4,821,550
				Ind. Ter. . .	392,060
New Hamp.	411,588			Iowa . . . . .	2,231,853
New Jersey.	1,883,669			Kansas . . .	1,470,495
New York...	7,268,894			Kentucky . .	2,147,174
				Louisiana . .	1,381,625
				Minnesota. .	1,751,394
				Mississippi. .	1,551,270
				Missouri . . .	3,106,665
				Montana . .	243,329
				Nebraska . .	1,066,300
				Nevada . . . .	42,335
				New Mexico.	195,310
				N. Carolina.	1,893,810
				N. Dakota . .	319,146
				Ohio . . . . .	4,157,545
				Oklahoma . .	398,331
				Oregon . . . .	413,536
				S. Carolina.	1,340,316
				Tennessee . .	2,020,616
				Texas . . . . .	3,048,710
				Utah . . . . .	276,749
				Virginia. . .	1,854,184
				Washington .	518,103
				W. Virginia.	958,800
				Wisconsin. .	2,069,042
				Wyoming. . .	92,531
Total. . . .	9,916,482	Total. . . .	19,960,742	Total. . . .	46,117,351

Population, registration states, 1900.....	19,960,742
Per cent. of total population .....	26.3
Population, registration cities in states added, 1906....	3,835,119
Per cent. of total population .....	5.0
Population of registration cities in nonregistration states.	6,969,757
Per cent. of total population .....	9.2
Population in registration area 1900.....	30,765,618
Per cent. of total population.....	40.5
Net population added to registration area in 1906.....	6,081,363
Per cent. of total population.....	8.0
Population in registration area in 1906.....	36,846,981
Per cent. of total population .....	48.5

NOTE.—Nearly all of the states not yet accepted as registration states have now, or have at some time possessed, laws intended to secure the complete registration of deaths. These laws have usually been defective in principle, though in some instances faulty administration may have been responsible for failure to secure results. Only three states—Indiana, Maine and Michigan—were added to the registration area during the decade 1890 to 1900, while one state—Delaware, which was admitted as a registration state in 1890—was dropped from the list in 1900. Two states—Nebraska and Utah—adopted legislation in 1905 which requires immediate registration of deaths with compulsory burial permits, and it is hoped that the results obtained will justify their admission at an early date. In addition to the population of the registration states given above, it should be remembered that certain cities in states not yet accepted as registration states having an aggregate population of 6,969,757 in 1900 are also embraced in the registration area, which makes the total population of that area on the basis of the census of 1900 amount to 36,846,981.



are conversant with the essential requirements of registration laws.<sup>1</sup>

I have said nothing in regard to the registration of births, because I believe the registration of births may, as a rule, best be promoted by first passing and enforcing an up-to-date law for the registration of deaths. This will enable all the necessary registration machinery to be organized, and the registration of births can be added after the registration of deaths has proved to be a practical success. The registration of births is most difficult—so much so that no state in this country, and no city, not even excepting cities like Boston and New York where laws have been in force for many years, has obtained complete returns of births. It is likely seriously to hamper the efforts to secure complete returns of deaths, and, as the mortality statistics are of greater sanitary importance, it would seem expedient, as a rule, to direct effort exclusively to the registration of deaths. Exception may sometimes be made with good results, as in Pennsylvania, where a completely organized and well-appointed system for births, deaths, and morbidity statistics as well, was installed, but if there is any doubt as to the ability to frame and to enforce a thoroughly effective law for the registration of deaths then legislation should be limited to what we know can be obtained under proper provisions.

The Bureau of the Census is coöperating with the various states in accordance with a joint resolution of Congress approved Feb. 11, 1903, which "requests the favorable consideration and action of the state authorities, to the end that the United States may attain a complete and uniform system of registration," and has sent many copies of its special publications on this subject, with the approval of the state public health authorities, to the officers of the state and county medical societies which form a part of the American Medical Association. Their attention has been called to the following resolution, adopted by the Association at New Orleans in 1903, and it is hoped that the results shown by the vital statistics legislation of 1907 will indicate the beneficial effect of the interest exhibited by the members of the Association:

*Resolved*, That the American Medical Association strongly urges on the state medical societies that special committees be appointed to advocate and secure the passage of satisfactory registration laws in states that do not at present possess them, that county societies support and aid in the execution of such laws as far as possible, and that physicians individually, throughout the United States, endeavor to promote the accuracy and value of the mortality statistics by giving clear and definite statements of causes of death on certificates of death.

1. The following publications of the Bureau of the Census relating to this subject are available for distribution: No. 71. Registration of Deaths, including a paper on "The Essential Requirements of a Law for the Registration of Deaths and the Collection of Mortality Statistics." No. 101. Practical Registration Methods. No. 104. Registration of Births and Deaths—Drafts of Laws and Forms of Certificates. No. 106. Extension of the Registration Area for Births and Deaths—A Practical Example of Co-operative Census Methods as Applied to the State of Pennsylvania. A general account of the movement will also be found in the introduction to the special report on "Mortality Statistics, 1900 to 1904."

**The Importance of Dietetics.**—The various forms of food, the methods and requirements of normal digestion, the influence of age and the adaptability of nutrition in the various diseases to which the human body is liable are subjects to which we can not urge attention too forcibly. It is not wise to urge too rigid a diet in any particular disease. We no longer absolutely discard meat in the nephritic nor sugar in the diabetic patient.—*Medical Times*.

## Clinical Notes

### THE QUANTITATIVE DETERMINATION OF GLUCOSE IN THE URINE BY A NEW MODIFICATION OF FEHLING'S SOLUTION.

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In the volumetric determination of glucose in urine based on the property of sugar to reduce cupric oxid the end reaction is markedly obscured by the precipitation of insoluble red cuprous oxid. To find a solvent for it has been the object of most of the modifications of Fehling's method thus far proposed.

The employment of an ammoniacal solution of cupric oxid to avoid this disturbing factor was first suggested by Pavy, whose method was subsequently modified by a number of investigators, including one of us (J. Rudisch). Such ammoniacal solutions, however, have not entirely accomplished their purpose. Not alone is the odor of ammonia obnoxious, but unless the determination proceeds rapidly the ammonia is driven off in sufficient quantity during the boiling to permit the deposit of the red oxid of copper before the end reaction is complete.

These disadvantages are overcome in the method devised by Gerrard and Allan. Ten c.cm. of a mixture of equal parts of Fehling's copper sulphate and alkaline solutions are heated to boiling, and exactly or nearly decolorized by titration with a 5 per cent. solution of potassium cyanid. After the addition of another 10 c.cm. of Fehling mixture to the decolorized solution it is again heated to boiling, and the sugar-containing urine then titrated into it from a burette until the blue color of the added copper is again destroyed. The double salt of potassium and copper cyanid formed during the first titration suffices to keep the red cuprous oxid in solution. This method, involving, as it does, two titrations and extreme care in avoiding an excess of potassium cyanid, presents considerable difficulty to the clinical worker. The use of potassium cyanid, a highly poisonous substance, and the relative instability of the solution are further objections to its general use.

In the following method which we have devised the disadvantages of the Allan-Gerrard test are obviated. To four parts by volume of a 50 per cent. solution of potassium sulphocyanate, chemically pure, is added one part by volume of a mixture of equal parts of Fehling's copper sulphate and alkaline solutions. Twenty-five c.cm. of this solution are placed in a porcelain dish, and the urine to be tested added drop by drop from a burette until the blue color of the copper entirely disappears. Throughout the titration the solution should be slowly boiled and constantly stirred with a glass rod. The end reaction is extremely sharp, the fluid becoming colorless or assuming a faint yellow tinge. The advantages of this method are (1) only one titration is necessary as potassium sulphocyanate does not decolorize the copper solution; (2) potassium sulphocyanate is not poisonous; (3) as the mixture is stable a considerable quantity may be made to be kept as "stock." Such a "stock" solution was found to be unaffected after four months' exposure to heat and sunlight.



With aqueous solutions of glucose ranging from 0.25 to 6 per cent. the results obtained with the authors' method and with the polariscope are identical. With diabetic urines, however, variations of from 0.03 to 0.25 per cent. are occasionally found—differences that are too small to be of clinical significance. These variations are explicable on two grounds. First, substances other than glucose (creatinin, uric acid, glycuronic acid) reduce copper and give too high a reading with Fehling's solution; secondly, levorotating substances (albumin, levulose,  $\beta$ -oxybutyric acid) may coexist with the glucose in the urine, giving too low a percentage with the polariscope. To estimate properly the quantity of dextrose in any given specimen, therefore, it is necessary to make determinations both with the copper solution and with the polariscope. Should the former indicate a higher percentage than the latter, levulose should be suspected and tested for with the Seliwanoff resorcin-hydrochloric acid method. In the absence of levulose the most probable disturbing factor is  $\beta$ -oxybutyric acid, as albumin and other levorotators are precipitated when the urine is cleared with lead acetate for the polariscope.

Although with undiluted urines containing large amounts of dextrose satisfactory results have been obtained with the authors' method, the extreme care necessary in titrating under these conditions makes it advisable to dilute such urine from five to ten times. It is preferable to examine specimens when fresh, but should it become necessary to employ preservatives, toluol, salicylic acid or carbolic acid may be added in small quantities without markedly interfering with the reaction. Chloroform, on the other hand, must be avoided as even in minute traces its presence vitiates the test.

## A SIMPLE METHOD OF FINDING THE OVA OF UNCINARIA.

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The following is a simple method of finding the ova of *Uncinaria americana*:

Mix thoroughly one-third of a teaspoonful of hard feces in about a pint of water. After this has stood for about five minutes the ova will have settled to the bottom. Pour off the clear liquid, leaving about one ounce in the bottom of the graduate. Wash the sediment in this manner for three or four times and then strain through cheese cloth or gauze. If the mass does not run through freely, press it with a glass rod. After rinsing, let it settle for a few minutes and then draw up a small quantity from the very bottom of the graduate with a medicine dropper. In a few minutes the ova will have settled at the bottom of the dropper. Put a drop on a slide and cover with a slip. By gentle pressure on the cover slip the drop will become thin enough to be examined. The ova are readily recognized under a  $\frac{2}{3}$  inch objective.

The following trial showed the superiority of this method over those ordinarily employed. Four slides were made from the same specimen of feces. The first was made by taking a small piece of solid feces and spreading it on the slide with a drop of water. Not a single ovum was found on this slide. The second slide was prepared by washing and settling as described above, but was not stained, and the drop was obtained with a platinum loop instead of the pipette. Only three ova were found. The third was made by using the dropper instead of the loop. Ten ova were found. The fourth slide was made as described above, and 113 ova were counted.

## CHEYNE-STOKES RESPIRATION.

J. W. ROBINSON, M.D.

MCCAMMON, IDAHO.

An editorial in THE JOURNAL, Oct. 27, 1906, on Cheyne-Stokes respiration suggested to me the idea of reporting the following case of pneumonia:

*Patient.*—B. P., aged 4, had always been a healthy boy, but not very robust. He had had an occasional "cold" and measles.

*History.*—On the night of October 25, he had a severe chill lasting one-half hour. He was restless all night, complained of slight pain in the right side; fever developed. In the morning the temperature was 102 F. A cathartic was given. He did not seem to be very ill until October 28, when I was called. The symptoms at that time were rather marked restlessness, rapid breathing, but no pain. The temperature had varied from 100 to 104 F.

*Examination.*—Examination showed a fairly well-developed boy. His face was flushed, breathing rapid but not labored, and he seemed rather dull mentally. The eyes showed cloudiness of the sclera, the pupils were even and responded to light; there was no photophobia. There was slight herpes labialis, the tongue was heavily coated with a brown coat, and there was some redness of the pharynx.

*Heart:* The pulse rate was 120, all sounds were normal, but louder than usual, except some accentuation of the second pulmonic.

*Lungs:* The middle lobe of the right lung was the only part involved and showed the classic signs of a lobar pneumonia. Respiration was 36.

The abdomen was rather tympanitic.

The urine was heavily colored, specific gravity 1026; there was no albumin, but there was diminution of chlorids; the exact amount of diminution was not determined.

*Course of Disease.*—Everything went well for a few days, when the lung symptoms grew less prominent, and marked toxic symptoms appeared. The breathing became quieter and the boy passed a pseudo-crisis on October 30, or five days after the initial chill. The temperature dropped to 97.6 F., the pulse to 60, and respiration to 16.

October 31: Marked meteorism developed, the breathing increased to 24, and was irregular, the temperature rose to 102 F., and delirium developed. The pulse varied between 90 and 130 and was very weak. Calomel and salines were used, as well as increased stimulation. The meteorism was very troublesome and frequent high colonic flushings were necessary to control it at all.

The next few days were stormy ones. Meningeal symptoms were marked, but the character changed from time to time.

November 1: There were marked stiffness of the muscles of the neck, and at times a transient opisthotonos, photophobia, dilated pupils, and almost constant crying. I feared a meningitis, but early on November 2 there was a change in the symptoms. The crying ceased, the photophobia lessened, but the stiffness of the neck remained. At 2 a. m. there set in a new symptom, which I thought was of fatal prognosis. The breathing which had been regular, and rapid only when interfered with by the marked meteorism, developed the Cheyne-Stokes type. From one complete pause to another there were usually seven breaths taken. A few times there were as few as five, and at others nine in the cycle. The heart seemed very weak. This condition lasted for about 16 hours, when there occurred a gradual change.

From this time on there was a slow but gradual improvement. It was a week, however, before the boy was considered safe. He is now in good condition.

I would direct attention to several factors in this case. As in a number of other pneumonia cases I have seen this autumn, the toxic symptoms were of more prominence and importance than those due to the lung involvement.

Even from the first there was not that classic symptom—a steady temperature. All through the course of sickness the temperature varied. From 102 to 104 F.



was the average, 97.6 and 107 F. representing the extremes.

A pseudo-crisis occurred and there was none of the usual causes to account for the return of fever. There was no new lung involvement nor abscess formation.

Although there was some stupor at first, the meningeal symptoms were slight until after the pseudo-crisis. Then symptoms developed very suggestive of a meningitis, except that they were of a changeable nature. The fact that recovery ensued shows that Cheyne-Stokes respiration is not always significant of a fatal termination.

Treatment in these cases is clear. The main attention should be paid to careful feeding and free elimination. I have found that by using rather large doses of sodium sulphocarbolate and small, frequent doses of aromatic fluid extract of cascara the intestinal condition can be markedly improved. In only the more asthenic cases has there been an urgent demand for calomel and colonic irrigation.

I have also noticed marked improvement following the use of a diuretic.

Potassium citrate, at times theobromin-sodium salicylate, and normal salt solution I consider the best. The latter is best given in enemas.

## SPONTANEOUS ARTERIOSCLEROSIS OF THE AORTA (ATHEROMA) IN A RABBIT.\*

W. OPHÜLS, M.D.

Professor of Pathology and Bacteriology Cooper Medical College,  
SAN FRANCISCO.

So much has been written lately about the artificial production of aortic lesions in rabbits by intravenous injections of adrenalin, nicotin and other substances, and their relation to the lesions in human arterial dis-



Figure 1.—Photomicrograph of section of the diseased aorta showing histologic character of lesion (Hematoxylin-eosin).

ease, that it would seem of interest to record a case of spontaneous atheroma accidentally observed in a rabbit.

\* From the Pathological Laboratory of Cooper Medical College, San Francisco, Cal.

The rabbit in question was a large, healthy, well-developed female, raised in the country, which had just been received by the laboratory and had not been at the college over eight days. It died of acute anemia in the course of an unsuccessful surgical operation.

Examination of the aorta showed a normal caliber and normal elasticity of the wall. In the arch near its beginning there were several light yellow, fairly well circumscribed, slightly raised, oblong spots from 2 to 3 mm. in greatest diameter, which attracted attention on ac-

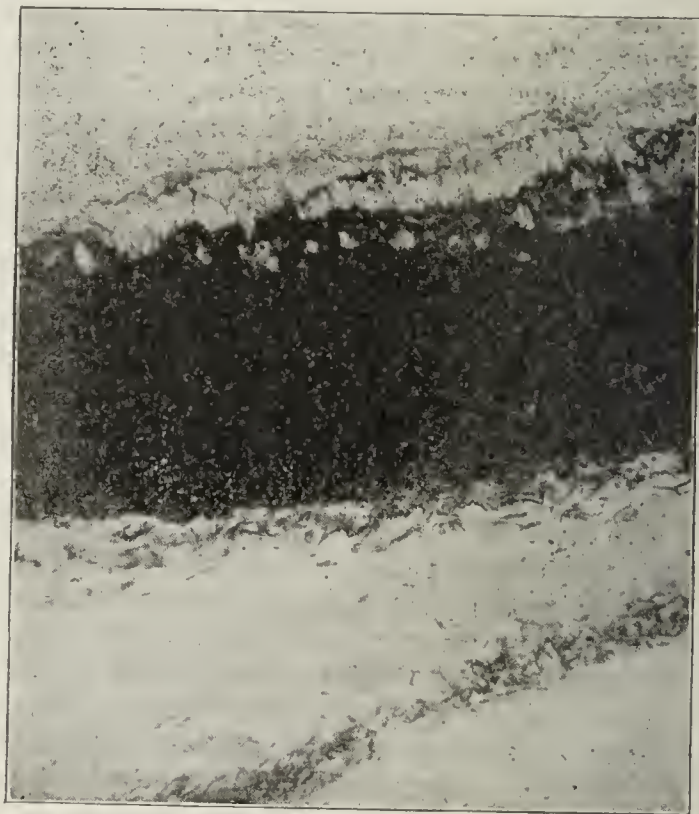


Figure 2.—Photomicrograph of a section of the diseased aorta stained with Wiegert's stain for elastic fibers, showing separation of elastic membranes.

count of their great similarity to the initial stages of atheroma in man and their dissimilarity to the lesions produced by adrenalin injections.

Sections confirmed this impression. As shown in the photomicrograph, the lesion is situated very largely on the inside of the blood vessel in the region of the intima. The upper layers of the muscle are also involved and the elastic membranes separated more or less from one another, as is shown in the other photomicrograph. This early involvement of the muscle is not astonishing when we remember that in rabbits the intima practically consists of the endothelial layer only. Histologically the lesion is an exact counterpart of the early lesions in human atheroma which I had much opportunity to study in my recent work on human arteriosclerosis.<sup>1</sup> We have the same accumulation of large cells (probably proliferated connective tissue cells) in the tissues with marked fatty degeneration of their protoplasm. In the rabbit also the trouble is not confined to the intima and the upper layers of the muscle, but the adventitia also seems to be involved. The sections show a moderate, but quite distinct fibrous thickening of the latter underneath the plaques, and in serial sections I even discovered an area of cellular infiltration around one of the vasa vasorum in the thickened adventitia.

So far as this observation goes the spontaneous atheroma in rabbits would appear to be much more like that of man than the experimental lesions produced with adrenalin.

1. Arteriosclerosis of the Aorta, Am. Jour. of Med. Sci., June, 1906.



## A SHUTTLE STITCH FOR CLOSING ABDOMINAL AND OTHER WOUNDS.

JOSEPH B. BACON, M.D.

Surgeon to the St. Francis Hospital.  
MACOMB, ILL.

One of the very important points to be observed in closing a wound after a celiotomy is to evert the peritoneal edges and thus avoid adhesions of the viscera to the wound. By any of the old methods of suturing this was a very difficult thing to do and often so tedious that no attempt was made to evert the edges. I have practiced this new stitch now in eight cases and find it an

his needle through the peritoneal angle of the wound and ties a reef knot, leaving about two-thirds of the suture material on the operator's side. The operator now passes his needle through the transversalis fascia and peritoneum, and the assistant catches up the loop, taking care always to catch only the thread next to the first knot. This is repeated until the other end of the incision is reached, and the assistant then ties another reef knot. Next the needles are passed through the

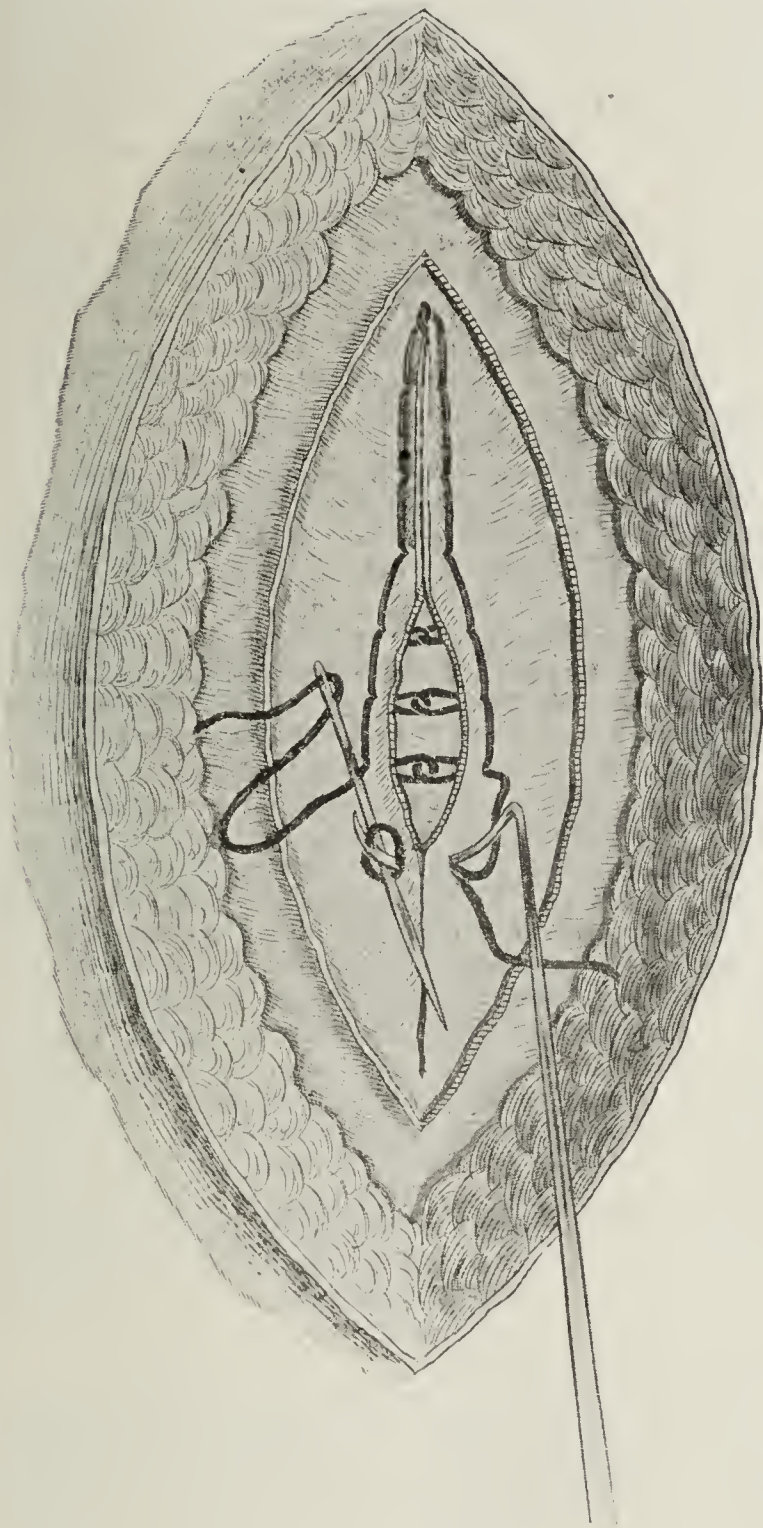


Fig. 1.—Suture of peritoneum.

ideal one. I use No. 3 chromicized catgut, and thus have a suture material that, while extra heavy for the peritoneum, is just right for the fasciæ, and, as only a small amount of it is used, the extra size is of small consequence. Any right-angled curved needle with a handle will do, but I am having made one with a glover's needle point and a round eye, so that the same needle will do for closing each layer separately and finally the skin, using horse hair or No. 1 pyoktanin catgut for the latter. One end of the catgut is threaded on a straight needle for the assistant and the other end is threaded on the needle of the operator. The assistant first passes

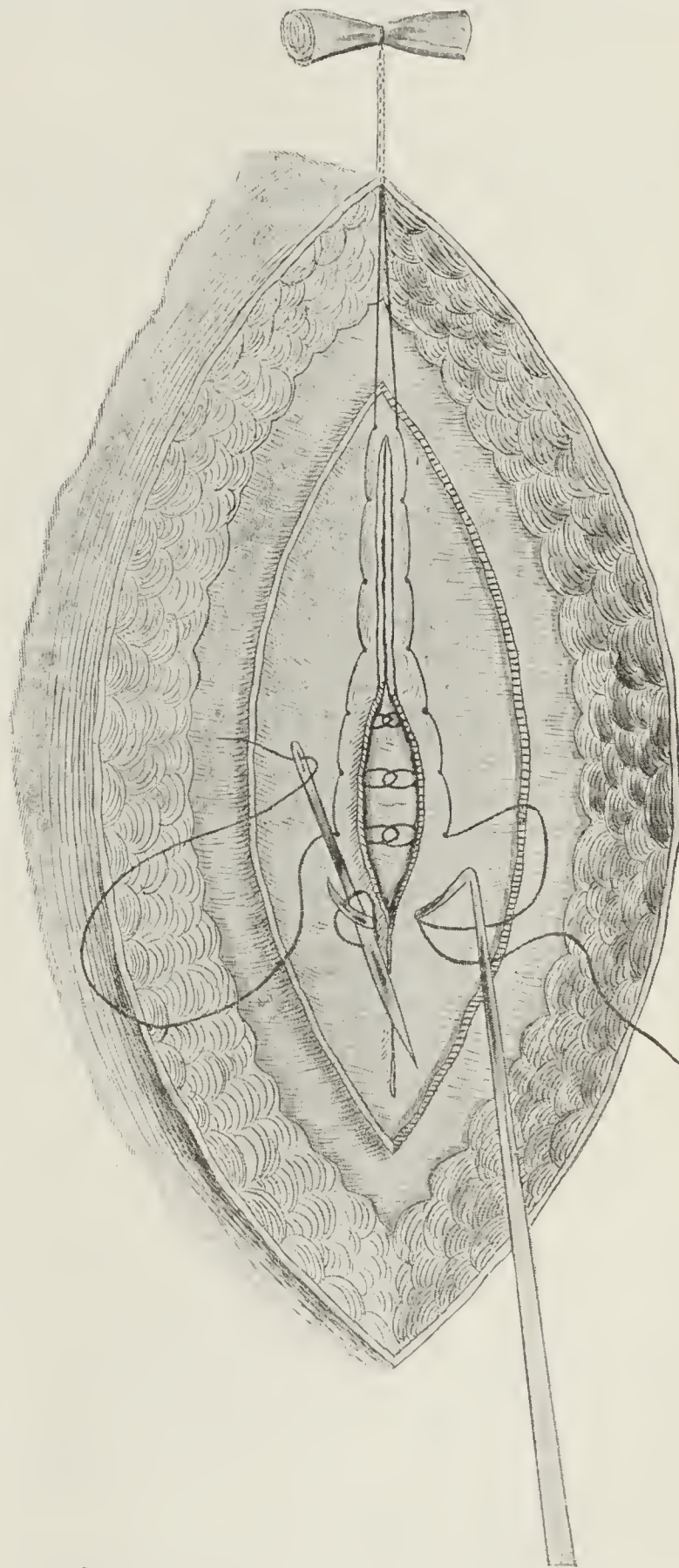


Fig. 2.—Placing of sutures which may be removed.

fascial edges at the adjacent angle to the wound, and the same method used in approximating them, simply turning "about face" and closing the fasciæ, ending at the same end of the wound at which the suture began.

In case one desires to use silkworm gut or wire for suturing material and later to remove them, a piece of gauze is fastened to the suture ends and the sutures passed through the skin down to the angle of the peri-



toneal wound, the needles are then rethreaded and the shuttle stitch begun as when the catgut was used.

The advantages of this stitch are:

*First.*—The peritoneal edges are accurately everted.

*Second.*—Only about one-half of the quantity of buried suture material is required.

*Third.*—The fascial edges are everted and thus a broad surface for their union is coapted.

*Fourth.*—One-half of the time is saved in suturing.

*Fifth.*—The figure-of-eight suture, if desired, can be placed easily just before closing the skin wound.

## CASE OF CHRONIC ULCERATIVE CHOLECYSTITIS WITHOUT GALLSTONES AND WITH NO SYMPTOMS REFERABLE TO THIS CONDITION.

JAMES P. TUTTLE, M.D.

AND

FREDERICK E. BEAL, M.D.

NEW YORK CITY.

The following case is reported as showing the possibilities of an evident chronic ulcerative cholecystitis, without gallstones, without stenosis of the cystic duct, which eventually perforated the gall bladder, with no definite history, and giving, up to the time of perforation, absolutely no symptoms pointing to its existence.

*Patient.*—Mr. C., aged 38, married, hotelkeeper, had lived the greater part of his life on the coast in a city in the extreme south. Family history was negative.

*Personal History.*—He had measles when about 10 years of age and he had no remembrance of ever having had malaria. He had had nothing else of moment until July, 1906—four months previous to death—when he had an attack spoken of by himself and his wife as a “bilious spell,” coming on after a heavy meal, with griping pains over the epigastrium, vomiting of a bitter greenish material, some fever and headache; there were no chills nor jaundice, and the entire attack lasted but a day or two. After this attack perfect health prevailed, with the exception of considerable annoyance from pruritus ani and occasional discharge or moisture about the rectum, with no pain. This condition had existed, however, with gradually increasing severity for a year or two previously, to the best of the patient’s recollection.

*Operation.*—On October 11, the man was operated on by Dr. Tuttle, for a small blind fistula and hemorrhoids, by the clamp and cautery method. Convalescence was immediate, prompt and complete. No symptoms nor signs were present indicating the slightest trouble anywhere. The itching ceased entirely and did not recur. There was no fever, pulse was normal, appetite good, tongue clear, and skin good color.

*Postoperative History.*—Ten days after the operation, when leaving the hospital, the patient complained of pain in the right side in the region of the hepatic flexure of the colon or lower border of the short ribs. He was temporarily relieved by aromatic spirits of ammonia, but the pain returned later and the physician at the hotel at which he was stopping administered morphin hypodermically.

At 4 o’clock the next morning the patient was awakened by severe pain in the region of the base of the right lung, characterized as sharp, cutting and intensified by breathing. Dr. Tuttle saw him an hour later and found a diaphragmatic pleurisy, temperature 100.6, pulse 96, respirations 36. There was no chill and no tenderness or rigidity anywhere in abdomen.

Dr. Beal saw the man at 11 o’clock the same morning, and found him complaining of pain referred to base of right lung, exaggerated by deep breathing. Temperature was 99.4, pulse 94, respirations 36. There were friction râles corresponding to the upper border of the liver, there were no moist râles

or consolidation in lung; there was no exudate in the pleura. The skin was slightly moist, warm and of good color. There was no pain or tenderness over the abdomen; urine had passed freely; bowels had not moved since the previous day. After strapping the side with plain adhesive plaster and ordering a laxative and enema, the patient was left feeling much more comfortable.

Dr. Beal was hastily summoned at 5 o’clock in the afternoon because of sudden and severe pain in the abdomen. He found the patient in marked collapse, pulse almost imperceptible at wrist and ranging from 130 to 140; temperature 98.6, respirations 30, jerky and audible; skin pale and covered with cold perspiration; pupils slightly dilated, expression anxious. The abdomen was distended, rigid and exquisitely tender to palpation, especially over the right hypochondrium. The pain became more intense over the entire abdomen, but was mostly in the right axillary line below the short ribs. It was not marked, nor was there especial tenderness over the gall bladder or the appendix. There was no tension of the right rectus muscle.

A consultation with Drs. Tuttle and John A. Wyeth decided a probable rupture of some viscus, but the condition of the patient allowed of no attempt at relief by opening the abdomen. All efforts to counteract the shock or to overcome the paralysis of the bowels were unavailing, the patient dying in 48 hours after the rupture, with little or no improvement at any time in the condition of collapse which would have rendered operation advisable.

*Postmortem Examination.*—The autopsy as made and reported by Dr. Jeffries disclosed the following condition:

*Thorax:* Heart and pericardium were normal. The right lung had moderate adhesions of recent formation in lateral and posterior surfaces from apex to base. At the diaphragmatic surface the lung was so firmly adherent by old fibrinous adhesions that it was impossible to separate the lung from the diaphragm. The left lung had one small, light adhesion at the posterior aspect of apex. Both lungs otherwise normal.

*Abdomen:* There was general peritonitis with congestion of all the blood vessels. Adhesions were not general, but all the tissues about the lower surface of the liver were firmly matted together. Just below the free end of the gall bladder a small pocket of pus about the size of a hickory nut was found between the surfaces of a reflection of the duodenum and the gall bladder. Adjacent to this was also a spot on the transverse colon with strong adhesions and marked evidence of chronic inflammation. The gall bladder presented a small perforation at its free end. Its inner surface gave evidence of chronic ulcerative cholecystitis with several spots of incomplete perforation at various points on its inner surface. There were no signs of gallstones. The cystic duct was not stenosed. In the peritoneal cavity there was about one quart of turbid, bile-colored fluid. The fluid in the gall bladder was of the same character as that in the peritoneal cavity. The liver was normal in size and well advanced in fatty changes. The kidneys were congested and were in a state of acute parenchymatous nephritis.

The condition was undoubtedly a chronic ulcerative cholecystitis with acute exacerbation and perforation. The firm adhesion between the gall bladder and the transverse colon was either a former perforation, or more probably an extension of the inflammation through the wall of the gall bladder.

76 West Eighth-fifth Street.

*Proper Names in Medical Nomenclature.*—This was the title of an inaugural thesis presented at Erlangen, 1906, by H. Orth, which is a valuable addition to reference literature. The *Monatshefte f. prakt. Dermatologie*, No. 11, Dec. 1, culls from the list those names relating to cutaneous affections and syphilis, and gives them with the definitions. Among the less familiar we note “Beckmann’s method”—determination of the freezing point of blood and urine in test of kidney functioning; “Marochetti’s blisters”—observed under the tongue in case of hydrophobia; “Schoenlein’s triad in purpura”—exanthem, rheumatic phenomena and gastrointestinal disturbances; “Shelley’s sign in grip”—sago-like eruption on palate and lips; and “Zangel’s apostem”—condyloma.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

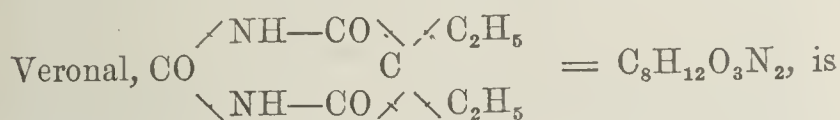
THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 227.)

### VERONAL.

DIETHYLMALONYLUREA. DIETHYLBARBITURIC ACID.



a ureide derived from diethylmalonic acid,  $\text{COOH}$ .  $\text{C}(\text{C}_2\text{H}_5)_2\text{COOH}$ , and urea,  $\text{CO}(\text{NH}_2)_2$ .

It is prepared by the interaction of esters of diethylmalonic acid with urea in the presence of metallic alcoholates.

It is a white crystalline powder, melting at  $191^\circ \text{C}$ . ( $375.8^\circ \text{F}$ .), odorless and faintly bitter. It is soluble in about 150 parts of cold water, but in 12 parts of boiling water. It forms alkaline salts which are easily soluble.

Prolonged heating with sodium carbonate solution liberates ammonia. Denninges' reagent produces a white precipitate; Millon's reagent produces in solution acidulated with nitric acid a precipitate soluble in an excess of the reagent.

**Actions and Uses.**—Veronal is quickly absorbed, especially when it is given in solution. In small doses it induces sleep apparently without any other effect. In larger doses the temperature falls and animals show marked trembling and restlessness in their sleep. In small doses it is a relatively safe hypnotic, but fatalities have followed its indiscriminate use.

It is recommended in simple insomnia, as well as in that accompanying hysteria, neurasthenia and mental disturbances.

**Dosage.**—0.3 to 1 Gm. (5 to 15 grains) in hot water, tea or milk, or, if in wafers or capsules, followed by a cupful of some warm liquid.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Merk & Co., New York). U. S. patent No. 782,739. U. S. trademark.

### VIBUTERO.

ELIXIR VIBURNI COMPOSITUM, STEARNS.

An elixir, each 30 Cc. (one fluid ounce) of which is said to represent: Blackhaw 2.6 Gm. (40 grains), cramp bark 2 Gm. (30 grains), squaw vine, wild yam, Jamaica dogwood and saw palmetto berries, of each 1.3 Gm. (20 grains), pulsatilla 0.65 Gm. (10 grains) in a menstruum containing 17 per cent. of alcohol.

**Dosage.**—8 Cc. (2 fluidrams), three times a day, followed by a teacupful of hot water.

Prepared by F. Stearns & Co., Detroit, Mich.

### VINUM EXTRACTI MORRHUAE, STEARNS.

STEARNS' WINE OF COD LIVER EXTRACT WITH PEPTONATE OF IRON.

A wine containing in each 30 Cc. (one fluidounce) 0.26 Gm. (4 grains) of alcoholic extract of fresh cod liver (made from fresh livers received in alcohol and containing their full amount of oil) and 0.26 Gm. (4 grains) of peptonate of iron in a menstruum containing 15.25 per cent. of alcohol.

The wine contains about 0.25 per cent. of oily extractives. It has a fairly pleasant taste, not at all suggestive of cod liver oil.

**Actions and Uses.**—It has been introduced as a substitute for cod liver oil. It is not believed by pharmacologists generally that the oil free extractives represent any considerable part of the therapeutic efficiency of cod liver oil.

**Dosage.**—15 Cc. (4 fluidrams) before meals and at bedtime.

Manufactured by F. Stearns & Co., Detroit, Mich. U. S. trademark No. 53,596.

### XEROFORM.

BISMUTH TRIBROMPHENOLATE. TRIBROMPHENOL-BISMUTH.

Xeroform,  $\text{Bi}_2\text{O}_3 \cdot \text{OH} \cdot (\text{OC}_6\text{H}_2\text{Br}_3)_2 = \text{C}_6\text{H}_3\text{O}_4\text{Br}_3\text{Bi}_2$ , is a chemical combination of bismuthyl oxide and tribrom-phenol, containing nearly 60 per cent. of  $\text{Bi}_2\text{O}_3$ .

According to the patent it is obtained by dissolving tribrom-phenol in sodium hydroxide and adding bismuth nitrate to the sodium tribromphenolate solution. The precipitated tribrom-phenol bismuth is collected, and washed with alcohol.

It is a fine yellow, nearly odorless and tasteless powder, neutral in reaction, and unaffected by light. It is insoluble in water, alcohol, chloroform, liquid petrolatum and vegetable oils, but soluble in 2 per cent. hydrochloric acid in the proportion of 30:100. By alkalis it is decomposed with the formation of bromides; it is not decomposed by heat at temperatures below  $120^\circ \text{C}$ . ( $248^\circ \text{F}$ .), and therefore may be sterilized.

It should yield 59.5 per cent. of bismuth oxide. If 1 Gm. is boiled with sodium hydroxide T. S., filtered, the filtrate rendered acid with sulphuric acid and the white, curdy precipitate washed and dried, it should melt at  $95^\circ \text{C}$ . ( $203^\circ \text{F}$ .) (tribromphenol).

It is incompatible with alkaline media and should not be heated above  $120^\circ \text{C}$ . ( $248^\circ \text{F}$ .).

**Actions and Uses.**—Xeroform is a non-irritant and non-toxic antiseptic. It is recommended as an odorless and efficient substitute for iodoform; as a specific in *ulcus cruris* and all weeping eczemas; internally, in gastrointestinal catarrh, proctitis, dysentery, bacillary and choleraic diarrhea, cholera infantum, etc.

**Dosage.**—1 to 3 Gm. (15 to 45 grains) per day to adults; 0.12 to 0.3 Gm. (2 to 5 grains) at a dose to children. Externally, as a dusting powder, in bandages, etc., like iodoform.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 516,358. U. S. trademark.

### ADNEPHRIN SUPPOSITORIES.

Each suppository represents a 1 to 1,000 combination of adnephrin with oil of theobroma and weighs about 1 Gm. (15 grains).

**Actions, Uses and Dosage.**—See Suprarenal Alkaloid and Adnephrin Solution.

Prepared by Frederick Stearns & Co., Detroit, Mich.

### ALBARGIN.

GELATOSSESILVER.

A compound of silver nitrate with gelatose, containing from 13 to 15 per cent. of silver.

It is prepared by adding silver nitrate to a solution of gelatose in water, evaporating the solution or precipitating the compound by the addition of ether or alcohol. It is a coarse, yellow, shining powder, very easily soluble in water forming neutral solutions. The presence of gelatose, silver and a nitrate can be shown by appropriate tests. It is incompatible with tannin and chlorides.

**Actions, Uses and Dosage.**—Albargin is used as a substitute for silver nitrate. It is marketed only in the form of tablets containing, each, 0.2 Gm. (3 grains).

Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Höchst a. M. (Victor Koechl & Co., New York).

(To be continued.)

**Difficulties of an Internist.**—J. H. Latta, Wichita, Kan., in the *Journal of the Kansas Medical Society*, states that the difficulties which meet the internist may be divided into three classes: 1. Those growing out of the relations existing between internal medicine and surgery; 2, those traits, innate or acquired, existing in the internist himself; 3, those outside interfering difficulties other than surgical.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, JANUARY 26, 1907.

## THE CAUSE OF THE REDUCTION IN THE DEATH RATE FROM PHTHISIS.

It is a fact well known to students of vital statistics that during recent years there has been a marked decline in the death rate in most civilized countries from pulmonary tuberculosis. This has occurred in widely separated parts of the world and has been almost universal, although there are some conspicuous exceptions to this rule, that of Norway being perhaps most noteworthy. The figures for many large cities, such as Paris, Berlin, Hamburg, Copenhagen, London and New York, show a marked and fairly continuous decline, amounting in some cases to a reduction of one-half. The chief departure from this general downward trend, as already stated, is the country of Norway, in which between 1871 and 1900 a very considerable increase in phthisis has been recorded. To a less extent an increase has also taken place in Ireland. Speculation has naturally been active concerning the cause for the remarkable general decline of this formidable disease, and many have been inclined to refer it complacently to an improvement in general sanitary conditions of life and to an extension of material well-being. The problem, however, has been recently subjected by Newsholme<sup>1</sup> to an exhaustive statistical investigation, in which various factors, such as urbanization and overcrowding, the price of wheat, cost of total food, total cost of living, wages, amount of food consumed, pauperism, education of the public, direct prevention, and measures of institutional segregation, are considered as possible influences affecting the phthisis death rate. Among these influences there is, in Newsholme's opinion, only one directly connected with the course of phthisis, so far as the available data permit of judgment; this is the institutional segregation of phthisis.

As the result of a prolonged inquiry, Newsholme concludes that the institutional segregation of phthisis, as measured by the ratio of deaths or cases in institutions to deaths or cases in the total community, shows from moderate to close co-variation in the United Kingdom, London, Norway, Sweden, Copenhagen, Prussia and Berlin, Brussels and New York. In Paris the character of the hospital treatment does not allow comparison to be made. Finally, the opinion is expressed that segregation in general institutions is the only factor that has varied

constantly with the phthisis death rate in the countries that have been examined. Institutional segregation must, therefore, be regarded as having exerted a more powerful influence on the prevention of phthisis than any other factor, none of which has varied consistently with the phthisis death rate.

Newsholme's authoritative reputation as a student of vital statistics and his long familiarity with this field render his paper worthy of careful study by those engaged in the campaign against tuberculosis. The thesis that he has advanced would seem to lend itself to experimental verification; such verification need not cover a very long period of time nor involve very great expense. Certain localities may prove especially well adapted to the study of this question.

## SLEEPING SICKNESS.

Medical research is not invariably fruitful of immediately encouraging results; it often disturbs blissful ignorance, as we frequently have occasion to observe. It may also bring out facts that may seem to contradict the results that had previously been obtained, or may further complicate a subject that had been apparently clearing up. A case in point is furnished by the latest reported finding in regard to the trypanosomes infesting the African tsetse flies, though as yet it is only suggestive rather than actually conclusive in any respect.

In the recent preliminary report<sup>1</sup> of the British commission to investigate sleeping sickness at Entebbe, Uganda, it was stated that the *Trypanosoma gambiense*, the protozoön responsible for the disease that has been devastating East Africa, had but a limited existence in the tsetse fly, *Glossina palpalis*, whose bite transmits the disorder, but died in its intestine within ninety-six hours. The infection, therefore, was thought to be only by the direct mechanical transmission of the parasite during the period in which it survived in the insect's proboscis; there was no cyclical infection comparable to that of malaria, though the life cycle of the organism had been carefully sought for. In a more recent communication to the Royal Society, however, Dr. E. A. Minchin,<sup>2</sup> of the commission, announces that one of the "wild" trypanosomes (*T. grayi*) occurring in the glossina with the *T. gambiense* becomes encysted in the hind gut of the fly, and this suggests the possibility of another method of infection by contamination of food or drink by the cast-off cysts. It arouses the suspicion, at least, that the earlier disappearance of the sleeping sickness organism may be due to its being cast off in a similar way. What can occur in one species of trypanosome may also occur in other allied species. This discovery, therefore, complicates the problem of the extinction of sleeping sickness and calls for further and, it may be, more difficult researches before any absolutely certain prophylaxis can be assured. Sleeping sickness

1. Jour. of Hygiene, 1906, No. 3, page 304.

1. Nature, Nov. 15, 1906.

2. Nature, Dec. 27, 1906.



has not yet invaded the United States or any of its island dependencies, but it has been transported across Africa by civilized agencies and, with increasing travel and commercial expansion, may threaten other tropical and subtropical regions unless checked. It is, of course, conceivable that conditions which are suitable to the life cycle of the trypanosome of sleeping sickness may exist outside of Africa and that other insects than the glossina can mechanically transmit the infection. The white race is not immune, as is shown by the death of one of the members of the British commission investigating the disease. The prospects of its control at present, however, seem encouraging, and if Koch has really discovered the natural habitat of the *Trypanosoma gambiense* in the crocodile it would appear that a very important advance in the control of the disease has been gained.

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#### NON-INFECTIOUS DUST AND ITS DANGERS.

Everyone now realizes the danger to the lungs from inspiration of the dust in the air. Most people, however, consider that this danger is due entirely to the infectious nature of the dust particles themselves or else to the fact that micro-organisms cling to dust particles and so may be carried deep into the respiratory passages. Ordinarily it is not realized that dust containing no infectious elements may prove at least a predisposing cause to pulmonary disease and that the irritation which it sets up may, indeed, provide the necessary factor that must ever form the connecting link between the microbe and the individual. Most people come in contact with germs of disease, while only susceptible individuals are affected by them, and the question of susceptibility is even more important than the virulence of the microbe. Whatever lowers resistive vitality may prove as harmful for the individual as the mere presence of pathogenic germs on the mucous membranes.

A rather startling proof of the pathogenic quality in an indirect way at least of non-infectious dust is to be found in some recently published statistics of the Metal Polishers' Union of North America.<sup>1</sup> The members of this union are the metal polishers, buffers, platers, brass molders, and brass and silver workers, of the United States and Canada. Their occupation consists in part in applying metal articles to rapidly revolving wheels in order to finish them for the market. The wheels must turn toward the workman because otherwise the articles would be snatched out of his hands, as from 2,000 to 3,000 revolutions a minute are required. All the wheels give off dust particles of various kinds, and all rub fine material from the surfaces of articles to be polished. The workmen live during their working hours, therefore, in an atmosphere thick with dust. All this dust, however, is perfectly free from infectious material, except for chance accidental contamination, and even this

must be rare, since many of the dust particles are hot, owing to the velocity of the wheel.

The treasury of this union, in spite of the fact that the men are steady and have no special temptations to excess, was found to be constantly exhausted. The reason is that the death claims eat up all the funds. An investigation of these claims showed that many of the men were dying from pulmonary tuberculosis. There were some deaths from accident, a few suicides, but the rest were all from pulmonary diseases—and pneumonia was very rare as compared with phthisis. The statistics for the last four years show that in 1903, 45 metal polishers died, of whom 43 succumbed to some lung trouble. In 1904 there were but 38 deaths among the metal polishers, of which only three were due to other causes than pulmonary disease. In 1905 there were 70 deaths among the metal polishers, 65 of which were due to some form of lung trouble. In New York City a local union having 170 men working exclusively on the precious metals, had eight death claims in two years, seven being due directly to tuberculosis, while 400 men employed in all the other branches of the same industry have had but three deaths from this cause in the same space of time.

It would seem from these statistics that even the cleanest kinds of dust, without a trace of infectious material in them, may still prove a source of the greatest possible danger and be the indirect cause of tuberculosis. This has been known for some time, but so startling a confirmation of it is sure to emphasize the necessity for taking every precaution for the avoidance of dust. Even what might seem to be the most innocuous of dirt particles may, when inspired, constitute foci of irritation in which tubercle bacilli may readily find a favorable nidus for implantation and growth. Hence the necessity for the cleaning and above all for the sprinkling of streets. Hence also the supreme advisability of the modern methods of house cleaning which do away with the raising of dust. If the crusade against tuberculosis is to be successful, hand in hand there must go with it the crusade against dust and dirt.

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#### CARROLL'S PROMOTION AND THE NOBEL PRIZE.

There is an old tradition that republics are prone to be ungrateful for benefits conferred because, to a great extent, they are lacking in that sense of personal obligation which characterizes a monarchy. What is everybody's business, in the way of return for work done, becomes nobody's business. It has been hoped, however, that our American republic would disprove this old-time tradition of ingratitude. There would seem to be an excellent chance for it to do so at the present moment and, by recognizing a noble deed, to confer deserved honor without waiting till death has come to diminish the effectiveness of the expressions of appreciation. Only one man is now alive of the little group of United States Army surgeons to whom the world owes the precious

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1. The Independent, New York, Dec. 27, 1906.



knowledge which has transformed that dread scourge, yellow fever, from one of the most serious and expensive of diseases to one so easily prevented that the hope of its complete eradication in the near future is now a confident prospect in medicine. Dr. Walter Reed and Dr. Jesse Lazear are dead, but Dr. James Carroll, who was among the first of the heroes of science to allow himself to be bitten by a mosquito that had fed on a yellow-fever patient and who actually contracted the disease, is still with us. If ever there was a heroic act performed by a soldier, this was one, and such heroism deserves to be rewarded and encouraged.

As we have before noted, a bill is before Congress to make Dr. Carroll an extra lieutenant-colonel. He now holds the rank of lieutenant, and, as he is over 50, the most that he can expect in the regular routine of promotion, before he is retired for age, is his captaincy. Such promotion as the bill provides for would not disturb the regular order of official rank and would provide a suitable reward for what future generations are sure to consider as one of the most unselfish acts of our time.

But there is still a greater reason why it is to be hoped that Congress will recognize the services of Dr. Carroll by passing the bill referred to; by this recognition the movement to secure for him the Nobel prize would receive a great impetus and would have an important influence on the committee that awards the prize. Certainly the conquest of yellow fever is of sufficient benefit to mankind to meet the conditions of the award. Though, because of his lower military rank, he was subordinate to Dr. Reed, the responsible head of the commission that demonstrated the etiology and successful prophylaxis of yellow fever, Dr. Carroll was longer, if not more closely, associated with the details of the investigation and largely had charge of the experimental work that was so fruitful of results. He was himself the first voluntarily to submit to an experimental inoculation by the bite of an infection-carrying *Stegomyia*. He risked his life in the cause, and the attack of yellow fever following the risk has left him, to a certain extent, disabled.

One Nobel prize has already been awarded to Dr. Ronald Ross, of England, one of the leading workers in the discovery of the mosquito origin of malaria, a research no more fruitful of valuable results than the yellow-fever investigation and demanding no such personal peril and sacrifice. With this precedent and with the proper steps taken by the American medical profession, there would seem to be no good reason why this prize should not be awarded to Dr. Carroll. We know of no more deserving possible recipient. Certainly the sacrifices that Dr. Carroll made are equal to those made by any man to whom a Nobel prize has been awarded, and the benefits to humanity are certainly as great as those that have been the outcome of any undertaking of any man who has been awarded the prize.

#### BILL TO INCREASE THE EFFICIENCY OF THE ARMY MEDICAL CORPS.

The bill to increase the efficiency of the medical department of the Army, which has twice passed the Senate, and been favorably reported, with slight amendments, unanimously, by the Committee on Military Affairs of the House of Representatives, April 4, 1906, is still, at this late date, awaiting action by the House. This bill, the necessity for the passage of which is acknowledged by all familiar with the facts in the case, which has been approved by the President twice in special messages to Congress, which has the unqualified approval of the Secretary of War and the general staff of the Army, and of the entire medical profession of the United States as voiced in its official journal, is in danger of failure unless special efforts are made to secure action by the House of Representatives. The short session of Congress is rapidly drawing to a close, yet this bill, so necessary to the welfare of the Army, a bill which everybody apparently favors and no one opposes, which costs nothing, may fail because it can not be brought to a vote. It behooves the medical profession of the country to assert itself and to ascertain why a measure which so directly concerns the physicians of the country is not given at least an opportunity for Congress to express its approval or disapproval.

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#### VISUAL ERRORS AND AUTOMOBILE ACCIDENTS.

It has long been the custom to subject locomotive engineers to certain visual tests, especially tests for color perception, in order to safeguard the interests of the public. It is a question whether chauffeurs ought not also to be examined with regard to their visual acuity. Even now, seldom a week passes without some automobile accident being recorded in the daily press, and without doubt many of the minor accidents are never reported at all. The number of automobiles in use is constantly increasing, and as this form of carriage becomes more available for commercial purposes this increase will become more and more rapid. Clements<sup>1</sup> points out that the chauffeur must be an accurate judge of pace and distance, and that this necessitates normal visual acuity. He calls attention to a series of motorists who consulted him regarding their vision after having undergone a number of minor mishaps, most of which, but for lucky chances, might have been much more serious. In all the patients Clements found errors of refraction, generally in the form of hypermetropia. In all instances, too, the danger of accidents of a certain class disappeared under correction of the error of refraction. In most of the instances referred to the accidents occurred about dusk and at turns in the road, the chauffeur miscalculating the distance and running into a ditch or bank. Clements calls attention to the fact that the convex goggles worn by autoists are practically weak hyperopic lenses, and that they may just turn the balance in favor of spasm of accommodation.

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1. British Med. Jour., 1906, II, 1636.



## THE INTERPRETATION OF MEDICAL LABORATORY FINDINGS.

It is unfortunate that all practitioners of medicine have not had a laboratory training, for the lack of it tends to make them put an erroneous valuation on the findings of the microscopist. Under ideal circumstances every practitioner would be able to make his own laboratory tests, but lack of the necessary training, or want of time, often render this impossible. Every physician who avails himself of laboratory tests should be able, however, to interpret the findings. The point on which many practitioners go astray is the significance of negative reports. While the presence of tubercle bacilli means tuberculosis, and of diphtheria bacilli means diphtheria, many physicians do not fully realize that the absence of these organisms does not exclude these diseases, especially if the failure results after a single examination. A case in point is recorded by Knauer<sup>1</sup> in which a physician assured a patient that he did not have syphilis after the negative examination of a suspicious sore for the *Spirochæta pallida*. Clinically, the sore strongly suggested an initial lesion, and the patient was naturally surprised and grieved when he developed secondary symptoms. Too much stress can not be laid on the fact that laboratory findings must be correlated with clinical findings, and that negative findings in diseases of bacterial origin do *not* exclude the disease suspected.

## ETERNAL VIGILANCE, THE PRICE OF SAFETY.

There has never been a time when the public has been so interested in matters relating to hygiene and sanitary science, including in this "patent medicines," frauds in food, etc., as at present. This interest, of course, has been aroused by the articles that have appeared in the lay journals on "patent medicines" and sophisticated foods, and especially by the publicity given in the newspapers to existing conditions as developed in the propaganda for the pure food law. In many states this winter bills similar to the national pure food act have been or will be introduced in the legislatures. In some states attempts will be made to secure legislation looking to the registration of vital statistics, in accordance with the recommendation of the Division of Vital Statistics of the U. S. Bureau of the Census. Besides these, in many states the boards of health are asking for an enlargement of their functions, for laboratories, to investigate foods and medicines. All these efforts for the protection of the public should receive the endorsement and assistance of physicians. Conditions seem very favorable for the passage of state pure food laws including "patent medicines"—so favorable in some states, in fact, that the passage of the bills, we are afraid, is being taken for granted. It must be remembered that the Proprietary Association is not giving up so easily as it appears to be and that more than ever before will pressure be brought to bear on the public press through its advertising departments. As a duty to his community every physician should solicit the aid of his state legislator and senator in getting such laws passed as will protect the public and guarantee them purity in food products.

1. Münch. med. Wochschr., Dec. 18, 1906.

## Medical News

## ALABAMA.

**Smallpox.**—On account of the recent cases of smallpox in Eufaula, the city council has ordered the infected houses thoroughly guarded and the residents of that portion of the city vaccinated.

**County Society Meetings.**—At the annual meeting of the Baldwin County Medical Society, held in Point Clear, January 7, the following officers were elected: President, Dr. Philip M. Hodgson, Stockton; vice-president, Dr. Joseph Hall, Bay Minette; secretary-treasurer, Dr. Henry Borst, Silverhill; censor, Dr. Clarence L. Mershon, Fairhope, and health officer, Dr. Volney McR. Schowalter, Point Clear.—At the annual meeting of the Tuscaloosa County Medical Society, held in Tuscaloosa, January 7, Dr. Joseph Leland was elected president; Dr. William G. Somerville, vice-president; Dr. Arthur A. Kirk, secretary-treasurer; Dr. G. C. Merriam, censor, and Dr. Surry F. Mayfield, county health officer.—The Talladega County Medical Society, at its annual meeting, held in Talladega, elected the following officers: Dr. Wallace R. Bishop, president; Dr. Eugene P. Cason, vice-president; Dr. Bishop B. Warwick, secretary; Dr. Thomas K. Mullins, treasurer, all of Talladega; and Dr. George A. Hill, Sylacauga, censor (re-elected).

## ARIZONA.

**Society Meeting.**—At the annual meeting of the Pima County Medical Society, held in Tucson, January 8, Dr. William V. Whitmore was elected president; Dr. Arthur W. Olcott, vice-president, and Dr. Abram Morrison, secretary-treasurer, all of Tucson.

**Hospital Needed for Asylum.**—Dr. Ray Ferguson, Phoenix, superintendent of the Territorial Insane Asylum, reports the institution as greatly crowded and that a hospital is urgently needed, as patients who become ill can not well be cared for in the regular wards. He will ask the legislature to make an appropriation of \$15,000 to build a hospital for the asylum.

## ILLINOIS.

**Contagious Diseases.**—Evanston, Oak Park, Wilmette and Kenilworth public schools have been closed on account of the prevalence of scarlet fever and diphtheria.—Smallpox is reported in Galesburg, North Chillicothe, Hoopeston, Stronghurst, Wyoming, Casselton, Toulon, East Peoria, Burrowsville and Jacksonville.—At DeKalb 156 cases of scarlet fever are reported and 68 houses are under quarantine.

**Personal.**—Dr. A. W. Hinman, Dundee, recently underwent an operation at the Sherman Hospital, Elgin.—Dr. Harry S. Allen, New Boston, is being treated in a Chicago hospital.—Dr. John W. Powers, Mount Carroll, has been appointed physician of Carroll County.—Dr. R. O. Lacey, Carbondale, who has been seriously ill, is reported to be convalescent.—Dr. J. M. Cody, Tremont, is convalescent after a serious illness and operation.—Dr. Hasleu, Grand View, is reported to have been injured in the explosion which destroyed a passenger train at Sanford, Ind., January 19.

## Chicago.

**Emergency Appropriation.**—The city council has been asked to appropriate \$15,000 for the employment of additional medical inspectors, their work being needed to combat the present epidemic of scarlet fever and diphtheria.

**Play by Chicago Physician.**—From February 11 to 23 there will be presented at Powers' Theater a play, "The Strength of the Weak," one of the authors of which is Dr. Alice M. Smith, a graduate of the Northwestern University Woman's Medical School.

**School Inspection.**—The health department publishes figures relating to the result of school inspection, as regards diphtheria and scarlet fever. Inspection was begun by the department in 1896 and continued for three years. During the preceding three years deaths from scarlet fever have averaged 1.54 per 10,000 of the population, but during the period of inspection the rate was reduced to 0.45—a reduction of 70.8 per cent. In the intervening period from 1889 to 1906, with a steadily diminishing school inspection, culminating in its recent total abandonment, the rate has averaged 1.64 per 10,000, an increase of more than 264 per cent. During the three years before inspection was introduced there were 11.55 deaths per 10,000 of population. During the years of inspection the rate fell to 5.75 per 10,000, a decrease of 50.2 per cent. There has been a still further decrease to 3.25 per 10,000 during the intervening period, attributable solely to the antitoxin treatment.



**Personal.**—Dr. and Mrs. Daniel R. Brower left Chicago for Egypt and Palestine, January 23.—Dr. Daniel R. Brower has been elected president of the Senn Club, vice Fernand Henrotin, deceased.—Dr. George W. Hall sailed for England January 1.—The following have been elected officers of the medical staff of the Marks Nathan Jewish Orphan Home: President, Dr. L. J. Pritzaker; vice-president, Dr. M. Meyerovitz; secretary, Dr. Melchior Whise; directors, Drs. T. P. Sacks, H. J. Davis and T. B. Diamond.—Dr. William Cuthbertson was thrown from his automobile, in a collision with a wagon recently, and suffered severe contusions.—Dr. J. E. Burkeley is reported to have been injured in the wreck of a suburban train on the Lake Shore Road, near Hammond, January 18.—Dr. D. Hally-Smith has sailed for Europe.—Dr. and Mrs. Edward J. Streeter, who are now in Vienna, expect to return to Chicago in the early spring.—Dr. Frank Conroy has been seriously ill from accidental gas asphyxiation.—Dr. A. Doe has been made a knight of the Order of St. Olaf by King Hakon of Norway.

#### INDIANA.

**Schlatter Fined.**—An individual calling himself "Schlatter, the divine healer," who was in Escanaba, Mich., earlier in the year, was arrested at Bloomington recently for practicing medicine without a license, and said to have been found guilty and fined \$25 and costs. The defendant denied that he was practicing medicine and said that he healed merely by faith, but promptly paid the fine.

**State Insane Hospital Report.**—Dr. Samuel E. Smith, superintendent of the Eastern Indiana Hospital for the Insane, East-haven, Richmond, in his report for the biennial period ended October 31, states that the number of patients in the institution October 31 was 731, only nine fewer than the highest enrollment during the two years covered by the period. He further reports that there is little disparity between the number of men and women afflicted with mental disorders. During the biennium 82 deaths occurred, of which two were suicides. He states that there has been exceptional freedom from epidemics and infectious diseases, and urges needed relief from the present crowded condition of the institution, which will be relieved to a certain extent by the erection of the hospital for epileptics at New Castle and the new hospital for the insane at Madison.

#### KANSAS.

**State Board Working for Good Laws.**—The State Board of Health is asking the legislature for necessary financial aid to do the work that the board realizes it should do. It asks especially for a laboratory of hygiene in Topeka, with a bacteriologist and an assistant, and \$2,000 a year aside from salaries for the maintenance of the laboratory. The board also asks for the creation of a bureau of vital statistics so as to place Kansas among the registration states. The bill is now in the legislature, and is based on the one recommended by the division of vital statistics of the census bureau. It is also urging a dairy law giving the board sanitary control of the dairy products and dairy herds, as well as for the control of cold storage of poultry, game, fish, etc. It is evident that the board is anxious that Kansas shall not be in the rear in protecting the health of the people of the state.

#### LOUISIANA.

**The New Touro Infirmary.**—The new Touro Infirmary, New Orleans, was opened to receive patients, January 1. The following medical staff has been appointed: Dr. Rudolph Matas, surgery; Dr. William Kohlmann, gynecology and obstetrics; Dr. Joseph D. Weis, medicine; Dr. J. Numa Roussel, dermatology; Drs. Paul L. Reiss and M. Feingold, eye, ear, nose and throat; Dr. Roy M. Van Wart, neurology; Dr. Erasmus D. Fenner, pediatrics; Dr. E. S. Hatch, orthopedics, and Dr. Oliver L. Pothier, pathology.

**Eye, Ear, Nose and Throat Hospital.**—On the recommendation of Dr. Arthur W. DeRoaldes, surgeon-in-chief of the Eye, Ear, Nose and Throat Hospital, New Orleans, the following medical staff has been appointed: Drs. Ernest A. Robin, Timothy A. Duggan and Victor C. Smith, eye department; Drs. Homer Dupuy, A. Benjamin Gaudet and Lieven DePoorter, ear, nose and throat department; Dr. E. S. Keitz, resident surgeon; Dr. Isadore Dyer, consulting dermatologist, and Drs. Henry E. Menage and Ralph Hopkins, assistant consulting dermatologists.

#### MAINE.

**Physicians in Legislature.**—In the Maine House of Representatives six members are physicians.

**Measles Epidemic.**—An epidemic of measles is said to be raging at Fort McKinley on Diamond Island, Portland Harbor.

**Violent Deaths.**—The report by the State Board of violent deaths during 1906 shows 2 cases of homicide and 59 cases of suicide, as compared with 47 in 1905, and 180 cases of violent deaths.

**New Hospital.**—The Webber Hospital Association, Biddeford, has leased for temporary use the Freeman residence. The house, which contains twelve rooms, will be equipped and the hospital will be opened as soon as practicable.

**County Society Meeting.**—At the thirteenth meeting of the York County Medical Society, held in Biddeford, the following officers were elected: Dr. M. Hubbard Ferguson, Biddeford, president; Drs. Charles W. Pillsbury, Saco, and Roland S. Gove, Sanford, vice-presidents; Dr. Clarence E. Thompson, Saco, secretary; Dr. Harry L. Prescott, Kennebunk Port, treasurer, and Drs. Jesse D. Haley, Saco, Charles W. Blagdon, Sanford, and Harry I. Durgin, Eliot, censors.

**State Academy Meeting.**—The seventy-eighth annual meeting of the Maine Academy of Medicine and Science was held in Portland, December 12. The academy abolished the system of sections under the charge of vice-presidents, and adopted a uniform fee of \$3 for all members. The following officers were elected: Dr. Charles W. Bray, Portland, president; Dr. Herbert F. Twitchell, Portland, vice-president; Dr. Herbert T. Clough, Bangor, treasurer, and Drs. Edwin M. Fuller, Bath, and Albert L. Stanwood, Rumford Falls, James F. Hill, Waterville, and Mr. William Chamberlain, Bath, trustees.

#### MARYLAND.

**Personal.**—Dr. Harry Adler has been elected a member of the board of trustees of the endowment fund of the University of Maryland, to fill the vacancy occasioned by the death of Dr. I. E. Atkinson.—Dr. John D. Blake has resigned the presidency of the Crescent Club after a service of 17 years.

**Presentation of Portrait to Johns Hopkins.**—The group portrait of Drs. Welch, Osler, Kelly and Halsted, which was painted in London by John S. Sargent, was unveiled in McCoy Hall, Johns Hopkins University, January 19. The painting was presented by Miss Mary Garrett and accepted by President Ira Remsen on behalf of the University. Mr. Royal Cortissoz and Dr. William H. Welch made short addresses.

**Emergency Hospital.**—The Emergency Hospital at Easton was opened January 16. The following physicians constitute the hospital staff: Dr. J. M. Bateman, chairman; Dr. Edward R. Trippe, general diseases; Drs. Charles F. Davidson and Philip L. Travers, surgery; Dr. Hughlett Harcastle, eye, ear and throat diseases. The hospital, located in the former Hotel Norris, has a public ward for white men with six beds; one for white women with 14 beds, and also beds for girls and children and for colored males and females. A number of free beds are provided.

**Centennial of University of Maryland.**—A mass meeting of the regents, faculties and alumni of the University of Maryland was held January 22, the object being to arouse interest in the coming centennial. Dr. Henry M. Wilson, class of 1850, presided, and addresses were made by Drs. John C. Hemmeter, Hampson H. Biedler, Samuel C. Chew, F. J. Gorgas, Charles Caspari, Jr., and by Hon. John P. Poe and President Thomas Fell, the two last named being members of the new department of arts and science. A collation followed.

#### Baltimore.

**Hospital Report.**—The Presbyterian Hospital reports that during 1906 an average of 136 patients a day were treated. A great number of immigrants were under treatment, some of whom were deported on account of contagious diseases.

**More Air for Patients.**—Balconies are to be built from private wards "B" and "C" at the Johns Hopkins Hospital to allow the patients the benefits of sunlight and open air. Permanent roofs will be placed over bridges leading from wards "D," "F," "G" and "H," which have been roofed with canvas. Patients will thus be able to sleep out of doors at night.

#### MICHIGAN.

**For Regent of University.**—Dr. Fleming Carrow of Detroit, we understand, is a candidate for the regency of the University of Michigan. Dr. Carrow has been connected with the university for 16 years as one of its professors.

#### MINNESOTA.

**Personal.**—Dr. and Mrs. Frank W. Bullen, Eveleth, left January 1 for the East and Germany.—Dr. Donald B. Pritchard, Winona, is reported to be ill with typhoid fever.—Dr.



William J. Mayo, Rochester, has been tendered a position on the State University board, vice Dr. Strickler.—Dr. John E. Campbell, St. Paul, has been reappointed city physician.

**Contagious Diseases.**—Dr. Blakeslee, Crookston, physician of Beltrami County, reports that there are at present 17 cases of smallpox in the county; that all the patients are in the Isolation Hospital, and that several other individuals are under observation. Most of the cases come from the lumber camps north of Bemidji.—Several cases of smallpox are reported in the vicinity of Poplar, Cass County.—Itasca Camp, No. 13, located at Turtle Lake, has been quarantined by the health authorities of Deep River on account of smallpox.—Minneapolis reports 11 cases of smallpox in school children.—Two homes in east Wing River are under quarantine on account of smallpox.—Two houses in Eveleth are quarantined on account of scarlet fever, and two on account of diphtheria.—Scarlet fever is reported to be epidemic at Silver Lake.

#### MISSOURI.

**Medical Society Election.**—At the annual meeting of the St. Louis Medical Society, held December 29, the following officers were elected: Dr. John C. Morfit, president; Dr. Thomas A. Hopkins, vice-president; Dr. Davis Forster, recording secretary; Dr. Cyrus E. Burford, corresponding secretary, and Dr. Charles J. Orr, treasurer.

**State Board Reorganization.**—At the annual meeting of the State Board of Health, January 8, a reorganization was effected by the election of the following officers: President, Dr. Robert H. Goodier, Hannibal; vice-president, Dr. John T. Thatcher, Oregon; secretary, Dr. J. Alfred B. Adcock, Warrensburg, and state bacteriologist, Dr. J. A. McConnell, St. Louis.

**Substitute for Coroner.**—At the request of the City Hospital Alumni Society, Senator Jeff J. Prendergast, St. Louis, will present a bill to the General Assembly abolishing the office of coroner and substituting therefor that of medical examiner. Under the provisions of the bill the examiner will report the result of investigation to the prosecuting officer of the county in which the death occurs.

**Contagious Diseases.**—The health officer of Kansas City reports 29 cases of diphtheria.—Diphtheria is reported to be epidemic in the district around the Franz Sigel and Shields schools, St. Louis.—Several cases of smallpox are reported at Tuckahoe, and at least one rural school has been closed on account of diphtheria.—For the first winter in several years no smallpox has appeared in St. Louis County, and no scarlet fever has been reported to the health office.

**Personal.**—Drs. W. L. Gist, Harold R. Kuhn and James P. Henderson have been appointed emergency surgeons of Kansas City.—Dr. John W. Angle, for more than five years assistant physician of State Hospital No. 3, Nevada, has resigned.—Dr. Walter H. Morris, St. Joseph, was rendered unconscious December 19 by the accidental inhalation of natural gas which had escaped.—Dr. John M. Bell, St. Joseph, has been commissioned examining surgeon for the pension department, vice Dr. John W. Leonard.—Dr. Philip Scholz, St. Louis, had a diamond stud, valued at \$600, stolen from him on a crowded street car, December 23.—Dr. John G. Love, Sedalia, has been appointed assistant surgeon at State Hospital No. 3, Nevada.

**Society Meetings.**—The Grand River Medical Society held its annual meeting at Hamilton, December 7. The following officers were elected: Dr. Carl C. Leeper, Braymer, president; Drs. Thomas P. Oven, Brookfield, and Haynie M. Grace, Chillicothe, vice-presidents; Drs. Reuben Barney, Chillicothe, secretary; Dr. John L. Burke, Laclede, treasurer, and Dr. Byron N. Stevens, Chillicothe, curator.—At the annual meeting of the Pike County Medical Society the following officers were elected: President, Dr. James W. Dreyfus, Louisiana; vice-presidents, Drs. J. E. Bankhead, Marion O. Biggs, Bowling Green, and C. A. Smith, Annada; secretary, Dr. R. Graham Hereford, Louisiana; assistant secretary, Dr. Charles L. Bankhead, Paynesville; treasurer, Dr. T. Guy Hetherlin, Louisiana, and censors, Drs. Bankhead, Hetherlin, Biggs, Kennedy and Treadway.

**Hospital Fund Divided.**—The funds collected by the St. Louis Saturday and Sunday Association amounted altogether to \$37,134.81, and were apportioned as follows to 11 hospitals: St. Louis Children's Hospital, \$7,846.30; St. Mary's Hospital, \$5,674.90; Martha Parsons Hospital for Children, \$4,254.25; Missouri Baptist Sanitarium, \$4,231.92; St. Louis Mullanphy Hospital, \$3,950; Mount Saint Rose Tuberculosis Sanatorium, \$3,585.12; Jewish Hospital of St. Louis, \$2,828.21; St. Luke's Hospital, \$2,414.72; Evangelical Deaconess Hospital, \$1,392.93; St. Louis Baptist Hospital, \$493.95; St. Louis Protestant Hospital, \$462.77. The amount of the donation was governed by

the amount of free work done by the hospital. The society also made donations of \$750 to the Skin and Cancer Hospital, \$600 to the Bethesda Home for Incurables and \$250 to the Provident Hospital.

#### MONTANA.

**Personal.**—Dr. George H. Wells, Butte, has been seriously ill with blood poisoning.—Dr. Thomas J. Murray, Butte, gave a dinner recently in honor of Drs. William C. Riddell and George H. Barbour, Helena, and Dr. Francis J. Adams, Great Falls.—Drs. Francis B. Atkinson, John V. Carroll and Jesse H. Russell have been appointed physicians for Chouteau County for the Fort Benton district; Drs. Charles F. Hopkins, Chinook, and Dudley for the Chinook district; Dr. William F. Hamilton for the Havre district, and Dr. A. P. Rooney for the Harlem district.—The home of Dr. Guy D. Bryant, Butte, was entered December 31 and money and jewelry taken.

#### NEBRASKA.

**Tuberculosis Ward Planned.**—General plans for the Tuberculosis ward at the Douglas County Hospital, Omaha, have been approved by the county board.

**Proposed Hospital for Lincoln.**—At a meeting of the Kansas synod of the Lutheran Church, held at Topeka, action was taken favoring the conversion of the Tabitha home orphanage, Lincoln, into a great church hospital.

**Society Meetings.**—At the annual meeting of the Valley County Medical Society, held in Ord, January 18, the following officers were elected: Dr. Minerva M. Newbecker, Ord, president; Dr. Charles W. Weekes, Scotia, vice-president; and Dr. C. J. Miller, Ord, secretary-treasurer.—At the annual meeting of the Gage County Medical Society, held in Beatrice, January 1, the following officers were elected; president, Dr. Clifford P. Fall, Beatrice; Dr. Frank E. Osborn, vice-president, Beatrice; Dr. Ira N. Pickett, Odell, secretary-treasurer; Drs. George H. Brash, John I. McGirr and C. A. Bradley, Beatrice, censors; and Dr. Harry M. Hepperlen, delegate to the state association.

#### NEW YORK.

**Canine Quarantine.**—City Island has been placed under canine quarantine by order of the acting commissioner of agriculture.

**Gifts to Nassau Hospital.**—This hospital, located at Mineola, L. I., is to be the recipient of a building, for operations, to cost \$10,000 from John Bird. Commodore Frederick C. Bourne will present the hospital with a laboratory and dispensary to cost \$6,000.

**Help Hospitals.**—The Good Samaritan Hospital at Suffern, N. Y., has received a liberal check from a Haverstraw Sunday school.—A benefit has been given under the auspices of the Woman's Auxiliary for the Nyack Hospital of Nyack, N. Y.

**Non-Poisonous Embalming Fluid.**—The State Board of Embalmers Examiners have adopted the regulations which have been approved by the State Board of Health and have the force of law. These regulations prohibit the use or sale in the state of any fluid containing arsenic, zinc, mercury, lead, silver, antimony, chloral or any poisonous alkaloid, or one that is not a thorough disinfectant in the proportions ordinarily used in embalming.

**Railway Fatalities.**—The report of railroad commissioners, just transmitted to the legislature, shows that during 1906, 959 persons were killed on the steam roads of the state and 2,105 injured, against 903 killed and 1,961 injured in the preceding year. One passenger was killed for each 6,470,685 carried. The number of employes killed was 357, and the number injured 1,424, as against 336 killed and 1,344 injured the previous year. On the street surface roads 317 were killed and 2,014 injured during the year 1906, as against 240 killed and 929 injured in the previous year. The increase in injured was mostly in Greater New York. Of the injuries among passengers 315 were the result of getting off of cars in motion and 440 of rear-end collisions.

#### New York City.

**Orphan Asylum Quarantined.**—The Brooklyn Orphan Asylum has been placed under strict quarantine following the discovery of nine cases of scarlet fever within two weeks.

**Growth of Jewish Hospital.**—The Jewish Hospital for Deformities and Joint Diseases, which was opened November 4, has outgrown its present quarters and has purchased the adjoining property. This building will be remodeled as soon as possible.

**Hospital Benefit.**—A musical and dance was given to raise funds to meet the maintenance expenses of the Williamsburg



**Hospital.** In addition to the regular work this hospital conducts a postgraduate school of medicine and a training school for nurses.

**Harvey Society Lecture.**—The seventh lecture in the Harvey Society course will be by Prof. Edmund B. Wilson of Columbia University at the New York Academy of Medicine, Saturday evening, January 26, at 8:30 o'clock, on "Recent Studies of Heredity." All interested are cordially invited to be present.

**Attempt to Burn Hospital.**—Shortly after the discharge of four porters from the Montefiore Home for Consumptives, a fire was discovered in one of the dormitories which had been started by a pile of clothing saturated with kerosene. Authorities arrested the four men. The fire was discovered before much damage had been done.

**New Postgraduate School.**—The Brooklyn Postgraduate Medical School has been organized with the following officers: Dr. William E. Butler, president; Dr. Lefferts A. McClelland, secretary, and Dr. G. Morgan Muren, vice-president. The school is located at Bedford Avenue and South Third Street, Brooklyn, has connected with it the Williamsburg Hospital, and offers clinical facilities at all the other hospitals of the city.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ending January 12, 446 cases of tuberculosis, with 162 deaths; 291 cases of diphtheria, with 51 deaths; 234 cases of scarlet fever, with 8 deaths; 204 cases of measles, with 6 deaths; 60 cases of whooping-cough, with 4 deaths; 43 cases of typhoid fever, with 8 deaths; 21 cases of cerebro-spinal meningitis, with 9 deaths; 154 cases of varicella and 3 cases of smallpox, making in all 1,456 cases, with 248 deaths.

**Organize Against Noise.**—The Society for the Suppression of Unnecessary Noise has recently been organized and will soon be incorporated at Albany. Its work will be extended to every form of noise that is not essential to the commerce of the city. Many well-known men have accepted offices and places in the directorate of the society, which augurs well for its success. During the meeting a telegram was received from Congressman William S. Bennett telling of the passage in the House of his bill putting a stop to unnecessary noises on rivers and in harbors.

**In Memory of Dr. Mary Putnam Jacobi.**—The Womans' Medical Association of New York City held a memorial meeting in honor of the memory of Mary Putnam Jacobi at the Academy of Medicine, January 4, at which it was announced that this association had undertaken to raise \$25,000 to establish a Mary Putnam Jacobi fellowship, the income of which was to be used in defraying the expenses of some woman medical student in whatever country she might choose to spend the money. Dr. William Osler was one of the speakers and said that the scientific character of many of Dr. Jacobi's contributions to medical literature gave new distinction to the work of women physicians in this country and had done much to allay the animus which had so long kept women out of medical schools and societies. Others who eulogized Dr. Jacobi were Dr. Elizabeth M. Cushier, Mrs. Florence Kelley, Dr. Felix Adler, Dr. Charles L. Dana and Mr. Richard Watson Gilder.

## OHIO.

**Medical Inspection of Schools in Cincinnati.**—Cincinnati is undergoing the exciting complication of her first medical inspection of schools under the health office.

**Increased Duties and Salaries.**—The board of health of Cincinnati has increased the salary of the district physicians from \$25 to \$50 a month, and has increased their duties by making them medical inspectors of public schools and of contagious diseases in their respective districts.

**Society Elects Officers.**—The Obstetrical Society of Cincinnati at its regular annual meeting elected the following officers for the ensuing year: President, Dr. William Gillespie; vice-president, Dr. M. A. Tate; recording secretary, Dr. J. H. Landis; corresponding secretary, Dr. E. S. McKee; treasurer, Dr. L. S. Colter.

**Dismissal of Dr. Holmes.**—The medical profession of Cincinnati, as well as the laity, are indignant over the dismissal of Dr. C. R. Holmes, who was serving in an advisory capacity to the board of public service in regard to the building of the new city hospital. Dr. Holmes has devoted a great deal of time, money and ability to the work, and is now said to be dismissed without so much as thanks.

## PENNSYLVANIA.

**Pittsburg Epidemic.**—Dr. J. F. Edwards, superintendent of the Pittsburg bureau of health, announces that there are over 1,000 cases of typhoid in the city of Pittsburg, caused, it is believed, by the poor water supply.

**Pollution of the Schuylkill.**—The State Department of Health has sent a communication to the city of Reading requesting that notice be taken of the refuse emitting from local industries and polluting the Schuylkill, to which it is conveyed through the storm water sewers.

**Appropriations for State Board of Charities.**—In its biennial report to the legislature the State Board of Charities recommends that \$12,765,382.68 be appropriated to the public and private charities of Pennsylvania for the next two years. Of this the board recommends that \$6,111,982 be appropriated to the state institutions, \$1,517,400 to the semi-state institutions, \$4,561,000 to the hospitals and \$575,000 to the homes. The care and support of the defective and delinquent classes, the institutions for the blind, deaf and dumb, and for feeble-minded children and the houses of refuge are included in the semi-state institutions.

**Condition of Insane Asylum Satisfactory.**—The State Lunacy Commission has completed its investigation of the State Insane Asylum at Warren, and has found that it is the best in the state, although having 446 patients too many. The asylum has 598 male inmates and 582 women now under treatment. Despite the excess of patients all were found to be comfortably quartered, and showed every evidence of the best physical care and treatment for their afflictions. The only complaint heard by the commissioners was regarding the commitment to the institution as indigents of persons well able to pay for private treatment, there being 30 such cases from Erie County alone.

**Investigation of State Hospital.**—The lunacy commission has made a thorough investigation of the conditions at the Danville Hospital for the Insane, inquiring into the alleged overcrowded condition of the institution, the condition of the buildings, the management, the salaries paid, the treatment of employes, and particularly whether the state is being defrauded, as has been intimated, by the care of supposedly indigent insane persons who have means or friends able to assume responsibility for their maintenance. The terribly overcrowded condition of the institution was brought out in the examination of Dr. Hugh B. Meredith, head of the institution, who said that the hospital had accommodation for 500 male and 350 female patients, but that at the present time there are 683 men and 613 women in the place, making it necessary for many inmates to sleep in corridors and quarters that are entirely unfit. It was brought out that the head male nurse received a salary of only \$37, and the head female nurse \$27 a month.

**Personal.**—Dr. Samuel F. Chapin, who has been surgeon of the Pennsylvania Soldiers and Sailors' Home almost since its foundation, has resigned on account of age and ill-health. He has been succeeded by Dr. William B. Washabaugh, formerly assistant surgeon at the institution.—Drs. Carl Kirschner and J. E. McCuaig, Erie, are convalescent after severe attacks of influenza.—Dr. Charles L. Templeton, resident physician of the Reading Hospital, has resigned.—Dr. F. G. Bryant, Scranton, who has been ill with diphtheria, has recovered.—Dr. H. M. Neale, Upper Lehigh, is recovering from an attack of influenza.—Dr. S. C. Honeywell, Norristown, lost a diamond pin, gold watch and chain and \$24 in cash by burglary December 30.—Dr. Leon Gottschalk, Chester, has been appointed physician at the State Quarantine Station, Marcus Hook, vice Dr. Harry Horning, resigned.—Dr. B. Frank Price, Braddock, is reported to be seriously ill.—Dr. A. V. Chessrown, Pittsburg, has been re-elected jail physician.—The following have been appointed physicians for the poor of Harrisburg: Drs. O. A. Newman, J. Edward Dickinson, S. F. Hassler, E. S. Meals, C. R. Phillips, H. Ross Coover, J. W. Shope and E. O. Nicohemus.—Dr. Elias G. Roos, Scranton, who has been ill with typhoid fever, is convalescent.—Dr. W. J. Rugh, Greensburg, sustained severe contusions in a collision between his automobile and a street car in Pittsburg.—Dr. H. Graham has been elected president of the board of health of Kennett Square.—Dr. John J. Singer has been appointed jail physician of Greensburg.—The following physicians have been appointed to care for the poor of Dauphin County: Drs. J. M. Peters and B. T. Dickinson of Steelton; Dr. M. O. Putt, Oberlin, and Dr. Harry McDaniel, Highspire.—Dr. George W. McCafferty, for 13 years assistant physician at the State Hospital for the Insane, Norristown, has resigned. His associates in the men's department presented



him with a silver tea service.—Dr. C. H. Weimer has resigned as first resident physician at the Miners' Hospital, Fountain Springs, the resignation to take effect February 1. He will be succeeded by Dr. W. T. Davies.—Dr. G. Mord Neuburger, Hazleton, has returned from Europe.—Dr. E. Marshall Harvey, Media, has been re-elected physician for the Home for the Poor, Lima.—Dr. Frank J. Evans, Chester, was given a handsome gold badge by the Firemen's Relief Association of Chester, January 9.—Dr. Mahlon H. Beary and family, Allentown, have gone to Florida for two months.—Dr. and Mrs. E. A. Van Scoy, Bradford, have gone to Porto Rico for the balance of the winter.

#### Philadelphia.

**New Jefferson College Hospital.**—It is announced that the new Jefferson College Hospital will soon be ready for occupancy. The building is absolutely fire-proof, eight and a half stories in height, and covers an area of 27,200 square feet.

**Medical Staff Appointed.**—The medical staff for the American Hospital for Diseases of the Stomach is made up as follows: Drs. Lewis Brinton, John B. Deaver, Ludwig Loeb, John B. Shober, Francis B. Jacobs, Isaac R. Strawbridge, James C. Wilson, James Thorington and L. Napoleon Boston.

**Beneficiaries of Charity Ball.**—The beneficiaries of the twenty-seventh annual charity ball, which will be held Wednesday, January 30, are the children's surgical wards of the Hospital of the University of Pennsylvania, the maternity department of the Jefferson Medical College Hospital, the Children's Aid Society and the Polyclinic Hospital.

**Medical Club Elects Officers.**—The following officers of the Medical Club have been elected for 1907: President, Dr. L. Webster Fox; first vice-president, Dr. Wharton Sinkler; second vice-president, Dr. James B. Walker; secretary, Dr. J. Gurney Taylor; treasurer, Dr. J. Lewis H. Adler, Jr.; governor (term five years), Dr. E. E. Montgomery.

**Deaths of the Year.**—The total number of deaths in Philadelphia during 1906 was 27,372, or 18.63 per 1,000. This compares unfavorably with the rate for 1905, which was 17.25 per 1,000. During the year 3,160 deaths were reported from tuberculosis, 2,693 from pneumonia, 2,296 from heart disease, 2,031 from intestinal diseases in children under 2 years old, and 1,061 from typhoid fever.

**Society Elects Officers.**—The Philadelphia County Medical Society has elected the following officers: President, Dr. James B. Walker; vice-presidents, Drs. William S. Newcomet, Joseph O'Mally, Wendel Reber, Robert Chase, M. Karpeles and Franklin Brady; secretary, Dr. William S. Wray; assistant secretary, Dr. Ross Skillern; treasurer, Dr. Collier L. Bower; censor, Dr. Charles A. E. Codman; district censor to the Pennsylvania State Medical Society, Dr. Albert M. Eaton.

**Personal.**—Dr. Henry Neffman has resigned from the board of health.—Dr. William A. Stecher has been appointed director of physical training in the public schools.—Dr. Francie E. Patterson has been appointed chief police surgeon, vice Dr. William M. Angney, deceased.—Dr. F. H. McFarland was thrown from his carriage in a runaway accident, January 8, and fractured his right arm and leg.—Dr. W. Joseph Hearn, whose skull was fractured some time ago, has recovered and left the hospital.—Dr. E. C. Town, who was recently operated on for appendicitis, is reported to be convalescent.

**College of Physicians Elects Officers.**—The following officers and committees of the College of Physicians have been elected for 1907: President, Dr. James Tyson; vice-president, Dr. G. E. de Schweinitz; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte; librarian, Dr. Frederick P. Henry; censors, Drs. Richard A. Cleemann, S. Weir Mitchell, Horace Evans, Louis Starr; councilors (to serve until January, 1910), Drs. S. McC. Hamill, H. R. Wharton; committee of publication, Drs. G. G. Davis, Thompson S. Westcott, William Zentmayer; library committee, Drs. George C. Harlan, Francis X. Dercum, Charles A. Oliver, William J. Taylor, S. Weir Mitchell; committee on Mutter museum, Drs. John Brinton, George McClellan, J. Allison Scott; hall committee, Drs. John K. Mitchell, Thomas H. Fenton, B. Alexander Randall, E. Hollingsworth Siter, A. O. J. Kelly; committee on directory for nurses, Drs. Wharton Sinkler, James C. Wilson, James Ingham.

#### TENNESSEE.

**Personal.**—Dr. Thomas J. Happel, Trenton, has been re-appointed a member of the State Board of Medical Examiners.—Dr. Frank D. Raymond, Memphis, who has been seriously ill in New York, is reported to be gaining steadily.—Dr. William T. Hubbs, Camden, was thrown from his buggy December 16, spraining his arm and shoulder and injuring his hip.

—The colored auxiliary of the anti-tuberculosis organization of St. Paul's church, Nashville, has elected Dr. Robert F. Boyd, president.—Dr. Fred C. Watson, Lexington, has been appointed house surgeon at the Lying-in Hospital, New York City.

**Staff Appointed.**—At the meeting of the board of governors of the Knoxville General Hospital the following staff was re-elected: Drs. John M. Boyd and David H. Williams, consultants; Drs. Wm. R. Lockett, Wm. Delpuech, Henry P. Coile and Francis J. Hackney, medicine; Drs. Charles M. Drake, Walter Luttrell, Samuel R. Miller and William R. Cochrane, surgery; Drs. Charles E. Lones, R. Haller Newman, Robert P. Oppenheimer and Henry J. Kelso, gynecology; Drs. Howard A. Ijams and J. Foster Scott, obstetrics; Drs. John H. Kincaid and Achilles E. Foster, eye, ear, nose and throat; Dr. Douglas Caulkins, diseases of children, and Dr. William D. Richmond, pathology.

#### TEXAS.

**New Medical Journal.**—The students of the medical department of Fort Worth University have commenced the publication of a monthly paper, to be known as the *Medical Mirror*, the first issue of which appeared in December. It is to be the official organ of the students' medical society.

**The Campaign Against Tuberculosis.**—The formal campaign against consumption in Texas began January 4, in San Antonio, with the opening of the American Tuberculosis Exposition, which continued for one week. The inaugural address was given by Hon. Thomas H. Franklin, who was followed by Dr. William S. Carter, dean of the Medical Department of the University of Texas, Galveston.

**Fire Losses.**—Dr. E. H. B. Steele, Jennings, suffered a loss of about \$3,000 in an incendiary fire December 29. Three weeks earlier his office and its contents were burned.—Dr. Samuel W. Rimmer suffered a loss of more than \$10,000 in the recent fire at San Saba. He carried no insurance.—At the recent fire in Nacogdoches Dr. Albert A. Nelson and Dr. William I. M. Smith suffered a total loss, with no insurance, and the offices of Drs. Felix R. Tucker, Joel H. Barham and Ashton B. Smith were entirely destroyed.

**Personal.**—Dr. William M. Brumby, Houston, has succeeded Dr. George R. Tabor as state health officer.—Dr. E. Matt. Thomas, Georgetown, has been appointed health officer of Williamson County.—Dr. A. Philo Howard, St. Louis, has been appointed local surgeon for the International & Great Northern Railroad, with headquarters at Houston.—Dr. George R. Tabor, the retiring state health officer, will make his home in Austin.—Dr. Vene P. Armstrong, Dallas, has been appointed quarantine inspector at Eagle Pass, and Dr. J. H. Florence, Dallas, has been reappointed quarantine inspector at Brownsville, his present station.

**Report of Health Officer.**—The biennial report of State Health Officer Tabor for the period ended Aug. 31, 1906, shows that the total amount expended for the biennium was \$45,372.41, as against \$51,903.70 for the previous period of two years, and this notwithstanding the strict quarantine against yellow fever and the necessarily heavy expense attached to its thorough operation. He noted the increased prevalence of typhoid fever throughout the state, and gave a complete history of the part played by Texas in keeping the state free from yellow fever during the prevalence of the disease in New Orleans last year.

**Hospital Notes.**—Steps have been taken for the enlargement of the Kings Daughters' Hospital, Temple, to double its present capacity, at a cost of about \$20,000. The new addition will contain about 40 rooms.—All Saints' Hospital, Fort Worth, was formally opened December 27 by Bishop A. C. Garrett of Dallas.—It is reported that the Santa Fe System will commence work this month on the new company hospital at Temple, to cost \$100,000.—The physicians of McKinney, Collin County, have organized the Collin County Sanitarium Association and propose to build, equip and operate a first-class sanitarium. The following officers have been elected: Dr. John E. Gibson, president; Dr. J. E. Hunter, vice-president; Dr. W. Todd Largent, secretary, and Dr. D. K. Houston, treasurer, and Drs. William C. Bryant, Thomas W. Wiley, Edwin L. Burton, together with the officers, directors.

**Society Meetings.**—The North Texas Medical Society held its annual session in Dallas, December 12, and elected the following officers: President, Dr. Frank D. Boyd, Fort Worth; vice-president, Dr. Joseph W. Largent, McKinney; secretary, Dr. Stephen A. D. Moore, Van Alstyne, and treasurer, Dr. Carey A. Gray, Bonham. The society passed resolutions urging every constituent society in the district to take prompt



action, as urged by the state insurance committee. The effect of this resolution will be to have county societies take concerted action in securing a minimum fee of \$5 for medical examinations for all old-line companies.—The Seventh Council District Medical Society held its sixty-fourth quarterly meeting at Austin, December 20, and elected the following officers: President, Dr. G. L. Robinson, Leander; Dr. Matthew M. Smith, Austin, secretary-treasurer, and Dr. E. Matt Thomas, Georgetown; Drs. S. E. Hudson and Homer B. Hill, Austin; Dr. Andrew J. Sibley, Creedmore, and Dr. James C. Anderson, Granger, censors.

#### VERMONT.

**State Board Elects Officers.**—At the annual meeting of the Vermont State Board of Medical Registration the following officers were elected: President, Dr. F. H. Godfrey; vice-president, Dr. S. W. Hammond; secretary, Dr. W. Scott Nay; treasurer, Dr. E. B. Whitaker. The other members of the board are Drs. J. S. Hill, G. I. Forbes and A. E. Parlin. The next meeting will be held in Burlington, July 9-11.

#### GENERAL.

**The New Naval Hospital.**—The new naval hospital at Annapolis is now practically completed and ready to be turned over to the government. It is located on the government farm overlooking the Severn and cost approximately \$250,000. The original plan was for a group of 10 buildings, but the appropriation necessitated a reduction to five, which are three colonnade-connected wards, the administration building and the power plant. Some grading and gardening work alone remain to be done.

**Another Clean Newspaper.**—The *Washington Herald* is a new daily newspaper in Washington, D. C., having been in existence only about three months, but already it has a sworn circulation of over 30,000 copies. So far, this is not an important item, but when we state that it is one of the newspapers that has come out boldly for clean advertising and against "patent-medicine" ads, it is different. Quoting from the copy before us, the *Herald* says that it proposes to be "clean in its advertising columns, as well as its news. It has rejected unclean advertising from the first issue. It wants business, but only clean business." There are now some forty or fifty newspapers which refuse to carry any kind of "patent-medicine" advertisements, and it is encouraging to note that the number is increasing.

**American Standard for Tetanus Antitoxin.**—At the recent meeting of the Society of American Bacteriologists, held in New York, Dec. 27-28, 1906, the committee on the standardization of serums made the following report, based largely on the work of M. J. Rosenau, director of the Hygienic Laboratory, Washington, D. C., and it was unanimously adopted: Tetanus antitoxin should be standardized by the tetanus toxin furnished by the Public Health and Marine-Hospital Service. The unit is 10 times the least amount of serum necessary to save the life of a 350-gram guinea-pig for 96 hours against the official test dose of the standard toxin. The test dose is 100 minimal lethal doses of a precipitated toxin preserved under special conditions at the Hygienic Laboratory of the Public Health and Marine-Hospital Service. It was decided that the minimal immunizing dose for a case of possible infection through a wound should be 3,000 of such units. It was decided that after April 1 the new unit should be adopted by all producers of tetanus antitoxin.

**Long Island Medical Journal.**—Another journal has been launched, the *Long Island Medical Journal*, edited by Dr. Paul M. Pilcher, and, according to the editorial introduction, the property of the Associated Physicians of Long Island. It is to take the place of the *Transactions* which have been published by the society for several years. The journal contains some excellent matter and, so far as the reading pages are concerned, is a credit to all connected with the enterprise. When we turn to the advertising pages, however, there is a difference. In the first place, it is very unusual for a new journal to secure 39 pages of advertising for its first issue. This shows enterprise. So far as quantity is concerned, the business management of the journal is to be congratulated, but when we come to the quality—well, it ought to be passed over in silence. The typical nostrums are here in all their glory. Antikamnia, with its "Cheer thy spirit with this comfort," occupies its usual prominent position at top half of page. Then there are Vin Mariani, with its offer of a reward of \$1,000 for any false statements concerning its purity; the mud poultice, Antiphlogistine, which is being bought over the counter daily by the public and used for every thing, from a "blind" boil to pneumonia—thanks to the medical profession; Dahl's Dyspepsia Cake, which is a new one to us, but

one that ought to take the public rapidly if the physicians will only help a little; Hydra-Casca Comp. for malnutrition, etc. Besides these, the following appear in the advertising pages of this journal, which is supposed to be published solely in the interests of the intelligent physicians of Long Island: Fellows' Hypophosphites; Angier's Petroleum Emulsion; Turck's Compound Emulsion; Chionia; Peacock's Bromides; Seng; Cactina Pillets; Anedemin, that delightful nostrum from Winchester, Tenn.; Hydroleine; Hayden's Viburnum Compound; Pepto-Mangan (Gude); Glyco-Heroin; Gray's Glycerine Tonic; Celarina; Aletris Cordial; Sal Hepatica; that thoroughly ethical proprietary that is advertised in practically every newspaper in the country, California Fig Syrup; Sanmetto; Glyco-thymoline; Listerine; Colchi Sal, et al. The intelligent members of the Associated Physicians of Long Island ought to be proud of the contents of the advertising pages of their new journal. The business management is certainly proud, for it would be able to supply physicians with this journal "free, gratis and for nothing," and then make a profit. Some zealous reformer is liable to make the remark that this journal must count on the nostrum men for its support rather than on its subscribers.

#### CANADA.

**Modified Milk in Montreal.**—A sanitary milk plant has been installed in Montreal, and the modification of milk for infants will be carried out on the Walker-Gordon system.

**Responsibility for Typhoid Outbreak.**—The provincial board of health of Quebec places the responsibility for the typhoid outbreak in Montreal on the Montreal Water and Power Company.

**Vital Statistics.**—The death rate for Winnipeg during 1906 was 16.138 per 1,000 of the city's population. The total number of deaths was 1,630. The deaths in Vancouver in 1906 were 424, as against 444 in 1905. One-ninth of the number was from tuberculosis.

**Military Appointments.**—Lieutenant-Colonel H. S. Birkett, M.D., A.M.C., Montreal, has been appointed principal medical officer for the Quebec command to replace Dr. C. W. Wilson, resigned. Lieutenant-Colonel George Stirling Ryerson, Toronto, is transferred to the reserve of officers. Lieutenant-Colonel Dr. A. B. Osborne, Hamilton, is also transferred to the reserve of officers. Major and temporary colonel G. H. Parke is gazetted lieutenant colonel, vice Dr. C. W. Wilson, resigned. Major A. N. Hayes, M.D., Sarnia, becomes a lieutenant colonel.

**Toronto Board of Trade and Tuberculosis.**—The Toronto board of trade has been investigating the question of tuberculosis as applied to immigrants and has come to the conclusion that the Dominion immigration inspectors are not doing their duty satisfactorily. Of the 243 patients treated in the Muskoka Free Hospital for Consumptives during the past official year 83 or one-third were of foreign birth; and it seems that a goodly proportion of these left their homes to emigrate to Canada afflicted with the disease and in some way managed to deceive the inspectors at Quebec. At the Toronto Free Hospital for Consumptives at Weston, 134 patients were cared for during the past official year and only 50 per cent. of this number were born in Canada. An analysis of the nationality of these patients shows that 35 per cent. came from Great Britain and Ireland, 2.9 per cent. from other British possessions, and 11.2 per cent. from foreign countries. The Toronto board of trade has reported this startling condition of affairs to the prime minister, Sir Wilfred Laurier, and has requested that steps be immediately taken to prevent the embarkation for Canada of any emigrants afflicted with pulmonary or any infectious or contagious diseases.

#### FOREIGN.

**Donation to the Imperial Cancer Research Fund.**—To celebrate their golden wedding, Mr. and Mrs. Bischoffsheim of England have given \$200,000 to the Imperial Cancer Research Fund.

**Higher Fees in and Around Berlin.**—Thirty-four medical societies, with a membership of 2,657 members, embracing the Berlin region, have advanced the fees for private practice. This decision was officially voted at a general assembly of representatives of the various medical societies held in December.

**Scarlet Fever Among French Troops.**—An epidemic of scarlet fever is reported among the troops stationed at Nancy and Toul, and the army surgeon attending the sick has also contracted the disease at Nancy. No leave of absence was granted to the soldiers as usual at the holidays, owing to the prevalence of the disease.



**New Professor of Physical Chemistry at Leyden.**—Professor Kuenen of University College, Dundee, Scotland, has been appointed to the newly established chair of physical chemistry in the University of Leyden. He is a graduate, a gold medalist, and Ph.D. of Leyden, and worked with Professor Ramsay in University College, London.

**Death of Spanish Woman of 126.**—The *Siglo Medico* of Madrid published some time ago the portrait of a working woman living in Madrid who was born in 1781, according to official records, and who was still living in astonishingly good health. Her death has just been announced; she succumbed to pneumonia at the age of 126.

**The Stoerk Endowment.**—The widow of the Vienna laryngologist, Karl Stoerk, has bequeathed her property for an endowment in memory of her late husband, who died in 1899. The bequest comes into effect after the death of her grandchildren. The estate is valued at \$34,000, and the income is to be devoted to aid needy medical students.

**Bequest from Physician for Billroth Endowment.**—Billroth's former assistant and friend, Dr. D. Barbieri, has bequeathed his entire estate, valued at \$75,000, to found an endowment in the name of Theodor Billroth. The income is to be used as stipends for young surgeons at the second surgical clinic at Vienna, the scene of Billroth's and Barbieri's labors. The bequest does not become operative until a life-interest has expired.

**Proposed Duty on Proprietary Medicines.**—The house of deputies in France is now discussing a bill to impose a 20 per cent. duty on all proprietary medicines. The manufacturing chemists and pharmacists are protesting most vigorously, as a matter of course, and many physicians have joined the ranks of protesters, as the duty would affect many drugs, curative sera, etc., which are being constantly used by physicians.

**Consolidation of Two Urologic Journals.**—It is announced that the *Centralblatt f. d. Krankheiten der Harn- und Sexual-Organen* will henceforth be combined with the *Monatsberichte f. Urologie*, assuming the new title: *Zeitschrift für Urologie*, to be published by Overländer of Dresden, C. Posner, L. Casper and H. Lohnstein of Berlin, and Zuckerkandl and Frisch of Vienna. It will be the official organ of the German Association of Urologists, and will be issued monthly by O. Coblentz, Berlin, for 25 marks, or about \$6.50 a year.

**Postgraduate Work in Italy.**—Milan is rejoicing over the completion of an institution for postgraduate instruction in obstetrics, gynecology, occupation affections, hygiene of factories, orthopedics and what is called "social medicine." Other branches of postgraduate work are to be taught in the already established clinics. Milan is said to be the industrial and commercial center of Italy and has long lamented the lack of a university. She now takes the lead in providing the first center for postgraduate instruction, patterned after the postgraduate schools in this country and in Germany. The expense has been met by private subscriptions, with some aid from the city and state.

**Banquet Tendered Ingegneros.**—Last month a banquet was tendered José Ingegneros, the professor of psychology and chief of the clinic for nervous and mental diseases at Buenos Ayres, on the occasion of his return from a two years' trip to Europe. Although still comparatively young, he is called by some "the American Charcot." Among his important works are several on "Simulation," both in criminals and in the ordinary struggle for existence; "Musical Language and Hysterie Disturbances;" "Industrial Legislation in the Argentine Republic," and other articles in the *Nuova Antologia*, *Arquivio di Psiquiatria*, *Semana Medica*, *Brazil Medico* and other French, Italian and Spanish journals.

**Semaine Médicale Drops Its Index of Current Medical Literature.**—For years the Paris *Semaine Médicale* has published a classified list of the titles of most of the articles appearing in some of the principal journals of the world, during the last few years issuing a quarterly index of this *Bulletin bibliographique international*, as it was called. With the opening of 1907 the *Semaine Médicale* omits this feature of its journal, devoting the space henceforth to more summaries of the important works published throughout the world. It states that readers were frequently unable to procure for themselves the articles indexed, or, when obtained, they were found comparatively unimportant, owing to the inevitable absence of selection in an index of the kind. The *Semaine Médicale* has always been distinguished for the careful way in which it was edited, the articles culled for review from the vast field of current literature showing rare judgment and thus presenting in concise form the cream of the literary output of the day,

but one criticism is unavoidable, namely, that when some new medical achievement is written up editorially, sometimes no mention is made of the original source in which it was published, at home or abroad.

**Appendicitis Collective Inquiry in Germany.**—The Berlin Medical Society appointed a committee last summer to collect statistics in regard to appendicitis, and the committee has just issued an appeal to physicians for their coöperation. It states that appendicitis in most of the civilized countries during the last two decades has assumed the form of an actual epidemic (*Volkskrankheit*). In Germany it has not only increased in frequency, but also in severity, while comprehensive statistics of the morbidity and mortality have been lacking to date. The statistics published from the larger hospitals and clinics have not yet decided the important question as to which cases of inflammation of the cecum require operative treatment unconditionally, and the so-called early operation, and which cases can be safely left to expectant internal treatment. The physicians of Greater Berlin are therefore urged to collect data during 1907 which can be used for statistical comparison in regard to the frequency and the various forms of appendicitis, the course and the outcome of the affection under internal and operative treatment, and the like. A question blank is to be sent to each physician to fill out and return, and arrangements have been made with the authorities so that the question blanks will not require postage. In order to avoid duplication of data, the physician in whose hands the patient first arrives and who makes the diagnosis, is the only one to note the data in the case. As a means to avoid further confusion, the name in full of each patient is to be added to each case mentioned. The *Perityphlitiskommission* includes Albu, Aschoff, Kraus, Lenhoff, Neumann and four others.

**Behring's Antituberculosis Immunization.**—The organ in which von Behring published his communications a year ago was a Paris daily, and now it is a Berlin daily in which he presents the latest results of his researches. The *Ztschr. f. aeztl. Fortbildung* adds, in commenting on this fact, that he selected December 11, Koch's birthday, as the day on which to publish in a lay paper this latest communication, simultaneously with his presentation of it at Stuttgart at a meeting for the benefit of the Wurtemberg Society for the Care of the Sick in the Colonies. THE JOURNAL has already mentioned—pages 869 and 1111 of the last volume—the results obtained with his tulase lactine, which he thinks is destined to play a highly important part in the treatment of scrofula and in the preventive immunization of infants against tuberculosis, similar to his successful immunization of young calves. The immunization does not attain its maximum until from five to thirteen weeks after the course of injections is completed. The progress of immunization can be traced by quantitative determination of the protecting bodies in the blood serum in comparison to normal serum. These protecting bodies pass into the milk, and it thus becomes possible to immunize infants by first immunizing the mother by this means, or by immunizing the cow from which it obtains its milk supply, if artificially fed. He says that the immunity conferred lasts longer than by other technics, and that his favorable experience with tuberculous animals still in fair general condition justifies the hope that tuberculous patients under similar conditions may derive equal benefit from the tulase treatment.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Jan. 2, 1907.

#### Work of the Liverpool School of Tropical Medicine.

The equipment of the Liverpool School of Tropical Medicine, whose achievements have been so frequently chronicled in THE JOURNAL, continues to keep pace with its important work. Laboratories outside Liverpool, at Runcorn, were established some two years ago because the Johnston laboratories, being situated in the city, were not adapted for keeping a large number of animals, both great and small. The chief work has been the study of trypanosomiasis and relapsing fever. Research work proper, however, is only part of the function of these laboratories. From here the Johnston laboratories are supplied with living parasites, the trypanosomes of dourine, mal de Caderas, nagana, Gambian horse sickness and sleeping sickness being kept constantly going in animals. The ticks, *Ornithodoros moubara* and *Argas miniatus*, are bred. Stocks of the *Irodes reduvius* and *Rhipicephalus annulatus*, which transmit the piroplasms of "red water" in cattle, are also kept.

#### Method of Preventing Suicide.

General Booth, the founder of the Salvation Army, has inaugurated a scheme for the prevention of suicide. Persons whose



lives have been saved in spite of themselves, almost invariably express gratitude to their rescuers. All that is wanted in many cases is just sound common sense advice, which would-be suicides shrink from asking from their friends, and which their friends are often unfitted to give. The bureau is superintended by two Salvation Army officers of wide experience of life, to whom those who have come to the conclusion that their difficulties are insuperable and that life is not worth living, may apply for advice, either in person or by letter. Confidences will be rigidly kept and secrecy inviolably preserved. No inquiries into the antecedents or private circumstances of applicants will be made. Nothing will be committed to writing without the express permission of the applicants. No financial assistance can be promised. The need of such an experiment lies in the fact that suicides in the United Kingdom have increased by 200 per cent. in 50 years, and by 50 per cent. in 25 years.

#### Cheap Purification of Sewage; Prevention of Contamination of Streams and Oyster Beds.

Mr. W. P. Digby and Mr. H. Shenton, before the Society of Engineers, read a paper on the contamination of drinking water, fisheries and shell fish layings by sewage. The Royal Commission has foreshadowed legislation forbidding the discharge of crude sewage and even of an effluent chemically pure but bacteriologically impure. Methods of sewage treatment, however, have been devised that will eliminate the dangerous qualities at little cost. Organic matter discharged into a river would serve to feed pathogenic microbes. Various methods of sterilization were described, including the use of chemicals, many of which are too costly for practical purposes. The electrolytic production of sodium hydrochlorite was explained. This makes it possible to sterilize 61,600 gallons of effluent chemically pure for 10 pence (\$0.20), exclusive of a small capital outlay. It is perfectly practicable to purify and to sterilize all the dry-weather daily flow of sewage entering the Thames, so as to render the water harmless.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Dec. 20, 1906.

#### Classes Conducted in English.

During the months of December, January and February a number of postgraduate classes are being conducted in English at the clinics of our General Hospital. The number of English-speaking students is continually increasing, and it has been found convenient for both the students and the teachers to conduct the lectures in English, so as to enable them to obtain the maximum benefit with the least difficulty. As regards the classes, they will deal with the following subjects: Otology, both practical and theoretical; ophthalmology (Klinik Schnabel); gynecology and obstetrics, in which the number of students is limited to six for each class; hematology (Klinik Neusser), and surgery of atypical conditions. Laryngology and bronchoscopy can be had as well, on application, but no special course has been announced. Another group of classes, not, however, in English, offering special advantages as to cost and time, will be held by the "Aertzekammer." The duration of the class is either six or twelve hours, mostly once or twice a week, in the evening hours (6-8), and it will cost twenty crowns (four dollars) for men with foreign diplomas, and six crowns for holders of continental degrees or diplomas. The subject of these classes will be such as are of special interest to active practitioners.

#### Vienna Practitioners Organize.

To-day the first meeting of a new organization of practitioners took place which may prove a very important and influential factor in regulating the material conditions of the profession, at least in Vienna. The new association intends to unite all doctors for the purpose of offering an unanimous body in all matters concerning the position of the practitioners toward clubs, contract practice, hospital abuse, bad debts, etc., and to arrange methods for calling the attention of the public authorities to the necessity of taking counsel with medical men in all matters which affect them. The leading men of the new organization belong to the medical staff of the university, several professors having taken up the matter, and promises of support have been received from all other medical clubs. As political dissensions are rather usual among the profession in Vienna, partly on account of racial and religious prejudices, partly due to the example set by parliament, the first clause of the by-laws of the organization provides that politics are absolutely banished from its aims. This has encouraged about 80 per cent. of the practitioners to become members of the organization, and it is justly ex-

pected that at last the tide has turned and a definite stand for the welfare of the profession will be made. Unanimous action is urgently desired, as again a scheme is in preparation by the "trade unions" to increase the burden on their doctors by reducing the pay or increasing the number of patients of each contract-man. The danger of the unions attaining their object is imminent, because the financial position of many young doctors prompts them to accept whatever opportunity of earning is held to them. The "passive resistance" of the country physicians is still being kept up, but the national authorities have not as yet yielded.

#### An Alleged Case of Malpractice.

The number of lawsuits for alleged malpractice is constantly increasing, and the public seems to take special interest in such suits. The insurance companies have taken the matter up, and have opened an account for the so-called "Haftpflicht," or liability of practitioners. It is to be regretted that the old-fashioned confidence in the doctor, which took all disadvantages arising from his actions as an inevitable but natural outcome, is fast dying out, and that the relationship between the doctor and patient is becoming merely that of an employer and employé. Thus a laborer, 21 years old, came recently to the clinic of Professor Frank, suffering from caries of the left foreleg. As conservative treatment was fruitless, an operation was advised and to which the patient submitted. A necrotic piece of the tibia had to be removed, and two days later a severe hemorrhage necessitated immediate amputation of the leg, because extensive thrombosis had interfered with the arterial supply and gangrene was threatened. The patient was dismissed with an artificial leg. His father, however, sued the professor and his assistant for \$10,000 damages for crippling the lad. He contended, further, that infection must have taken place due to careless technic during the operation, otherwise such a simple operation ought not to have resulted in the loss of the limb. The court, after hearing medical experts, decided that there was no reason for granting any damages, as thrombosis could not have been prevented and that the surgeons had used the utmost care in dealing with the case.

## Pharmacology

#### Adding Insult to Injury.

When the Council on Pharmacy and Chemistry, nearly two years ago, began its work of independent and scientific investigation of proprietary preparations, some of the questions asked were:

"What guarantee has the medical profession that the formulas of these proprietary medicines are not changed at the will of the manufacturers? How can the physician who confidently prescribes them for his patients know that the preparation which he orders to-day is the same as that which was furnished him last year, or which may be given him next year, under the same name?"

At once a wail, as of injured innocence, went up from countless vendors of proprietary medicines, who replied with one voice:

"The honor and reputation of the proprietors and manufacturers is sufficient guarantee of the stability and permanence of these preparations."

So vehement were their protestations and so well simulated were their declarations of Pecksniffian virtue that many physicians were deceived thereby. Many medical journals (whose views were, perhaps, slightly biased by the consideration of fat advertising contracts), also were apparently convinced. But the fact was overlooked that guarantees based on honor are of value only in proportion to the amount and quality of honor possessed by the guarantors.

The enactment of the national Food and Drugs Act is bringing many things to light. Some of them are interesting, some would be amusing were they not so utterly despicable. Among other things, it has furnished a demonstration of the value of the "honorable assurances" of nostrum vendors.

The nostrum antikamnia has pointed many a moral in the campaign in the last two years. It was hardly to be hoped that it would deliberately furnish a demonstration of the utter lack of honesty on the part of a certain class of proprietary manufacturers. Yet, relying apparently on the



ignorance of the public and the long-continued lethargy of the medical profession, its promoters have, in the last few weeks, unwittingly convicted and stultified themselves. Having first advertised their mixture to the profession as a chemical compound and, later on, advertised and sold it directly to the public as a sovereign remedy for countless ills, it was shown by analyses made for the Council on Pharmacy and Chemistry that their preparation was a mixture containing acetanilid, caffeine, citric acid and sodium bicarbonate. Now, when the pure food law went into effect, the proprietors of this mixture found themselves in a sad dilemma; if they labeled their mixture in accordance with the provisions of the law they would have to admit that it contained acetanilid and that the charges against them were true. Failing to comply with the law, they must go out of business. The latter alternative was not to be thought of. The profits gained by selling, with the aid of careless or ignorant physicians, a five or ten-cent mixture for \$1 were too great to be surrendered without a struggle. Was there no way out? There was. The same brilliant intellect, perhaps, that first saw the commercial possibilities in the business, said: "Change the formula. Phenacetin is about as cheap as acetanilid; the patent has just expired and consequently we can get it at a low price. Let us substitute phenacetin for acetanilid."

No sooner said than done. But how about the "honor and reputation of the manufacturers?" Never mind that, so long as the profits are undiminished and the public, both lay and professional, is ignorant and credulous.

As a result the profession is treated to an edifying exhibition of virtue triumphant, a wolf so completely covered by the harmless coat of a sheep that he flatters himself that his wolfish nature is completely concealed. No longer are skulls and skeletons sent out in calendar form as grinning advance agents to be displayed in every doctor's office, but instead a beautiful domestic scene, showing a convalescent child nestling in the arms of its mother. The familiar "AK", however, as usual, is in the lower right-hand corner. And what a change in labels! No longer is antikamnia a chemical entity, but the label now openly but ingenuously declares that "Antikamnia tablets in this original package contain 350 grains acetphenetidin, U. S. P., per ounce. Guaranteed under the Food and Drugs Act, June 30, 1906. Serial No. 10." While below, as an entirely unnecessary display of conformity to the Pure Food Act, appears the statement:

"The Antikamnia tablets in this original ounce package contain no acetanilid, antifebrin, antipyrin, alcohol, morphin, opium, codein, heroin, cocain, alpha- or beta-eucain, arsenic, strychnin, chloroform, cannabis indica or chloral hydrate."

Truly, Satan is appearing as an angel of light. What a gratification it is to the long exploited profession to know that antikamnia contains no alcohol, no chloroform, no cannabis indica, no chloral hydrate. How unfortunate that this spontaneous display of confidence is not carried far enough to inform the profession of the ingredients, aside from phenacetin, contained in the mixture!

The label is an admission that the nostrum does not contain what it was never supposed to contain, with the exception of acetanilid, and is indirectly an attempt to conceal the real contents. The proprietors knew that the dear public, whose "pains, headaches, neuralgias, women's aches and ills, grippal neuroses, nervousness, insomnia, rheumatism, lightning pains of locomotor ataxia, sciatica, etc.," they are longing to assuage, will not know that acetphenetidin is the official designation for what is popularly known as phenacetin, and that this dangerous product is found in the new mixture in the proportion of approximately 4 grains to a 5-grain tablet. Evidently they also presume considerably on the ignorance of our profession, or why should they make the brazen statement that four grains of phenacetin is the "most reliable remedy" for the long list of diseases enumerated on their advertising calendar. On the outside of the envelope in which this interesting collection of misleading statements is mailed, appears the appropriate caution, "Please do not bend this package." Evidently the calendar is not so elastic as are the consciences of those who circulate it.

"Can a leopard change his spots?" We have the assurance

of holy writ that it is a most difficult process. But evidently, as John P. Robinson said, "They didn't know everything down in Judee." That was before the days of nostrum vendors and advertising agents, who do not hesitate to sacrifice what honor they may have once possessed for the sake of continuing their humbuggery, and who even have the effrontery to attempt to make capital out of their deception by brazenly announcing that they were "the tenth firm to file their label with the pure food commissioners," at the very time that they are perpetrating this fraud on physicians.

When the formula for which such wonderful virtues were claimed was suddenly thrown overboard, was the medical profession, which by its short-sighted patronage had built up this business, notified in any way of the change? Search the new advertising matter of this nostrum from beginning to end and you will find not one word to show that "the Antikamnia tablets in this original ounce package" differ in the slightest particular from those sold to the profession and the public for years past. This being true (and the statements of the promoters themselves are our authority for it), what remains of the pratings of "honor" and the "guarantee of the manufacturers"? Has a physician no right to know when a change is made in the formula of a preparation which he has been prescribing for years?

What assurance has the profession that, at any moment, a cheaper or more dangerous drug may not be substituted for "acetphenetidin" if thereby the law can be evaded or the profits of the delectable business enhanced?

How can any conscientious physician prescribe, for those who confide their lives to his care, a preparation the stability of the formula of which must depend absolutely on its owner's whim?

How can a physician with the slightest sense of responsibility to his patients allow his office to be used as a free advertising bureau for a preparation manifestly founded and developed on deceit and misrepresentation?

How can any medical journal, except those avowedly and unblushingly seeking to aid the nostrum maker to exploit the profession, whose interests they claim to serve, continue to carry the deceptive and misleading advertisement of a twice exposed fraud?

How can any physician with a particle of self-respect or manhood continue to support, by subscription or contribution, any medical journal which, by accepting such advertising, allies itself with the army of deceit and chicanery?

#### Want Reform in Nostrum Business.

It is but too well known that a large portion of the pharmacist's business consists of the sale of "patent medicine," and that these nostrums are sold by him without attempting in any way to protect the public from fraud. And with much truth it has been argued that the numerically strongest association of druggists in the United States has for its chief aim the methods of increasing the sale of "patent medicines." It is therefore worthy of note that pharmacists fully realize that they can not serve the physician and the public on the one hand, and the "patent-medicine" concern on the other hand, at one and the same time; this is indicated by a resolution reported to the executive committee of the Illinois Pharmaceutical Association. The resolution reads in part:

The honest and conscientious pharmacist who desires to do the square thing by his medical friends and his customers can not go out of the way to assist any manufacturer who makes dishonest claims for his products, as to their contents or medicinal value.

The public has been thoroughly aroused in regard to the "patent-medicine" question, and looks to the pharmacist for information on it. For the pharmacist to cater to the patronage of physicians on one hand and on the other to assist in selling quack nostrums under flagrant misrepresentation, is undermining our very foundation for confidence of the public in our competency and integrity.

We therefore beg to submit that an earnest appeal be drafted to the manufacturers of "patent medicines" so to revise their advertisements as to make it possible for honorable pharmacists to tolerate traffic in "patent medicines."

The trouble with the last proposition is that the druggists are asking too much; if the manufacturers of "patent medicines" revise their advertisements to make it possible for "honorable pharmacists to tolerate the traffic," the manufacturers must tell only the truth, in which case their sales would fall off to the vanishing point.



**Agreement Between Physicians and Pharmacists.**

The physicians and pharmacists of Monessen, Pa., have entered into an agreement by which the druggists agree to avoid window displays of proprietary medicines and the advertisement of the same, to discourage counter prescribing and to refer patrons to a physician, and the physicians agree, on the other hand, not to dispense tablets except in case of emergency and not to prescribe proprietary pharmaceuticals, but to indicate U. S. P. and N. F. preparations wherever possible. The plan is said (*N. A. R. D. Notes*, Nov. 15, 1906), to work well and to be spreading to other towns in Pennsylvania.

**Correspondence****Cyclopedia of American Medical Biographies.**

BALTIMORE, Jan. 8, 1907.

*To the Editor:*—The letter published in *THE JOURNAL*, Dec. 8, 1906, in regard to the Cyclopedia of Biographies brought responses from all parts of the country.

I wish to report marked progress in the enterprise, and to put before the profession the organization of the plan up to the present. I have three sets of collaborators engaged in different fields of activity. First, there are men who take charge of large sections of the country or a state; second, those who have charge of the specialties, and third, a system of volunteer associates, or those who engage to write one or two biographies. Those who have charge of the states will be glad to have the specialists written up by men who are particularly familiar with their work. At the same time they will also be glad to have certain individual lives written by some one who is either a descendant, or who is particularly well acquainted with the subject, having lived in the neighborhood.

Dr. Walter L. Burrage has taken the New England states, with the exception of Connecticut and Rhode Island. Dr. Charles Caverley is co-operating with Dr. Burrage in Vermont; Dr. Walter Steiner has assumed Connecticut and Rhode Island; Mr. Albert T. Huntington, the librarian of the Brooklyn Medical Library, will probably assume charge of New York state, in co-operation with some other physician; Dr. Francis R. Packard has assumed Pennsylvania; Dr. August Schachner, Kentucky; Dr. Leartus Connor, Michigan, and Dr. H. E. Handerton, Ohio. I hope that Dr. Dudley P. Allen will co-operate with Dr. Handerton in gathering data for the history of a state in which so many of his ancestors have lived and attained eminence. Dr. P. C. Coffey has Oregon and Washington; Dr. C. S. Sheldon, Wisconsin; Dr. George H. Kress, California; Dr. Albert Robin, Delaware; Dr. E. A. Hoefler, Dakota; Dr. N. A. Powell, Ontario.

I hope through this notice to secure further co-operation in a work which ought to enlist the sympathies of every section of the country, including Canada.

I particularly want individual biographies or notices of biographies sent to me, and wherever possible, I want the picture and the signature of the worthy.

1418 Eutaw Place.

HOWARD A. KELLY.

**Did Not Endorse Solidified Formaldehyd.**

STATE UNIVERSITY OF IOWA, IOWA CITY, Jan. 18, 1907.

*To the Editor:*—My attention has recently been called to a circular issued by the George Leininger Chemical Company, which now goes by the name of the International Chemical Company, in which I am quoted as recommending the George Leininger solidified formaldehyd for fumigation, and in which the State University of Iowa, the Iowa State Board of Health and I personally am mentioned as endorsing the products of this firm. It is true that I have examined the formadehyd mentioned and have found that when used in sufficient quantity (more than is recommended by the firm) and using it under certain conditions (such as a sufficient amount of moisture, a proper temperature, etc.), that it will disinfect. I have never, however, given it an unqualified recommendation and, so far as I know, it has never been endorsed by the Iowa State Board of Health or the State University of Iowa as such. I thought it due the profession to make this public statement in view of the wide advertising that is being done by the firm mentioned.

HENRY ALBERT.

**National Department of Health.**

FORT WAYNE, IND., Jan. 18, 1907.

*To the Editor:*—The subject of a medical department in the federal government is of great interest to the profession. One of the chief objections to it hitherto was that the scope of the proposed secretaryship was not wide or important enough to warrant the creation of a department, and a bureau did not meet the wishes of those who advocated this innovation. Dr. Barchfeld's bill goes a great way in overcoming these objections. The supervision of foodstuffs and the control of the entire medical services of the Army and Navy would make the proposed department really important. I would suggest another service to be included—the census bureau. The supervision of emigration and immigration with the vital statistics and the statistics of morbidity—in a word, of the demography of the nation, would be a natural addition to the department of health. The internal fisheries, as distinct from the pelagic, and the experimental hatcheries would also be appropriate adjuncts to the proposed scientific department. All these together would make its scope and importance fairly comparable with the other departments represented in the President's cabinet.

WILLIAM P. WHERY, M.D.

**Marriages**

GEORGE GREEN, M.D., to Miss Lydia B. Williams, both of Norfolk, Va., January 9.

JOSEPH HALL, M.D., to Miss Carrie Nelson, both of Bay Minette, Ala., January 2.

J. BYNUM STANLEY, M.D., to Miss Lillian Helen Lang, both of Memphis, Tenn., December 5.

GEORGE C. KEIFER, M.D., Philadelphia, to Miss Juanita M. King of Pottsville, Pa., January 9.

WALTER V. SPENCER, M.D., to Miss Villa May Brown, both of Portland, Ore., January 1.

MARTIN W. FITZPATRICK, M.D., to Miss Julia Murphy, both of Decatur, Ill., at Springfield, Ill., January 7.

WALTER DE LA M. HILL, M.D., to Miss Julia Tompkinson, both of Everett, Pa., at Cumberland, Pa., December 31.

FRANCIS M. MCNAIR, M.D., Sugar Grove, Ill., to Miss Evelyn McGibbon of Galesburg, Ill., at Valparaiso, Ind., January 12.

**Deaths**

Julius Caesar Le Hardy, M.D. Jefferson Medical College, Philadelphia, 1856; at one time professor of chemistry in Oglethorpe Medical College, Savannah; a member of the Georgia Medical Society since 1858, and its president in 1873; a member of the Medical Association of Georgia since 1868 and its president in 1851; medical director of the Citizens' Sanitary Association of Savannah from its organization in 1882; at one time health officer of Savannah and a hygienist and sanitarian of great ability; a Confederate veteran and one of the most widely known physicians in South Carolina, died at his home in Savannah, January 7, from nephritis, after an illness of several months, aged 75.

Daniel S. Adams, M.D. College of Physicians and Surgeons in the city of New York, 1872; a member of the American Medical Association; treasurer of the New Hampshire Medical Society from 1881 to 1891, and president of the board of censors of the society in 1886; a delegate to the International Medical Congress in Washington, 1887; a member of the New England Alumni Association of the New York Hospitals; a member of the staff of Elliott Hospital, Manchester, N. H., since its foundation and one of the most prominent practitioners of that city, died at his home, January 12, from malignant disease of the intestines and liver, after a long illness, aged 60.

William L. Hunter, M.D. Jefferson Medical College, Philadelphia, 1868; a member of the American Medical Association; a veteran of the Civil War; postmaster of Turtle Creek, Pa., for six consecutive terms, and a member and president of the council at that place; one of the best known practitioners of the Turtle Creek Valley, died suddenly at his home in Edgewood, Pa., January 7, from cerebral hemorrhage, aged 62.



William H. Lauman, M.D. Bellevue Hospital Medical College, New York City, 1867; for several terms coroner of Cumberland County, Pa.; at one time school director and president of the local board of health, died at his home in Mount Holly Springs, January 11, from cerebral hemorrhage, after an illness of a year and a half, aged 68.

George C. Borst, M.D. Bellevue Hospital Medical College, New York City, 1876; a member of the American Medical Association and Cumberland County (Pa.) Medical Society, and a prominent physician of the county, died at his home in Newville, January 8, from gastritis, after a brief illness aged 53.

Gustavus A. Bachman, M.D. Jefferson Medical College, Philadelphia, 1873; a member of the American Medical Association; for many years a druggist of Kensington, and a member of the school board of the nineteenth ward of Philadelphia, died at his home in that city, January 8, from heart disease, aged 64.

William M. Weaver, M.D. Yale University, Medical Department, New Haven, Conn., 1897, of Hartford, Conn.; an inmate of the New York State Hospital for the Insane, Islip, L. I., who disappeared from that institution, December 16, was found hanging from a tree near Brentwood, L. I., January 4, aged 36.

William K. Knowles, M.D. Hahnemann Medical College, Philadelphia, 1871; manager of the *New England Medical Gazette*, and at one time chairman of the Board of Health of Everett, Mass., died at the Massachusetts Homeopathic Hospital, Boston, January 7, after a long illness, aged 56.

Michael Hawes, M.D. Starling Medical College, Columbus, Ohio, 1856; a surgeon during the Civil War; the oldest practitioner in Guernsey County, Ohio, where he had practiced for more than half a century, died at his home in Claysville, January 7, from senile debility, aged 79.

Benjamin Hubbard, M.D. Berkshire Medical College, Pittsfield, Mass., 1843; one of the oldest members of the Old Colony Medical Association; a member of the school committee of Plymouth, Mass., died at his home, January 12, after an illness of four weeks, aged 89.

Frederick W. Bridgham, M.D. Medical School of Maine, at Bowdoin College, Brunswick, 1866; a member of the Maine Medical Association and Hancock County Medical Society, died suddenly at his home in Sullivan, January 6, from heart disease, aged 71.

Abraham S. Baldwin, M.D. University of Maryland School of Medicine, Baltimore, 1847, one of the oldest residents of Long Green Valley, Md., died at his home at Baldwin Station, January 9, from cerebral hemorrhage, after an illness of two years, aged 81.

A. Julian Cabell, M.D. University of Virginia, Medical Department, Charlottesville, 1887; a member of the state and county medical societies, died at his home in Norwood, Va., January 7, from pneumonia, after an illness of one week, aged 48.

James C. Dirickson, M.D. Jefferson Medical College, Philadelphia, 1853; at one time consul to the Navigator Islands and surgeon with the Walker expedition to Nicaragua, died at his home in Berlin, Md., from pneumonia, January 4, aged 73.

John W. Johnson, M.D. College of Physicians and Surgeons, Baltimore, 1893; a member of the state and county medical societies, died at his home in Torrington, Conn., January 12, from nephritis, after an illness of several months, aged 35.

Patrick J. Ragan, M.D. Jefferson Medical College, Philadelphia, 1876; formerly a practitioner of Virginia City, Mont., and later a resident of Haywoods, Cal., died at his home in that place, January 2, from hemorrhage, aged 65.

Richard Mervin Cogan, M.D. Jefferson Medical College, Philadelphia, 1906; substitute physician at the Rhode Island Hospital, Providence, died at that institution from scarlet fever, January 4, after an illness of four days, aged 27.

John W. Ralston (Years of Practice, Illinois) 1888; for many years a practitioner of Indianola, Ill., and school director of that place, died at his home in Danville, Ill., January 6, after an illness of two weeks, aged 76.

Otto F. Jentz, M.D. New York Medical College, New York City, 1864; of Hasbrouck Heights, N. J.; a member of the board of education of that place, died at his home, December 20, from intestinal obstruction, aged 62.

George W. Boland, M.D. University of Maryland School of Medicine, Baltimore, 1856, died at his home in Barnesville,

Md., January 8, from senile debility, after an illness of one year, aged 82.

George W. Fuller, M.D. Cooper Medical College, San Francisco, 1887; a member of the state and county medical societies, died at his home in San Francisco, January 1, after a long illness.

Simon I. Groot, M.D. Berkshire Medical College, Pittsfield, Mass., 1846; of Washington, D. C., died at the Homeopathic Hospital in that city, from pneumonia, January 8, aged 86.

Gilbert L. Rose, M.D. Cincinnati College of Medicine and Surgery, 1875; died at his home in Decatur, Mich., January 5, after an illness of five days, from pneumonia, aged 53.

Alfons Muller, M.D. University of Halle, Germany, 1886; New York University Medical College, 1890, died at his home in New York City, from pneumonia, January 9, aged 45.

Joseph J. Cummings, M.D. Jefferson Medical College, Philadelphia, 1874, died at his home in Philadelphia, January 7, from pneumonia, after a short illness, aged 50.

William M. Crawford, M.D. Medical College of the State of South Carolina, Charleston, 1885; died at his home in Lancaster, S. C., January 8, after a long illness.

James Moore Still, M.D. Rush Medical College, Chicago, 1864, died at the home of his daughter in Maryville, Mo., recently, aged 80, and was buried January 10.

G. W. Waters, M.D. Hospital College of Medicine, Louisville, 1876, of Lane La., died at the home of his brother in Belcher, La., January 2, aged 59.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 19, 1907:

Harvey, Philip F., asst.-surgeon-general, leave of absence extended one month.

Woodson, R. S., surgeon, relieved from duty at Fort McDowell, Cal., and will proceed to San Francisco, Cal., and sail from that place on or about Feb. 5, 1907, for the Philippine Islands, and on arrival at Manila will report in person to the commanding general, Philippines Division, for assignment to duty.

Farr, Charles W., asst.-surgeon, arrived at the Army General Hospital, Presidio, San Francisco, Cal., for treatment, from Manila, P. I.

Davidson, Wilson T., asst.-surgeon, relieved from duty at Presidio of Monterey, Cal., and ordered to Fort D. A. Russell, Wyo., for duty.

Banlster, John M., deputy surgeon-general, ordered to proceed from Fort Riley, Kans., to Omaha, Nebr., and report in person to the commanding general, Department of the Missouri, for temporary duty as acting chief surgeon of that department.

Ashburn, James K., contract surgeon, returned to duty at Fort Lincoln, N. D., from leave of absence.

Rhoades, Rex H., dental surgeon, left Fort Sheridan, Ill., and arrived at Columbus Barracks, Ohio, for duty.

Marshall, John S., examining and supervising dental surgeon, returned to duty at Army General Hospital, Presidio of San Francisco, Cal., from leave of absence.

Hammond, William G., dental surgeon, returned to duty at Fort Logan, Colo., from leave of absence.

Miliukin, John D., dental surgeon, ordered from Fort Leavenworth, Kans., to Fort Riley, Kans., for duty for one month.

Stone, Frank P., dental surgeon, ordered from Fort Clark, Texas, to Fort Bliss, Texas, for temporary duty.

Whitney, Walter, contract surgeon, left Fort Terry, N. Y., on leave of absence for one month.

Gregory, Verdo B., contract surgeon, relieved from further duty in the Philippines Division, and ordered to Fort Adams, R. I., for duty.

Dade, Walter H., contract surgeon, returned to Fort D. A. Russell, Wyo., from leave of absence.

Pinquard, Joseph, contract surgeon, granted leave of absence for one month, fifteen days.

Adair, George F., contract surgeon, relieved from further duty at Fort Wadsworth, N. Y., and ordered to duty at Fort Wood, N. Y.

Tyler, George T., contract surgeon, relieved from duty at Fort Monroe, Va., and ordered to duty at Fort Wadsworth, N. Y.

Long, Charles J., dental surgeon, left Fort Snelling, Minn., and arrived at Fort Assiniboine, Mont., for duty.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 19, 1907:

Block, W. H., acting asst.-surgeon, resignation accepted, to take effect from Jan. 13, 1907.

DeLancy, C. H., P. A. surgeon, detached from the *Hancock* and granted sick leave for three months.

Bagg, C. P., surgeon, detached from the Naval Station, Guam, L. I., and ordered home to wait orders.

Hart, G. G., acting asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the *Albatross*.

McCullough, F. E., surgeon, detached from the *Albatross* and or-



dered to the Naval Station, Guam, L. I., sailing from San Francisco, February 5.

Mink, O. J., asst.-surgeon, ordered to the Naval Medical School, Washington, D. C.

Hibbett, C. T., medical inspector, detached from the *Franklin* and ordered to the Naval Rendezvous, St. Louis.

Riggs, C. E., surgeon, detached from the *Pensacola* and ordered to duty with Marine Legation Guard, Pekin, China, sailing from San Francisco, February 21.

Decker, C. P., surgeon, ordered to duty on board the *Franklin*.

Taylor, J. S., P. A. surgeon, detached from duty with Legation Guard, Pekin, China, and ordered home to wait orders.

Abekin, F. G., P. A. surgeon, detached from the Naval Rendezvous, St. Louis, and ordered to the Naval Training Station, San Francisco.

Stratton, R. J., asst.-surgeon, Duhigg, J. C., appointed assistant-surgeons, with rank of lieutenant (junior grade) from Dec. 20, 1906.

#### ORDERS ISSUED BY COMMANDER-IN-CHIEF OF ASIATIC FLEET, JANUARY 17.

Thompson, J. C., surgeon, detached from the *Cincinnati* and ordered to the Naval Station, Olongapo, P. I.

Peck, A. E., P. A. surgeon, detached from the *Concord* and ordered to the Naval Station, Olongapo, P. I.

Sellers, F. E., asst.-surgeon, detached from the *Mohican* and ordered to the *Cincinnati*.

Stoops, R. E., asst.-surgeon, detached from the Naval Station, Olongapo, P. I., and ordered to the *Concord*.

#### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Jan. 18, 1907:

##### SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, Dec. 1-15, 2 cases.  
Georgia: Augusta, Jan. 1-8, 11 cases.  
Illinois: Galesburg, Jan. 5-12, 13 cases; Sandwich, Dec. 1, 1 case; Viola, Oct. 1-Jan. 8, 5 cases.  
Indiana: Indianapolis, Dec. 30-Jan. 6, 2 cases; South Bend, Jan. 5-12, 3 cases.  
Louisiana: New Orleans, Jan. 6-12, 6 cases.  
Michigan: Detroit, Jan. 5-12, 1 case.  
Missouri: St. Joseph, Dec. 29-Jan. 5, 7 cases, 1 death.  
New York: New York, Jan. 5-12, 3 cases.  
Wisconsin: La Crosse, Jan. 5-12, 1 case.

##### SMALLPOX—FOREIGN.

Africa: Cape Town, Dec. 1-8, 2 cases.  
Brazil: Pernambuco, Nov. 15-30, 26 deaths.  
Canada: Nova Scotia, Colchester County, Jan. 7, present; Cumberland County, Jan. 7, present.  
China: Chefoo, Nov. 13, 1 death (from S. S. *Raleigh*); Shanghai, Nov. 24-Dec. 2, 1 case.  
Cuba: Habana, Jan. 5, 1 case (from *Kronprinzessin Cecilia*); Jan. 7, 1 case (from S. S. *Puerto Rico*).  
France: Paris, Dec. 15-29, 9 cases, 1 death.  
India: Bombay, Dec. 11-18, 1 death; Calcutta, Dec. 1-8, 4 deaths; Madras, Dec. 8-14, 1 death.  
Italy: General, Dec. 13-20, 3 cases.  
Netherlands: The Rotterdam, Dec. 30-Jan. 5, 1 case, 1 death (imported).  
Russia: Moscow, Dec. 8-15, 1 case; Odessa, Dec. 15-29, 11 cases, 3 deaths; St. Petersburg, Dec. 1-22, 12 cases, 5 deaths.  
Spain: San Feliu du Guixols, Dec. 22-29, 1 death.  
Syria: Beirut, Dec. 15-29, present.

##### YELLOW FEVER.

Salvador: Republic, Jan. 14, epidemic.

##### CHOLERA—INSULAR.

Philippine Islands: Nov. 18-24, Manila, 2 cases, 1 death; Provinces, 59 cases, 45 deaths.

##### CHOLERA—FOREIGN.

India: Bombay, Dec. 11-18, 4 deaths; Calcutta, Dec. 1-8, 91 deaths; Rangoon, Dec. 1-8, 20 deaths.

##### PLAGUE.

Brazil: Bahia, Nov. 25-Dec. 8, 6 cases, 5 deaths.  
China: Hongkong, Nov. 25-Dec. 1, 1 case, 1 death.  
Egypt: Alexandria, Dec. 22-26, 1 case, 2 deaths; Kench, Dec. 22-27, 6 cases, 8 deaths; Menoufieh, Dec. 21-27, 1 case, 2 deaths.  
India: General, Nov. 25-Dec. 8, 16,041 cases, 12,090 deaths; Bombay, Dec. 11-18, 13 deaths; Calcutta, Dec. 1-8, 19 deaths; Rangoon, Dec. 1-8, 13 deaths.  
Peru: Chicama Valley, Dec. 11, 14 cases.

#### Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 16, 1907:

Stoner, G. W., surgeon, directed to proceed to Boston as chairman of board of examiners; on completion of duty to rejoin station.

Guitierrez, G. M., surgeon, leave of absence granted for seven days from January 8, revoked.

Brown, B. W., P. A. surgeon, directed to proceed to Evansville, Ind., for special temporary duty, on completion of which to rejoin station at Louisville, Ky.

Lavinder, C. H., P. A. surgeon, extension of leave of absence for seven days from January 8, amended so as to grant five days only.

McMullen, John, P. A. surgeon, directed to proceed to Boston as recorder of board of examiners; on completion of duty to rejoin station.

Robinson, D. E., P. A. surgeon, directed to proceed to Baltimore, reporting to medical officer in command for duty and assignment to quarters.

Goldberger, Joseph, P. A. surgeon, bureau letter of November 13 amended so as to grant 16 days' leave of absence instead of 21 en route from Mexico, Mex.

Gwyn, M. K., P. A. surgeon, granted leave of absence for one month from Dec. 17, 1906.

Stimson, A. M., asst.-surgeon, granted leave of absence for seven days from Jan. 10, 1907, under Paragraph 191 of the Service Regulations.

Stimson, A. M., asst.-surgeon, granted extension of leave of absence for seven days.

Rucker, W. C., asst.-surgeon, granted two days' leave of absence from January 15.

Rogers, Edward, pharmacist, relieved from temporary duty in Washington, D. C., and directed to rejoin station, Stapleton, N. Y.

McBride, Charles R., pharmacist, granted leave of absence for six days from Dec. 1, 1906, under Paragraph 201 of the Regulations.

#### BOARDS CONVENED.

A board of medical officers was convened to meet in Baltimore on January 12 for the physical examination of cadets in the Revenue Cutter Service. Detail for the board: Surgeon L. L. Williams, chairman; Asst.-Surgeon F. H. Simpson, recorder.

A board of medical officers was convened to meet in Boston, January 14, for the physical examination of an applicant for the position of constructor in the Revenue Cutter Service. Detail for the board: Surgeon R. M. Woodward, chairman; Acting Asst.-Surgeon F. H. Cleaves, recorder.

A board of medical officers was convened to meet in Boston, January 14, for the examination of an alien immigrant. Detail for the board: Surgeon G. W. Stoner, chairman; Surgeon R. M. Woodward, Passed Asst.-Surgeon John McMullen, recorder.

#### REINSTATEMENT.

Dr. John W. Tappan reinstated as an acting assistant surgeon Jan. 12, 1907.

#### CASUALTY.

Pharmacist John Achenbach died Jan. 12, 1907, at Port Townsend, Wash.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

#### STATUS OF SCOPOLAMIN-MORPHIN ANESTHESIA.

CHICAGO, JAN. 15, 1907.

To the Editor:—I am surprised and astounded at the communications on page 159 of THE JOURNAL, Jan. 12, 1907. Dr. Ray asked a very proper question. Like many another he failed to notice that our advertisements as published referred not to "scopolamin-morphin," to which these many fatalities are properly accredited, but to "hyoscin-morphin-and-cactin compound," our special product now successfully used in over one thousand cases already recorded with us, and "without one untoward result as yet reported." He also quoted Wood's therapeutics where many gruesome statistics are given.

In an article published by me in the *International Journal of Surgery*, February, 1906, I called attention to the dangers of scopolamin-morphin anesthesia and have since arrayed my influence against that expedient. In that same article I suggested an explanation of these dangers and suggested that pure hyoscin be used instead, and gave the formula for trial which I have since so widely published.

My suggestions in this paper were taken up by a number of surgeons, some of whom have reported publicly and others to me privately, all reports thus far being favorable to the utmost degree.

I am perfectly well aware that scopolamin is claimed by some to be identical with hyoscin, but the fact remains that the same therapeutic results are not obtained from the one that are obtained from the other. In this connection Shoemaker's "Therapeutics," sixth and latest edition, page 545, at the end of a learned and elaborate study of many authorities says: "From the above we learn that the name scopolamin, which has for some time now been used in chemical literature and which has even been adopted by and introduced into the German pharmacopoeia should be therefrom erased, since it is merely a mixture of hyoscin hydrobromate and atrosin hydrobromate and not a chemical compound."

But this is not the point; I will leave that for the theorist. The fact remains, as stated, that the consensus of opinion of all observers with whom I am in touch is to the effect that their actions are not identical and it is to hyoscin-morphin-and-cactin compound, the product of the Abbott Alkaloidal Company, that I refer. It is this on which my statements are based, and it is from the use of this tablet that, so far as I know (and I have the benefit of close touch with many able observers the country over), that "no untoward result has as yet been reported."

Dr. Wood has evidently passed over these points very carelessly, he has unquestionably read but few, if any, of the papers published and for some reason or another is prompted by an animosity, personal or induced, that leads him to characterize the statements of an earnest, honest man as "separated from falsehood only by the width of the advertiser's license."

Dr. Wood apparently would have it deduced from his answer that morphin will do all in surgical anesthesia that hyoscin-morphin-and-cactin compound will do. I will leave this point for those familiar with both to answer.

I have nothing whatever to say or to hint as to the products of other houses. The manufacturers are fully capable of speaking for themselves. I ask no support from Wood or any one else that they can not conscientiously give; but I do object to being treated unfairly, to being held responsible for deductions from



statements I have never made, and to have stated against me statistics based on the use of a product that I have always condemned. Dr. Wood can quote any number of so-called "authorities" as well as present his own work in support of claims of his own making, as he can in refutation of positions of his own assumption, but if he has any evidence refuting the statements I have made and the position I do hold, I trust he will publish it. Not one of the fatal cases collected by him occurred from the use of the Abbott tablet, even though I can scarcely be expected to vouch for the skill and care of every physician who uses these sharp-edged tools, any more than for the quality of the alkaloids and the skill in their pharmaceutical manipulation shown by other manufacturing houses.

As Dr. Wood's conclusions, so far as I can determine, are based entirely on the statistics of foreign observers, how can he, in all fairness, assume to measure thereby American results from the use of quite another thing? W. C. ABBOTT.

ANSWER.—The attitude of Dr. Abbott in his letter concerning the relation of hyoscin and scopolamin recalls very forcibly the position that was taken by many physicians some years ago concerning the physiologic action of thein and caffeine. There was so much evidence, apparently authentic, to support the view that there was a marked difference between the therapeutic action of thein and caffeine, that an exhaustive chemical and pharmacologic investigation was undertaken in one of the best-equipped university laboratories of the United States to determine once and for all the exact relation of these two supposedly different alkaloids. The chemical study demonstrated their chemical identity, and before the pharmacologic examination had fairly begun it was learned that the caffeine used by the clinicians who reported a marked difference in its action from that of thein, had been actually manufactured from tea leaves, and was, therefore, nothing more than thein itself. Thus, this much-debated question was settled at one stroke. Among modern scientific men the question of the identity of hyoscin and scopolamin is not in dispute. It is only those who fail to keep pace with chemical and pharmacologic progress, and others, who for pecuniary reasons do not wish to keep pace, persist in maintaining that hyoscin and scopolamin are different bodies. It is really unfortunate that the confusion arising from the use of two names for a single valuable article must be perpetuated by selfish interests which profit to the extent that they succeed in befogging the physician. We will not quarrel over the nomenclature of the alkaloid under discussion, though there are good reasons why the name hyoscin might be abandoned. No less than three different bodies have at different times received the name "hyoscin." It was first applied to a decomposition product of hyoscyamin which is now universally recognized as tropin. Ladenburg later transferred the name to an amorphous alkaloid isomeric with atropin, which he claimed to have separated from hyoscyamus, but which was never found again, even by the largest alkaloid manufacturers of the world. Then Hesse used the same name to designate an alkaloid which he acknowledged, and which Schmidt amply demonstrated, to be identical with scopolamin. This identity was demonstrated not only chemically, but optically and pharmacologically by most careful methods. It is now, therefore, merely a matter of personal opinion or habit whether the name hyoscin or scopolamin shall receive preference. When Dr. Abbott condemns "scopolamin-morphin anesthesia" as being dangerous he condemns "hyoscin-morphin anesthesia" as well. From Dr. Abbott's letter we are expected to believe that all scopolamin on the market is a mixed product of atrosin and hyoscin and further that "the products of other houses" are to be looked on with suspicion. For the sake of argument let us assume that commercial scopolamin is a mixture of atrosin (racemic scopolamin) and hyoscin (levo-scopolamin) and then note the results of the classical work of Cushny on this very subject, which was published in the *Journal of Physiology*, vol. xxxii, July 13, 1905. He says "Levo-hyoscin (scopolamin) and racemic hyoscin (atrosin) have the same effect on the central nervous system in man and mammals. . . ." No one has disputed the accuracy of these results which are practically quantitative. Since the cause of death by hyoscin- (scopolamin) morphin anesthesia is due to failure of respiration, a mixture of hyoscin and atrosin would be just as dangerous, but no more so than if either one were administered alone. In other words, as far as the dangerous effect is concerned, commercial scopolamin would have the same action as pure scopolamin (hyoscin). But as a matter of fact this assumption that commercial scopolamin is always a mixture of atrosin and hyoscin is absolutely unwarranted. When it is considered that the Abbott Alkaloidal Co. does not manufacture the alkaloid, but purchases it from sources which must be open to other pharmaceutical houses, the insinuation that the products of other houses may be unreliable and the inference that the only pure hyoscin (scopolamin) to be found in the market is in the form of "hyoscin-morphin cactin" tablets is amusing, to say the least, and will not be likely to deceive. In this connection it seems very remarkable that Shoemaker's "Therapeutics," which the author of the letter quotes to substantiate his position, passes by without

even mentioning the beautiful and epoch-making researches of E. Schmidt and his pupils, who have done much to clear up the chemical and optical properties of this interesting alkaloid. "The elaborate and learned study of many authorities," referred to by Dr. Abbott, consists of the work of Ladenburg, which is only of historical interest, since it is inaccurate and no longer recognized, and that of Hesse, who at first championed the views of Ladenburg but was later compelled to acknowledge the accuracy of Schmidt's splendid researches. There is still one factor to be considered in this discussion and that is the use of cactin, whatever that may be. The only object of using this substance in this combination can be to counteract the dangerous respiratory depression of the hyoscin-morphin. Cactus has never been vaunted as a respiratory stimulant, but rather as a cardiac stimulant, equal to digitalis. Cactus is, however, a very uncertain drug, enormous doses of the very best preparations having been administered without producing the least effect. In some cases a slight rise in blood pressure has been noted, but in no case has the effect been comparable to digitalis. But assuming that cactus or cactin is all that its most enthusiastic supporters claim for it, the respiratory depression still remains, and, therefore, the element of danger is not eliminated. Since no convincing evidence has been offered that the use of the name "hyoscin" instead of the word "scopolamin" makes "hyoscin- (scopolamin) morphin" safe, no amount of juggling can conceal the fact that "hyoscin-morphin anesthesia" is fraught with great danger.

The following letter from Dr. Robinson is answered by what has been said above. It contains practically the same arguments as does the letter from Dr. Abbott, but is published so that it may not be said that we do not give both sides. It should be remembered that Dr. Robinson is intimately connected with the Abbott Alkaloidal Co., at least as one of the editors of their journal.

NEW YORK, JAN. 17, 1907.

To the Editor:—I read Dr. Wood's remarks in THE JOURNAL A. M. A., January 12, p. 159, with the greatest astonishment. There are but two points which I wish to take up, and I trust that in the interests of fair play you will give space to my remarks. Dr. Wood speaks of scopolamin and hyoscin as if they were one and the same substance; as if the discussion on the point of the identity or non-identity of the two substances were already completely at an end; as if the verdict of all pharmacologists were unanimous and the case were settled by a court from which there is no appeal. This is, I regret to say, very far from being the case. At present there are still pharmacologists who consider the two substances far from being identical. Hesse is one of those pharmacologists, and Professor Shoemaker has the following to say: "It may be of importance just in this connection to note, as pointed out by Hesse, that commercial scopolamin hydrobromid contains an admixture of a small proportion of another powerful mydriatic alkaloid known as 'atrosin,' which is isomeric with hyoscin or scopolamin. Atrosin, apparently, bears a similar relation to the latter as regards mutual convertibility that hyoscyamin does to atropin. Some pharmaceutical authorities indeed allege that scopolamin hydrobromid *should be erased* from the German and United States Pharmacopoeias, on the ground that it is merely a mixture of hyoscin hydrobromid and atrosin hydrobromid, and not itself a definite chemical compound. I call attention to this interesting point merely to note the fact that commercial scopolamin hydrobromid may differ in its physiologic action, owing to the variable quantity of atrosin present; this may also offer an explanation of any difference that may be observed between the action of scopolamin hydrobromid and hyoscin hydrobromid."—*New York Medical Journal*, Oct. 7, 1905.

This is a very strong statement, and it goes to show that there is at least still room for honest differences of opinion as to the identity of the two alkaloids. True, the chemical formula of hyoscin and scopolamin is the same, but what of it? So is the chemical formula of cocaine and hyoscin, namely,  $C_{17}H_{21}NO_4$ , and of course nobody will assert that the two alkaloids are identical. The merest tyro in organic chemistry knows that two products may have the same chemical formula and be widely different in many other respects, particularly in their therapeutic effects. That the chemical behavior of the two alkaloids is the same also shows nothing, for a minute trace of atrosin in the scopolamin will not interfere with the reaction.

Another point is that Dr. Wood seems to be inclined to ascribe the anesthetic effect of the combination chiefly to the morphin. He says "Hyoscin has practically no power as an analgesic." Nobody ever claimed that it did. It certainly is not an analgesic, but it is a wonderful general narcotic. And it is for that purpose that it is given. He says further: "The addition of hyoscin to the morphin, therefore, can not greatly increase the insensibility to pain." If it can not, how is it that we are enabled to amputate limbs under its influence? We certainly could not do it under the influence of morphin alone. If we should try, such a large amount of morphin would be necessary as to be a positive danger to life. Again, thousands of cases of childbirth have been conducted by the aid of scopolamin-morphin (in the Frauen-Klinik at Freiburg, director Professor Krönig; in the Charité at Berlin, director, Professor Bumm, etc.), and it is certainly not the morphin that produced the



insensibility, but chiefly the hyoscin, for we know that morphin has but a slight effect in diminishing the agonies of labor.

In brief, I would say that it is very far from being a fact that the identity of hyoscin and scopolamin is universally accepted, and that Dr. Wood utterly misunderstands or underestimates the action of hyoscin as an anesthetic. I might add that the addition of a cardiac tonic to pure hyoscin and morphin can not fail to render the combination more safe and less liable to give rise to untoward effects. That the combination is absolutely safe, I am inclined to doubt. I do not believe that we will ever discover an absolutely safe hypnotic or an absolutely safe anesthetic. The induction of sleep or anesthesia is too complicated a phenomenon, and affects the vital processes too deeply ever to be absolutely safe. We can only speak of anesthetics as being relatively safe, or least dangerous.

WILLIAM J. ROBINSON, M.D.

#### THE LENHARTZ TREATMENT OF GASTRIC ULCER.

DAYTONA, FLA., Jan. 17, 1907.

*To the Editor:*—What is the Lenhartz diet for gastric ulcer and where can I find literature concerning it? I saw it mentioned in an article in THE JOURNAL of January 12, and good results were reported from its use.

E. C. ATWOOD, M.D.

ANSWER.—The Lenhartz treatment consists of a somewhat abundant diet, chiefly of proteids, given on the principle that the excess of acid is thereby neutralized and the healing of the ulcer facilitated. The patient is put to bed and absolute rest enjoined, so that the first two weeks following hematemeses the feces and urine are passed in a bedpan. Mental quietude is also enjoined, especially freedom from any form of excitement. Confinement to bed is continued for at least four weeks. An ice bag is laid over the region of the stomach to promote the contraction of that organ, lessen the exposed surface of the ulcer and relieve pain. On the first day, even after hematemeses, the patient receives in teaspoonful doses about half a pint of iced milk and one, two or three fresh beaten eggs during the first twenty-four hours. The eggs are beaten up entire with a little sugar and the cup containing them placed in a dish filled with ice, so that they remain cold. In addition two or three times a day or oftener, bismuth subnitrate in, at most, 30-grain doses, is given, suspended in water, and these doses are repeated, as needed, for the first ten days, two or three times a day. The amount of milk is increased daily by about 100 c.c. (3½ ounces) and daily one egg is added until at the end of the first week about 800 c.c. (26 ounces) of milk and six to eight eggs are taken daily. After six days scraped beef can be given in quantities increased from the beginning dose of 31 gm. (one ounce) to 70 gm. (2 1/3 ounces) the second day, and so on, the beef being stirred into the egg. Gruel, softened zwieback, etc., may be added to the diet after two weeks, and at the end of four weeks an abundant mixed diet, avoiding coarse vegetables and other irritating substances, can be given. The bowels are kept open by enemata.

The method is described by M. Wagner (*Muench. med. Wochschr.*, Jan. 5, 1904) and also by J. V. Haberman (*Medical Record* of June 16, 1906). This method was tested by E. Wirsing, (*Archiv. f. Verdauungskrankheiten*, xl, 3), in comparison with the method of Leube, and he reaches the conclusion that it is better than the older method for patients who have had recent hemorrhages or who are much debilitated, but that the method of Leube should be given the preference in ordinary cases. His article was reviewed in THE JOURNAL, 1905, xlv, page 1122.

#### PUBIOTOMY WITH THE NEEDLE.

WETUMKA, IND. TER., Jan. 2, 1907.

*To the Editor:*—Kindly inform me through THE JOURNAL fully as to the technic of the so-called "Pubiotomy with the Needle," as mentioned on p. 2043 in THE JOURNAL of Dec. 15, 1906. Also explain how it aids labor.

V. BERRY, M.D.

ANSWER.—Hocheisen (*Arch. of Gyn.*, lxxx, p. 99), describes the operation as follows: "The patient is thoroughly disinfected in the usual way and placed on the operating table. The leg crutches are removed and the legs of the patient held on the backs of two assistants, one on either side. One assistant catheterizes thoroughly, aiding by pressure on the bladder from the outside. The urine is carefully examined for blood. This is important, as bloody urine is frequently found in prolonged labors, and if this be not determined beforehand, one will not be able to say afterward whether the bladder has been injured during the pubiotomy or not. One now carefully examines again to see if delivery can be effected without pubiotomy. If it can not, a Bumm's needle is introduced opposite the inferior border of the symphysis between the labium majus and minus, the latter of which, with the clitoris, is displaced medially. The needle, by depressing the handle and under guidance of the fingers of the left hand, introduced into the vagina, should hug the bone closely, and at no time should it fail to touch raw bone. At first the needle is directed toward the tuberculum pubicum; it soon, however, passes more medially, and is finally directed so as to come out in the midline. When the point of the needle appears through the skin an assistant attaches a saw (Gigli's) armed with one handle, and the operator then draws the

needle back. The second handle is then fixed to the saw. A nurse passes a long sterile towel in a figure of 8 around the patient's knees and ties it. The two assistants hold the legs together. By holding the saw as perpendicularly as possible, the bone is sawed through until only the bridge of soft parts, i. e., the skin, etc., remains, and until this can be pressed into the gap between the ends of the bone, only then is it certain that the anterior perlosteum and ligament have been completely severed, which is necessary in order to permit sufficient separation of the bones. In this manner we have never met with any hindrance due to the ligamentum arcuatum inferius (sub-public ligament) which is either completely severed by the saw or so arched that it tears completely when the bones separate. The saw is withdrawn and the openings immediately compressed, while a large compress is forced above and behind the symphysis, and a second one against the vulva. One-half minute compression suffices. After labor has been completed the blood which has accumulated in the wound made by the saw, is pressed out, the two small openings closed with catgut and a dressing and bandage applied." The operation aids labor by permitting the iliac bones to spread laterally, thus increasing the pelvic diameters. It has a limited range of usefulness and may be considered when the disproportion between the size of the child's head and that of the interior of the pelvis is too great to permit the birth of a living child yet not great enough to demand Cesarean section. The available conjugata vera may be increased on an average from 1 cm. to 1.5 cms. by the operation.

#### GLUTEN FLOUR AND SACCHARIN IN DIABETIC DIET.

ISLAND POND, VT., Jan. 3., 1907.

*To the Editor:*—In the article by Dr. Max Elnhorn on "The Dietetic Treatment of Diabetes Mellitus," published Dec. 29, 1906, why did he not include gluten flour in the diet list for diabetes? I would also like to know what he thinks of saccharin as a substitute for sugar.

H. E. SARGENT.

ANSWER.—This letter was referred to Dr. Elnhorn, who replied as follows: "1. Gluten flour contains a great deal of starch, any way, and for this reason its advantages over ordinary flour are not so great. 2. Saccharin is no article of food, and for this reason can replace sugar only with regard to taste, but not as a food."

### Medical Organization

#### The Importance of County and District Societies.

Dr. J. C. Larkin of Hillsboro, Ohio, President of the First Councilor District Medical Society, delivered an address at the meeting of the District Society, held at Cincinnati, Nov. 8 and 9, 1906, in which he discussed the work and value of county and district societies. Dr. Larkin said in part: "While a casual observer may think that but little work has been accomplished in the past few years, yet careful inquiry will disclose that in every county society in the first district there is more interest being taken and more work being done in one year than in any previous five years. There are men attending county societies and state meetings to-day who did not know that such organizations existed in the past. . . .

"The majority of the members of the medical profession are at the same time the most unselfish and the most selfish of all beings in the world. The doctor is unselfish in matters pertaining to his own patients, but he is most selfish when the other doctor is concerned, forgetting at once that the injury done is not only an injury to the particular individual against whom his animosity is directed, but to the profession he represents and himself as well. It is the duty and the business of the county society to dispel this illusion, to break down the ill feeling and jealousies which exist and to crown hard-earned merit as it deserves. . . .

"We want to make the influence of the county society so strong that no decent, self-respecting physician can afford to be without its portals. We want to make its local influence so great that no legislator can ignore its warnings, and when we ask in the name of humanity that certain laws be enacted for the general good they will heed our demands and be only ready to do our commands. . . . Members of societies should make it their duty to spread the knowledge of what the profession at large is doing for the people in a disinterested way. Teach them that physicians are high priests of health and not sordid creatures who try to get rich from their infirmities and frailties. Show them that our greatest good can be rendered in preventing diseases. Impress on their minds that it is worth more to prevent an individual from having tuberculosis than it is to treat him for a year or two and then have him die, or perhaps to prolong his sufferings for



three or four years. Never let the people forget that the vast majority of diseases are curable and preventable if taken early enough, and that we are charging them for superior knowledge and not for pills and prescriptions; that their health and that of their family is as important as their farms, their stocks or their homes. . . ."

#### A New Law in Utah.

The Legislative Committee of the Utah State Medical Association has decided to work for the adoption of a new medical practice act and to provide for reciprocity. A special meeting of the state society was called for January 16, to consider the proposed legislation for the profession. The Committee on Medical Legislation has also endorsed the Pure Food Law as adopted by Congress; the enactment of a law for Utah, similar to the North Dakota Pure Food and Drug Law; the action of the State Board of Health in initiating a movement for the establishment of a state hospital for epileptics and the feeble-minded; the enactment of a law establishing a receiving hospital for cases of suspected insanity, where the patients could be observed and treated for thirty days before removal to the state hospital for the insane; resolutions asking all members of the profession in Utah to oppose the reduction of any insurance examination fees were recommended to the state society for adoption.

The Utah Medical Society adopted resolutions at its meeting on January 9, approving the new medical practice act for the state, especially the proposition authorizing the board to revoke licenses under certain conditions. The society also adopted resolutions to the effect that physicians giving expert or scientific evidence should be recompensed accordingly rather than by the statutory witness fees. The society also opposed the adoption by Congress of the proposed osteopathic bill.

#### Services to State and Municipality.

The work of two busy practitioners is thus commented on in a recent issue of *Collier's Weekly*:

"The new president of the Municipal Voters' League in Chicago is the type of citizen whom, it must be confessed, that city is more likely to bring to the front than some of its populous rivals. There as elsewhere lawyers are more likely than other men to be found in public life, but two of the most notable instances of civic service lately have been furnished by physicians. The new president of the league is Dr. Henry B. Favill, and the other physician to whom we refer is Dr. Frank Billings. Both of these men, in the very front of their profession, overburdened with labor and responsibility, have assumed heavy responsibilities for the state. The mere list of the civic activities of Dr. Billings during the last ten years would be voluminous. His latest and most important work of that nature, however, was when he assumed, at the earnest request of Governor Deneen, the presidency of the State Board of Charities. These institutions are now being thoroughly overhauled with the view of bringing them up to the highest scientific practice, and the state is fortunate in having the benefit of Dr. Billings' knowledge, executive ability and power of work. Dr. Favill has been much interested in the general life of the City Club, and last year he accepted the chairmanship of the committee on political action there. He is much in earnest, and, with his great ability, fine character and entire disinterestedness, the Municipal Voters' League, with him as its chief, should unquestionably continue in a brilliant manner its valuable career."

In the January number of the *Journal of the Michigan State Medical Society*, the editor says, under the heading "What Was Accomplished by Our Profession During 1906," "A most important tendency of the times is the activity of the profession in the matter of educating the people of this country in matters pertaining to health. We are just awakening to the sense of our duty to our fellowmen, and a most important awakening it is, for if the medical profession does not teach and lead the way in the great health problems which are to be solved, others will attempt to do so and public sentiment will be awry. We are only at the beginning of this campaign of education, yet much has already been accomplished in the spread of knowledge concerning tuberculosis and a good start has been made in public instruction in sexual hygiene." In the same number appears a bulletin issued by the Committee on the Study and Prevention of Tuberculosis, which should be read by all county and state secretaries.

## Insurance Fees and Lodge Practice

### Club Practice in Laporte, Ind.

The statement has been made repeatedly in our editorial columns that the physicians of the United States will sooner or later be forced to fight the same pernicious system of lodge and contract practice, which has developed to such an extent in Germany, England, and elsewhere. In September, 1905, the Fresno County Medical Society of California was forced to adopt resolutions condemning the efforts on the part of the local lodge of the Fraternal Order of Eagles, to secure medical attendance for members and their families at a purely nominal figure. Various other county societies, in the past two years, have had similar experiences. Evidently, neither the large city nor the small town is exempt from this experience. Nearly a year ago the Chicago Medical Society appointed a special committee to consider this subject. This committee has been accumulating material and data since that time and is preparing a report.

A recent occurrence will illustrate the need of watchfulness and prompt action on the part of the organized profession. A letter was received, by the advertising department of *THE JOURNAL*, from the Fraternal Order of Eagles of Laporte, Ind. The writer stated that the lodge was in need of a young physician to look after its members and to render them medical attention. For this work the lodge guaranteed \$500 a year, and intimated that as "the right man would get the backing of the members of the lodge," it would be a "good thing for a bright young man looking for a good location." The calm assurance with which it was intimated that the backing of 250 individuals (each of whom was trying to get his yearly medical bill reduced to \$2) would be of any value to a conscientious physician, is worthy of note.

Instead of inserting the advertisement, a physician of Laporte was asked for the facts. He replies:

The Eagles' lodge and the Owls' lodge were organized here by outside parties to exploit the physician, and, after peddling their offer around among the physicians the Eagles finally secured one of the local men to act as lodge physician on contract for a year. All the physicians, however, finally came together, and adopted the enclosed resolutions, which were signed by every physician in Laporte. The Eagles' contract expired several months ago, and they have made every effort to find a successor, without avail. The advertisement carries its own moral. They guarantee about \$500 by 250 members, i. e., \$2.00 a member, medicine included.

The writer goes on to say that it would be an excellent thing if the physicians of every city could forestall lodge contract practice by united resistance at the beginning.

The physicians of Laporte are to be congratulated on the stand they have taken. It is to be hoped that their opposition to this vicious lodge-practice business will be so thoroughly successful as effectually to put a stop to any further efforts along that line in Laporte. The experience of physicians in that city should serve as a warning to the members of the profession, and especially to county societies in every part of the country. There is no possible argument by which such prostitution of the profession can be justified, either from the standpoint of the physician or of the patient. The only person who can possibly profit by such an arrangement is the middleman, who, if he can reduce some short-sighted physician to a state of peonage and farm out his "professional services" (God save the mark) for \$2 a year to gullible members of the laity, who may be overcome by their bargain-counter proclivities, may realize a handsome income. To any one else such an arrangement can only result in disappointment. It is to be hoped that in every community in which an effort is made to secure the services of physicians on such ridiculous terms, the members of the local profession will follow the example of the Laporte physicians and settle the matter promptly and finally.

### Society Resolutions on Insurance Fees.

In addition to the societies noted in previous numbers of *THE JOURNAL*, the following societies have adopted resolutions in favor of the maintenance of a \$5 fee for insurance company examinations:

Center County (Ky.) Medical Society.  
Red River (Texas) Medical Society.  
Aberdeen District (S. D.) Medical Society.  
Smith County (Tenn.) Medical Society.  
Clarendon County (S. C.) Medical Association.  
Monterey County (Cal.) Medical Society.



West Virginia State Medical Association.  
Schoolcraft County (Mich.) Medical Society.  
Flathead County (Mont.) Medical Society.  
Dade County (Fla.) Medical Society.  
Auglaize County (Ohio) Medical Society.  
Franklin County (Pa.) Medical Society.  
Randolph County (Ark.) Medical Society.  
Marlin County (Cal.) Medical Society.  
Clarksdale and Six Counties Medical Society.  
Beaverhead County (Mont.) Medical Society.  
Las Vegas (N. M.) Medical Society.  
Lenoir County (N. C.) Medical Society.  
Central Willamette (Ore.) Medical Association.  
Platte County (Mo.) Medical Society.  
Laflore County (Miss.) Medical Society.  
Whiteside County (Ill.) Medical Society.  
Green County (Ala.) Medical Society.  
Etowah County (Ala.) Medical Society.  
Clark County (Ga.) Medical Society.  
Mourne County (Ark.) Medical Society.  
Kent County (R. I.) Medical Society.  
Medical and Surgical Society of North Aroostook, Maine.

The following resolutions have been adopted by the Allegheny County (Pa.) Medical Society:

WHEREAS, Many of the life insurance companies have notified their medical examiners of the reduction of the examining fee from \$5 to \$3;

WHEREAS, We, as physicians, realizing the responsibility incident to proper examinations believe such reduction to be unjust; therefore, be it

*Resolved*, That the Allegheny County Medical Society does hereby declare such reduction to be unjust and respectfully requests that the members of this society do not accept such reduction of fee; and, further, be it

*Resolved*, That it is the sense of this society that hereafter for each examination in which any analysis of the urine is required the minimum fee should be \$5.

## Society Proceedings

### COMING MEETINGS.

Med. Society of State of New York, Albany, Jan. 29, 1907.  
Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.

### PHILADELPHIA SOCIETY FOR THE STUDY AND PREVENTION OF SOCIAL DISEASE.

*Regular Meeting, held Dec. 20, 1906.*

The President, HON. A. M. BEITLER, in the Chair.

#### Venereal Disease Among Children.

DR. THOMAS MORGAN ROTCH of Boston emphasized the important fact that the laity as well as physicians should understand thoroughly the dangers of syphilis and gonorrhea in young children. A more exact and extended knowledge of these diseases should be acquired by physicians in order that they not only should recognize obscure cases, but also that they should not brand innocent people with the suspicion that they have acquired this disease when they really have not. He claimed that the public should be protected from the stigma of syphilis and gonorrhea as well as from the diseases themselves. Lantern slides were shown illustrating some phases of syphilis in early life.

#### Criminal Aspects of Venereal Infection Among Children.

DR. W. TRAVIS GIBB of New York City stated that sexual crimes against young children are much more common than is supposed. These conditions were largely attributable to the moral and sanitary environments in which the people of the tenements are huddled together without decent privacy. In his association with the New York Society for the Prevention of Cruelty to Children for 15 years he has examined over 800 girls ranging in age from eight months to 16 years on whom rape and other crimes had been committed. Almost 13 per cent. of all the children suffered from venereal disease, and of these 81 had gonorrheal vaginitis; 2½ per cent. had chancroids. A very small number of cases of syphilis were noted in the number examined. This rarity was attributed to the fact that the cases were examined in a short time after the crime had been committed, when not sufficient time had elapsed for the development of the characteristic evidence of the disease. In spite of the large number of cases brought to the attention of the Society, Dr. Gibb is of the opinion that it is but a small proportion of the actual number of such crimes that occur, stating that the great majority of children never tell what has happened to them.

#### Social Economics of Venereal Disease.

PROF. C. W. A. VEDITZ of Washington, D. C., said that the increase in the number of deaths due to venereal disease is startling, compared with the increase in deaths due to other diseases. This increase for the registration areas is from 3.4 per cent. per 100,000 in 1900 to 4.8 per cent. per 100,000 in 1904. Admitting the difficulty of securing accurate data concerning venereal disease in other countries, he quoted one authority as stating that there are 4,000,000 persons in France who have syphilis, and who have it in a contagious form. Other estimates exceed this, while not a few are less.

He thinks that the attitude of the public toward venereal disease is apt to undergo much the same change that it has undergone with regard to tuberculosis; from the general tendency to keep the disease secret, there came with the knowledge of its great extent and danger open attention to the subject. This was succeeded by scientific examination, naturally resulting in a more manifold and determined effort to root out the disease.

In regard to syphilis Professor Veditz feels that the public is emerging from the first of these stages and entering on the second. The social economist of to-day is interested in raising to the highest level the mental ability and physical efficiency of a community. The importance, therefore, is obvious of the removal of diseases of all kinds, and particularly of those which are hidden away from the public gaze. He believes it exceedingly important that the factor in economic supremacy of the possession of a population which is vigorous physically and mentally should be taken care of, and to the extent to which these are pushed in the background will depend the position of the United States among the nations. From the social economist's point of view he called attention to the necessity that the dangers of venereal disease be carefully studied and movements set on foot looking to the restriction of the disease along with the other two great plagues of mankind—alcoholism and tuberculosis.

#### Laity and Venereal Disease.

TALCOTT WILLIAMS, ESQ., speaking as a journalist, declared that the laity of America would never either register prostitution or insist on its compulsory examination, neither would it segregate prostitution. He called attention to the fact that segregation is a state nearly always existing in frontier and rudimentary conditions, and that as life becomes more complex segregation disappears. His own judgment is that registration, compulsory examination and segregation belong to a less developed state of society and are the remains of a subconscious attempt on the part of society to segregate and brand the social evil. The problem of venereal disease must be met without the possible application of these artificial restrictions. He believes that within the next 40 years society will suppress the outward manifestations of prostitution. Instances were cited showing that this suppression has already been evidenced. He does not know, however, that this means a suppression of the evil.

That the laity will raise the age of consent he also expressed his confident belief. The rising curve of the age of consent, which in the memory of many had begun in many of the states and in many European countries at 12, will soon reach 18 or 20. The chief advantage of this would be not in a checking of crime, but in the conviction of the criminals. Furthermore, the laity is certain to increase the matter of personal prophylaxis against the spread of the disease. From his investigations he has already observed marked evidence of this. This, however, while decreasing the danger of infection, does not remove it.

He deprecated the fact that editorial discussion in the newspapers of the social evil is unpopular, and he believes that the laity can do much to correct this mistaken idea, feeling that more light is always destructive of evil.

#### Clergy and Venereal Disease.

REV. FLOYD W. TOMKINS referred to the minister's duty in exhortation, teaching and practice. He should exhort first of all that his people should know the danger from the spread of the disease; and, with a realization of the unspeakable evil



he should urge his people to work against the segregation or licensing of the vice which largely creates the disease. He should further exhort to a method of education in the public schools by which the boys and girls should be taught the dangers of the disease. The minister should also exhort to a higher civilization by the marriage of only those persons who are fit to enter into marriage.

In regard to teaching, the men and boys, the women and girls should be taught the danger of the disease and of the safeguards against it. They should be taught, fearlessly and frankly, the dual evil, that the fallen man is just as bad as the fallen woman. He is utterly disgusted with the judgment which welcomes in the social circles the man who has defiled himself, while the woman—sinning, perhaps, from love—is damned forever. There should be taught also the terrible consequences of this sin, not only physically and mentally, but morally and spiritually.

Concerning the subject in connection with practice, he decried the indiscriminate way in which ministers perform marriages. He believes the minister's influence should tend to make it impossible that marriages should be performed without some previous knowledge of the parties. In his own practice he feels that the minister must come near to the physician in making, in a certain degree, public the results of this disease. He asks whether it is not the duty of the physician, with knowledge that a man about to be married is diseased, to so advise the minister. The minister may then say to the man that he is unwilling to marry him unless he can give a certificate showing that he is free from the disease. He deplores the fact that the publicity which marks dwellings with smallpox and signs of other disease should do nothing whatsoever about this disease, and declares that society is simply stagnant at this point. He believes it the minister's business to do something concerning it, to plead and pray that the terrors of the disease may be made known and its dangers guarded against. In closing he desired that it be known by the members of the medical profession and of the laity that the ministers are ready to work, heart and soul, in this matter.

#### CHICAGO MEDICAL SOCIETY.

*Regular Meeting, held Dec. 12, 1906.*

The President, DR. GEORGE W. WEBSTER, in the Chair.

#### Symposium on Exophthalmic Goiter.

DR. FRANK BILLINGS said that the chief symptoms of exophthalmic goiter are tachycardia, exophthalmos, enlargement of the thyroid gland and tremor. In addition to this, there occur in many cases a secondary anemia, emaciation, vomiting, diarrhea, an erythematous flush of the skin, sometimes an infiltrating, hard edema of the skin; in rare instances scleroderma, and sometimes pigmentary changes, throbbing arteries, general headache and shifting neuralgic pains; a moderate irregular type of fever, nervous irritability, mental excitement or depression, myasthenia, and profuse sweating. The disease occurs more frequently in women than in men, in the proportion of seven or eight to one.

He has the records of 61 patients who have come under his personal care; 8 were males, and 53 females. The ages of the males ranged between 23 and 48 years; of the females, between 17 and 54. Of the males, two were acute and the remainder chronic forms of the disease. One male had suffered from goiter for several years preceding the onset of the symptoms, and with 7 the goiter developed as an incident of exophthalmic goiter. Of the females, 32 had no goiter preceding the development of the disease, while 20 had suffered from goiter for from three to twenty years. Ten of the 53 females suffered from acute exophthalmic goiter and in all of these acute cases goiter was primary; that is, developed as a part of the disease.

In an analysis of the 61 patients it is found that of the probable causes, severe grief preceded the attack in 4; 6 had suffered from a severe attack of la grippe; in 2 cases overstudy was ascribed as the cause. Two had severe operations and the disease developed immediately afterward. The disease developed at the climacteric in 2; goiter existed in the

family in 15 cases. In one family there were 6 individuals who suffered from goiter.

Tachycardia existed in all at some time in the history or during the clinical observation. The pulse rate was high, ranging from 100 to 160, and even to 180. Tremor was also present in every patient at some time during the observation. It was not as constant as the tachycardia, and in some instances occurred only during excitement. The tremor was fine, varying from 6 to 10 to a second. Exophthalmos was present in 4, and absent in 4 of the males. In the females it was present in 38 and absent in 15. It was present in but one eye in 2 of the females. Graefe's sign was present in 41 females, absent in 5, and not noted in 7. It was present in 4 and absent in 4 males. Moebius' sign was present in 4 females and absent in 49. One suffered from chronic internal strabismus. Moebius' sign was present in 1 male and absent in 7. Stellwag's sign was present in the severe cases of exophthalmos and absent in others. Thirty patients sweated profusely. Dry skin and dry hair occurred in 2, and in 20 there was no disturbance of the secretions of the skin. Loss of weight from 5 to 40 pounds occurred in 29. There was a gain in weight in 2, and no apparent change in the remainder.

Twelve of the patients had diarrhea. Constipation occurred in 7, and the bowels were in a normal condition in the remainder. Nausea and vomiting occurred in 12, while these symptoms were absent in the remainder. Sleeplessness was a common symptom and present in all of the acute cases. Most of the patients were emotional. Headache of the neurasthenic type was common. Myasthenia affecting special groups of muscles was common. In all of the acute cases the heart muscle showed the effect of the toxemia by a quick nervous action and by the varying degree of dilatation of the left ventricle which was commonly found. In one chronic case with acute exacerbations multiple eruptions occurred on the skin, especially of the lower extremities, associated with persistent itching. In 3 cases acute exacerbations of a chronic condition occurred from the use of the thyroid extract used by the physician as a remedy. In one male a simple goiter treated with thyroid extract developed into a typical exophthalmic goiter; the patient recovered on the withdrawal of the remedy. Pregnancy occurring in 3 patients aggravated the symptoms, and in 2 instances the disease became so acute that evacuation of the uterus became necessary. In this instance the patient returned to a chronic form of the disease after an almost fatal ending. Albuminuria with hyaline and a few finely granular casts occurred in 11 cases. Glycosuria was present in 1 patient.

All but 3 of these patients were treated by medical measures. In more recent times, since the development of the so-called serum treatment, thyroidectin was used in 12 cases. The powder form of the serum was used in a dose of from 15 to 40 grains a day in divided doses, with varying results. In no instance has he secured the favorable results recorded by many other physicians. In 2 instances the symptoms were aggravated by the remedy. For five years, on the suggestion of Dr. Forchheimer, of Cincinnati, he has used the hydrobromate of quinin in 8 cases. The drug has been given in from 15 to 30 grains in divided doses in 24 hours. It has afforded a more uniform improvement in the symptoms due to vasomotor disturbances than any other drug. Dr. Billings used the serum of thyroidectomized goats prepared under the direction of Moebius, in 1 male. This patient was put upon rest treatment in the hospital and in addition to the full doses of the serum hydrobromate of quinin was given. The improvement was steady and continuous. He has not had any experience with the use of the specific serum prepared by Beebe, of New York, and used by Rogers and Thompson in the treatment of 39 or more cases. He has not used the milk of thyroidectomized goats which has proven beneficial in the hands of many reporters. Three of the patients included in this group were operated on, and of this number 2 made satisfactory recoveries and have remained well, while one died on the operating table.

DR. DEAN D. LEWIS discussed the pathology of exophthalmic goiter; while DR. R. B. PREBLE spoke of the cardiac symptoms.



### Neurologic Complications.

DR. L. HARRISON METTLER stated that it would be an easy thing to enumerate the many complications that have been observed in exophthalmic goiter, but such an enumeration is neither very illuminating nor especially scientific. What is needed is an accurate definition of exophthalmic goiter and not a mere conglomeration of the symptoms. So many manifestations that have been assigned as secondary symptoms of exophthalmic goiter belong to other well-defined affections that it is hard to draw the line of demarcation between the two sets of diseases; and what is needed more than mere additional observations is the formulation of some principles, if possible, whereby we may say in a given case, this manifestation belongs to exophthalmic goiter, and this does not.

Dr. Mettler suggested for practical purposes three principles that he believed would be found generally useful in distinguishing the presence of any diseases in a patient who may at the same time have exophthalmic goiter. The first principle is to keep close to the narrow definition of exophthalmic goiter as being represented in one or more only of the cardinal symptoms, tachycardia, struma, exophthalmos, no matter what the other neurasthenic, hysteroid or general nervous manifestations may be. Whether regarded as a mere syndrome (which it probably is) or as the essential expression of the disease, the famous triad in part or in whole must be the basis of diagnosis and nothing else. The second principle is that we should always endeavor to align the so-called secondary or nervous symptoms of exophthalmic goiter with any other corresponding symptoms present that belong to some other distinct, well-known trouble. For example: An exophthalmic patient who presents a decided neuropathic heredity, excessive emotionalism and mental instability, concentric narrowing of the visual fields, polyuria, general hyperesthesia and paraplegic manifestations has, in all probability, hysteria, in addition to the thyroid intoxication. As each of these symptoms belongs to hysteria and yet has been at times assigned to exophthalmic goiter, the standpoint from which they are viewed will very materially modify one's opinion as to the etiology, prognosis and treatment of the case in hand. The third principle is that all organic diseases and all symptoms that represent an organic lesion are complications rather than a mere part of the exophthalmic goiter. Cardiac valvular lesions, tabes dorsalis, ocular palsy, multiple neuritis, for example, are complications, and should not be confused with the symptomatology of exophthalmic goiter.

### Ocular Signs and Symptoms of Exophthalmic Goiter.

DR. CASEY A. WOOD, said the chief reason why the eye symptoms are of extreme value, particularly in diagnosis, is because of their easy detection and because of the fact that one or more of them invariably occur early in the disease, and because in doubtful cases they may be relied on to differentiate exophthalmic goiter from other forms of exophthalmos, tremor, struma, tachycardia, and the like. Exophthalmos is commonly the first eye symptom to attract the attention of the observer. Before the exophthalmos appears, retraction of the upper lid and widening of the interpalpebral fissure (Dalrymple's sign) is commonly seen. Infrequent winking is also an important and constant sign of exophthalmic goiter. Graefe's sign is a most valuable one. It occurs early, is quite constant, and although it may be present in Thomsen's disease and sometimes fails altogether, should always be searched for in doubtful cases. Insufficiency of convergence, or the signs of Moebius, depends on the fact that the stretched internal recti muscles are unable to move the bulging eyes inward to the same extent and with the same facility that they can normally situated globes. Symmetrical paresis of the external recti muscles is sometimes a sign of exophthalmic goiter, and there may be apparent excess of convergence.

What he regards as most valuable evidence of the disease is Becker's sign. He refers to spontaneous pulsation of the retinal artery. Epiphora has been seen a number of times in exophthalmic goiter, and may be very troublesome. Dryness of the eyes is one of the commonest complaints made by these

patients. Loss of sensation of the cornea and conjunctiva has several times been noticed and doubtless has been overlooked in many other cases, as it is an objective symptom and does not attract the attention of the patient. Circumscribed edema of the eyelids, as well as pigmentation of their skin surface, has been occasionally seen, but these are probably mere accidents and form a part of the dermal changes seen elsewhere on the body.

### Medical Treatment of Exophthalmic Goiter.

DR. WILLIAM E. QUINE discussed rest, diet, hydrotherapy, electricity, the Roentgen ray, organotherapy, serumtherapy, medicinal therapy, saline purgatives, etc. Speaking of serumtherapy, the author said that two kinds of serum have been introduced: (a) The serum of thyroidectomized animals, and (b) the serum of animals treated with increasing doses of thyroid extract. Neither of these products has furnished important results.

In medicinal therapy iodine usually proves hurtful. The same is true of digitalis and strychnin. Belladonna, given in the dose of 10 minims of the tincture, three or four times a day, is recommended by more writers than any other medicine; but to the author it seems inferior to some others. Forchheimer recommends the employment of hydrobromate of quinine so strongly and with such explicit references to its value as to command attention. He gives it in the dose of five grains every six hours, sometimes alone, and sometimes with the addition of one grain of ergotin to each dose. Salicylate of sodium, in the dose of ten grains, repeated every six or four hours, usually subdues symptoms appreciably for a short time, but its effects are not lasting. As to saline purgatives, the phosphate and the glycerophosphate of sodium are of undoubted value. In his own practice improvement of the patient under their use has rarely failed to occur.

Aside from the saline purgatives, the medicines he has learned to rely on mostly are strophanthus, codein and the bromids. Pulverized strophanthus in the dose of one grain, codein, 1/3 or 1/2 grain, and bromid of sodium in the dose of 20 grains, each repeated at regular intervals three or four times in twenty-four hours, often prove very serviceable. It is usual for him to give two of these medicines, but not codein and the bromids at the same time. He estimates that 60 or 70 per cent. of the cases of exophthalmic goiter terminate in recovery under medical treatment. It must be remembered, however, that some cases terminate spontaneously in this way, and he has witnessed three instances in which the occurrence of pregnancy seemed to contribute to the result. Charcot has recorded a similar observation. When medical treatment has been well sustained for six months without distinct benefit to the patient, or if the patient should get worse under the best medical treatment that can be devised, surgical treatment must be considered.

DR. ARTHUR DEAN BEVAN reviewed the development of the surgery of the thyroid gland, and reported the results obtained in seventeen cases of exophthalmic goiter on which he operated. Two of these patients died, one on the table, and the other shortly after operation.

### SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Nineteenth Annual Meeting, held at Baltimore, Dec. 11-13, 1906.*  
(Continued from page 251.)

#### Puerperal Thrombophlebitis of the Pelvic Veins.

DR. GEORGE H. NOBLE, Atlanta, directed attention to the surgical aspect of the question. Of the 32 cases of puerperal sepsis collected, the infection was divided as follows with reference to location: Metrophlebitis, 11; metrolymphangitis, 4; abscess in parametrium, 8; thrombophlebitis (suppurating) of broad ligament, 2; suppurative peritonitis, 7; and deep laceration of vagina, 7. The author thinks considerable saving of life may be made by early recognition of the disease and prompt interference.

Any puerperal case with pelvic lesions, variable temperature and climbing pulse of three to four weeks' duration, with-



out signs of improvement, justifies an operation of some kind, especially if the uterus proves negative as the source of trouble. If a mistake is made in diagnosis, and the location of the infection is found in the Fallopian tubes or abscesses in other parts of the pelvis, no surgical error is committed, for they, too, are in need of serious attention.

There are several plans of procedure. First, excision of the thrombosed veins; second, ligation of the thrombosed veins; third, hysterectomy. In addition to these, attention should be given to the complicating conditions.

In the summary of the small number of cases accessible, the results are as follows: Resection of veins, mortality, 28 4/7 per cent.; ligation of veins, 44 4/9 per cent.; hysterectomy, 64 1/4 per cent. Dr. Noble ventured the assertion that until further experience shall have worked out the solution of this problem, the opinion must be accepted that early recognition of septic thrombosis of the pelvic veins, followed by prompt excision, is the best method of relief we can offer patients in this disease.

#### Surgical Treatment of Tuberculosis of the Kidney.

DR. HOWARD A. KELLY, Baltimore, reported a surgically treated series of 62 cases of kidney tuberculosis. This list embraces 57 nephrectomies (including simple nephrectomies, and those combined with removal of the ureters, and in a few cases also parts of the bladder), four nephrotomies and one partial nephrectomy. The extreme rarity of a spontaneous healing, even by a complete destruction of the kidney and occlusion of its ureter, is emphasized. Dr. Kelly has never met with this condition. The disease in all cases sooner or later involves the bladder, and from that leads to death, either by infecting the sound kidney or by extensively metastasizing to other parts of the body.

As tuberculosis of the kidney once started destroys the kidney, and as the cases become more unfavorable after bladder involvement, a nephrectomy should be done just as soon as the diagnosis is made. The importance of this early operation is shown by the results in the 21 cases treated comparatively early in the course of the disease, i. e., with no bladder involvement, or only slight involvement around the ureteral orifice of the affected side. There has not been a death in this group, and all have been cured. Contrasting with this 36 cases with extensive bladder involvement, there were 4 primary, and within four years 5 secondary deaths, making a total mortality rate of 25 per cent. The statistics from the nephrectomies are 57 cases, 4 primary deaths, or 7 per cent. mortality; a total of 7 deaths within six months, 12.2 per cent. mortality; and a total number of deaths of 9, 16 per cent. mortality. Excluding from the series 9 cases with residual bladder trouble still present, all of which, except one, have been operated on within a year and a half, there remain 48 cases, with 39 complete cures, and 9 deaths, a cure rate of 76.93 per cent.

#### Tuberculosis of the Kidney.

DR. CHARLES P. NOBLE, Philadelphia, reported ten nephrectomies for tuberculosis, 9 of the patients being women. In each of the ten cases the tuberculosis of the kidney was primary, but in the man the lungs were also involved. This case ended fatally six weeks after nephrectomy in the natural course of the disease. The nine women not only recovered from the operation, but were restored to health. Three of them suffered from permanent loss of capacity in the bladder, due to the healing of extensive ulcers. In most of the cases the complicating cystitis and ulceration underwent a spontaneous cure after the nephrectomy.

The following points were emphasized: No evidence of ascending tubercular infection has come under the writer's notice. In each of the cases the tuberculosis of the kidney was primary, and the bladder, when involved, was infected by pus discharged through the ureter. The results of early nephrectomy for tuberculosis of the kidney are very satisfactory. The profession should be educated to appreciate these facts and to diagnose tuberculosis of the kidney at an early stage, before extensive involvement of the bladder or general dissemination of the disease has occurred.

#### Vaginal Cesarean Section with Subsequent Pregnancy and Labor.

DR. JOHN F. MORAN, Washington, D. C., stated that at the last meeting of the Association he reported two cases of vaginal Cesarean section, performed for eclampsia, both successful, and he now reports a subsequent pregnancy and labor occurring in one of them.

#### Dystocia Following Fixation and Suspension of Retroflexed Uterus.

DR. J. WHITRIDGE WILLIAMS, Baltimore, reported four cases and collected 34 from the literature in which Cesarean section had to be done following some method of fixation or suspension of the uterus.

DR. HENRY O. MARCY, Boston, gave a brief sketch of one of Baltimores greatest men, Dr. Horatio Gates Jameson, whose greatest contribution to surgery, he said, was the occlusion of arteries by the buried animal ligature.

#### Surgical Aspects of Gastric Carcinoma.

DR. JOHN B. DEEVER, Philadelphia, said that from 25 to 40 per cent. of all cancers in the body are primary in the stomach. Bryant, quoted by van Valzah and Nisbet, shows that in Baltimore there are 200 deaths annually from cancer; Boston, 300; Philadelphia, nearly 500; New York City, nearly 900. Of these, perhaps almost one-half are directly due to cancer of the stomach. Chronic gastric dyspepsia is the chief predisposing cause of the cancer.

By timely operation for the various causes of persistent indigestion, many a patient will be saved from developing gastric carcinoma. Early diagnosis of gastric carcinoma being so extremely difficult, and radical removal being only highly promising when an early diagnosis has been made, partial gastrectomy should be an operation limited to cases of malignant disease operated on for symptoms of pyloric obstruction or other gastric affection supposedly benign, in which the existence of cancer, though perhaps suspected, can not be certainly diagnosed before operation. Partial gastrectomy is the preferable treatment for these cases. In cases moderately far advanced, gastroenterostomy should be preferred. Where the indication is to prevent starvation, jejunostomy is to be performed.

#### Vaginal Section as an Operation of Choice.

DR. HENRY T. BYFORD, Chicago, said that the cases adapted to vaginal section are mostly those in which the parts affected are more accessible from below, namely, those connected with prolapse and retroversion of the uterus, with prolapse of the ovaries or with adhesions low down in the pelvic cavity, and cases of hysterectomy or myomectomy for small fibroids as well as hysterectomy for other small neoplasms and malignant diseases of the uterus.

When the uterus is not to be removed, the author prefers the incision posterior to the cervix for those cases in which the uterus is retroverted or readily retrovertible and the cervix can be drawn well down near the vulva. The anterior incision has the advantage of enabling the operator to deliver the fundus into the vaginal entrance and also to draw the ovaries and round ligaments forward within easy reach. Among the disadvantages of the latter are a complicated wound which can not always be as satisfactorily sutured as the posterior incision, and the presence of the fundus in the vagina to interfere with manipulations, etc.

When there are special reasons for avoiding abdominal section, the field of vaginal section may be extended by removing the uterus, or if it be desirable to preserve the uterus by lateral colpotomy in connection with the anterior or posterior incision, or both. By ligating and severing the uterine artery, or by skirting or shaving the edge of the cervix with scissors or a sponge, and separating the broad and sacro-uterine ligaments from the cervix, space can be obtained for the introduction of the whole hand into the peritoneal cavity and for the employment of intraperitoneal illumination. The author has even extended the incision completely around the cervix, as for vaginal hysterectomy, separating the bases of



both broad ligaments as well as of the sacro-uterine ligaments and bladder, and afterward suturing the parts back to their original relationship, without any bad results. Through the opening thus made the torn or perforated rectum can be successfully sutured.

The author believes that while the utility of vaginal section will diminish with the perfection of the technic of abdominal section for pelvic conditions, there will always be a place for it, and the time has not yet come when a special training in gynecologic surgery can be considered as superfluous.

#### Appendicitis in the Negro.

DR. HUBERT A. ROYSTER, Raleigh, N. C., said that in order to obtain some information on this point he wrote to several surgeons practicing in southern cities having a large proportion of negro inhabitants; and the replies were unanimous in regard to the rarity of the disease in this race. During ten years he has removed the diseased appendix from negro patients 54 times. In 40 of the cases a pathologic appendix was found while operating for other conditions, such as pus tubes, fibroids, etc. Besides a few of these which contained pus, over one-half of the others were filled with fecal matter, usually soft. Practically, none of these cases presented a definite history of appendicitis, but only that of the original lesion. Fourteen cases of primary appendicitis in the negro were operated on, three in the first seven and a half years, and eleven in the past two and a half years. During the latter period the total number of appendix operations on both whites and negroes was 123, giving a relative frequency of practically 9 per cent. in the colored race.

#### Injuries and Diseases of the Hyoid Bone.

DR. RANDOLPH WINSLOW, Baltimore, reported six cases, and said that tumors of the hyoid bone are both malignant and innocent, in about equal proportion, and both require thorough removal with as much of the contiguous tissues as may be necessary. An early operation is as much to be desired in neoplasms of this bone as in those occurring in other parts of the body.

The following papers were also read: "Conservative Method of Managing Undescended Testicle," by Dr. Joseph Price, Philadelphia; "Gallstones Without Symptoms and Symptoms Without Gallstones," by Dr. Maurice H. Richardson, Boston; "Two Simple Surgical Tricks Worth Knowing, with Instruments Used," by Dr. Ap Morgan Vance, Louisville, Ky.; "Treatment of Hemorrhage by Direct Transfusion of Similar Blood," by Dr. George W. Crife, Cleveland (appeared in THE JOURNAL, Nov. 3, 1906, p. 1482); "Report of a Case of Ruptured Ovarian Tumor with Complications," by Dr. Rufus B. Hall, Cincinnati; "Cysts of the Omentum," by Dr. R. E. Fort, Nashville; "Some Disjointed Observations on our Technic," by Dr. A. Morgan Cartledge, Louisville; "Influence of Respiration on Development of the Chest Deformity in Scoliosis, with Its Relation to Application of Plaster Jacket," by Dr. Michael Hoke, Atlanta; "Some Suggestions in Regard to the Surgical Treatment of Empyema," by Dr. Samuel Lloyd, New York; "Normal Involution of the Appendix," by Dr. Robert T. Morris, New York; "Spleneectomy, Indications and Results; Report of Five Successful Cases," by Dr. W. P. Carr, Washington, D. C.

### Medical Legislation

#### The Osteopathic Bill in the National House of Representatives.

The osteopathic bill that was introduced in the United States Senate and carried surreptitiously through that body by Senator Foraker, is now pending in the Committee on the District of Columbia of the House of Representatives. The committee has been asked to grant a hearing to the medical members of Congress—Dr. A. J. Barchfeld (Pa.), Dr. H. D. Burton (Del.), Dr. E. W. Samuel (Pa.)—who were authorized by the Committee on Medical Legislation and the National Legislative Council, assembled in joint conference, to appear as a committee of the American Medical Association. In the meantime the bill published in last week's issue of THE JOURNAL (page 253), has been made the basis of a general referendum. Members of the National Auxiliary Legislative Committee having this referendum in hand will greatly assist the medical committee in Congress above alluded to, by at once procuring as many signatures as possible and forwarding them without delay to the chairman, Dr. A. J. Barchfeld, House of Representatives, Washington, D. C.

#### CONFERENCE OF THE COMMITTEE ON MEDICAL LEGISLATION AND THE NATIONAL LEGISLATIVE COUNCIL.\*

*Annual Meeting, held in Washington, D. C., Dec. 13-15, 1906.  
(Concluded from page 255.)*

#### The Osteopathic Bill for the District of Columbia.

At the instance of Dr. L. M. Halsey (New Jersey) who was absent, the Osteopathic Bill was considered in the committee of the whole. After the committee had reported the conference took up the question of

#### Uniform Pure Food and Drug Legislation by the States.

THE CHAIRMAN: Gentlemen, if you will pardon me, I wish to interrupt this order for the time being. We are honored this morning with the presence of a distinguished gentleman, one who has conferred a great boon on the country by his advocacy of the Pure Food and Drug Bill, which passed the last session of Congress. This gentleman has kindly come here to-day, leaving his many public occupations to talk to us a little about the question that will presently engage our attention, namely, that of securing uniform legis'ion by the states as supplementary to the national legislation on the subject of pure food and drugs. I have the honor of introducing to you Senator Heyburn, of Idaho.

SENATOR W. B. HEYBURN, of Idaho: Mr. Chairman, I am not as well organized to present suggestions of use to you as I should be, because the call came suddenly, and I can only talk to you from the standpoint of the general consideration that I have given to the subject both before and since the enactment of the Pure Food Law. I have taken up the question for consideration with that department of each of the states. It so happens that the state from which I come to the Senate, Idaho, has an excellent law on the subject of pure food and the protection of the people against vicious practices, both of manufacture and distribution. I took up the question in my own state a number of years before I came to the Senate, so that it was not a new question to me. I find now a necessity for uniformity in regulations under the terms of the act. The representative, or rather the administrative, department of the government can make certain rules and regulations. I have been keeping an observant eye on their action in that direction. And I observe a danger that, by rules and regulations, they will weaken the force of the legislation. The legislation must consider at all times the basis on which the action of the people interested in this subject and those who have to execute the law must rest.

#### PURE FOOD LAW REGULATIONS.

Now some of the rules and regulations—and I will not take time to point them out in detail this morning, because I have not them before me—but some of those rules and regulations are calculated to emasculate the legislation. We must depend on the gentlemen of the medical profession throughout this country to keep a vigilant eye on that point and otherwise to suggest and to aid us. I do not mean any harsh criticism or do I wish to be understood as criticising those who have undertaken to formulate rules and regulations for the enforcement or carrying into effect of the Pure Food Law. It is not in the nature of criticism so much as in the nature of suggestion. We have got to be on the alert. Any body of men such as that comprising the committee or the board, that has undertaken to formulate rules, will have different views on this subject and the dominant mind in that body is apt to impress itself on the entire body; sometimes it is because of the timidity of the other members of that body. Very often the best minds in any deliberative body are the silent minds, the minds which are so constituted by nature as not to be capable of asserting themselves when they should do so. So that a little careful observation on the part of the medical fraternity of the United States made known to those who are in a position to make it effective, will help us very much. Now, of course, I am very strongly in favor of uniformity in state legislation. But, uniformity in national regulation is just as important. We can direct legislation in a large measure. So far as the gen-

\* The complete record of the conference (from which this report is an abstract) has been published in book form and can be obtained on application to the American Medical Association, Bureau of Legislation, 103 Dearborn Avenue, Chicago.



eral government's jurisdiction is concerned, we can control it, and the jurisdiction on the subjects is largely national, because nearly every subject is, by reason of its relation to the people, interstate in character. The manufacture of no article is confined to the limits of one state. In fact, those instances would be so few that they are not worth considering. All medicines are made for interstate trade, and very often for all other states except the one in which they are made. They are very frequently obnoxious to the laws of the state in which they are manufactured; and, in fact, those who are going to manufacture contraband articles generally select a jurisdiction other than that in which they intend to circulate it, so that they can not be charged with selling it against the law in a "concurrent" jurisdiction. That needs to be looked after.

#### ANTI-NOSTRUM LEGISLATION.

I have always been aggressively against the advertisement of the nostrums that are called "patent medicines." Some time ago a friend of mine, a very old fellow, that I had taken a special interest in, in securing a pension, a man I have known all the years of my life, had reached the age and condition of dependency. I had succeeded in getting him a nice, comfortable pension that would pay his monthly bills for household provisions. Once, when I found that he was very poor, I said to his wife, "What are you doing with your pension?" She said: "Don't you know, Mr. Heyburn, that it takes at least one-half of that pension for 'patent medicine.'" And then she enumerated the "patent medicines" that they were taking. Now, there were these old people, who were paying more than fifteen dollars a month for "patent medicines." So I took the matter in hand with them and also with some of their neighbors and had the matter stopped. They were being imposed on. It was being suggested to them, through advertisements, that they were the victims of ills that they were not troubled with at all, and then that they could find relief through these different medicines. They were thus offered "patent medicines" at one dollar a bottle and fifty cents a bottle, and their house had simply become a depository for those bottles.

Gentlemen, you can not be too aggressive in your opposition to these things. It is not only a question of the health of the people. Many of these nostrums are perfectly harmless to the physical person, but they are not harmless to the pocket-books of the people. So that it is a work of kindness and consideration for the people to bring it down to the closest possible basis.

#### LEGISLATION AGAINST NEWSPAPERS.

I am also in favor of stopping the advertisement of these nostrums in every paper in the country, and when that matter comes before Congress, I am in favor of restrictive legislation to bar them from the mails of the United States. (Applause.) I think it would be just as legitimate for a newspaper to carry an advertisement saying that we handle the finest line of bombs that can be manufactured; warranted to bring death and destruction in every instance, without fail. I would regard that as just as legitimate as the advertisement of many of these manufacturers, especially those for children and helpless people who have no voice in saying whether they will take them or not, but who must receive them when given to them.

#### COLD STORAGE LEGISLATION.

On the question of food I have proposed to myself, and have suggested to the press, that I would at the proper time, when I thought it would be effective, introduce a measure for the further inspection of things in cold storage. And I would like to have the careful attention of the medical fraternity to that question, which is one the importance of which has become apparent to me, so far as I can determine those questions, to be one demanding attention.

I have noticed in the exhibition of meats in Chicago, St. Louis, Portland, Oregon, in the big cold storage departments, a condition of affairs, taken in connection with my observation and experience, that seems to demand some further relief. The process of disintegration or the foundation of ptomain poison has been laid in my judgment as well by cold, as by heat, if continued too long. I have seen that yellow, greenish waxy appearance on meat that had been in cold storage three or four years. As soon as you take that meat out, it takes to itself a slimy condition, and it is immediately given a bath of boric acid or something of that kind, to make it fit to handle. The other day I talked with the chef of one of the largest hotels in the United States, and he told me that if the people who ate cold storage fowls could see them before they are prepared they would never eat them. He said that as long as they are kept frozen they were all right, but as soon as they are thawed they take on to themselves this condition,

which would generate ptomain poison, if not stopped or checked immediately or in a very short time. I believe that meats in cold storage should be inspected at least every three months. In our examination we found meats that had been in cold storage three years. These people boast of their cold storage plants. We found that it is nothing unusual at all for these cold storage establishments to carry three or four years' supply for their customers.

#### THE ECONOMIC SIDE OF COLD STORAGE.

There is a side to this question that does not interest you as physicians, but will interest you as citizens. It has enabled these people to dictate the price of cattle, meats and fowls in the United States. They are in position to say: "We do not care whether we buy your goods or your steers this year or next. Take them home and feed them and go broke on it." As a business proposition it results in a corner in those products. You feel it in your household, physicians though you are. You come just as close to those questions in the ordinary walks of life as the rest of us. I would like your investigation of that question. When you have investigated it, you can assist very much those who have to deal with this question through legislation, in giving us the benefit of your views. I may be wrong in my opinion. I am not scientifically educated along those lines, but merely an observer. I have seen that meat that has been in cold storage from two to four years sent out to our camps on the frontier, and I have seen whole camps prostrated in a night. I have seen men die, or I have known men to die in very large numbers as a result of ptomain poison from cold storage meat that had been kept in storage so long that a process of disintegration, or, rather, the foundation had been laid by this protracted freezing process, for ptomain poisoning.

Now, in regard to uniformity of state legislation on the Pure Food Law, there could be no higher purpose served by you gentlemen, representing as you do one of the most magnificent organizations in the world, the physicians of a great country like this. And you can send your views out of here into every corner of the country, so that it will be potent in its influence. The legislatures are few in number, comparatively. Many of the states already have very excellent laws, and there is a considerable degree of uniformity on certain subjects. It merely needs the balancing hand to be put on them, and the suggestion should and could best come from your profession. Men who sit in the legislatures, as a rule, are not technically equipped to deal with this subject. Do not give them a general declaration. Tell them how to make your views on the subject effective. You have a legislative committee. Prepare a measure that shall meet with the approval of the medical fraternity as represented by your organizations, and send that to the health officer of every state, send it to the officers of the legislatures, whether it be the speakers of the respective houses or the chairman of the judiciary committee. And now is the time for you to do it. The legislatures are filled with ambitious men willing to take up this question for you. When I want matters brought to the consideration of legislative bodies, I do not hesitate to take a list of all of them, and send them a personal letter, every man in the legislature. Not a stereotyped letter, not something with a printed signature on it. Send them a letter which will give them the impression, and correctly so, that you regard them as being in a position to take a leading part in these matters. You will find a very ready response. They will become either your supporters, or your opponents, and in either event, the subject will receive consideration. (Applause.)

Of course, I do not know what consideration has been given to this subject. I am just here on my feet on the spur of the moment to make these few suggestions; and I shall be very glad if I may know further of your consideration and your action in these matters, because the subject is one that interests me intensely. The people are enforcing the Pure Food Law. You are doubtless aware of that. Every dealer to-day inquires of his wholesaler or his jobbing house whether or not the goods offered him will stand the test under the Pure Food Law. I know a large dealer who, the other day, declined to purchase buckwheat meal from the people from whom he had been buying it for twenty years, simply because the man wanted him to take a verbal agreement instead of a written one. He said: "If you will give me your guarantee, you may send me two tons of it now, but I want the guarantee in writing." And the other man said: "We never give guarantees in writing, but our firm is a firm of high repute, and we will give you our personal guarantee." Then the prospective purchaser said: "I will not order the buckwheat meal." Druggists tell me that they are censoring every article that goes on to their shelves, because they do not propose to be found with a lot of



contraband articles on their shelves when the Pure Food Law goes into effect. Our merchants are clearing their shelves of articles that will be contraband under the Pure Food Law on the first day of January, and of course the state laws are all supplementing national legislation and will continue to do it. The states are anxious to do it.

The difficulty with the enactment of the Pure Food Law was not in getting votes for it, when it came to a vote; it was in bringing it to a vote. There never was a time when that bill was in danger of being defeated through lack of votes, because a man would find some difficulty in giving a reason why he should vote against a measure of that kind. He might object to it on the grounds of unconstitutionality, if he were a strict constructionist, or one of those people who think that the constitution was meant to cramp and retard instead of assist; but when it came to a vote there were very few men that had the temerity to stand up there and say that we are in favor of dishonest tradesmen having the right to foist these fake articles on the people of this country, who have neither the opportunity, time or ability to discriminate between that which is harmful and that which is not.

I thank you gentlemen very much for the opportunity of appearing before you this morning and I shall be deeply interested in your future work in these matters.

DR. C. Z. AUD, of Kentucky: Gentlemen, let us by a rising vote, thank the Senator for the interesting and helpful address which he has delivered this morning.

The motion was duly seconded, formally put, and unanimously carried.

THE CHAIRMAN: If the Senator discusses this question so thoroughly in the short notice he had, I wonder what kind of a speech he would have made if he had had more notice. We certainly feel grateful to him.

We are fortunate in having a report on this question of the discrepancies in these state laws by Dr. von Mansfelde, who will present the report at this time.

DR. A. S. VON MANSFELDE, of Nebraska: Mr. Chairman, I think nothing could be more fortunate for Senator Heyburn than to have made the speech he has made and have the actual realization of his desires presented to this Council five minutes later. Your Committee on Pure Foods and Pure Drugs begs leave to report as follows:

A few weeks ago I received the following instructions from our chairman, Dr. Reed:

You are requested as chairman of the Committee on Pure Foods and Drugs, appointed by the National Legislative Council, to prepare a report on discrepancies in state laws relating to the Pure Foods and Drugs. It is our expectation to take up the subject of standardizing state laws on this and other subjects, as a necessary supplement to recent national legislation. It is, therefore, important to have the facts before us so that we may know in just what particulars state laws fall short of the desired remedy. I am aware that this is rather a large task to be discharged in the next two or three weeks, as we desire to meet in Washington on December 14, when we expect to have Senator Heyburn and a few other prominent men in public life, to address us on this particular subject.

I fancy it will be almost impossible for you without collating practically all of the laws of the different states of the Union to present this subject exhaustively. As nearly as I can understand, however, the essential points of discrepancy relate to definition of the words "drugs" and "foods" and the specifications as to what comprise adulteration and misbranding. If you would spend a day at the Law Library of Lincoln, writing in advance to have the clerk get out the statutes of the different states for you, I fancy you could make comparative statements of these two particulars as they relate, at least, to all of the leading states of the Union.

To which we beg to say:

That we happily have in our possession an epitome of the legislation in all the states on drugs and foods, the work of the great Bureau of Chemistry of the Department of Agriculture, and especially the work, through the incentive of its chief, Dr. H. W. Wiley, by Dr. W. D. Bigelow, chief of the Division of Foods, and Dr. Lyman F. Kebler and Earl T. Ragan, of the Division of Drugs.

We find that it would be a work of months to fulfill the demand of the chairman on our committee, but we recommend that a committee of this Council prepare at as early a moment as possible a standardized bill, a pattern bill, to be used as the profession may wish in shaping legislation of the different states on this subject.

Very respectfully submitted.

A. S. VON MANSFELDE, M.D., Chairman.  
SILAS D. PRESBREY, M.D.

DR. A. S. VON MANSFELDE, of Nebraska: Mr. Chairman, I move the adoption of the report as read.

The motion was duly seconded, formally put, and carried.

THE CHAIRMAN: The adoption of this report involves the recommendation for the codification of these various discrepancies, and, of course, their publication in THE JOURNAL as an appendix to the published proceedings of this section of the Council.

DR. A. S. VON MANSFELDE, of Nebraska: Mr. Chairman, I was very strongly struck by the Senator's remarks in regard to taking care of "patent medicines," and this Council is familiar with a phase of the subject which appeared before us at the last session of our Council in which a law was presented by Mr. Bok, the editor of the *Ladies Home Journal*, in which he addressed us in rather euphonious terms. It was my pleasure to say that I proposed to go home and to get that law revised, and I have been at it since then. I hold in my hand a law, or rather a bill for an act which it was my humble privilege to write, which is to be introduced after the holidays in the legislature of Nebraska, already consented to by all the profession in Nebraska. Subsequent to the correspondence with the Chairman of the Council, Mr. Senator, the matter was brought to the attention of the people of the country by a bill that Mr. Bok suggested in the *Ladies Home Journal*, and I took the pains to take that as a basis for a section of my bill that is to be introduced into the legislature of Nebraska, and I would like very much to know whether you approve of the measure or not:

Section XV. Any and all mixtures and compounds, which may now, or from time to time be known as articles of food or medicine for a man or other animals, other than a medicine specially compounded on the written order or prescription of a physician, duly authorized to practice his profession in this state, which shall be hereafter manufactured in this state, or which shall be hereafter manufactured without this state and exposed or offered for sale, or sold or given away, or otherwise disposed of within this state, shall have printed upon the container thereof, in black letters upon white paper, of a size not smaller than of type eight point, so called, a complete schedule showing all the ingredients contained in such mixture or compound of food or drugs and the exact proportions of each ingredient thereof, without disclosing the methods of manufacture.

All such mixtures and compounds of foods and drugs, if they contain any one, or more of the substances, or their derivatives, enumerated in section 13 of this Act, then and under such conditions, there shall be printed in plain English in red letters of a size not smaller than eight point, so called, on white paper in addition to the schedule of ingredients hereinbefore required, both on the outside wrapper of the package, bottle, box, or other parcel, containing the same and also on the label affixed to such package, bottle, box, or parcel, a notice reading as follows:

This package (or bottle, or box, or parcel as the case may be) contains (here give the name and proportion or percentage of the drug as the case may be) and is therefore under the Act of the Legislature of the State of Nebraska marked

#### POISON.

and also the single separate word Poison, which shall be printed separately, on a line by itself in bold fair type, and in letters not less than one-quarter of an inch high.

Any person, firm, or corporation who shall manufacture or expose, or offer for sale, or sell or give away, or otherwise dispose of any such compounds or mixtures of food or drugs, the latter generally known by the trade names of proprietary or patent medicines, without complying in every detail with the provision of this section of this Act shall be guilty of a misdemeanor and for such first offense shall be fined not more than one hundred dollars (\$100.00) and upon conviction for each subsequent offense not exceeding two hundred (\$200.00) or imprisonment in the county jail of not more than one year, or by both such fine and imprisonment in the discretion of the court, and the convicted defendant shall be liable for all the costs of the action.

I will say for the information of the Council and also for the information of the Senator that I have enumerated the drugs mentioned in the Pure Food Law, but I have also taken the liberty to add the derivatives of the coal tar preparations or other abortifacients, and have named them.

I want to say that this is not my own emanation. It is a combination of the Pure Food Law of the United States, the bill that Mr. Bok so kindly furnished us, and suggestions of Dr. Bigelow on the subject. The bill certainly seems to be very comprehensive, and although it is new, it is still germane to the subject and it is one we might very well take under consideration. Perhaps Senator Heyburn will favor us with a few remarks on the question.

SENATOR W. B. HEYBURN, of Idaho: The questions are too technical for a non-professional person like myself to express before a body of men comprised as this is, himself on the spur of the moment, expressing definite ideas, at least. I know practically nothing outside of the most general rules of chemistry as to the effect or desirability of these combinations, so it would be useless for me to attempt to say anything that might be useful to you on it. I take it for granted that those of the profession who know the nature, character and effect of these substitutions, singly or in combination, are entirely capable of determining when and where they may be safely ad-



ministered. The question of notice, it seems to me, is quite sufficient. Of course, there are some combinations that people should not be allowed to sell, even though they are marked poison. There are some enumerated in that bill that should not be sold at all to any person. They should be administered or taken, if at all, under the direct supervision of a competent medical man, who would know how and when to administer them. So that a layman, such as myself, would have no opinion that would be useful to you on that subject. I want to say that I did not express myself as fully as I felt. I want to express my appreciation, and the appreciation of those who enacted the Pure Food legislation of the inestimable services of the medical profession, and especially of your Chairman, acting for you (Applause), in helping to shape that legislation to an intelligent purpose and make it practicable, and while I have written him my personal appreciation of it, and expressed it through him to the profession at large and to your organization in particular, yet I desire on this occasion especially to say that there was nothing that helped us to the extent of the aid given by the medical profession and by your organization, and by your Chairman. It crystallized the general knowledge that the layman has on this subject. We stand ready when this bill is found defective in any respect to take up your suggestions and give them our attention.

I thank you again, and wish you a pleasant and profitable session.

#### Revised Packing Laws.

DR. H. R. BURTON, of Delaware: There is a matter that will probably come before Congress during this session, and I would like to hear some expression of views from the members of this Council, and that is a law compelling packers to label the date of packing on their canned goods, especially canned meats. Now it has always been my opinion that canned goods, if they were pure and wholesome three months after they were put in the package, that they would be good for three years or for ten years, if the package remained intact. Dr. Wiley, as I understand, claims that after three years, or after a certain time, I will not say what time, they become dangerous and inferior, or maybe it is after a certain number of months. I have forgotten what the time was. I would like to know what would be the views of some of the members of this Council as to the advisability of compelling packers, especially packers of meats, to put the date of packing on their goods.

After a further informal discussion of the osteopathic bill, during which remarks were made by Drs. Aud (Ky.), Samuels (Pa.), Acker (D. C.), Van Meter (Colo.), Rodman (Pa.), Halsey (N. J.), Welch (Md.), Percy (Ill.), Fulton (D. C.), the Chairman called for

#### Report of the Special Committee on the Bill for the Relief of Dr. James Carroll.

DR. A. S. VON MANSFELDE:

WHEREAS, The Chairman of this Council in his address to this body uses this language:

The ultimate completion of the Panama Canal, the present salubrity of Cuba, the safety of our Southern seaboard against periodic invasion by epidemics, the maintenance of life and health by our citizens in that great section; and the stability of our national commerce against disturbance from the same cause, are all made possible by the discovery that the mosquito is the carrier of the contagion of yellow fever. That fact was established by the labors of three men, two of whom in the interests of humanity and science subjected themselves to inoculation by infected mosquitoes. As a result of that experiment, one of them, Dr. Jesse W. Lazear, within the next few days, died a martyr's death, the other, Dr. James Carroll, survived to live a martyr's life. The only reward that he has so far received is a disease of the heart that occurred as the result of the yellow fever, that he voluntarily contracted for the welfare of his race. This man, this hero, after risking his life to give this priceless boon to the world after incurring a permanent invalidism in that cause, after having spent thirty-four years in the faithful service of his country, is permitted to remain only as assistant surgeon with the rank of First Lieutenant in the U. S. Army, with the paltry salary of an officer of this grade and with broken health this man, far past the meridian of life, is supposed to meet the obligations resting upon a husband, the father of seven children and to provide against the requirements of old age. A bill for his relief, endorsed by this Council at its last conference was introduced in the Senate but has never been reported out of committee. This is a shame. Surely if Congress understood the facts of this case the bill would pass within an hour by concurrent action of both houses. To permit it longer to slumber will be to bring the blush of humiliation to the cheek of every intelligent and grateful citizen of the Republic.

The special committee appointed by resolution of Dr. A. S. von Mansfelde to pass on said remarks of the Chairman, do most emphatically approve same and recommend that this Council as a representative body of the medical profession of America, urge on the President and Congress to make such investigation and take such action as will mete out a full

measure of justice to Drs. James Carroll and Jesse Lazear and their families.

Further, that the medical members of Congress be respectfully requested to use their utmost power to accomplish this end.

A. S. V. MANSFELDE, Chairman.

C. Z. AUD.

S. D. VAN METER.

A motion was duly offered to accept the report, which being seconded, was formally put and carried.

#### Standard Bill for the Regulation of Pure Food and Drugs in the States.

The Conference resolved itself into a committee of the whole (Dr. von Mansfelde in the chair) on the regulation of foods and drugs in the states. After a thorough discussion of the measure, submitted respectively from Nebraska and Colorado, the committee of the whole was adjourned to meet at 4 o'clock p. m. the same day, and the Council resumed its session with Dr. Reed in the chair.

#### Sanitary Aspect of the Immigration Question.

THE CHAIRMAN: Gentlemen, I wish to say that in arranging the program for this evening I invited the Commissioner-General of Immigration to be with us and present some views with reference to the requirements of that service, as to additional legislation. I find that the Commissioner is absent. I have received the following letter, however, from the Commissioner's office, as follows:

"Your letter of the 8th instant, addressed to Commissioner-General Sargent, has only just been received at this Bureau. Mr. Sargent is now on the ocean between Honolulu and San Francisco, enroute to Washington, and will not reach here until about December 23d.

"It so happens, however, that Dr. George W. Stoner, Surgeon in the Public Health and Marine-Hospital Service, who has charge of the medical division at the Ellis Island Immigration Station, is in the city, and I have arranged to have him attend your conference to-morrow.

"Dr. Stoner is thoroughly posted upon all features relating to the medical inspection of aliens, both at the places of entry into this country and at the foreign ports of embarkation. He will be pleased to address your conference on this subject, should you care to have him do so."

Dr. Stoner is here and I take great pleasure in introducing him to you. He will make a few remarks.

DR. G. W. STONER: Mr. Chairman and members of the Council: I need not say in the beginning that I have been called on very unexpectedly. Had I known that I was to be in Washington and in attendance at this meeting I should have been most happy to have made some little preparation, but your chairman has kindly suggested that all I need to say is to invite attention to what is now pending before Congress. I may say, therefore, that there are various immigration laws which have been passed from time to time. The last, or the latest one, being that of March 3, 1903. This is, in many respects, a very comprehensive law as many of you may know. It even goes so far as to say that no intoxicating liquors of any kind shall be sold at any United States immigrant station and that no intoxicating liquors of any character shall be sold within the limits of the Capitol Building of the United States. Strange as it may seem, the immigration law contains that paragraph. I understand it was put in somewhat humorously by the House, expecting that of course the Senate would strike it out, but the Senate seemed to have forgotten to do so and there it stands.

If you are interested in these matters I would be glad to read this bill to you. The question of immigration is such a large one that it is hard to determine just what to talk about, but I happen to have a paper which I prepared not long ago for the consideration of the New York Academy of Medicine, having reference to our method of conducting examinations at Ellis Island. In this paper I called attention to some of the sections of the law to which I have just referred.

Under Section 1 there is levied a head tax or "duty" of \$2.00 for each and every passenger not a citizen of the United States or the Dominion of Canada, the Republic of Cuba or the Republic of Mexico, who shall come by steam, sail or other vessel from any foreign port to any port within the United States, or by any railway or by any other mode of transportation from foreign contiguous territory to the United States. The money thus collected shall be paid into the United States treasury and will constitute a permanent appropriation to be called the "Immigrant Fund," to be used to defray the immigration of aliens into the United States.

Section 2, directing exclusion of "all idiots, insane persons, epileptics, and persons who have been insane within five years previous, persons who have had two or more attacks of in-



sanity at any time previously: persons afflicted with a loathsome or a contagious disease." In explanation of the law I may say that the diseases classed as dangerous and contagious are either those of trachoma, and fibrous diseases of the scalp, and some forms of ringworms as well.

Section 8 imposes heavy fines (\$1,000) or imprisonment against any person bringing into or attempting to land in the United States any alien not duly admitted by an immigrant inspector or not lawfully entitled to enter the United States; and Section 9 provides that there shall be paid to the collector of customs \$100 for each and every alien afflicted with a loathsome or dangerous contagious disease, if it shall appear to the Secretary of Commerce and Labor that the existence of such disease might have been detected by a competent medical examination at the time of barring embarkation; and no vessel shall be granted clearance papers while such fine imposed on it remains unpaid.

I might say, in connection with this paragraph that during the last year, as nearly as I can remember, there was some \$20,000 to \$30,000 imposed in fines, chiefly for bringing in trachomatic aliens, cases that might have been recognized on the other side. There are many cases of trachoma and we find it very hard to certify to whether the disease was contracted on board ship or had evidently been of long duration, and it places us in a very hard position to say that the disease might have been detected by competent medical examination on the other side, for the reason that the disease lies in a dormant state, or is believed to be cured. Indeed they sometimes present certificates from eminent men on the other side of the water which declares them free from trachoma or other dangerous disease, but nevertheless, we find them on arrival with the disease in the most dangerous form.

Sections 20 and 21 provide among other things that any alien who shall come into the United States in violation of law, or who shall be found a public charge therein, from causes existing prior to landing shall be deported to the country whence he came at any time within two years (and under certain conditions within three years) after arrival, at the expense of person bringing alien to the United States, or, under certain other conditions at the expense of the immigrant fund.

Now I might say in regard to that section that a great number of cases are returned each year by different state authorities, chiefly by New York State, as so many settle right around there and near at hand, and find their way into the public institutions. On the other hand, a certain number become insane, and then return, or at least their names are returned, and if the landing can be certified, warrants are obtained at the department, an arrest is made and the patient brought back to Ellis Island and put on board ship and deported, provided, of course, in all cases, that the immigrants are able to travel. Now, sometimes they are sent back after a residence of two years, sometimes after a residence of six months. We have had immigrants returned when the interval was not more than two or three months. For this reason reflection has sometimes been made that we have not been observant in our medical examinations. However, our investigation shows that the majority of these cases had their first attack after arrival, brought about in many cases by homesickness, hunger, or privations of that kind, acting as an exciting cause. It is easy enough to make a certificate that their condition is due to some remote cause just as otherwise due to causes existing before landing. In a remote sense that might be true of every one, but it is a very different proposition from saying that they had the disease when they landed, and that it might have been detected. Nevertheless, we are continually increasing our facilities for that kind of work. The Surgeon-General has increased the number of medical officers. We have in our corps several men who are quite well posted on mental afflictions, and on questions of insanity, and the Surgeon-General has also made the very wise provision to have several of our officers detailed for special duty in the government hospital for the insane here in Washington, where they receive extraordinary advantages and instructions from the specialists and alienists on duty in that institution.

So that every effort is being made to sift as far as possible the undesirables. I must say, however, that the law is ineffectual inasmuch as it provides a fine against certain classes and yet provides no penalty in regard to idiots, insane persons, epileptics and so on, other than mere deportation, and mere deportation is not sufficient. It is, therefore, important that the bill now pending before Congress, which places under the so-called fine class such afflictions as I have mentioned. I think that is one of the most important features in the pending legislation to-day before Congress in relation to immigration matters.

In relation to the section I have referred to just now, Section 30 provides among other things, "that no intoxicating liquors shall be sold to any United States immigrant station." And Section 30, that no intoxicating liquors of any character shall be sold within the limits of the Capitol Building of the United States. I only draw your attention to this matter to show you the importance immigration matters have before Congress, and all you need to do, and they will, I have no doubt, do what you say.

THE CHAIRMAN: Specifically, what measures are pending?

DR. G. W. STONER: The principal one is the bill to which I just referred, which places in the fine class the cases I have enumerated.

THE CHAIRMAN: Is there anything that this Council of the American Medical Association can do to promote the passage of those measures?

DR. G. W. STONER: Yes, sir.

THE CHAIRMAN: Will you be kind enough to send them to my office; send them to me.

DR. STONER: I shall, with pleasure.

THE CHAIRMAN: If you will send me those measures before I leave Washington, the measure will be put in as part of the proceedings.

DR. WILLIAM H. WELCH: Mr. Chairman, I am very much interested in the matter discussed by Dr. Stoner, and I move that the thanks of this Council be extended to Dr. Stoner for coming here so kindly and giving us this very instructive talk.

The motion was duly seconded, formally put and carried.

DR. STONER: Mr. Chairman, I would also like to express my appreciation of your kindness.

DR. L. M. HALSEY: Mr. Chairman, before we adjourn, in regard to the matter I was talking to you about this morning, I move, as it seems fitting at this time, that the Council of the American Medical Association to take some initiative at the active work of Senator Heyburn in effecting this Pure Food legislation, I move you that a resolution be prepared by the Committee on Resolutions and presented to Senator Heyburn, expressing the appreciation of the members of the American Medical Association for his untiring work in this connection.

The motion was duly seconded, formally put and carried.

Whereon the conference adjourned to 4:30 p. m.

#### COMMITTEE OF THE WHOLE.

AFTER RECESS—FRIDAY AFTERNOON, 4:30 O'CLOCK P. M.

THE CHAIRMAN: Gentlemen, I think we had better come together as a committee of the whole, and I will ask Dr. S. D. Van Meter, of Colorado, to take the chair during the consideration of this proposed standard bill on the pure food and drug proposition.

Whereon the conference resolved itself into a committee of the whole, Dr. S. D. VanMeter, of Colorado, in the chair.

The various provisions of a proposed standard bill were thereon discussed *seriatim*.

DR. L. M. HALSEY: Mr. Chairman, I heartily agree with your suggestions as to these measures being applicable to all states, and it seems to me the proper plan is to appoint a special committee and provide the printing in THE JOURNAL of a bill which will generally cover the points under contention and which will be the basis or the framework for enlargement and for application to the several states. I make that as a motion.

The motion was duly seconded, formally put and carried.

DR. E. J. LUTZ, of Kansas: Mr. Chairman, owing to the temporary absence of Dr. Reed, I move we now rise as a committee of the whole and make our report to the conference.

The motion was duly seconded, formally put and carried.

DR. A. S. VON MANSFELDE (Chairman *pro tem*): Gentlemen, we will now have the report of the committee of the whole.

DR. S. D. VAN METER: Mr. Chairman, the committee of the whole begs leave to report that it has had under consideration the question of pure-food legislation and the question as to the advisability of appointing a committee and standardizing an act to be taken as a model by the different legislatures throughout the country, and begs leave to report that the committee of the whole feels that the committee on legislation should take this matter up and have their ideas as to the



salient features especially applicable to all the states, have them published as soon as possible, prior to the first of January if possible, and furnish the legislature of each state proper copies throughout the United States.

THE CHAIRMAN *pro tem.*: There is already a motion on record that covers a part of your motion.

DR. S. D. VAN METER: As I understand it, Mr. Chairman, the only thing accomplished in the reading of these bills is proving my prophecy that there is no use at this time to try to standardize a bill. In addition to that motion, I would like to say in the report of the committee of the whole that the committee has had this matter under consideration and wishes to state that they are convinced that further than immediate advice on the salient features which may be decided on by the legislative committee, composed of Drs. Reed, Rodman and Welch, can not be acted on with any sufficient promptness. That is my idea in regard to the proposition, and that they should take up the salient features, especially the enacting clause, the following of the national law, etc., and advise the different states forthwith without waiting for the publication, but have it published as soon as possible.

The motion was duly seconded, formally put and carried.

(At this time Dr. C. A. L. Reed entered and resumed the chair.)

The conference thereon adjourned to visit the Speaker of the House and other members of Congress, as previously determined.

#### COMMITTEE OF THE WHOLE.

SATURDAY, DECEMBER 15.

The conference assembled in committee of the whole in the room of the House Committee on Pensions, Dr. Charles A. L. Reed in chair.

A formal interview was had with Messrs. Barchfeld, Burton and Samuels, who were informed of the action of the Council in placing various questions in their hands.

#### The Army Medical Reorganization Bill.

The Council was then received by Hon. J. G. Cannon, Speaker of the House, to whom the Chairman again presented the claims of the Army Medical Reorganization Bill, urging that a rule be issued for its early hearing during the present session. The Speaker was not disposed to favor the measure, but before the conclusion of the interview promised to go over the subject again.

A call on Hon. C. H. Grosvenor (Ohio), member of the House Committee on Rules, resulted in the information that he was in favor of the bill and that the committee was ready to issue a rule just as soon as the Speaker would permit the subject to come up.

A call on the Secretary of War, Mr. Taft, revealed that he was continuing his earnest support of the measure, that he had already spoken with the Speaker in its behalf, and would do so again.

#### The Bill for the Relief of Dr. James Carroll.

The Council was very cordially received by Senator Warren, Chairman of the Senate Committee on Military Affairs, who manifested an active interest in the measure for the relief of Dr. Carroll. It was arranged that the Committee on Medical Legislation, A. M. A., should present the military record of Dr. Carroll and all necessary memoranda relating to the case immediately after the holiday recess, when Senator Warren would bring the matter up in committee and have it reported to the Senate as soon as possible.

Members of the Council then called individually on their representatives and senators in the interest of the various pending measures.

The committee of the whole reassembled at 6:30 p. m. and reported.

Whereon, at 6:45 p. m., the Annual Conference of the Committee on Medical Legislation and the National Legislative Council of the American Medical Association was declared adjourned by the chairman.

Approved: J. F. PERCY, Secretary.

CHARLES A. L. REED, Chairman.

## Section Discussions

### CONGENITAL HIP DISLOCATION.

(Continued from page 284.)

#### DISCUSSION.

DR. E. H. BRADFORD, Boston, said that Dr. Mueller's explanation of the twist of the neck of the femur was very carefully studied some years ago by Professor Nichols and Dr. Soutter, and it was at that time regarded of such importance that it seemed as if it were necessary to perform osteotomy of the neck to correct it, but fortunately subsequent experience showed that this is rarely needed. The after position Dr. Mueller mentions has been tried a number of times at the Children's Hospital in Boston, with, in many cases, marked success, but Dr. Bradford thinks that Dr. Mueller's statement that it is successful in 100 per cent. of cases is hardly justified from a pathologic reason. With regard to the permanency of the cure of congenital dislocation of the hip by manipulative methods, there can now be no possible doubts. Dr. Mueller's claim that 50 per cent. of the cases are cured by the manipulative method can be substantiated by the experience of several clinics; but there remain 50 per cent. that are not cured, and in many of these cases the result has not been a cure even when fixed in a position in after treatment similar to that described by Dr. Mueller. If the anatomy of the hip joint is studied it will be seen that the chief factor in children in holding the head of the femur in place is the cotyloid ligament, a fibro-cartilaginous ligament. There is also an orbicular ligament which aids in holding the head of the bone in place. In congenital dislocation the capsule is stretched and the cotyloid and orbicular ligaments are also stretched. Under certain conditions there is in resistant cases a contraction of the capsule near the acetabulum so that it is much smaller than the dislocated head. When the dislocation is reduced under these circumstances, a tough cartilaginous fold has pushed in front of the head. This may be largely fatty tissue, but in certain cases it is not fat but fibro-cartilage. This tissue may be absorbed under pressure; but if the tissue is fibrous, it is not probable that it will be absorbed. In the old operation of incision it was thought necessary to deepen the acetabulum destroying the capsule. In the past year at the Boston Children's Hospital attempts have been made to utilize the flaps of the capsule after cutting the constricted portion of the capsule to hold the reduced head in place, making in this way a new orbicular zone.

The disadvantages of the operation of incision, Dr. Bradford said, are considerable. There is the risk of sepsis. Though deaths from sepsis are, as a rule, preventable, there is always a risk involved. There is probably slightly greater danger of stiffness after incision than after manipulation. These dangers, may, however, be diminished by care and improved skill, but at present it appears that the operation of choice in ordinary cases of congenital dislocation of the hip is the manipulative method. He thinks that the position referred to by Dr. Mueller after manipulative reduction is probably much more reliable in preventing relapse than the position formerly in general use.

DR. VIRGIL P. GIBNEY, New York, stated that the question all are considering is whether the bloodless method is going to supersede the bloody method, and he thinks that surgeons have about come to a conclusion. During the past two or three months he has tried to find the records of some 58 cases that have been operated on since 1900. He thought that he had secured the end results of that number, but in boiling them down he found that he could get only about 43 out of the whole number that were worth reporting. For instance, somewhere the report was made six or eight months after operation, where there was a difference of opinion as to whether the head of the bone was anatomically perfect. Roentgen ray pictures showed the everlasting twist of the neck, a rudimentary position, and sometimes he could feel in the gluteal region a little body which later became more prominent. So he ruled out every case of which he was not absolutely sure. He thought that the demonstration by Dr. Bradford was very convincing. If surgeons can not avoid



sepsis they ought to be content to adopt the bloodless method. Of the 43 cases that he succeeded in analyzing, there were eight anatomic cures, making about 18.5 per cent. There were two functional cures, 4.5 per cent.; or combining the anatomic and the functional cures, and many anatomic cures are functional cures, there are ten cures out of 43, a percentage of 23 1/5. Seventeen patients were improved, or 39.5 per cent.; that is, the anterior reposition or the subspinous reposition, as it is sometimes called, but a very good functional result with the abolition of that lordosis which is so common in congenital dislocation of the hip. The ease with which these patients can walk long distances is remarkable. Fourteen patients were unimproved, or 32.5 per cent. There was one doubtful case and one patient died of the bloodless operation. There was one open operation which was a failure, and that was followed by the bloodless operation, which was a partial success. There were five bloodless failures, followed by the open method, which were all improved, and there were two of the Lorenz failures that were cured by operation.

DR. A. H. FREIBERG, Cincinnati, said that he was under the impression that the conditions with reference to twist of the femoral neck in these cases of congenital dislocation of the hip joint referred to by Dr. Mueller are identical with those described by Schede some years ago, and that the principle involved in this primary reposition referred to in the paper is practically identical with the method proposed by Schede at that time, with the exception of the osteotomy of the femur.

DR. F. MUELLER, Chicago, said that although the malformation and the filling out of the socket with fibrocartilage or fat is known as being present in almost any case of congenital hip dislocation, he cannot agree with Dr. Bradford's explanation that the remodeling of the socket cannot be expected because fibrous cartilage is not resorbed by pressure. In applying the Lorenz method one does not depend on the resorption of this layer of cartilage, but only on the remodeling of the underlying bony tissue for which the "functional adaptation and transformation" holds good (J. Wolff. law of transformation).

As to Dr. Freiberg's remarks, he said that Schede was one of the first to call attention to the fact that this twisting of the neck of the femur is present in about 50 per cent. of all cases, and he therefore advocated a medium abduction and inward rotation of the thigh. But Dr. Mueller's position is neither identical with Schede's position nor is it inward rotation at all, because if it would be then the patella could not be in or nearly in the frontal plane. His position is a neutral rectangular one obtained by abducting the thigh about 90 degrees. It is also different from Lange's, which is a medium abduction and intro-rotation very similar to Schede's position.

## VARIATIONS IN THE FRONTAL SINUSES.

(Continued from page 289.)

### DISCUSSION.

DR. L. D. COFFIN, New York City, said that Dr. Cryer exhibited one picture which showed an anterior ethmoid cell which looked as if it had been shoved up into the frontal sinus. In a dissection Dr. Coffin had an extreme example of this kind in which the ethmoidal cell on one side nearly filled a large frontal sinus, and on the other side the frontal sinus was completely filled by an ethmoidal cell. One could simply make out that a layer of frontal bone covered the bony wall of an ethmoid cell. It was an opportune find for him at that time as he was studying the development of the frontal sinus, and found that the most commonly accepted theory is that the frontal sinus is the result of the prolongation of the ethmoidal cell into the frontal bone. Dr. Coffin does not think that the development of the frontal sinus should be explained in this way. If it were so developed, it would seem as though one should always recognize the point at which he has passed through the frontal bone, and at that point one would expect to find and to recognize the bony covering of the ethmoid cell, as part of the ethmoid

bone. Why, he asked, should the frontal sinus not be developed by the same physiologic process as accounts for the other bony sinuses, viz., the action of the osteoblasts and the osteoclasts.

These cases show how easily in operating for frontal sinus disease one might open an ethmoid cell in the frontal region, clean it out, and close the wound without ever having been in the frontal sinus at all. One gets a proper appreciation of the development of the sinuses when he considers the size of one of these large ethmoidal cells which are found in the frontal region as compared with the diameter of the infundibulum through which it pushed its way into the frontal sinus; that is, he appreciates better the action of the osteoblasts and the osteoclasts. Dr. Cryer's specimen showing such extensive air spaces, is very interesting. Dr. Cryer had opened into it through the floor of the brain and from the greater wing of the sphenoid, and again away out at the external wing of the eye, and it seems as if it would be almost impossible to operate satisfactorily on it. Had Dr. Cryer done a typical Killian operation, however, the case might have presented fewer difficulties than would appear from the specimen as presented.

DR. F. S. SNOW, Syracuse, N. Y., said that Dr. Cryer has shown anatomic facts which can be applied with value. These cases must be approached with a good deal of caution, but there should be no timidity in cases of emergency. Some conditions call for operative work and will admit of no other treatment; even if a sinus is 44 mm. deep it is the operator's duty to uncover that sinus and to secure drainage. A patient should not be subjected to the radical operation who has a fair chance of comfort and life by enlargement of the nasofrontal duct. After fifteen years' experience with these chronic cases Dr. Snow's attitude is a conservative one. While it must be admitted that acute symptoms sometimes supervene and better drainage must be secured than can possibly be obtained through the nasofrontal duct, still the fact remains that in the majority of cases this duct is large enough to give fairly comfortable conditions.

DR. GEORGE E. SHAMBAUGH said that any one who makes a study of the frontal sinus on the cadaver must be impressed at once with the very great variations in the shape as well as in the size of this sinus. So far as his observations go the frontal sinus varies more in its size than any of the other nasal accessory sinuses. In his collection there are five adult heads in which no frontal sinus is found on either side. He has several in which a moderate sized sinus exists on one side and none at all on the opposite side. The enormous size which a frontal sinus may attain is equally surprising. He has one preparation in which the frontal sinus extends 4.6 cm. from its anterior wall back over the roof of the orbit; from the median line following the rim of the orbit it measures 7.2 cm., while it extends upward over the forehead 5.5 cm. The cavity formed by the two frontal sinuses in this instance is enormous and should such a patient be operated on by one of the obliterating methods a most unpleasant deformity could not be avoided. Dr. Cryer has shown some illustrations in which he speaks of the presence of three or more distinct frontal sinuses. Dr. Shambaugh does not think these should all be called frontal sinuses. Developmentally the frontal sinuses are of course originally ethmoid cells, that is they are cells that originate in the ethmoid between the unciform plate and the plate of the bulla. They are considered ethmoid cells until they have pushed their way up between the two plates of the frontal bone when the term frontal sinus can be justly applied. It is a very common occurrence for other ethmoid cells to grow upward into the frontal sinus. Such cells are called frontal ethmoid cells and although they have separate passages leading to the nasal chambers they should not be considered as independent frontal sinuses. The term frontal sinus should be reserved for the two having their outlets between the unciform plate and the bulla, i. e., in the anterior end of the infundibulum. Dr. Shambaugh said that sinusitis is a misformed term and should be dropped for the correct word sinuitis, which is formed by adding the suffix *itis* to the noun stem *sinu*, just as the word *iritis* is formed instead of *irititis*. The term *sinuitis* is the



correct one and is the one used by writers who have an appreciation of language. Dr. Shambaugh emphasized the practical bearing which the enormous variation in the size of the frontal sinus has when the question is being considered of relieving a frontal sinusitis by an intranasal operation or by removing the outer wall. This certainly should be a strong factor in favor of a conservative intranasal operation when such will suffice, as it usually will.

DR. H. P. MOSHER, Boston, said that the frontal sinus is undoubtedly an anterior ethmoidal cell. The highest one, the one that pushes apart the two plates of the frontal bone, is called the frontal sinus. Dr. Mosher has specimens of ethmoid cells projecting into the frontal sinus large enough to give a wall which could be recognized at operation at the Harvard Medical School.

DR. ROBERT C. MYLES, New York City, said that about 10 years ago he operated on hundreds of cadavers. He investigated the ethmoidal cells and frontal sinuses and found a great many specimens such as Dr. Cryer has shown. Dr. Myles has operated on series of both by the internal and external methods. As time goes on and he compares experiences in the different procedures, he attributes increased value to one cardinal principle, and that is providing drainage from the recesses above the orbit and in the frontal bone through the natural channel, which is through the ethmoidal cells. Sufficient progress has not been made to do these operations perfectly, such as cutting away the ethmoidal cells and the floor of the frontal sinus, without causing occasional injury to the patient. Logan Turner collected the histories of 24 deaths from the external operation, and there are very few from the internal. The natural tendency in the future in treating these large recesses above the eye and frontal sinus will be through the nose, and it rests with some one to devise a method of removing these cells without injuring the orbit and the cribriform plate. When Dr. Myles has succeeded in cutting a large hole in the floor of the frontal sinus, the patients usually make a more rapid recovery. A small frontal sinus is easily obliterated by an external operation, but a large one presents many difficulties. He reported a case in which he removed  $7\frac{3}{4}$  square inches of bone—the anterior walls of the frontal sinuses—from a man's forehead, and got union by first intention over two-thirds of the area; the man recovered completely. Of course, there was deformity, but that can be alleviated a great deal by the different paraffin methods. Whenever drainage and ventilation through the nose can be established every possible measure for improvement in that direction should be instituted.

## SYMPTOMS OF TUMORS OF THE PREFRONTAL LOBES OF THE BRAIN.

(Continued from page 295.)

### DISCUSSION.

DR. P. C. KNAPP, Boston, said that from Dr. Krauss' description of the specimen exhibited, it would seem as if the growth was not distinctly confined to the prefrontal region, but was invading the ascending frontal convolution. Dr. Knapp declared that he can hardly subscribe to the theory that would localize the higher intellectual processes so definitely in the left prefrontal region. He thinks that the intellectual functions of the brain are too complex and too varied and involve too many different and distinct regions of the brain to warrant us in making such a definite localization. His study of the mental disturbances in tumors of the brain show that the only case in his collection in which there was no pronounced mental disturbances of all the cases of tumors in the prosencephalon, was in the case of a large tumor involving the left prefrontal lobe and extending backward. The explanation was comparatively simple. It was one of those cases of tumor with intense headache, so that the patient on account of the pain objected to any questioning, and it was deemed unwise to go into any extended examination in regard to the mental function. There is certainly an increasing amount of evidence that the

temporal lobe plays an important part in the intellectual faculties. Any disturbance in the speech zone will generally show itself in the disturbance of the mental faculties, either in the processes of comprehension or in the expression of ideas. Furthermore the intellectual faculties are not dependent entirely on the cortical processes, but on the proper functioning of the great association tracts as is shown by the fact that in tumors of the corpus callosum the mental disturbances constitute an early and marked symptom.

DR. FRANK R. FRY, St. Louis, Mo., said that he recently noticed a convenient and expressive phrase to use when discussing this matter of cerebral localization; namely, "the center for the control" of stereognosis, speech, etc., the idea being that there is no one center for speech, one center for writing, one center for stereognosis, etc., but that there is an area where the various perceptions and conceptions involved in these several functions are collected or collated for expression. Some years ago he noticed that an English writer in speaking of Broca's convolution called it "the way out of language." He meant that there is a definite place where the various concepts entering into language must be collected before they can find expression in speech and in writing. Last year Dr. Fry reported to the American Neurological Association a case of a large tumor involving the posterior portion of the third frontal convolution and the operculum of the left side. There was no disturbance of speech and but very little mental disturbance. The patient was left-handed.

DR. H. A. TOMLINSON, St. Peter, Minn., said that for some years he has been studying the conformation of the convolutions of the brain in demented persons; comparing the changes found in the convolutions with the evidence furnished by the life history of the individual. While he has found considerable variation between different brains, the changes follow a definite order, and these observations confirm the conclusions of Dr. Mills concerning the part of the brain involved in intellectual functioning. The atrophic changes that result in dimpling, usually begin in the frontal convolutions anterior to the precentral sulcus. As the dementia progresses the atrophy extends to the convolutions of the operculum, the first and second temporal convolutions, the angular gyrus, the upper part of the superior parietal lobule, and to the mesial border of the paracentral lobule. These secondary changes in the special sense areas, and the associated areas for muscular expression, are always involved in proportion to the degree of dementia. Dr. Tomlinson believes that the intellectual disturbance and dementia associated with the presence of tumor in the brain are the result of the interference with association between the different special sense areas, and that this faulty association is the main factor in producing the mental changes referred to by Dr. Knapp.

DR. CHARLES K. MILLS, Philadelphia, believes that in the strictly prefrontal portion of the cerebrum, and especially in the left hemisphere, are located the higher psychical functions. Not long since, in conjunction with Dr. Weisenburg, at the 1905 session of the Association, he reported a case of tumor of the frontal region which seemed to carry out these views. Of course such views must be based on a much larger study than that of neoplasms and other destructive lesions of the prefrontal lobe. The conclusions must be drawn from studies in anatomy, morphology and comparative physiology. There may be mental symptoms from lesions differently situated or from diffused lesions, and this is exactly what should be expected. The tumor, if it is one that produces pain and great cerebral irritation, will cause mental phenomena which are the results of that irritation, just as any sort of painful lesion in any part of the body will produce psychic symptoms. The irritation may excite or exhaust the patient or prevent him from fixing his attention, and symptoms of this sort are supposed to disprove the idea of special psychic regions of the brain. This, however, is not correct reasoning. Injury or disease of the posterior association area of the brain, the region of the brain concerned with concrete memories, will give mental symptoms of a special kind, but ones which can be separated from those caused by lesions in any other part of the brain. An injury to the higher region



will include the lower in its symptomatology, but the lower will not include the higher.

DR. W. C. KRAUSS, Buffalo, said that some British physicians contend that the occipital lobes are the center of the higher intellectual faculties, and, as Dr. Knapp claims the temporal lobe is also thought by many to be the proper seat of the higher faculties. The tendency among psychiatrists, however, has been to consider the prefrontal lobe not as the seat of the mind, but as the seat of the higher psychical functions. The mind must be considered as the sum of all the attributes and functions of the brain and the pathology of the mind must be that of general cortex disease. In paresis, the only mental disease in which there is definite pathology, the lesion is almost always found in the prefrontal lobes, and of late the examination of these patients has revealed the fact that the left prefrontal lobe is more involved than the right prefrontal lobe or any other area. The contiguity of the zones or centers is an important argument in these cases. Nature is very jealous about her powers and her different association tracts and centers. For instance, no one would expect to find the writing center next to the leg center, nor the speech center next to the arm center, except, perhaps, in those people who talk with their hands. There is a close contiguity of all these zones, however, and it seems that the intelligence zones are very close to the zones through which intelligence is made possible, speech and writing are located in the left frontal and prefrontal areas.

## SYMPOSIUM ON TUBERCULOSIS.

*Continued from page 304.*

### DISCUSSION

ON PAPERS BY DRS. HOLDEN, HAYNES, WHEATON, BEGGS  
AND KNOPF.

DR. CHARLES H. WILLIAMSON, Chicago, declared that to cure patients only to return them to their centers of infection is not of great value. The most important function of a sanatorium is to remove from our great cities the centers of infection. Whether compulsorily or not is another question. Having disposed of these advanced cases, and having rendered the city a proper place for citizens, attention may be directed to the early cases. In dispensary practice Dr. Williamson has seen patients scrape up a few hundred dollars, go away and come back and re-enter on a life in infected surroundings.

From a business standpoint, he said, the tuberculosis sanatorium is a paying investment. Those familiar with present conditions in Germany and some other parts of the world, and the operations therein of the great universal insurance companies of Europe (to whose particular health-conserving functions our municipalities and state correspond) know that it would be to our advantage, simply from the dollars-and-cents standpoint, to erect municipal or state sanatoria. Such enormous sums of money are wasted every year by the withdrawal of patients from their occupations through incapacity for work for a period of one, two or three years as would pay for the establishment of more than enough sanatoria for the cure of these patients.

It would seem almost like going back to ancient history to harp on the necessity for early diagnosis. A large number of men have grown up to whom the early diagnosis of tuberculosis shapes itself about as follows: They have a case of some obscure pulmonary trouble; they watch it for a little while and find that the patient has a rise of temperature; they are not familiar or are too busy to be familiar or to take the time with modern laboratory research, so they tell the patient to expectorate in a bottle, and then they send it off to some laboratory. Dr. Williams has seen fairly advanced cases of tuberculosis in which the sputum had been examined repeatedly by health boards or private laboratories and nothing had been found. That ended it; the patient was regarded as not being infected with tuberculosis by the physician in question. Every physician should make these examinations himself. He said

that it is one of his cardinal principles whenever possible to make examinations himself, with the care they deserve. In many cases a reasonably competent man ought to make a diagnosis long before the bacilli are present in the sputum. Dr. Williamson recently delivered a public address to the laity on the subject of the nostrum evil, and in looking up the matter he was astounded to find the number of people among the poorer classes who are taking the most unheard-of nostrums as cures for tuberculosis. It opened his eyes to the picture of the average Chicago tuberculous individual among the poorer classes wandering around and spending in some cases \$100 or \$200 in the course of two years on "patent" medicines; in other words, on nostrums which offer absolutely no hope of cure, and, indeed, make them worse, because they tide a man over the time when something could be done for him and he constantly grows worse. In regard to cremation, Dr. Williamson has met with a great deal of opposition from a religious standpoint, but he has always advocated cremation in his private practice, though with the poorest success. His words have been wasted.

DR. ALBERT ROBIN, Wilmington, Del., stated that the sanatorium for incipient cases is of advantage to the patient, but of very little advantage to the community, for the reason that the patient suffering from incipient tuberculosis is the least dangerous to the community. He is the one in whom the bacilli are surrounded and imprisoned, and in which, as a rule, they are very seldom eliminated by the sputum. The patients who constitute the greatest menace to the community, namely, the advanced cases, are the ones who are refused admission in all our present sanatoria. Great effort should be directed toward trying to treat those patients. Dr. Robin would isolate them. He does not mean compulsory isolation, but would give them a place where they could be treated and isolated, and he thinks that the hospital treatment of tuberculosis should receive greater attention than it is receiving to-day. Tent colonies can be arranged at almost any place with very little expense by small charitable institutions, churches and so on, at much less expense than many of the hospitals constantly being erected in the large cities. He furthermore believes that wherever applicable the tent treatment should be instituted in private practice. The open-air treatment is a medicine, as it were, and should be administered wherever possible, irrespective of whether there is a large sanatorium or not in the state or the city. Dr. Robin recently placed a private patient in a tent built in the back yard, properly arranged, with a great deal of benefit to the patient. The problem of notification is confronting Delaware, as every other commonwealth. There is always a danger of engendering phthisiophobia, and beyond that danger line there lies concealment of the disease. Make notification compulsory, make it so that every patient will be stamped and branded "tuberculosis," so that people will be afraid to come in contact with him, and immediately the way is paved for concealment of the disease. A concealed disease is the hardest to combat, and Dr. Robin thinks that we ought to be careful how we tackle tuberculosis, not only from a legislative standpoint, but also in speaking to the laity. He mentioned one instance in which the husband kept away from his wife for two years before she died, fearing to come in contact with her lest he be infected with tuberculosis. The wife was miserable. The children were kept away from her and a great deal was done which was cruel and inhuman, simply because of this phthisiophobia. Dr. Robin thinks it behooves physicians not to engender any such hysterical fear and at least to try to mitigate it. Concerning cremation, he said that the legal objection is a very weighty one. He is not ready to agree with Dr. Knopf that it is at all possible to make a chemical examination of every body before it is cremated. Sudden deaths occur frequently, and Dr. Robin hardly knows of a municipality rich enough to employ the experts involved in the chemical examination of remains. It would be so expensive that the cost even of large cemeteries would be insignificant in comparison. Dr. Robin doubts very much whether cemeteries are so dangerous as pictured by Dr. Knopf. If bodies are buried deeply in the ground the putrefying organisms, or the saprophytes, very soon destroy the pathogenic bacteria; it is almost impossible to isolate pathogenic organ-



isms from old cadavers. There is far greater danger from infection during the funeral or before the body is buried, when the friends come in contact with the body, and this danger would not be eliminated by cremation. Again, the sentiment of the survivors ought to be respected.

DR. THOMAS F. HARRINGTON, Lowell, Mass., said that the relative duties of state boards of health versus local boards of health opens up a very important question. Most of the state boards of health are simply advisory, whereas the local boards of health have almost unlimited executive powers. It seems to Dr. Harrington that the state board of health should be the supreme executive power in health matters in the various states, the local boards of health being part of the state board of health. The Massachusetts State Board of Health issues a monthly bulletin. In Massachusetts it is felt that this bulletin has been a great aid, especially in the antituberculosis crusade. There are many conditions which are simply local in this fight against consumption, and in Lowell a good deal of public comment, enthusiasm and encouragement have been created concerning the eradication of diseases by public talks and particularly by suggesting things and by attracting the attention of the laity. In these days of automobiles the question of dust becomes a very serious one, and in order to concentrate the attention of the public on the seriousness of the dangers from dust arising from automobiling, etc., it has been suggested in Lowell that the streets be sprinkled with an antiseptic solution, selecting for that purpose something which would have the effect of impressing itself on the minds of the laity, and permanganate of potash was suggested, not, of course, arguing that permanaganate of potash could be used on the public streets in a solution sufficiently strong to destroy the germs, if that is needed—the question in the minds of many whether any real infection ever occurs in this way is an open one—but because of the moral effect of sprinkling the streets with a colored solution. The great danger, Dr. Harrington thinks, is in going to the extreme of persecution. This wave of enthusiasm over the United States in the antituberculosis movement has been so great and overwhelming that it is carrying us a little too far, and we have not only created phthisiophobia, so-called, but we are apt, unconsciously, in our zeal and enthusiasm, to go to the bounds of persecution. Let us fight consumption, but let us have it distinctly understood that we are not in any way fighting the consumptive. It is the custom to differentiate, usually by the coughing, etc., the incipient cases and the advanced cases. There is a class of patients which has been overlooked—the so-called susceptible cases. Experience with patients in hospitals soon convinces us that patients with typhoid fever, rheumatism, pneumonia, pleurisy especially, and more especially those cases of surgical interference with great loss of blood, are allowed to go from general hospitals without an examination as to whether incipient phthisis has shown itself.

If we impress on these people that they are more susceptible on account of the loss of blood and the debilitating diseases under which they have recently passed, we would be doing a great good in preventing the spread of tuberculosis among a very susceptible class. Let us be sure, Dr. Harrington said, that our patients have been well fortified after the so-called general diseases before we send them out into quarters infected with tuberculosis. We are just beginning to have the public come up to that plane of education when they believe that consumption is an infectious disease; we are getting them to go to sanatoria and hospitals. If we talk about cremating the tuberculous we are going to defeat ourselves. We are going to create antagonism among the laity which will result in the hiding of the disease and in a great deal of lukewarmness in the support of movements we are trying to foster, and on that ground he hopes that the impression will not go out that physicians advocate the cremation of those dying from tuberculosis.

DR. C. C. BROWNING, Los Angeles, emphasized the fact that in the reporting of cases we may find the residence of the individuals affected and in that way we may know with whom they come in contact, and by systematic examination of those people, we may discover the disease before symptoms are sufficiently manifest to cause them to consult a physician; and

by changing their mode of life we may prevent the development of the disease.

Dr. Browning impresses on these patients that the care which they should give to themselves to secure their best interests will incidentally protect the public. He believes that many patients are deprived of the opportunity of permanent recovery by the constant reinfection of themselves by their own carelessness, and when this view is presented to them they have a very different interest than when they are taught and induced to take this care for the protection of the public only. Another thing: the patient who is rightly instructed and is careful is not a menace to others. It is the ignorant and the careless patient who is dangerous. The matter of early diagnosis, he said, is one it is not necessary to insist on, but to those who are meeting these cases infrequently it is certainly one that is very important. It is surprising how many patients come to the sections of country where tuberculous patients are sent with the idea that they are predisposed to tuberculosis—some bronchial trouble—when phthisis is really far advanced and they probably have a few weeks or at most a few months to live. Municipal legislation usually emanates from the municipal boards, or, in many places, from the local health officers. The local health officers are not always men who have given careful attention to tuberculosis. In California to-day there is a great wave of legislation of this kind sweeping over the state. The state sanitary convention was held in San Francisco on April 15. At that meeting a committee was appointed to draft a form of resolution which might be submitted to the several municipalities; of course, to be modified according to their various needs. The state society has a committee on tuberculosis, and that committee had recommended to the state society the adoption of a similar form of ordinance. This was done the day following. The morning following that came the disastrous earthquake and fire which ended the deliberations of the state medical society, but the matter is still in the hands of the committee and will be taken up at the next session.

DR. P. H. BAILHACHE, New York, in regard to the transportation of tuberculous patients said that all hospitals in the Public Health and Marine-Hospital Service have a ward, isolated from the other wards, in which tuberculous patients are housed until they are fit to be forwarded to the Marine Hospital Sanitarium at Fort Stanton, N. M. The precautions taken may be summed up as follows: Usually four are sent at a time, so that they will occupy seats and beds opposite each other. They are supplied with nickel-plated spit cups (similar to those commended by Dr. Knopf some time ago), and with disinfectants to disinfect the cups when it is necessary to clean them; they are also furnished with individual glasses for drinking purposes; they are supplied with sufficient money to purchase their rations *en route*; the cars in which they travel are disinfected on arrival at Chicago (where the change is made) and at Carrizozo, N. M. The men are given full instructions how to use their spit cups, to drink out of their own glasses and to be careful not to communicate with passengers in the train or to inform them where they are going and why. The reason for this is simply not to cause alarm in the train. The class of men that they have to deal with is sailors. The vessels they come from are, of course, more or less infected, and it is obligatory on the officers of the service to fumigate the vessel or portion of the vessel inhabited by these sailors before the vessel can leave port. Dr. Bailhache recommended other physicians sending patients west to any sanatorium to furnish them with spit cups and individual glasses, and such instructions as will be of service to the patient and thereby prevent infection of the car to any great extent.

DR. FREDERICK A. TUCKER, Noblesville, Ind., is of the opinion that the states and municipalities can do more in the control of tuberculosis by the complete registration of all cases coming within their jurisdiction, that they may provide for suitable disinfection of the premises and make it a duty on the municipality to teach the inhabitants and those infected how to care for themselves, so as not to give tuberculosis to others. In Indiana lecturers visit the different teachers' institutes



and farmers' institutes and give instruction on the home management of tuberculosis, and it is a part of the duty of the teachers in the public schools to teach personal hygiene to the pupils. In that way it is hoped to eliminate a great deal of tuberculosis. The Indiana State Board of Health has adopted rules regarding the sanitation of transportation companies, and the greatest and heartiest coöperation has been from the railroad companies themselves and from the sleeping-car companies. The rules adopted by the Indiana State Board of Health have been adopted by the Pullman company and the Pennsylvania system. Dr. Tucker is in favor of a state law or a municipal law against indiscriminate expectoration. He believes it is the greatest means of the spread of tuberculosis, and that it should be put as a duty, not only a legal but a moral duty, on every one. In the education of the public Dr. Tucker believes in the organization of local societies, and especially that the newspapers can do more for the medical profession and more for the subject of tuberculosis than can be accomplished in any other manner. He believes in states establishing tuberculosis sanatoria for, say, a community of 200,000 or 400,000, making it on the order of a health farm, which in a way could become self-supporting and not be a burden on the state.

DR. H. S. POMEROY, Boston, said that very close to the foundation of the prophylactic work that we hope to do in combating tuberculosis is some arrangement for the care of the sputa. He is satisfied that the general public is to-day more willing than able to be reasonable in this respect. Dr. Pomeroy said that we should provide cheap temporary sputum receptacles which can be burned. A number of these have been devised, but it seems to him that there should be at least one or two good forms of receptacles for use in the room and one or two good forms for use in the pocket, which, by being made, perhaps, by the million, could be offered at a merely nominal price, or given away by druggists to poor people, and these, being burned, could save an enormous amount of infection from getting among the people.

DR. LISTON H. MONTGOMERY, Chicago, said that at times the sentiment is in one direction and then the pendulum swings in another. He said that if in the near future the Congress of the United States should establish a department of health, with a physician as the cabinet secretary, not only tuberculosis but insanity, venereal and other infectious and contagious diseases would be greatly lessened and the welfare of the people would be materially enhanced. The papers on tuberculosis and other papers which have been presented year after year before this section reach mainly the medical profession, whereas if literature were sent out from an official head of the government direct to the people regarding these matters by secretaries of state boards of health, it is not impossible that the great dark plague (syphilis) and perhaps the various other types of venereal diseases, and tuberculosis as well, within the next century will be a thing of the past and will be exterminated from this, the fairest land on which the sun has ever shone.

DR. J. T. SEARCY, Tuscaloosa, Ala., said that no allusion has been made to tuberculosis among the negroes. He believes that physicians of the South have a more serious problem as regards general sanitation and public health than those in the north. If there is any one class of people, any one race anywhere susceptible to tuberculosis, it is the negro. Dr. Searcy is at the head of two large state institutions, in which are about 1,200 whites and about 600 negroes. It has almost reached the point that if bacilli are found in the sputum of a negro he is at once checked off as doomed. A number of whites who have been in the institution twenty-five years and who are known to be tuberculous are still living. The whites respond to treatment and get well, and the deadroom shows the healed lesions of tuberculosis in their lungs, whereas in the negro in many instances three or four months at best is as long as one is expected to live if he has tuberculosis. The mortality among them from tuberculosis is nearly twice as great as among the whites. How to correct this is one of the most difficult problems. To reach them with education, to bring them up to the point of appreciating the danger of the sputum and of infection to others is a serious question. In the

insane hospital with which Dr. Searcy is connected there are nearly six times as many whites as there were in 1870; about fourteen times as many negroes. Tuberculosis at large in the state, according to statistics, is increasing even at a greater rate than insanity. It is now about twice as great among the negroes as among the whites. Almost every organ in the body is affected. Dr. Searcy said that it will be a difficult question also to introduce the cremation of tuberculous bodies as a general measure among Southern people—among the negroes particularly.

DR. G. WALTER HOLDEN, Denver, said that he can not agree with the statement that consumptives should be branded. He agrees with Dr. Harrington in his statement that we are fighting consumption and not the consumptive. This is a work that must be controlled by municipal and state organizations, especially by city organizations. This disease is a disease of cities, and until we wipe out their plague spots we shall have constant sources of infection. He emphasized the necessity of the American Medical Association taking a more decided stand in the fight against tuberculosis. There is no tuberculosis section either in the American Medical Association or THE JOURNAL. Why should not such a section be instituted, either under the Section of Hygiene and Sanitary Science, that of Medicine, or independent of any other section? The circulation of THE JOURNAL of the American Medical Association is over 45,000; with a tuberculosis section it would be possible to carry weekly information as to what is being done in the crusade against this disease to physicians in all parts of the United States.

DR. CLARENCE L. WHEATON, Chicago, believes that we must establish state sanatoria and bring the poor under control, providing proper homes for them, and in the incipient cases giving the patients an opportunity to recover, allowing them to return to the commonwealth in proper physical condition to resume labor. Registration is an excellent thing, and is to be advised in all municipalities, in all communities. In regard to cremation he thinks that we all agree with Dr. Knopf, realizing, however, the many difficulties that must enter into the problem mainly through sentiment. He said that in his travels through the Southwest he observed that the railroads made practically no provision for the tuberculous; at some of the stations where it was necessary to change cars there was not even an invalid chair to transport the patient from the train to the waiting-room. Before the Illinois State Medical Society a year ago Dr. Wheaton advocated that the profession of the state, through the medium of the legislature, take some action in this matter and appeal to the railroads running out of Chicago to make some provisions for these patients. As yet no action has been taken.

DR. S. A. KNOPF, New York, said that as a New Yorker he knows what compulsory registration means. It has been found that a command to the physician to report does not work, but by requesting him to report cases the health department usually gets what it wants. It is left to the discretion of the physician to answer the following questions printed on the notification blanks: "Do you or do you not wish an inspector to visit your patient?" If he says "No" the patient is not interfered with. Regarding the spitting paragraphs, Dr. Knopf said that he has been instrumental in putting up some himself, but as he grows older he finds the command, "Don't spit, it costs you \$100 or \$500," is not nearly so effective as putting a spittoon where it is needed and putting over it, "Spit here." The necessity of preventing tuberculosis during school life is essential; but let us not make an outcast of the pupil or teacher. They should be taken care of in school sanatoria. Tuberculous school teachers in the earlier stages, he said, could be advantageously employed in such sanatoria in the performance of their duties.

Dr. Knopf said that he believes in special cars for the tuberculous when possible, but he also believes that we should not become phthisiophobiacs. Not infrequently physicians find patients recovering who have had large-sized cavities. It is exceedingly difficult at times to diagnose a small cavity. He agreed that it is the advanced ease of tuberculosis which is dangerous. Such a patient is dangerous within the radius of the four walls where he is confined, but Dr. Knopf believes



that a patient in the early stages, up and about, spitting here and there and everywhere, is the one spreading tuberculosis. The committee for the prevention of tuberculosis in New York has issued circulars to all physicians in New York, begging them not to send any patient of moderate means to distant countries or states. They emphasize the possibility of home treatment and at the same time do not go to the extreme of stating that there is nothing in climate.

There is a great deal of truth in the inability of modern mothers to raise proper children. There are too many bottle-fed babies and not enough breast-fed babies. Children sometimes are badly reared through ignorance. A child born with a tuberculous diathesis is a natural-born bad eater, and discipline alone can overcome his tendency by teaching him to eat properly and at regular intervals. Dr. Knopf says that early diagnosis is not only often neglected, but too much reliance is placed on the discovery of the bacillus in the sputum. If the bacilli are in the sputum there is already disintegration of pulmonary tissue and the patient is no longer an incipient case. Any one can make a diagnosis of tuberculosis by sending the sputum to the health department. The important thing is the physical diagnosis before the appearance of the bacilli. Phthisiophobia could be overcome by physicians if instead of calling tuberculosis a dangerous contagious disease, they call it communicable. There is a difference between "communicable" and "contagious." If we call a disease "communicable" it conveys the idea that we have to fight the carrier, and the carrier is the sputum, and all that we have to tell a patient to do away with the danger of infection is: "Be careful when you cough; hold your hands before your mouth when you cough; never expectorate except in a proper receptacle." The simpler the directions the more readily are they obeyed. Dr. Knopf was enthusiastic in the early days and gave every one a pocketflask, until one day a patient gave it back and said: "Use one yourself," and he did. In a street car he imitated the consumptive cough, took out his flask and deposited some saliva therein. Everybody got out or moved away from him, because they were scared by this pocketflask. He now tells his patients to cut up a lot of pocket squares; put clean ones in one pocket and the soiled ones in the other, and have the pocket lined with oilcloth. Dr. Knopf said that for fifteen years he has been a strong advocate of sanatoria for incipient and early cases, and general hospitals for the advanced, but that the home treatment must not be forgotten. We have, perhaps, one bed in a sanatorium here in the United States to a thousand consumptives. The 999 must be treated, too, and must be treated at home and can be treated at home if necessary. He advised a room with good exposure to light and sun, giving the patient plenty of good, nutritious food, installing, if possible, a window tent and arranging for proper hygiene; in short, giving the patient as nearly as possible at home the treatment which he would receive in a sanatorium. The solution of the tuberculosis problem rests on a great many factors. So long as we allow the tenement-house population in cities, towns and villages to live as unhygienically as now, so long as we allow child labor and the underfeeding of the poor, no matter how many sanatoria we may have we will only create every day a new lot of consumptives to be sent to sanatoria. We must begin at the beginning: proper housing, proper feeding and better education.

In defense of cremation he said that he did not make the statement that every individual dying should be examined and a costly chemical analysis made. He said that in the case of every one who wishes to be cremated or shall be cremated an analysis should be made unless there is absolute certainty as to the cause of death. Cremation is very much cheaper than burial; it costs only \$25. For the poor this means a great deal. Dr. Knopf declared that he is pleading mainly to do away with the dangers arising from infectious diseases far more dangerous than tuberculosis. Tuberculosis is a social as well as a medical disease, and in discussing it we must look at all sides. Only by combining all our efforts as physicians and as philanthropists, conjoined with wise government, the thorough training of physicians and the coöperation of an intelligent people shall we be able to master the great white plague.

## SUPERSTITION IN TERATOLOGY.

(Continued from page 311.)

### DISCUSSION.

DR. D. S. HANSON, Cleveland, Ohio, said his personal experience led him to believe that attributing deformities to impressions made on the mother is usually the result of an after-thought. In cases in which he has had the greatest reason to suspect such deformities they have always failed to materialize. One instance was that of a woman six weeks pregnant, who had gone to the dime museum during the time the "dog-faced man" was on exhibition. The man came up behind her and "barked" over her shoulder. She was greatly wrought up over the fact and fainted, yet a normal child was delivered. He believed the experience of nearly all medical men coincides with this opinion.

DR. GEORGE N. ACKER, Washington, D. C., referred to a case under his observation in which a father had been born without an arm, and the mother feared that the child would be born with only one arm. As soon as the child was born she asked whether it was born with two arms. Were there any truth in such statements concerning maternal impressions, he thought they would be borne out in a case like this. In this case and other cases he has gone to the text-books to prove to the patients that such things are improbable, but as Dr. Shelly said, the text-books create the impression that such things can occur.

DR. J. B. LEARNED, Northampton, Mass., said that evidence in this matter is like evidence in any other pathologic condition. Authors of text-books are convinced, doubtless, of the correctness of their position. Dr. Shelly is likewise convinced of the soundness of his own opinion. These are human measurements both in text-books and in papers read before the Association. He believes that it is just as possible for a mother with certain mental conditions, suddenly acquired, to leave the impress on the fetus as it is that a child born from a highly intellectual mother and father should possess none of the traits of its parents. It is, however, absolutely beyond human reach to fathom all these mysterious phenomena of birth.

DR. JOHN LOVETT MORSE, Boston, thought that the last speaker was confused in that he had included those conditions and tendencies which may be transmitted by the sperm and the ovum with others which can not be transmitted after the fetus is begun.

DR. L. F. BISHOP, New York City, said that although he was not entirely convinced, still it may be true that there are no transmissions of anatomic defects from the maternal impressions on the offspring, and that the incidents recited are merely coincidence. Nevertheless he felt very sure that children do inherit from a mother a nervous impress from nervous conditions existing during pregnancy. He has charge of the children's department for nervous diseases in a large clinic and sees many hundreds of defective children. The histories obtained from their mothers often show that while they are carrying these defective children they undergo some particular form of hardship, the husband being imprisoned, or drunken and abusive, or something of the kind. From a great many such cases his impression is that the nervous condition of the mother during pregnancy has an influence on the nervous and mental makeup of the child. Whether this is ever specific in influencing the physical characteristics of the child is a little finer matter.

DR. B. B. SIMMS, Talladega, Ala., thought that a child might take on some acquired habit or disposition of the parent. For instance, a couple whose habits are innately good will naturally have children who will likewise be good; but, suppose after having two or three children the parents should acquire bad habits. Of children born subsequent to this and showing bad habits there would be no hesitation in saying they had taken the habits from the parents. The nervous state of a mother while carrying a fetus may be described as an acquired state. In certain cases he did not see why morbid impressions should not be transmitted to the fetus.

DR. JOHN LOVETT MORSE, Boston, referring to what Dr.



Bishop said, said there can be no doubt that the mother's general condition affects the general condition and development of the fetus. It seemed to him reasonable to suppose that if the father was drunk and committed to prison during the mother's pregnancy, he had probably been drunk before, and that the tendency was transmitted through the sperm and not through the mother.

DR. E. T. SHELLY, Atchison, Kan., did not know how this theory happens to be in American text-books. One of the authors whom he quoted has a signed article in Appleton's New Universal Encyclopedia and Atlas, in which he repudiates absolutely everything he said in this connection in his text-book. In regard to the contention that the mental condition of the mother may leave its impress on the child, Dr. Shelly said that in a general way may be true. The nutritional disturbance resulting from violent and prolonged nervous annoyances might be reflected in the fetus, but as Dr. Morse explained, much of such reflected ill to the fetus is due to conditions existing before impregnation, and is, therefore, hereditary, and might just as easily be paternal as maternal in origin. But fetal disturbances may occur in a general way after impregnation, simply because of nutritional changes in the blood of the mother. Even pregnancy may be interrupted in this way. Such fetal disturbance is, however, a vastly different thing from the transmission of a certain effect to a certain portion of the body of the child and the production of a specific fetal deformity. In presenting this paper he had tried to help rid the profession and its obstetric text-books of this preposterous notion which has absolutely no scientific basis, but which is simply handed down and is copied from one text-book into another. The prevalence of this superstition is not only a reflection on modern medicine, but the source of so much mental distress to so many mothers that it surely merits most earnest attention.

## SYMPOSIUM ON ROENTGEN-RAY THERAPY.

(Continued from page 318.)

### DISCUSSION

ON PAPERS BY DRS. LEONARD, BOGGS AND WILLIAMS.

### DISCUSSION.

DR. G. C. JOHNSTON, Pittsburg, Pa., stated that these papers contained nothing new. The perusal of literature gives the impression that there is need for what these papers have been giving, that is, the elementary principles. Many doctors appear to think that the only thing necessary is the possession of an apparatus and a patient. That, however, is not conducive to result in radiotherapy. Still, this belief apparently is responsible for many of the papers that appear from week to week in the medical journals. For instance, one man treats six cases of carcinoma of the breast, with six failures. Therefore, he considers the *x*-ray a failure. He treats superficial carcinoma and deep scirrhus, with the technic distinctly stated for lupus vulgaris or acne, and such reports do not give a good impression. It is necessary to keep reiterating until men discover that the possession of a little knowledge is a dangerous thing.

DR. PERCY BROWN, Boston, said that the first thing needed is to get the matter of dosage down to a fine point. The day of guess work is passed. The second point to be considered is the question of limiting the work, so that the best results can be obtained. The true *x*-ray worker is the one who is a dermatologist as well as a physicist.

DR. J. H. STUART, Minneapolis, made a brief statement in regard to the treatment of acne by the high frequency current. His experience, covering a period of over three years during which were treated a number of cases ranging in variety from the simple to some of the very aggravated and obstinate forms, encourages him to entertain the belief that all the common forms, at least, of this disease may be cured by this modality.

DR. C. A. DENNETT, Arlington, Mass., said that only a few years ago there was a great interest shown in the *x*-ray and now we hear almost less of the *x*-ray than we do of anything

else. He thinks that this is due to so many people having tried it, applying it with very little knowledge, getting poor results, and then giving it up. Some of the mistakes made at first were in the technic. He thinks the static machine with the soft tube is the thing to use in acne. In eczema, it simply melts away; old chronic cases which had everything done for them will be cured. In diseases of bones and joints even the surgeons themselves agree that the *x*-ray is of great aid and value. In the diagnosis of early cases of tuberculosis it is being made use of a great deal.

DR. WILLIAM J. MORTON, New York City, said that his opinion of the present status of the *x*-ray is that it is at a period of partial therapeutic eclipse by reason of being abused by ignorant workers. Many doctors think that all they have to do is to buy a machine and administer the *x*-ray to get cures. As to the particular radiation that comes out of a tube, he believes in the therapy of a high vacuum tube, 7 to 12 inches alternating spark, because we have to deal not with deep lesions only, but intermediate lesions, as well as superficial. A tube that gives no yellow color whatever is the safest; it obliterates the chance of injury to the patient and gives the best therapeutic effect. He has never seen a case of eczema that has not been promptly benefited by *x*-ray treatment. He has also found the radiation of great value in chronic tonsillitis and in chronic lesions referred to the appendiceal region. In regard to malignancy, the *x*-ray is the first agent outside of mechanical means which has produced an actual effect to remove cancer. The *x*-ray therapist has no differences with the surgeon. The *x*-ray and surgery must combine their efforts.

DR. M. K. KASSABIAN, Philadelphia, reported the effect of the rays on the site of a former sarcoma, removed two months before *x*-ray treatment was begun. He irradiated the cicatrix through an opening in a lead sheet, the size of a silver dollar. The part exposed was retarded in growth and did not recur. The part covered with the lead sheet later developed a sarcomatous growth. This proves the retarding action of the *x*-rays. When giving *x*-ray treatment, he strongly advises that the operator should not expose himself to the direct action of the agent. The method he adopts is as follows: He steps into an adjoining room and observes the treatment and fluorescence of the tube by the reflection cast into a mirror, which is set at an angle in the corner of the laboratory. When he wishes to cease the seance, he has a clock with an automatic switch arrangement. When, for instance, five minutes have elapsed, the switch cuts off the current and a bell rings.

DR. K. DUNHAM, Cincinnati, O., said that the most important part of these papers is the cry against ignorance. The men who have made these reports in no way over-stated the facts; they have held much in reserve. They have reported what they know. They have reported not what they have seen one minute or seen a few cases of, but they have reported cases they know so well, so thoroughly backed by the physicians who sent them that no report of one of these cases could be better founded on scientific observations and fact. Not one of these men, he said, would dare come to the American Medical Association and say he cured appendicitis. Not because it might not be true, but because they are so imbued with the necessity of telling only those truths which have thoroughly proven what they can show proof for.

DR. M. F. WHEATLAND, Newport, R. I., said in regard to the treatment of tubercular adenitis, that considering the nature of the surgical treatment proposed, requiring the removal of all the lymphatic glands of the neck with the possibility of further infection of the patient, and also the unsightly scar and deformity which often remains, and comparing them with the results produced by the *x*-ray, physicians are led to strongly favor the latter method. He has treated seven patients with the *x*-ray with excellent results. One of them had had several glands eurented many times without success, the cavities invariably filling up with granulation tissues. This case (the worst of all) responded more promptly to treatment than the others. He had nothing to offer his patients suffering with acne until he began to use the *x*-ray; not only pustular acne, but the most intractable of all forms, acne rosacea, rapidly yields to this agent with the ordinary technic.



As to Dr. Morton's allusion to appendicitis, it might be interesting to relate the case of Dr. S——, a retired surgeon, who requested him (Dr. Wheatland) to continue the x-ray treatment he had been receiving in New York at the hands of Dr. Meyer. He said that it was the opinion of both Dr. Meyer and Dr. W. T. Bull that he was suffering from a chronic appendicitis, with adhesion of the intestines which produced pain when fermentation was present. On account of his age they would not suggest an operation, but advised a continuation of the x-ray treatment which he had found gave great relief to his pain, and to aid him in obtaining more regular movements of the bowels. After a few weeks he discontinued treatment and in time his pain returned with greater severity. Dr. Bull subsequently performed an operation and removed a cancerous growth from the intestines.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

NEW YORK State Boards of Medical Examiners, Albany, January 29-February 1. Chief of Examining Division, Charles F. Wheelock, Albany.

NEVADA State Board of Medical Examiners, Carson City, February 4. Secretary, Dr. S. L. Leg, Carson City.

KANSAS State Board of Medical Registration and Examination, Topeka, February 12. Secretary, Dr. F. P. Hatfield, Grenola.

NEBRASKA State Board of Health, State House, Lincoln, February 13-14. Secretary, Dr. George H. Brash, Beatrice.

Delaware December Report.—Dr. J. H. Wilson, secretary of the Board of Medical Examiners of Delaware, reports the written examination held at Dover, Dec. 11-13, 1906. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. One candidate, a graduate of the University of Maryland in 1905, was registered through reciprocity.

The following colleges were represented:

College.	PASSED.	Year	Per
		Grad.	Cent.
Baltimore Med. Coll.....		(1904)	78.5
Maryland Med. Coll.....		(1905)	82.
University of Pennsylvania.....		(1905) 86.6; (1906) 84.5,	87.7
Temple College .....		(1906)	83.7

The following questions were asked:

#### ANATOMY.

1. The first vertebra is how attached to the skull? 2. Give shape, size, formation and articulation of first and second vertebra. 3. Give shape, approximate size, origin and insertion of trapezius muscles. 4. Describe choroid plexus and situation of fourth ventricle of the brain. 5. Give origin and distribution of superior maxillary nerve. 6. Explain origin and distribution of brachial artery. 7. Give branches of internal carotid artery and their distribution. 8. Give structure, situation and size of gall bladder. 9. Give structure, formation, situation and size of the gastro-hepatic omentum. 10. Give location, shape, size, structure and blood supply of the diaphragm.

#### PHYSIOLOGY.

1. What is the function of the sudoriparous or sweat glands, where is the dominating sweat center located, and how is this excited to action? 2. Name the functions respectively of the anterior and the posterior roots of the spinal nerves. 3. Give functions of the liver and name the blood vessels entering it. 4. In what way does the blood circulate through the heart? 5. What are the mechanical uses of saliva? 6. What gases have we in the stomach? 7. How do arteries differ from veins? 8. Are the movements of the lungs passive or active? 9. What changes are produced in the atmospheric air by respiration? 10. How does the function of an afferent or centripetal nerve differ from that of an efferent or centrifugal one?

#### SURGERY.

1. In ligating the superficial femoral artery at its lower third, what structures are severed and what are the anatomical relations? 2. Describe traumatic inflammation. 3. How and why are fever and delirium induced by physical injuries? 4. Bone fractures are how classified? Diagnose and treat a typical fracture of each variety. 5. Dislocations are how classified? Diagnose and treat a typical case of each variety. 6. Explain reasons for preferring any special operation for amputation of both forearm and leg. 7. Explain method of procedure in operating for relief of fistula in ano. 8. In operating for relief of urinary calculi, what method would you use and why? 9. Differentiate hydrocele and chronic orchitis. 10. Deep seated pus cavities are how treated?

#### PATHOLOGY.

1. Give morbid anatomy of cerebral hemorrhage and name the common cause when it appears in early life. 2. How does the pathology of locomotor ataxia differ from that of ataxic paraplegia? 3. Define dementia and give its pathology. 4. State path-

ology of tinea circinata. 5. Define indicanturia, name its chief sources and the pathological conditions in which it is most usually found. 6. What is the pathologic anatomy of phlebitis? 7. Name morbid anatomy of Hodgkins' disease. 8. Give pathology of biliary calculi. 9. State difference in pathology of catarrhal, ulcerative and intestinal appendicitis. 10. How does tachycardia differ from bradycardia, and in what pathologic conditions are they found respectively?

#### PRACTICE OF MEDICINE.

1. Mention the conditions that contraindicate general anesthesia. 2. Define arteriosclerosis. Give its etiology and state the age at which it is most liable to occur. 3. What are the symptoms and treatment of acute laryngitis in children? 4. Mention five possible complications of typhoid fever and your treatment of each. 5. Give symptoms and treatment of acute lobar pneumonia. 6. What is meant by immunity? In what ways may immunity be acquired? 7. Define neurasthenia. Give symptoms and treatment. 8. Differentiate tubercular arthritis from rheumatic arthritis. 9. State the symptoms and outline the treatment of (a) opium poisoning, (b) strychnin poisoning. 10. Give the symptoms and treatment of hydrophobia.

#### OBSTETRICS.

1. Name the internal female organs of generation and state the functions of each. 2. How would you diagnose pregnancy in the early months, before quickening. 3. Mention conditions that may require induction of premature labor. How would you produce the same? 4. What is ectopic gestation? Name its varieties and state how its diagnoses may be established. 5. How would you proceed if called to a case of neglected shoulder presentation? 6. Give causes, pathology and treatment of ophthalmia neonatorum. What is the great danger? 7. State the causes and give the management of postpartum hemorrhage. 8. State causes and treatment of mammary abscess. 9. Name the important diameters and measurements of (a) the female pelvis, (b) the fetal head. 10. Give the positive and doubtful signs of pregnancy, beginning with those you consider of the most importance.

#### MATERIA MEDICA.

1. Give the preparations and classifications of phenacetin, somnal and hydrogen dioxid. 2. What are the principal anthelmintics, mode of action? 3. Name twelve officinal alkaloids. 4. What are the officinal extracts, how obtained? 5. What is chrysarobin, where found and how applied? 6. Name the alkaloids of veratrum viride. 7. What are the preparations of gualacum, give physiologic action? 8. Name six motor excitants and six motor depressants. 9. Name the preparations of iron, their doses and incompatibles. 10. What is picrotoxin, what combinatory action does it represent?

#### THERAPEUTICS.

1. What analogy exists between the nutrition of health, the disturbances of disease and the action of remedies? 2. Give the origin of benzoin and menthol, with their therapeutic applications. 3. In uremic poisoning what remedies are required? 4. What is the physiologic antagonism between belladonna and morphia? 5. What are the principal preparations used as antiperiodics? 6. Of what therapeutic value is amyl nitrate? 7. What respiratory stimulants exalt the functions of the respiratory center of the medulla? 8. For what is stramonium used, what are its physiologic actions? 9. Give the preparations and doses of the mineral acids with their therapeutic effects. 10. Give the preparations of bismuth, how administered, and indications for use.

#### HYGIENE.

1. Will the destruction of offensive odors remove the conditions injurious to health? 2. In what way may the application of fertilizers affect the public health, and how can it be avoided. 3. What are the nitrogenous constituents of food, from whence derived and what are their functions? 4. What is the period and source of infection and the necessary time of quarantine, in (a) smallpox, (b) scarlet fever, (c) diphtheria, and what do you understand by quarantine? 5. How would you manage an outbreak of contagion among school children? Answer in detail. 6. Describe a practical method for the disinfection of clothing, bedding, etc. 7. How would you provide for an infant who never has the breast available? Name food you would prefer, quantity you would advise, and frequency of feeding, according to age. 8. What general preventive measures would you recommend to stay the increase of tuberculosis? 9. Give the advantages or disadvantages of a state sanatorium for the treatment of tuberculosis. How should it be constructed and managed? 10. What in detail is the duty of physicians in attendance on infectious disease, to prevent its spread?

#### CHEMISTRY.

1. What is analysis, and synthesis? 2. What is the difference between physical and chemical action? 3. What are the essential ingredients in air? Is it a mixture or a chemical compound? Give proof. 4. What are the chemical properties of phosphorus? 5. What is Labarraque's solution and on what does its disinfectant value depend? 6. What are the physical and chemical properties of ammonia, and how does it differ from other alkalies? 7. Give method of disinfection in detail—1st, with sulphur; 2nd, with formaldehyd. 8. Which is the more efficient and why? What are the best tests for albumin and sugar in urine? 9. What is eucalyptol, and what are its uses in medical practice?

Yale Medical School Advances Requirements.—Beginning with the session for 1909-10 the requirement for admission to Yale Medical School will be two years of university work, which must include courses in inorganic chemistry, physics and general biology. Arrangements will be made, whereby, through a proper choice of subjects, the student may secure both the B.A. and M.D. degrees in six years.

Wyoming December Report.—At Cheyenne, Dec. 5-7, 1907, only one candidate was examined, a graduate of the Denver and Gross College of Medicine in 1906. He passed with a grade of 84.5.



## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

### Hemoptysis.

Abrams, in a communication to the *Lancet*, discusses the use of amyl nitrite in this condition. He states that his experience with the drug, extending over a period of about five years, justifies him in concluding that it is the most efficient and expeditious remedy we possess in the treatment of hemoptysis. In a number of instances it failed to influence the hemorrhage, yet for uniformity of action it is without a rival in this condition. Unless the drug proves efficacious after the first administration subsequent inhalations do no good. Unless enough of the drug is inhaled to induce the physiologic action no therapeutic results should be expected. The author states that the action of the remedy is best determined by a study of the nasal mucosa as a center for the discharge of reflexes. It is his belief that the action of amyl nitrite in hemoptysis is due essentially to an irritation of the bronchoconstrictor fibers of the vagus which, acting on the bronchial musculature, causes the latter to express the blood from the lungs as water is squeezed from a sponge. The blood-pressure factor in explanation of the action of the drug he does not believe adequate.

Brown, in the *Amer. Jour. of Med. Sci.*, discusses this subject and shows that all drugs which cause a contraction of the blood vessels, as ergot, adrenalin, etc., if acting on the pulmonary vessels, would be directly injurious, as they would cause a contraction of the healthy vessel, while the diseased vessels, incapable of varying in diameter, would be subjected to increased instead of lessened tension. Recent experimental work would seem to indicate that lessened tension from dilatation of the pulmonary vessels does not take place. The nitrites have recently been brought into use, and their action consists chiefly in producing a dilatation of the peripheral vessels, mainly of the head and neck, and of the vessels of the splanchnic area, causing a marked fall in the blood pressure, while the heart action is accelerated. The different members of this group vary in regard to the rapidity, the intensity and the duration of their action. Amyl nitrite acts instantaneously, but the action lasts only for about five minutes. Nitroglycerin acts more quickly and more intensely, but for a slightly shorter period than sodium nitrite. In both the action is well marked in fifteen minutes and lasts for from one to two hours. It is dangerous to lower the blood pressure too much and dangerous not to lower it enough. To overcome these difficulties Brown now takes the patient's blood pressure every two hours, and orders the doses accordingly, aiming to keep the tension within certain limits. He uses amyl nitrite at once, and if the patient is nervous administers morphin ( $\frac{1}{8}$  grain) hypodermically, and gives with it nitroglycerin, or, on account of its greater stability and fewer untoward symptoms, sodium nitrite; in these cases the sodium nitrite or nitroglycerin should be given hypodermically, immediately, and repeated as often as necessary. A careful nurse may be quickly trained to take accurate readings of the sphygmomanometer, and the cuff may be left on the arm indefinitely, if preferred. To determine at which level to keep the blood pressure, Brown takes it several times at short intervals and attempts to keep it usually between 100 and 115 or 120 mm. of mercury. It is comparatively easy to do this with the aid of sodium nitrite.

Hemoptysis frequently occurs in the early morning hours, and the patient awakens spitting blood. Howell's theory of sleep offers a striking explanation of this phenomenon. This observer holds that sleep is due to the fatigue of the vasoconstrictor center (or centers) and he has shown that a dilatation of the peripheral vessel occurs during sleep. In the early morning hours, when the vasoconstrictor center is regaining its lost tone, there are concomitant variations in the pulmonary blood pressure. Sudden variations in pressure are, in all probability, more dangerous than a steady high pressure. To prevent these variations as much as possible and to equalize the

blood pressure, Brown has recently given morphin and sodium nitrite hypodermically between midnight and 2 a. m., waking the patient if necessary.

To recapitulate briefly, he suggests that the blood pressure be frequently observed, that morphin be used when necessary to quiet the patient and so to equalize the blood pressure, that sodium nitrite be administered to reduce, when necessary, the blood pressure, and that in case of a sudden hemoptysis amyl nitrite be administered at once when possible to produce a marked fall in the blood pressure and so to aid in a temporary cessation, at least, of the hemoptysis.

Ringer recommends the following for this condition:

℞. Fluidextractum ergotæ .....f3i 30  
Olei gaultheriæ.....m. iv 24

M. Sig.: One teaspoonful every hour at first; then every four to six hours.

Pepper recommends the following for the same condition:

℞. Acidi gallici .....f3ii 8  
Acidi sulphurici aromatici.....f3i 4  
Glycerinæ .....f3i 30  
Aquæ dest. q. s. ad.....f3vi 180

M. Sig.: One teaspoonful at a dose; repeat frequently.

The *Canada Medical Record* recommends the following:

℞. Tinct. digitalis .....f3iss 6  
Olei terebinth. ....f3iii 12  
Olei menth. pip.....m. xx 1/20  
Acidi sulphurici aromatici.....f3iii 12  
Spt. vini rect.....f3xvi 60

M. Sig.: From 40 to 60 drops, well mixed with sugar, to which one or more tablespoonfuls of water may be added, every two, three or four hours, according to the urgency of hemorrhage.

Skoda has recommended:

℞. Pulv. aluminis .....3i 4  
Sacchari .....3ss 2  
Pulv. ipecac. comp.....gr. xx 1/20

M. et ft. chartulæ No. vi. Sig.: One powder every two hours.

### Influenza.

In the very early stages of this affection anodyne and antipyretic remedies are indicated. The following will be found useful during the first hours of the attack:

℞. Aspirin (acetyl-salicylic acid).....3i 4

Mix and divide into six powders. One powder every three hours until effect is produced. Each powder should be followed by a glass of water, preferably hot. Or:

℞. Aspirin (acetyl-salicylic acid).....3i 4  
Sodium bicarbonate .....3iss 6

Mix and divide into six powders. One powder every two hours until effect is obtained. These powders should also be followed by glass of water. Or:

℞. Acetphenetidin .....gr. xx 1/20  
Pulv. opii et ipecac.....gr. x 60

M. et ft. chartulæ No. ii. Sig.: One powder at once and repeat one powder in two hours if necessary.

Yeo recommends the following prescription to be given later in the attack for the hard and distressing cough which is so often one of the most troublesome and lingering symptoms:

℞. Apomorphinæ hydrochloridi.....gr. i 06  
Morphinæ hydrochloridi.....gr. 3/4 045  
Acidi hydrochloridi dil.....f3ss 2  
Syrupi .....f3iv 15  
Aquæ dest. q. s. ad.....f3iv 120

M. Sig.: One or two teaspoonfuls for a dose.

### Diabetes.

Croftan, in the *Clinical Review*, recommends the following, to be used as a mouth wash in this condition:

℞. Betanaphtholis .....gr. v 30  
Sodii boratis .....3vi 24  
Aquæ menth. pip.....f3vi 180  
Aquæ dest. ....Oi 480

M. Sig.: To be used as a mouth wash.

If the gums are painful and bleeding, this is useful:

℞. Tinct. opii .....f3vi 24  
Potass. chloratis  
Sodii boratis, āā.....3iiss 10  
Decocti althææ radicis.....Oi 480

M. Sig.: To be applied to gums.



## Medicolegal

### Exhibition of Injured Member as Affecting Record.

The Supreme Court of Indiana says, in *Pittsburg, Cincinnati, Chicago & St. Louis Railway Company vs. Lightheiser*, a personal injury case brought by the latter party, that, in the course of his testimony, and in explaining the character of his injury, the plaintiff exhibited his injured foot, and testified that it was stiff at the ankle joint, and by movements of the foot showed the effects of the injury on his ability to use it. The defendant railway company insisted that it was error to permit this to be done, because it was thereby deprived of its ability to present a complete record. But the court holds that the company was not deprived of any substantial right by the action of the lower court, and the record was complete. This court has previously held that such an exhibition of the injured limb was not error.

### County, Not Patients, to Pay for Detention Hospital.

The Supreme Court of Iowa says, in the case of *L. H. Kurtz Co. vs. Polk County*, that the city council of Des Moines, acting as a board of health, undertook to provide and furnish a detention hospital in which to seclude and care for such persons in said city as might be suffering with smallpox or other contagious diseases, and, in the performance of said work, ordered from the plaintiff company materials and repairs suitable to be used therein. The board of supervisors, however, refused to allow the company's claim as a proper charge against the county. It was argued that the intention of the statute was to assess the cost of erecting, furnishing and repairing pest houses and detention hospitals to the persons who are so unfortunate as to require treatment therein, and that no liability was intended to be imposed on the county.

If such intention was clearly and explicitly expressed, and the provision were to be treated as a valid exercise of the police power of the state, the court should, of course, it says, give it effect, but, in the absence of such clear expression, the court thinks it should hesitate long before approving a construction involving the unreasonable and oppressive results which would follow an adoption of the theory of the county. To say that the board of health may buy or erect a detention hospital, supply it with a heating plant, and all the furniture and conveniences required for its proper use, and charge all the expenses thus incurred to the person or persons who may be involuntarily removed thereto for temporary care and treatment is to attribute to the legislature an intention, which this court's respect for a coördinate branch of the government forbids.

While the power and discretion conferred on boards of health are of necessity somewhat drastic and arbitrary, and, in the hands of reckless and autocratic officers, are easily made the instruments of hardship and oppression, the court regards it very clear that the statute does not contemplate any such result as the county here contended for. On the contrary, that part of section 2570a which provides for imposing a charge on the patients detained in hospital, speaks solely of "the expense incurred for the care of such persons." Given its plainest and most obvious meaning, the phrase "expenses for the care" of a sick person means only such expenses as pertain to attendance, nursing, board and treatment, and certainly not to the expense of erecting and furnishing the building in which such care is furnished.

If a sick person admitted to one of our city hospitals is received with the assurance that the charge against him will be limited to the expense incurred in his care while he remains an inmate, he could hardly be blamed for manifesting some surprise if, on being discharged, he finds the cost of erecting, heating and furnishing the hospital charged up in his bill. This court is not disposed to enlarge the apparent meaning of the statute to make possible such an inequitable result. The patient is not to be, and ought not to be, charged for any expense other than such as has been reasonably incurred in his care, giving that term its usual and ordinary significance. As to other expenses, if any, and especially expenses made in establishing and fitting up property of a permanent

character which remains the property of the city or county, while the statute does not in express terms say they are to be paid by the county, the provision that they shall be certified to, and audited by, the board of supervisors clearly indicates that such was the legislative intent. Judgment for the plaintiff was right and is affirmed.

### Errors Relative to Damages in Malpractice Case.

The Supreme Court of Iowa says that in the malpractice case of *Albertson vs. Lewis* the plaintiff had sustained a fracture of the bone of his arm, between the elbow and shoulder, on December 5. It was the allegation of the petition that the defendant, through want of skill, negligently set and treated the arm so that it became crooked and had a large lump on it, and was useless to the plaintiff; that the disfigurement so caused was permanent in its nature. As related to the subject of damage, pain and suffering, mental and physical, past and future, were alleged; also loss of time and diminished earning capacity. That the fracture was properly reduced in the first instance was not disputed in the evidence. Nor was it disputed but that down to February 25, following, at least, the subsequent treatment administered was proper in all respects. The plaintiff testified that, on the date last mentioned, the defendant took off the zinc cast in which the arm had previously been encased, and put on in place thereof a simple gauze bandage; that he then gave instructions to the plaintiff to use the arm, saying that it would gradually grow stronger. In respect to the appearance of the arm at that time the plaintiff said that he wore the bandage so put on some three or four weeks, when he took it off; that the arm "was then as crooked as it is now." The defendant, on the other hand, testified that he saw the plaintiff last on January 15, at which time he examined the arm and found the fractured ends of the bone in proper apposition; that he continued the arm in the zinc cast, and that the plaintiff did not thereafter return for further examination or treatment, as he was requested to do. The several surgeons called as witnesses on the trial agreed that an examination of the arm disclosed a case of delayed union, and that the angular deformity in the arm was caused by the fact that the broken ends of the bone were not in perfect apposition. As to the failure of the bone to reunite, it was agreed that such was due to conditions inherent in the patient himself, and not to any improper treatment on the part of the surgeon. That the imperfect apposition was due to the absence of an immovable dressing such as to secure immobilization, and the use of his arm by the plaintiff, seemed to be conceded. The surgeons, however, were not directly interrogated on that point.

It will be apparent from the foregoing statement, the court says, that negligence on the part of the defendant, if any such there was, could only be predicated on a finding of the truth of the plaintiff's contention to the effect that on February 25 a gauze bandage was substituted for the zinc cast, and that he was then directed to make use of his arm.

A physician who was witness for the plaintiff testified that, in his judgment, an operation on the plaintiff's arm called "resection" would be necessary if any better result than the plaintiff had was to be expected. Over the objections of the defendant, he was then permitted to testify as to the reasonable value of a surgeon's services in performing an operation of resection. Here was error. If there were no other reasons, the error becomes apparent when it is observed that the petition contains no allegation that, as a result of the defendant's negligence, the condition of the plaintiff's arm is such that a future operation is or will become necessary, and that the plaintiff will be put to expense on account thereof. Quite to the contrary, the petition presents the case of a fixed and permanent injury, and the demand for damages is grounded wholly on that theory. This being the state of the record, the court need not determine whether the expense incident to medical and surgical attendance should be classed as general or as special damage—a point on which there is more or less conflict in the authorities. It is sufficient to say that in any view the defendant was not called on to defend as against a claim of future damage—to accrue, if at all, as the plaintiff might elect—growing out of a matter respecting which, if the petition speaks at all on the subject, the averment is that such



an operation, and hence the attending expense, would be unavailing to afford relief and, therefore, useless.

Following the reasoning of the foregoing paragraph, it must be said that there was error in charging the jury that, in fixing the amount of the plaintiff's damage, if he was found entitled to recover, they might take into consideration "the reasonable and necessary expense for another operation or an operation on the arm in question," etc. Besides the above considerations, it was not made to appear that an operation in the future was within the contemplation of the plaintiff. That it is error to instruct on matters not within the issues, and in respect of which there has been no attempt to make proof, is fundamental doctrine. Moreover, as the case was submitted to the jury, they were authorized to find damages for a permanent injury, and also damages as for the expense incident to a possible attempt to remove the permanency of the disability and restore the arm to normal conditions.

The defendant also complained that in the charge the jury was told that, in fixing the amount of the plaintiff's damages, they might take into consideration the impairment of his health in addition to the injury sustained by him to his arm and his loss of ability to work and labor. Here also was matter wholly foreign to the pleadings and proof, and hence error.

On the subject of his physical pain the evidence for the plaintiff was confined to this simple statement: "When I work hard the arm pains me slightly at times. I do not experience any serious pain." There was nothing in the record to warrant a conclusion that such pain as he did suffer was attributable in any degree to the fact that, in growing together, the broken parts of the bone were not in perfect apposition to each other. And the imperfect apposition was the only matter appearing on which the charge of negligence could be sustained. As the matter of a possible future operation was not in the case, the pain and suffering that might be incident thereto could not, of course, be considered. There being no ground on which to base a recovery as for physical pain, such should not have been submitted to the consideration of the jury, and the submission thereof was error.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

January 12.

- 1 \*Yellow Fever. A. E. Thayer, Galveston, Texas.
- 2 \*Colostomy. C. B. Kelsey, New York.
- 3 Dementia Præcox. E. F. McCampbell, Columbus, Ohio.
- 4 Pes Planus from the Viewpoint of Neurology. C. P. Frischler, Brooklyn.
- 5 \*Hyoscin Sleep in Obstetric Practice. W. H. Birchmore, Brooklyn.
- 6 Working Formulas to Facilitate the Percentage Modification of Milk. C. J. Dillon, New York.

1. Yellow Fever.—While studying one case of yellow fever Thayer found a number of boat-shaped bodies in sections from the pancreas and epithelium of the small intestine. He says that from this single experience it can not be claimed, far less proved, that the ameboid bodies seen are causal in the disease. However, provisionally the name *Amæba febris flavæ* may be suggested. He believes that before such a claim can be made the following conditions should be fulfilled. The same bodies must be found in the organs of other patients with yellow fever, and early autopsy is probably important. They should be found in the blood of yellow fever patients, in all probability within the first three days of the disease, for transmission by the stegomyia occurs only during that period. They must be found under some guise in the tissues of mosquitoes known to be infected. More than one observer in different parts of the world should find and identify them. They should be cultivated. All these conditions apply to fresh cases of the disease and to infected mosquitoes.

2. Colostomy.—Kelsey is thoroughly convinced of the great benefits of colostomy in many cases. The incision he now makes is half the length of the former one, and is gridironed, as in appendicitis. Muscles are separated as far as possible, and fibers cut as little as possible. In the temporary operation

the sutures are passed through the edges of the abdominal incision, the parietal peritoneum, and the wall of the gut. In the permanent operation care should be taken not to include the parietal peritoneum in the suture. In making an opening into the sigmoid it should be made as high up as possible to avoid prolapse, and in the cecum it should be made as far as possible from the valve. The operation for an artificial anus may as well be completed at the time as to wait several days before the gut is opened.

5. Hyoscin Anesthesia in Obstetric Practice.—Birchmore believes for the accoucher that hyoscin is the ideal anesthetic. It gives all the aid in quieting the patient that any narcotic can give, while in addition it affords a practical anesthesia of prolonged duration without risk to either mother or child. This anesthetic sleep is without danger.

#### New York Medical Journal.

January 12.

- 7 \*Certain Diseases of the Peritoneum. J. G. Mumford, Boston.
- 8 \*Pathogenesis of Facial Hemiatrophy. A. Gordon, Philadelphia.
- 9 \*Bone Syphilis, Hereditary and Acquired. R. W. Taylor, New York.
- 10 Excision of the Wrist. J. S. Wright, Brooklyn, N. Y.
- 11 \*Melanosarcoma of the Eye (Primary) and of the Liver (Secondary). M. I. Schoenberg and C. N. B. Camac, New York.
- 12 \*New Operation for the Correction of Malformations About the Nasal Lobule. F. S. Kolle, New York.
- 13 The Insanity of Inebriety. T. D. Crothers, Hartford, Conn.
- 14 The Untrained Nurse; Her Legitimate Field and Her Opportunity for Self-Improvement. J. H. Wiggins, Jamestown, N. Y.

7. Diseases of Peritoneum.—Mumford reviews the present-day knowledge of diseases of the peritoneum but does not offer anything new.

8. Pathogenesis of Facial Hemiatrophy.—Gordon concludes that hemiatrophy of the face may be caused by the lower sympathetic ganglion with its nerve, by the fifth nerve, by the Gasserian ganglion, finally by a central lesion. The tendency of some writers to attribute Romberg's trophoneurosis exclusively to the sympathetic nerve fibers, he says, is erroneous.

9. Bone Syphilis.—Taylor says that in the treatment of bone syphilis energetic treatment is urgently called for. While in general potassium iodid is of vital importance, it must be remembered that in these cases there is a necessity for the combined use of mercury with the iodid. In most cases a more prompt result will follow the combination treatment, and the patient will be spared the massive doses of the iodid which are so trying to the stomach, and often so depressing to the mind and system. The local vigorous use of mercurial ointment should never be forgotten in conjunction with internal medication. In many cases the combined use of the iodid with hypodermic injections of some active, soluble mercurial preparation will be attended with conspicuously beneficial results.

11. Melanosarcoma of Eye and Liver.—The striking features of Schoenberg's case are: 1. Failing vision two years before hepatic involvement. 2. Ocular pain and progressively failing vision one and three-quarters years before hepatic involvement. 3. Clinical diagnosis, glaucoma; pathologic diagnosis, melanosarcoma. 4. Abdominal pain and mass in a patient with extirpated eye; no eye symptoms at this time. 5. No jaundice. 6. No ascites. 7. No hematemesis or melena. 8. No varicosity of the veins of the abdomen or extremities. 9. No abdominal pains except at a very early stage and though these were severe they resembled an attack of indigestion. 10. The sudden appearance of the tumor, the rapid development up to a certain size, beyond which it did not go throughout the subsequent course of the disease. 11. Urine turning black and yielding melanin reaction. The patient died about two and one-quarter years after the onset of the eye symptoms, and two and one-half months after the onset of abdominal symptoms.

12. Correction of Malformations About Nasal Lobule.—The operation described by Kolle is said to apply particularly to the correction or reduction of an over prominent nasal tip due to an excessive growth or congenital malformation of that part of the nose, giving the organ undue prominence and a hook-like appearance usually associated with a narrow, sharply upward inclined upper lip. The same operation, on a larger scale, can



be readily employed for the correction of hyperplasia nasi and rhinophyma. The method leaves no scar whatever except for a slight white line across the columna of the nose where it is out of view and when contracted offers no objection on the part of the hypercritical patient. The frequent references in the text to diagnosis prohibit abstracting the method of operating.

#### Boston Medical and Surgical Journal.

January 10.

- 15 \*Renal and Ureteral Hematuria. A. L. Chute, Boston.
- 16 \*Cancer of the Uterus, Patient Alive and Well Six Years After Panhysterectomy. F. Cobb, Boston.
- 17 \*Surgical Aspects of Bronchiectasis, Particularly in Children and Young Adults. C. G. Cumston, Boston.
- 18 \*Carcinoma of the Appendix, Probably Primary. N. R. Mason and L. J. Rhea, Boston.

15. Renal and Ureteral Hematuria.—Chute says that there is but one way to distinguish definitely between a hematuria of the upper urinary tract and one of bladder origin. That is by means of cystoscopy—simple inspection of the ureteral orifices in some cases, combined with catheterization of the ureters in others. It is possible to distinguish between a hematuria of ureteral origin and one of renal origin by passing a ureteral catheter and noting if the urine from the kidney pelvis is bloody as well as that from low in the ureter. In a large proportion of the cases of renal hematuria an accurate diagnosis of the bleeding can be made by means of a careful consideration of the symptoms combined with an accurate examination of the patient and study of the urine.

16. Cancer of Uterus.—The case reported by Cobb was one of squamous cell cancer in the beginning of the second stage of its growth, the stage of papillary overgrowth with necrosis and foul discharge. A panhysterectomy was done. The second operation, done five and one-half years after the hysterectomy for a ventral hernia, furnished an unusual opportunity to prove by inspection and palpation of the peritoneal cavity entire freedom from recurrence of malignant disease.

17. Surgical Aspects of Bronchiectasis.—Cumston says that if ordinary medical treatment, carefully applied and continued for some time, remains ineffectual, then resection of the ribs should be seriously considered. His experience in resection of the ribs for bronchiectasis in children is limited to two instances, but the results obtained were excellent.

18. Carcinoma of Vermiform Appendix.—Mason and Rhea report a case of scirrhus carcinoma originating either from the epithelium at the tip of the appendix or as a metastasis from a primary growth somewhere else in the body. The reasons urged for considering this a primary tumor of the appendix are the following: 1. Evidently the tumor arose from epithelial cells which have spread peripherally and longitudinally and infiltrated the muscle coats of the appendix. 2. The new growth is sharply limited by the serous coat of the appendix. 3. Clinically there is no evidence of a tumor elsewhere in the body. 4. The tumor is of the slow growing scirrhus type which has been demonstrated to be primary in the appendix. 5. The appendix is an unusual place for metastases to take place.

#### Lancet-Clinic, Cincinnati.

January 5.

- 19 Tuberculosis, a Personal Appeal. W. Porter, St. Louis.
- 20 Hygiene, Prophylaxis and Calisthenics as Practiced in the Public Schools of Cincinnati. L. Bloom, Cincinnati.

January 12.

- 21 \*Migraine. C. S. Chamberlin, Cincinnati.
- 22 President's Address, Ohio Valley Medical Association. D. M. Griffith, Owensboro.

21.—See abstract in THE JOURNAL, Nov. 24, 1906, page 1761.

#### St. Louis Medical Review.

January 5.

- 23 Lorenz Helster. F. J. Lutz, St. Louis.
- 24 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.

#### American Journal of Medical Sciences, Philadelphia.

January.

- 25 Principles Underlying the Surgery of the Stomach and Associated Viscera. W. J. Mayo, Rochester, Minn.
- 26 \*Paravertebral Triangle of Duiness in Pleural Effusion (Grocco's Sign). W. S. Thayer and M. Fabyan, Baltimore.
- 27 \*Adams-Stokes Disease (Heart-Block) Due to a Gumma in the Interventricular Septum. T. G. Ashton, G. W. Norris and R. S. Lavenson, Philadelphia.

- 28 \*Pathologic Physiology of Chronic Arterial Hypertension and Its Treatment. T. C. Janeway, New York.
- 29 Inorganic Late Systolic Pulmonary Murmurs in Infancy and Childhood. S. McC. Hamill and T. Le Boutillier, Philadelphia.
- 30 \*Paroxysmal Irregularity of the Heart and Auricular Fibrillation. A. R. Cushny, London, and C. W. Edmunds, Ann Arbor.
- 31 Hemochromatosis with Diabetes Mellitus. T. B. Fletcher, Baltimore.
- 32 \*Acute Pulmonary Edema. D. Riesman, Philadelphia.
- 33 \*Nature of Aplastic Anemia and Its Relation to Other Anemias. R. S. Lavenson, Philadelphia.
- 34 Natural and Artificial Inhibition of Peptic Digestion. J. Saller and C. B. Farr, Philadelphia.
- 35 Acute Unilateral Septic Pyelonephritis. D. N. Eisendrath, Chicago.
- 36 Gastric Ulcer in Childhood. H. Adler, Baltimore.

26. Grocco's Sign in Pleural Effusion.—This article will be reviewed editorially.

27.—See abstract in THE JOURNAL, Dec. 8, 1906, page 1944.

28. Chronic Arterial Hypertension.—Janeway declares that the height of the blood pressure gives no indications whatever for treatment, except along preventive lines. Hypertension is no more to be attacked therapeutically than is a heart murmur. Only those symptoms which point unmistakably to inadequate maintenance of the circulation, or to sudden threatening of danger, give the signal to interfere.

30. Paroxysmal Irregularity of Heart.—A case of paroxysmal arrhythmia, with marked acceleration of the heart, is described by Cushny and Edmunds, and it is shown that the irregularity is due to irregular discharge of impulses and not to defects in the contraction of the ventricle which appears to respond to the impulses received. A similar form of irregularity in the dog's heart is described, and it is shown that this is due to the ventricles receiving irregular stimuli from the auricle which is in the state of fibrillation. This form of arrhythmia is shown to occur in dogs occasionally from peripheral irritation and it is probable that this gives rise to reflex inhibition of the vagus center which, acting on an abnormal heart, causes auricular fibrillation. The suggestion is made that in the patient described and in other cases of paroxysmal arrhythmia the condition is due to auricular fibrillation from inhibition of the vagus center.

32. Acute Pulmonary Edema.—The edema of the lungs to which Riesman calls attention is not that so commonly seen in the period of lost compensation of valvular or muscular heart disease, in cachectic states, in grave infectious diseases, or in acute or chronic nephritis in the terminal phase. It bears no relation to subcutaneous dropsy, and in typical cases is not associated with it. Recovery from an attack is frequent, but there is a striking tendency to recurrence, subsequent attacks being similar to the first. They set in suddenly, usually at night, and place the patient's life in jeopardy. The clinical causes are various; arteriosclerosis and cardiac and renal disease are most important. The pathogenesis is obscure; vasomotor disturbances and a disproportionate activity of the two ventricles (the right predominating) are the chief factors. The chief symptoms are agonizing dyspnea, cyanosis, cough, expectoration of frothy albuminous fluid, and profound prostration. Over the lungs, often more over the upper than the lower portions, the characteristic moist râles of edema are heard. The most valuable remedies are bleeding, dry cupping and cardiac stimulants.

33. Aplastic Anemia.—According to Lavenson, the essential features of aplastic anemia which is a variety of progressive pernicious anemia are: A rapidly fatal course; a marked reduction in the number of red blood corpuscles; a greater proportionate reduction in the amount of hemoglobin, resulting in a low color index; a leucopenia with a relative lymphocytosis; an absence of megaloblasts, and usually normoblasts. Postmortem, the characteristic finding is pale bone marrow in which the signs of erythrocytic and granulated leucocytic formation are wanting. The differences between aplastic anemia and the usual form of progressive pernicious anemias result entirely from the absence of regenerative processes in the former. The blood picture in aplastic anemia is the result of two factors, one the hemocytolysis and the other the failure of regeneration on the part of the bone marrow. The



failure of regeneration of the blood elements of the bone marrow represents the result of one of the three following conditions: (a) A simple deficiency of the regenerative powers; (b) an inhibitive action on the bone marrow by the factors producing the destruction of the blood elements, and (c) a true aplasia of the bone marrow. If there be a true aplasia it is probably of recent origin, for if it were of long duration in all probability there would have been manifestations of a deficiency in blood formation before the advent of the hemolytic agent. The relations of lymphocytes to leucocytes and red blood corpuscles in aplastic anemia lends evidence to the view that lymphocytes are not a specific product of the bone marrow. Lavenson reports one case.

#### American Journal of Surgery, New York.

January.

- 37 \*Choice of Procedure in Cases of Loose Kidney. R. T. Morris, New York.
- 38 Blood Examination in Surgical Diagnosis. I. S. Wile, New York City.
- 39 Undescended Testicle. R. A. Barr, Nashville, Tenn.
- 40 Local Anesthesia in Rectal Work. J. M. Lynch, New York City.
- 41 Treatment of Lateral Curvature. C. R. Keppler, New York.
- 42 Stamping Out Hereditary Diseases by Sterilizing the Sexes. M. E. Van Meter, San Francisco.
- 43 \*Fatal Case of Hydrochloric Acid Poisoning. J. L. Wollheim, New York.

37. **Nephropexy.**—Morris' operation includes the method of Goelet, who suspends the kidney by a kangaroo tendon suture entering the lower pole of the organ, and is carried alongside the dorsum for half the length of the kidney, then across to the other side, then down and out near the point of entrance. The two loose ends are made fast to any convenient muscular attachment. The next point in the combination includes the ideas of Senn and of Longyear. The lower pole of the kidney is packed with iodoformized gauze in such a way that the retroperitoneal pouch is distended. Gauze in a narrow strip is employed, and one end of the strip is left outside of the wound. The sheath of the quadratus lumborum muscle alone is sutured, and that allows good approximation of deeper structures. The skin is sutured with the exception of just enough room for the loose end of gauze. The fatty capsule of the kidney is trimmed and the fibrous capsule is split along the dorsum in order to give relief from the immediate inflammatory tension. At the end of a week the iodoformized gauze is removed, and no further attention is required except change of outer dressings for neatness. The patients are allowed to get out of bed at the end of 14 days, as a rule. The suture hangs up the kidney in a simple way. The gauze acts as a drain at first, and then causes the formation of granulation tissue, so that the secondary adhesion obliterates the retroperitoneal pouch and fixes the nephrocolic ligament. The instruments used for the operation are a pair of scissors and a needle. It is not necessary to tie any vessels. Avoidance of deep suturing obviates the danger of catching the lumbo-gluteal nerve where it would get pinched.

43. **Hydrochloric Acid Poisoning.**—Wollheim's patient swallowed about an ounce and a half of concentrated hydrochloric acid. She was promptly given milk by members of her family, and vomited this at once in very large curds. She then complained of severe pain in the mouth and throat, and along the esophagus, and severe gastric and abdominal pain. Twenty-five minutes after the accident there was administered at once the only alkali handy, sodium bicarbonate, ad. lib., in solution, and lavage of the stomach was done. About one ounce of sodium bicarbonate, dissolved in one quart of water, was poured into the stomach through the tube, but it could not be withdrawn by syphonage or the pump. On withdrawal of the tube it was found plugged with thick, ropy mucus. Another attempt to wash out the stomach was futile, either because of the large quantities of mucus present or possibly because of perforation of the stomach due to the acid. The patient was given apomorphin hydrochlorid, gr. 1/10, hypodermatically, and this having failed to produce emesis in five minutes, the dose was then repeated, also without effect. The patient, still conscious and complaining bitterly of pain in the mouth, throat and abdomen, was given hypodermatically morphin sulphate, gr. 1/4, and atropin sulphate, gr. 1/100; and

more sodium bicarbonate was administered. At this time she complained bitterly of thirst, mucus was flowing freely from her mouth, and swallowing was difficult and painful. In spite of all efforts at stimulation—strychnin, atropin and whisky hypodermatically, and saline enemata—the patient went into collapse. This was about one hour and a half after taking the acid. She developed pulmonary edema and died of respiratory failure about five hours after the fatal draught.

#### Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

January 1.

- 44 \*Cancer of the Breast. J. C. Stewart, Minneapolis.
- 45 Combined Drainage in Rupture of the Urethra. H. P. Ritchie, St. Paul.
- 46 Diet for the Tuberculous in the St. Peter State Hospital. W. H. Darling, St. Peter, Minn.
- 47 Orchitis Complicating Mumps. T. Lowe, Pipestone.

44. **Cancer of Breast.**—Stewart thinks that cases of cancer of the breast are neglected and badly advised because many of the profession do not admit, or do not know, the facts as to the curability of this disease by operation. The only remedy is a campaign of education among both the profession and the laity. All tumors in the breasts of women over 30 should be considered and treated as cancer until proved benign. Incomplete operations, except for palliation, are criminal. Well-performed radical operations save, certainly, 25 per cent of the victims of this dread disease.

#### Chicago Medical Recorder.

December 15.

- 48 \*Prevalence of Leprosy in the United States and the Policy to be Pursued with Regard to It. W. A. Pusey, Chicago.
- 49 Organic Heart Disease and Immunity from Pulmonary Tuberculosis. B. Stow, New York City.
- 50 Syringomyelia with Involvement of Cranial Nerves. A. Church, Chicago.
- 51 Prolapse of Rectum. C. J. Drueck, Chicago.
- 52 Treatment of Salpingitis. L. J. Pritzker, Chicago.
- 53 Points in the Anatomy of the Temporal Bone to be Considered in Connection with Mastoiditis Following Acute Suppurative Otitis Media. J. Hollinger, Chicago.
- 54 Suppurative Thrombophlebitis of the Iliac Vein. Atresia and Vesiculis et Recti. C. E. Beck, Chicago.

48.—See THE JOURNAL, Dec. 8, 1906, page 1945.

#### Journal of the South Carolina Medical Association, Greenville.

December 21.

- 55 End Results in Conservative Work on Ovaries. R. S. Cathcart, Charleston.
- 56 Should There be a Division of Fees? C. B. Earle, Greenville.
- 57 Head Injuries. L. Guerry, Columbia.
- 58 Relation of the Doctor to the Druggist. T. G. Croft, Aiken.

#### Western Medical Review, Lincoln.

December.

- 59 Rational Treatment of Neurasthenia. H. D. Singer, Omaha.
- 60 Necessity for Early Diagnosis in Cancer of the Uterus. C. O. Rich, Omaha.
- 61 Mastoid Operation Followed by Death from Hemorrhage on the Ninth Day. M. H. Garten, Lincoln.

#### Journal of the New Mexico Medical Association, Albuquerque.

December 15.

- 62 Gastroenterostomy for Gastric and Duodenal Ulcer. B. D. Black, Las Vegas.
- 63 Is Tuberculosis Preventable? M. K. Wylder, Albuquerque.
- 64 Suggestions as to Diseases of the Eye. W. G. Shadrach, Albuquerque.
- 65 Treatment of Extensive Burns of the Second Degree. W. H. Burr, Gallup, N. M.
- 66 Pneumonia. W. W. Spargo, Albuquerque.

#### Columbus Medical Journal.

December.

- 67 Post Operative Complications. F. F. Lawrence, Columbus.
- 68 Practical Use of the Cystoscope. S. S. Wilcox, Columbus.
- 69 Sterility in the Male. T. E. Courtright, Columbus.

#### Journal of the Outdoor Life, Saranac Lake, N. Y.

December.

- 70 Personal Hygiene. J. W. Heffron, Syracuse, N. Y.
- 71 The Sanatorium an Educator. J. H. Elliott, Gravenhurst, Ontario.
- 72 "Patent Medicine" Cures. E. F. L. Jenner, Digby, N. S.

#### Canada Lancet, Toronto.

December.

- 73 Echoes from St. Mary's Clinic, Rochester, Minn. E. A. Hall, Victoria, B. C.
- 74 Surgery of the Kidney and Ureter. W. J. Mayo, Rochester.
- 75 The Trained Nurse and Her Influence in the Community. S. M. Hay, Toronto.
- 76 The Topography of the Chest. E. Seaborn, London.

#### Montreal Medical Journal.

December.

- 77 Absorption of Fats in Infants. T. P. Shaw and A. L. C. Gliday, Montreal.
- 78 Tetanus Following Vaccination. F. R. England, Montreal.
- 79 Tetanus Followed by Recovery. A. Cumming, Montreal.



- 80 Tetanus Followed by Death. A. E. Garrow, Montreal.  
81 Publotomy. D. J. Evans, Montreal.  
82 Congenital Dislocation of the Humerus. A. M. Forbes, E. H. White and C. H. Russel, Montreal.  
83 Perforation of the Stomach. I. Olmsted, Hamilton.

**Medical Standard, Chicago.***December.*

- 84 Can Women Escape Pain in Parturition? M. O. Terry, Mamaroneck, N. Y.  
85 Treatment of Arteriosclerosis. G. F. Butler, Chicago.  
86 General Treatment of Splanchnoptosis. B. Robinson, Chicago.  
87 Practical X-Ray Therapy. N. M. Eberhart, Chicago.  
88 German Gynecology. L. Waite, Chicago.

**Journal of Cutaneous Diseases, New York.***December.*

- 89 Dermatitis Vegetans in Its Relation to Dermatitis Herpetiformis. J. A. Fordyce and W. S. Gotthell, New York.  
90 Vegetating Dermatosis. W. A. Pusey, Chicago.  
91 Syphilis and Epithelioma of the Tongue. D. W. Montgomery and H. M. Sherman, San Francisco.

**Annals of Otology, Rhinology and Laryngology, St. Louis.***December.*

(FRAENKEL FESTSCHRIFT NUMBER.)

- 93 Bernhard Fraenkel—What He Has Done for Rhinology. W. Freudenthal, New York.  
94 Bernhard Fraenkel's Contributions to Medical Literature. W. Freudenthal, New York, and Landgraff, Belzig.  
95 Diseases of the Trachea, Anomalies, Hemorrhage, Inflammations and Infections. J. E. Newcomb, New York.  
96 Tumors of the Trachea. C. F. Thiesen, Albany.  
97 Stenosis of the Trachea. W. K. Simpson, New York.  
98 Foreign Bodies in the Trachea and Tracheoscopy. A. Coolidge, Jr., Boston.  
99 Anatomy of the Accessory Cavities of the Nose Studied by Topographic Projections. H. W. Loeb, St. Louis.  
100 \*Function of the Accessory Cavities of the Nose. J. M. Ingersoll, Cleveland.  
101 General Pathologic Processes Associated with or Following Infections of the Accessory Sinuses. D. B. Kyle, Philadelphia.  
102 Gastroscopy. C. Jackson, Pittsburg, Pa.  
103 Congenital Laryngeal Stridor. A. L. Turner, Edinburgh.  
104 Channels of Infection in Tuberculosis. J. W. Gleitsmann, New York.  
105 Sarcoma of the Nose; Spontaneous Disappearance of Malignant Growths. R. Levy, Denver.  
106 \*Middle-Ear Suppuration as Etiologic Factor in Retropharyngeal Abscess. E. M. Holmes, Boston.  
107 Qualities of the Sense of Smell. H. Zwaardemaker, Utrecht.  
108 Early History of Laryngology in America. T. J. Harris, New York.  
109 Reminiscences. E. Cutter, West Falmouth, Mass.  
110 Etiology of Atrophic Rhinitis. J. Sendziak, Warsaw.  
111 Laryngeal Disturbances Produced by Voice Use. W. E. Caselberry, Chicago.  
112 Removal of Adenoid Vegetations Through the Nasal Passages by a New Method. O. T. Freer, Chicago.  
113 President's Address. Am. L. R. and Ot. Soc. J. E. Logan, Kansas City.  
114 Diffuse Hyperplastic Laryngitis and Pharyngitis of Congenital Syphilis. A. B. Kelly, Glasgow.  
115 Cough in Diseases of the Recurrent Nerve. G. Ferreri, Rome.  
116 Differential Diagnosis of Certain Malignant Diseases of the Lymphoid Tissue of the Throat. J. L. Goodale, Boston.  
117 Malignant Disease of the Tongue. J. H. Bryan, Washington.  
118 Treatment After the Radical Operation for Chronic Suppurative Frontal Antritis. H. Luc, Paris.  
119 How Far are Abnormalities of the Nasal Septum Responsible for Mal-Function of the Nose? H. L. Swain, New Haven.  
120 Skiagraphy in the Diagnosis of Frontal Sinusitis. W. A. Chisholm, New York.  
121 Nasopharynx and Throat in the Deaf Mute. J. K. Love, Glasgow.  
122 Persistent Unilateral Headache, Due to Nevold Changes in the Bone of the Middle Turbinal Body. W. Wingrave, London.  
123 Etiology of Hyperkeratosis of the Tonsils. G. B. Wood, Philadelphia.  
124 Laryngeal Phlegmon. N. H. Pierce, Chicago.  
125 \*Cause of Vocal Nodules. F. E. Miller, New York.  
126 \*Carcinoma of the Larynx. C. W. Richardson, Washington.  
127 Clinical Anatomy of the Tonsil. W. L. Ballenger, Chicago.  
128 Submucous Resection of the Nasal Septum by the Open Method. J. E. Rhodes, Chicago.  
129 Catheterization Treatment of Acute Frontal Sinus Inflammations by the Internal Method. H. Curtis, New York.  
130 Permanence of Improvement in the Shape of the Nose Obtained by the Subcutaneous Injection of Hard Paraffin. W. Downie, Glasgow.  
131 Submucous Resection of Triangular Cartilage. R. Lake, London.  
132 Multiple Recurring Papillomata of the Larynx. C. W. Richardson, Washington.  
133 Results of Operation in Sarcoma of the Nose. J. Price-Brown, Toronto.  
134 \*Two Cases of Stammering, Illustrating the Importance of Early Treatment. G. Hudson-Makuen, Philadelphia.  
135 Violent Epistaxis in a Gouty Patient. A. Trifiletti, Naples.  
136 Importance of Diseases of the Nose in Treatment of the So-called Scrofulous Diseases of the Eye. C. Ziem, Danzig.  
137 Nasal Operations. J. Baratoux, Paris.  
138 Pseudo-Frontal Sinusitis. V. Delsaux, Brussels.  
139 Interico-Thyroid Tracheotomy and Decanulation. E. J. Moure, Bourdeaux.  
140 Treatment of Synechia of the Pharynx. E. J. Bernstein, Kalamazoo, Mich.  
141 New Self-Retaining Nasal Speculum. J. H. Allen, Portland, Maine.

100, 106, 125, 126.—See THE JOURNAL, July 21, 1906, page 229.

134.—See THE JOURNAL, July 28, 1906, page 299.

**FOREIGN.**

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**British Medical Journal.***December 29.*

- 1 Conditions of Eyesight Required for Military Service. A. Lawson.
- 2 Visual Tests for Railway and Marine Service. C. H. Williams.
- 3 Forms of Choroiditis Resembling the Well-Known Syphilitic Type. C. Stedman.
- 4 Death and Blindness from Wood-Alcohol Poisoning. C. A. Wood.
- 5 Sympathetic Ophthalmia. G. H. Burnham.
- 6 Preventive Treatment of Sympathetic Ophthalmia. A. Lawson.
- 7 Transferred Ophthalmia; Sympathetic Irritation; Sympathetic Ophthalmia. C. A. Oliver.
- 8 Sympathetic Degeneration. A. F. Fergus.
- 9 Sympathetic Ophthalmia, Following Mules's Operation and Ending in Recovery. W. G. M. Byers.
- 10 Phlegmon of the Orbit, Simulating a Malignant Growth and Its Origin from the Ethmoid Cells. D. Roy.
- 11 Eyesight in Relation to Compensation. F. Fergus.
- 12 Affections of the Lachrymal Passages. A. B. Osborne.

**The Lancet, London.***December 29.*

- 13 \*Treatment of General Peritonitis. A. W. M. Robson.
- 14 Cyanosis, General and Local. T. Oliver.
- 15 \*Pathologic Considerations of Extrauterine Pregnancy. S. J. M. Cameron.

13. Treatment of General Peritonitis.—An extended experience in cases of acute general peritonitis from various causes has convinced Robson of the value of a treatment, the salient points of which are: 1, The removal or repair of the cause with or without irrigation of the peritoneal cavity; 2, drainage of the site of operation by a split rubber tube containing a strip of gauze and of the peritoneal cavity by a tube in the pelvis, assisted by the reclining posture, which he has for years advocated after all abdominal operations; 3, rapidity of operation; 4, avoidance of unnecessary exposure and handling of the viscera; 5, the prevention of shock; 6, the free administration of saline fluid by the rectum; 7, rectal alimentation and the stoppage for a time of mouth feeding; and 8, the avoidance of opium and sometimes the administration of repeated small doses of calomel subsequently to operation.

15. Extrauterine Pregnancy.—Cameron reports a case of twin pregnancy in one Fallopian tube. The patient had a history of seven weeks' amenorrhea and had been seized with sudden abdominal pain. When seen she was evidently in grave peril. From the signs and symptoms rupture of a gravid right tube was diagnosed, and as hemorrhage was evidently continuing, Cameron opened the abdomen without delay. The peritoneal cavity contained a great quantity of blood, which was for the most part in a fluid state. There was no rough, torn surface on the tube ploughed up by hemorrhage; the blood came from a spouting vessel on the posterior wall, and the tips of a group of villi projecting above the level of the peritoneal coat into the abdominal cavity. The tube contained a perfect twin pregnancy. The umbilical cords arose very close together and each fetus had a complete amnion.

**Journal of Tropical Medicine, London.***December 15.*

- 16 Rodent Ulcer in a Nubian Woman. A. Balfour.
- 17 A Blood-Sucking Hemipteron. H. H. King.
- 18 Dengue in Egypt. L. Phillips.
- 19 Vomiting Sickness of Jamaica. C. W. Branch.

**The Practitioner, London.***December.*

- 20 Cancer of the Stomach. W. H. White.
- 21 Distribution and Treatment of Cancer at the Angle of the Mouth. G. L. Cheate.
- 22 \*Treatment of Bronchiectasis. A. Chaplin.
- 23 Urinary Excretion in Bright's Disease. F. A. Bainbridge.
- 24 Serum Therapy. W. D. Emery.
- 25 Intussusception in Infants. C. H. Fagge.
- 26 Physical Methods of Treating Heart Disease. A. G. Bennett.
- 27 Recent Work on Typhoid Fever. C. B. Ker.
- 28 Etiology of Typhoid Fever. J. T. C. Nash.
- 29 Immediate Suture of Ruptured Perineum. S. Shelli.

22. Treatment of Bronchiectasis.—For the past five years Chaplin has adopted the plan of submitting all patients to the creosote treatment, whether fetor was present or not, and



the results have been most gratifying. Many of these patients during that period have shown no tendency to develop fetor, although the stage of their complaint was such as to lead one to expect the onset of this symptom. Chaplin says, therefore, that it may reasonably be supposed that if the practice of giving the patients periodic sittings in the creosote chamber were systematically carried out the most dangerous symptom of the complaint might, in a great measure, be obviated and the life of the patient thereby prolonged.

**Intercolonial Medical Journal of Australasia, Melbourne.**  
*October 20.*

- 30 Evolution of Insanity. R. Jones.
- 31 Severe Injuries of the Urinary Organs. F. D. Bird.
- 32 Use and Abuse of Pessaries. H. C. Lloyd.
- 33 Spinal Anaesthesia. B. T. Zwar.
- 34 An Interesting Case of Head Injury. G. Owen.
- 35 Thrombosis of Mesenteric Veins. A. H. Brown.
- 36 Case of Subacute Combined Sclerosis of the Spinal Cord. R. R. Stawell.
- 37 Tumor of the Brain—Double Optic Neuritis—Trepining—Death. H. Laurie.
- 38 Treatment of Hemorrhage After Removal of Postnasal Adenoids. J. W. Barrett and W. F. Orr.
- 39 Value of the Transillumination Test in Empyema of the Maxillary Antrum. J. W. Barrett and W. F. Orr.

**Glasgow Medical Journal.**  
*December.*

- 40 Case of Enteric Fever in which the Action of Typhoid Virus was Directed to the Kidney (Nephro-Typhoid). A. Napier and R. M. Buchanan.
- 41 Account of Five Cases of Pyelitis in Enteric Fever. J. Brown-Lee.
- 42 Supplementary Lobe of the Liver Causing Symptoms of Pyloric Obstruction. J. A. Adams.
- 43 Typhoid Spine. A. Love.

**Australasian Medical Gazette, Sydney.**  
*October 20.*

- 44 Early Recognition of Malignant Disease. H. C. Hinder.
- 45 Radical Method of Extirpating Malignant Growths in the Neck, Secondary to Mouth Carcinoma. H. L. Maitland.
- 46 Two Cases of Bullet Wounds of the Head and Ocular Symptoms Connected Therewith. T. K. Hamilton.
- 47 The Urethroscope. W. R. Fox.
- 48 \*Polycythemia and Chronic Cyanosis without Splenic Enlargement. C. Reissmann.
- 49 \*Parotitis During Dysentery. P. Bollen.
- 50 Intermittent Nasal Obstruction. G. L'Estrange.
- 51 \*Foreign Body Forced into Intestine Through the Vagina. T. G. Wilson.

48. **Polycythemia and Chronic Cyanosis without Splenic Enlargement.**—The principal features in the case reported by Reissmann were a chronic cyanosis and enlargement of the liver occurring in a girl 18 years of age. The symptoms at first were those of a tumor in the mediastinum. A more or less acute illness was preceded by attacks of unconsciousness and followed by vomiting, diarrhea, headaches and giddiness, drowsiness, signs of venous obstruction in the chest and leg, hemoptysis, a great increase in the number of red cells in the blood, increased coagulability of the blood and an increased excretion of chromogens in the urine. The spleen could not be felt below the margin of the ribs.

49. **Parotitis in Dysentery.**—Bollen reports what he considers a bona fide case of parotitis occurring during the course of a dysentery. The complication yielded promptly to hot applications.

51. **Foreign Body Forced into Intestine Through Vagina.**—Wilson reports the case of a woman who six years previously, thinking she was pregnant, had introduced a crochet hook into the vagina and failed to recover it. No bleeding followed. When Wilson first saw her the uterus was found retroflexed, but with a certain degree of mobility; to the right there was a hard mass, low down in the lateral fornix, which was tender to palpation. The diagnosis of right adnexal inflammation, with possibly involvement of the appendix, was made, and operation was advised. On opening the abdomen this mass was found to be thickened omentum, densely adherent round the appendix, the tip of which was adherent to the posterior surface of the broad ligament. The uterus was retroflexed, but both tubes and ovaries, except for some congestion, were normal. A foreign body, corresponding to a crochet hook, was felt, apparently in the ascending colon. The lower end of the ileum was found adherent below to the posterior surface of the broad ligament, and at the opposite side of its circumference this coil of bowel was densely adherent to the lower end of the ascending colon, and

between these two coils of bowel a small dense cartilaginous ring could be felt, giving the impression of an artificial anastomosis between these coils of bowel. On separating the adhesions of ileum below, a small hole was found in the bowel, and the communication between the ileum and the ascending colon could be demonstrated. The crochet hook was an ordinary bone one, 5½ inches long, and mottled in appearance from the fecal staining. The crochet hook had been pushed up through the lateral fornix and had perforated both sides of the coil of ileum and had been forced into the ascending colon. It had probably remained in this position long enough for a fistula to be formed between these two coils of gut, and had later worked its way entirely into the ascending colon, where it was found with its sharp end pointing upward under the liver.

**Beiträge z. klinischen Chirurgie, von Bruns', Tübingen.**  
*Last indexed, page 269.*

- 52 (L. No. 1, Pp. 1-463.) Spontaneous Fracture as Early Symptom of Fibrous Ostitis. M. von Brunn. (Früh-symptom der Ostitis fibrosa.)
- 53 Fractures in Roentgen Picture. Id. (Beurteilung von Frakt. im R.-Bilde.)
- 54 \*Traumatic Aneurisms from Bullet Wounds. Z. Kikuzi. (Traum. An. bei Schusswunden.)
- 55 \*Subcutaneous Injuries of Ureter. C. Blauel. (Subkut. Ureterverletzungen.)
- 56 Fixation of Thyroid Gland. Id. (Zur Exothyreopexie.)
- 57 \*Fate of Silver Wire Suture of Fractured Patella. M. von Brunn. (Schicksal des Silberdrahtes bei der Naht der gebrochenen Pat.)
- 58 \*Sarcomata of Long Bones. O. Kocher. (Sarkome der langen Röhrenknochen.)
- 59 Six Cases of Metastatic Paraneuritic Abscesses. W. Albrecht. (Met. paraneur. Abszesse.)
- 60 \*Remote Results of Excision of Umbilicus for Hernia. R. Krauss. (Omphalektomie bei Nabelbrüchen.)
- 61 \*Removal of Spleen After Traumatic Rupture. W. Hörz. (Splenektomie bei traum. Milzruptur.)
- 62 Remote Results of Operative Treatment of Mammary Tuberculosis. E. Braendle. (Tub. der Brustdrüse.)
- 63 Primary Tuberculosis of Shafts of Long Bones. Zumsteeg. (Prim. Diaphysentub. langer Röhrenknochen.)
- 64 Fractures at Upper End of Tibia. O. Sonntag. (Frakt. am oberen Ende der Tibia.)
- 65 Successful Roentgen Treatment of Case of Symmetrical Affection of Lachrymal and Salivary Glands. C. Pfeiffer. (R.-Therapie der sym. Thränen- und Speicheldrüsenkrankung.)
- 66 \*Results of Roentgen Treatment of Malignant Lymphomata. Id. (R.-Behandlung der mal. Lymphome.)
- 67 Roentgen Diagnosis of Bronchiectasia. Id. (Diagnose der Bronchiektasien im R.-Bilde.)
- 68 Green-stick Fractures in Leg Bones. P. Müller. (Biegungsbrüche an den langen Röhrenknochen der unteren Extremität.)
- 69 \*Operative Treatment of Incarcerated Hernia of Diaphragm. Vayhinger. (Zur Op. incarcerated. Zwerchfellhernien.)
- 70 Functional Results of Amputation of Leg Below the Knee. A. Reich. (Nachuntersuchungen über die Gebrauchsfähigkeit der Amputations-Stümpfe des Unterschenkels.)

54. **Traumatic Aneurism from Bullet Wounds.**—Kikuzi reviews his experience with 85 cases. Various arteries were involved, including the subclavian and axillary. When the tourniquet can be applied temporarily he advocates a method of intracapsular ligation of the injured vessel which much facilitates the operation and renders general anesthesia unnecessary, while the danger of subsequent gangrene is much reduced.

55. **Subcutaneous Injuries of the Ureter.**—Blauel adds another to the 11 cases on record of injury of the ureter from contusion without external wound. An operation was undertaken in 8 of the 12 cases, including puncture of hydronephrosis in 1 case, evacuation of the retroperitoneal effusion with nephrectomy later in 3, laparotomy in 1, suprapubic incision in 1, and in another a plastic operation on the ureter with subsequent nephrectomy. Seven of the 12 patients succumbed to the effects of the injury, 2 from shock and 3 from peritonitis. There are no pathognomonic signs of injury of the ureter at first. Acute hydronephrosis or a tumor from escape of the urine through the injured ureter are important signs later. Cystoscopy revealed the injury in 2 of the cases, and it should never be omitted in case of a dubious diagnosis. Nephrectomy was done in all the 7 cases in which the patient recovered.

57. **Fate of Silver Wire Suture of Fractured Patella.**—Twelve men between the ages of 22 and 49 whose fractured patellas had been sutured with silver wire were recently re-examined. Objective ideal healing of the fracture was found to have occurred in only 3 of the cases. In the others the wire had become displaced and the parts were not firmly fas-



tened together, but were loose in all but one case. In some the wire had broken up into several pieces; in 4 others it had worked its way into the joint. von Brunn concludes that silver wire is not strong enough to guarantee consolidation of the bone. Silk or catgut would have been fully as effectual as the wire in these cases.

58. **Sarcoma of a Long Bone.**—Kocher found that in 45 cases of sarcoma of a long bone cured by operative measures 30 were myelogenic sarcomata. Out of 32 myelogenic sarcomata operated on there has been no recurrence for more than three years in 5 patients, 2 of whom had been treated by amputation, 2 by resection and 1 by mere evacuation. Conservative measures are advised always for myelogenic sarcoma and sometimes for the periosteal when not too far advanced, with resort to amputation or exarticulation in case of recurrence. Patients must be kept under supervision for three years at least after the operation.

60. **Ultimate Results of Operative Treatment of Umbilical Hernia.**—Krauss found 13 patients permanently cured out of 22 operated on by the Bruns-Condamin technic during the last twelve years. Recurrence was observed in 9 cases. The details of the technic and the case histories are given in full.

61. **Splenectomy for Traumatic Rupture of Spleen.**—In 11 out of the 103 cases of traumatic rupture of the spleen, reports of which have been published, the injury had been inflicted by the kick of a horse. Hörz reviews this material and describes a case, personally observed, treated by splenectomy. Systematic examination of the blood showed that the removal of the spleen had absolutely no ill effects. In conclusion, he reviews the 34 splenectomies done since 1902 for traumatic rupture of the spleen, bringing Berger's statistics down to date.

66. **Roentgen Treatment of Malignant Lymphoma.**—Pfeiffer concludes from his experience with one patient and from analysis of the literature that it is impossible to exclude positively all injurious by-effects of the exposures. No permanent cures have yet been realized; recurrence has been observed in 70 per cent. of the patients treated. Recurrence may be as late as after the fourteenth month and it is generally soon fatal. Transient improvement may be secured, but is not constantly observed.

69. **Incarcerated Hernia of the Diaphragm.**—Vayhinger advocates the transpleural method of operative treatment as far superior to the abdominal for various reasons, among them the lesser mortality, the better oversight and better and easier reduction of the hernia, while the hernial opening can be sutured more readily.

All the articles in this opening number of the fiftieth volume of the *Beiträge* issue from von Bruns' clinic at Tübingen.

#### Berliner klinische Wochenschrift.

- 71 (XLIII, No. 49, Pp. 1555-1582.) Tumors in Dogs Transmitted by Sexual Contact. A. Sticker. (Uebertragung von Tumoren bei Hunden durch den Geschlechtsakt.)
- 72 \*Decapsulation of Kidney in Treatment of Severe Eclampsia. A. Sippel. (Ein neuer Vorschlag zur Bekämpfung schwerster Eklampsieformen.)
- 73 \*Origin of Acute Hemorrhage and Necrosis of Pancreas. E. A. Polya. (Zur Pathogenese der ac. Pankreasblutung und Pankreasnekrose.)
- 74 \*Pathogenesis and Treatment of Infantile Splenic Anemia. H. Wolff. (Anaemia splenica infantum.)
- 75 Results to Date of Experimental Vaccination Against Syphilis. C. Bruhns. (Resultate der exp. Syphilisimpfung.)

72. **Decapsulation of Kidney in Eclampsia.**—Sippel noticed in 1902 that the kidneys were in a condition of glaucoma in the body of a woman who had succumbed to eclampsia with persisting anuria two days after delivery. This finding, with other experiences, impels him to advocate slitting the capsule of each kidney when these organs do not functionate efficiently after delivery in cases of eclampsia. He has never had opportunity to carry out this idea in practice, but Edebohls' success in this line, he says, justifies the measure as the routine treatment for such conditions. He does not advocate it before delivery, but would restrict it to the severer forms of eclampsia after childbirth.

73. **Pathogenesis of Hemorrhage and Necrosis in Pancreas.**—Polya's experimental research demonstrates that the presence of even a small amount of duodenum content in the pancreatic duct causes a severe affection in dogs which, in its

course and pathologic anatomic findings, corresponds exactly to fat tissue necrosis in man. Trypsin in the duct has a similar effect.

74. **Splenic Infantile Anemia.**—Wolff describes a very severe case in a child, 1 year old, with only 467,000 reds and 37,800 whites, hemoglobin 40 per cent. The spleen was much enlarged and the anemia and cachexia were extreme. The spleen was removed without loss of blood, under chloroform, the entire operation lasting 40 minutes. The child weighed 14 pounds and the spleen weighed about 1 pound and measured 19x11x3 cm. The blood picture altered at once for the better; in 10 days the reds had increased more than tenfold and the child had gained 2 pounds in weight and continued to improve. Wolff ascribes the affection to some primary disturbance in the spleen.

#### Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 76 (XXXII, No. 50, Pp. 2017-2056.) Treatment of Bullet Wounds. Sprengel. (Schussverletzungen.) Clinical lecture.
- 77 \*Treatment of Ulcer in Stomach or Duodenum After Perforation into Abdominal Cavity. v. Eiselsberg. (Behandlung des in die freie Bauchhöhle perf. Magen- und Duodenalulcus.)
- 78 \*Operative Treatment of Tuberculous Process in Upper Cervical Vertebra. E. Payr. (Op. Behandlung des Malum suboccipitale.)
- 79 Intestinal Stenosis as Tardy Effect of Appendicitis. A. v. Bergmann. (Darmstenosen als Spätwirkung der App.)
- 80 \*Catgut Suture of Fractured Patella. Riedel. (Die Catgutnaht bei Fract. patellæ.)
- 81 \*New Method of Uniting and Suturing the Ends of the Ureter After It has been Completely Divided. S. Pozzi. (Invagination mit Entropium.)

77. **Treatment of Perforated Gastric or Duodenal Ulcer.**—Five recovered out of the 12 patients on whom von Eiselsberg has operated for perforation of an ulcer into the free abdominal cavity. Some of the others were practically moribund when first seen. He endorses Brunner's statement that the physician who sends a patient with such a perforation promptly to the hospital, without wasting time on internal measures, deserves more credit than the surgeon for the success of the operation. He extols the great benefit of jejunostomy, after the perforation has been taken care of; it allows the stomach to be left in peace while the patient can be sufficiently nourished from the start. The Witzel technic is simple and rapid and the patient can be fed every two hours to his great advantage. In one instance nourishment was pushed too far and the patient acquired a transient catarrhal intestinal affection; he had then been tided past the critical period. Thorough rinsing of the peritoneum in peritonitis is the rule at von Eiselsberg's clinic, supplemented by salt solution subcutaneously and intravenously at need. He tampons in case of diffuse peritonitis, preferably in the form of Gersuny's wicks, bringing the wick or drain out through the upper or lower angle of the wound which is otherwise sutured. He does not use lamp wicking, as it breaks too readily, preferring a knitting yarn for the purpose, known as Gumpoldskirchner-Strickgarn No. 16. His impression is that an extensive radical operation or gastroenterostomy does not ensure against recurrence of the ulcer and consequently he advises the jejunostomy alone as offering the best chances for permanent success under the conditions. The remote results in his experience justify these conclusions.

78. **Operative Cure of Tuberculous Process Just Below the Atlanto-Occipital Articulation.**—Contrary to the general opinion that a tuberculous process in this region is best treated by extension and evacuation of pus when it has settled to the lowest point, Payr thinks that aggressive operative treatment is justified under certain conditions. He reports the details of a primary tuberculous affection of the bone of the cervical vertebrae which he treated by excision of the focus. It was unilateral and by its location and extent allowed radical removal without fistula formation and with complete recovery of the patient, a woman of 35. The play of the muscles is important for the early diagnosis, as in hip-joint disease. If the trouble is bilateral the head is held stiffly erect, but when it is restricted to one side the head is bent or the chin twisted over to that side to relieve the pressure, whether the lesion is in the articulation or just below it. The localization of the pain is also instructive, and the x-rays may throw light on the nature and seat of the process. Ample access must be secured



by horizontal incision from the mastoid process to beyond the median line, with a perpendicular incision, 14 cm. long, extending downward from a point not far from the mastoid process. Such intervention should be restricted to unilateral processes in the early stages with relative retention of free movement of the head and not much painfulness when pressure is applied to the vertex. Such cases are rare, but the favorable results attained in the case reported justify further attempts in this line.

80. Catgut Suture of Fractured Patella.—Riedel used catgut in treating 3 old fractures of the patella and 8 recent fractures. Two other patients with splintered fracture of the patella, without much dislocation, did not require suturing, and the fractures healed without operative interference. The result was faultless healing and almost perfect functioning of the joint. The same results were obtained in nearly all the cases sutured with catgut. In 2 cases he used five or six sutures with stouter catgut, and aseptic inflammation resulted, with fever and apparently severe phlegmons. The leg became enormously swollen, but the general condition persisted invariably good; the patients were placid, while the surgeon worried for fear of impending suppuration in the joint. The parts healed in time, but the legs can not be actively flexed more than 110 degrees and the joints are still a little stiff. This aseptic inflammation from the use of too much catgut explains a number of disturbances which he has observed in operations in which much catgut was used. The phlegmon is at first aseptic, but is liable to become infected from the skin. When a small amount of fine catgut is used, this complication does not occur. In future Riedel intends to use only four fine catgut threads; the upper half of the patella, under chloroform, does not offer the least resistance. The patient whose patella was sutured with only two threads has the most functionally perfect joint to date.

81. Union of Severed Ureter by Invagination and Suture.—Pozzi describes a case in which the ureter was cut across in the course of a difficult abdominal operation. He united the stumps again by invaginating the upper end in the lower end, turning back inside the upper end of the lower stump. He first stretched the lower stump and then made a longitudinal incision for 2 cm. from the top. The upper margin was then turned back inside for 1 cm., bringing the outer aspect of the ureter into the lumen. The upper stump was then introduced into the lower stump for a distance of 1 cm. The stumps were then sutured together and the ureter straightened out; the longitudinal incision was then sutured, not allowing the stitches to enter the mucosa. This technic of invagination and entropion brings the outer surfaces of both stumps together, ensuring perfect healing without tendency to cicatricial retraction. The parts are more liable to stretch than to develop stenosis. If desired, the circular buttonhole suture can be made over a small sound or hysterometer with crooked end, introduced through the longitudinal incision. Catheterization of the ureter is not required after the operation, he thinks, as the ureter is not inclined to necrosis, but displays a peculiar and quite extraordinary vitality. He drains afterward; urine oozes out of the junction at first, but the ureteral fistula soon closes spontaneously.

#### Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed XLVII, page 2127.

- 82 (LXIV, No. 5, Pp. 651-778.) Utilization of Iron by Infants. N. Krasnogorsky. (Ausnützung des Eisens bei Säuglingen.)
- 83 \*Influence of Salt on Dropsy in Children. O. Grüner. (Einfluss des Kochsalzes auf die Hydropsien des Kindesalters.)
- 84 \*Endemic Influenza in Children. L. Jehle. (Grippenendemie hervorgerufen durch den *Micrococcus catarrhalis*.)
- 85 Changes in Neutrophile Blood Picture During Incubation of Measles. H. Flesch and A. Schosberger. (Veränderung des neutr. Blutbildes im Inkubationsstadium von Masern.)
- 86 Six Cases of Gangrenous Processes During Measles. B. von Hoiwede. (Brand bei Masern.)
- 87 Syphilitic Myocarditis with Acute Development of Drumstick Fingers. W. Stoeltzner. (Myoc. syph. mit akuter Entwicklung von Trommelschlägelfingern.)
- 88 Two Atypical Cases of Myxedema. F. Slegert and B. Karer. (2 atyp. Myxodemfälle.)

83. Influence of Salt on Dropsy in Children.—The daily findings in 8 cases of dropsy in children are tabulated, with the amount of salt and of fluids ingested and eliminated, the specific gravity of the urine and other details of the metabolism. They show the remarkable parallelism between retention of salt and formation of edema, and the prompt

subsidence of the latter under the influence of partial or complete deprivation of salt. The fact of the retention of salt and its consequences has been fully established, he states, but it is difficult to explain its mechanism. Grüner accepts the whole process as a spontaneous means of regulating the osmotic balance. Both experience and theory, he declares, sustain the advantages of restricting the intake of salt in all cases of edema of cardiac or renal origin or tendency thereto. Restriction of the intake of salt is not always effectual in every case of existing retention of salt. Possibly the retained salt in these cases is combined with the albuminoids and tissue fluids in some way and is no longer in the form of a simple solution, and thus its elimination through the kidneys is prevented.

84. Endemic Influenza Among Children.—Jehle describes an endemic induced by the *Micrococcus catarrhalis* in the infants' ward in a hospital. The infants in the incubators were not affected, but the other children had several recurrences of the epidemic febrile affection. High fever was the only marked symptom and no complications were observed, not even coryza, except in a few instances. Five drops of pyocyanase were instilled into each nostril, and infants thus treated were spared further recurrence, while the bacteriologic findings were constantly negative thereafter.

#### Monatsschrift f. Geb. und Gynäkologie, Berlin.

Last indexed XLVII, page 2128.

- 89 (XXIV, No. 5, Pp. 575-702.) Obstetrics at the Tyrol Maternity, 1890-1906. E. Ehrendorfer. (Rückblick auf einzelne klinische Fortschritte in der Tiroler Landesgebärklinik innerhalb der letzten ca. 1½ Dezennien.)
- 90 \*Retention of Fetal Membranes. P. Rissmann. (Elhautretention.)
- 91 \*Value of Potassium Iodid in Eclampsia. O. Gutbrod. ("Zur Eklampsiefrage.")
- 92 Influence of Intravenous Injection of Own Placenta Substance in the Rabbit. E. Martin. (Einfluss einer intrav. Inj. von Placenta-Substanz auf den eigenen Organismus beim Kaninchen.)
- 93 \*Intestinal Occlusion in Case of Parametritis. P. Kuliga. (Erscheinungen von Darmverschluss bei Parametritis.)
- 94 Case of Marginal Insertion of Umbilical Cord on Placenta Praevia with Blood Vessels on the Side of the Membranes Next to the Internal Os, with Birth of Living Child After Rupture of Two of the Vessels. B. Zöppritz. (Vasa praevia bei Insertio velamentosa, etc.)
- 95 \*Collective Review of Latest Works on Appendicitis During Pregnancy and Childbed. R. Klien. (App. während der Schwangerschaft, Geburt und Wochenbett.)
- 96 Duties of Midwife After Delivery. R. Lumpe. (Wie sollen sich die Hebammen in der Nachgeburtszeit verhalten?)

90. Retention of Fetal Membranes.—Rissmann is convinced that retained membranes must be removed to prevent impending sepsis, to ensure prompt recovery and complete involution of the genitalia and as a means of arresting hemorrhage. He has found that energetic pressure from without, repeated at long intervals, is generally sufficient to ensure the expelling of the membranes, although his experience indicates that the more the uterus is left untouched for a time after delivery the greater the tendency to spontaneous expulsion of the membranes. If they are still retained after an interval of 24 hours, instrumental removal is indicated. He summarizes 16 case histories to show the advantages of acting on these principles. In some cases the membranes were so tough and so adherent that spontaneous expulsion would have been out of the question. In other cases the conditions indicated that the lower segment of the uterus had contracted in such a way as to prevent any chance of spontaneous expulsion.

91. Potassium Iodid in Prophylaxis of Eclampsia.—Gutbrod's patient was a iv-para, with a history of eclampsia at every childbirth except the third. The absence of eclampsia at the third delivery is ascribed by Gutbrod to his prophylactic administration of potassium iodid. The course of the pregnancy and delivery was normal under the influence of this drug administered according to Lomer's technic, with rest in bed at the periods at which menstruation would have occurred in the absence of pregnancy. As the course of the childbirth was so smooth, the family assumed that the fourth pregnancy would have an equally favorable natural outcome and omitted the potassium iodid and rest. Severe eclampsia developed at the seventh month, requiring artificial delivery, and amaurosis persisted for several days. The case is reported as unusually convincing testimony to the value of potassium iodid in the prophylaxis of eclampsia. The drug permeates the tissues of both mother



and fetus and acts on the toxin causing the eclampsia, while it stimulates the secretion of urine and strengthens the heart. Gutbrod makes a practice of giving potassium iodid in every case of abortion to promote absorption of any infarcts that may form in the uterus. He also gives it when the fetus had been delivered putrefied in previous pregnancies or the after-birth had been unduly retained. His experience now includes 120 patients for whom he has ordered potassium iodid regularly from the beginning of pregnancy. The ordinary dose never caused any disturbances in mother or child. The results have been so universally good that he is tempted to give it systematically in all pregnancies, not merely in the pathologic, as a means of aiding the maternal organism during the stress of childbearing, at least during the last two months, and of averting any possible tendency to eclampsia. He mentions as another argument Caspari's favorable experience with potassium iodid in chronic and acute nephritis.

93. **Intestinal Occlusion from Parametritis.**—Kuliga reports 3 cases of inflammatory processes in tissues adjoining the uterus, with effusions which compressed the rectum. The occlusion was not complete at first, but became so as the signs indicated that the intestines were paralyzed. One of the patients succumbed to the resulting ileus; the second patient recovered, but was left with an artificial anus for six months, and the third patient was four months in bed and still carries an artificial anus. The cases teach the necessity for extreme caution in applying weighting and superheating in treatment of parametritis. The acute exacerbation in one case was undoubtedly due to measures of this kind, and he has frequently had occasion to observe acute exacerbations after application of these measures to patients who had been free from fever for weeks. The cases further teach the necessity for caution in the use of the high intestinal tube. The long obstipation renders the walls of the intestine so friable that perforation is always menacing. When signs of complete paralysis of the intestines are observed, ordinary injections and purgatives internally do no good, and an artificial anus should be made at once, as a rule. This is a comparatively harmless intervention, relieves the patient at once and removes the pressure of the fecal masses on the effusion which may be the means of keeping up the inflammation and postponing healing. The general condition rapidly improved in the cases in which Kuliga made an opening into the intestine. Whether to evacuate the effusion through the vagina or not depends on the individual case. Pus is better removed, but under other conditions it is perhaps best to wait after making the new anus to see if the inflammatory process does not subside spontaneously. Severe hemorrhage might follow operative intervention and be difficult to control in the pathologically altered tissues. He knows of only 5 cases on record in which the rectum was closed by compression from a parametritic effusion. One of the patients succumbed to peritonitis, and 3 were cured by inguinal colotomy after suppuration.

95. **Appendicitis During Pregnancy.**—Klein has collected 34 cases of appendicitis occurring during pregnancy or the puerperium. Operative treatment was undertaken in 17. All the patients recovered except 2 for whom the intervention came altogether too late, and a third patient who was treated by vaginal hysterectomy on a mistaken diagnosis. Four died of the 17 who received expectant treatment. Childbirth occurring during the appendicitis is a grave matter. Only 3 survived out of the 7 patients in this category.

#### Münchener medizinische Wochenschrift.

- 97 (LIII, No. 49, Pp. 2377-2424.) Further Researches on Cow's Milk Precipitin in Infants' Blood. E. Moro. (Kuhmilchpräzipitin im Säuglingsblut.)
- 98 \*Functional Hypertrophy of Transplanted Scraps of Thyroid Tissue in Man. H. Cristiani and E. Kummer. (Funkt. Hypertrophie überpflanzter Schilddrüsenstückchen.)
- 99 \*Eosinophile Intestinal Affections. O. Neubauer and C. Stäubli. (Eosinophile Darmerkrankungen.)
- 100 \*Bacteriologic Early Diagnosis of Typhoid. H. Conradi. (Bakt. Frühdiag. des Typh.)
- 101 Influence of Arsenic on Metabolism. A. Lardell. (Einfluss des Arsens—Val Sinestrawasser—auf den Stoffwechsel.)
- 102 What Do We Know of the Active Agent in Vaccine? E. Paschen. (Was wissen wir über den Vakzineerreger?)
- 103 Presence of Antituberculin in Tuberculous Tissue. A. Wassermann and C. Bruck. (Vorhandensein von Antituberkulin im tub. Gewebe.)

- 104 \*Treatment of External Anthrax. K. Lengfellner. (Behandlung bei äusserem Milzbrand.)
- 105 \*Tamponing in Treatment of Ozena. R. Sondermann. (Nasentamponade bei Ozena.)
- 106 \*Speculum Holder. Schallehn. (Halteplatte für Spekula.)

98. **Functional Hypertrophy of Transplanted Pieces of Thyroid Gland.**—Cristiani's experiences in the clinic with transplanted scraps of thyroid glands have been duly chronicled in THE JOURNAL as reported. He here relates a case of partial exophthalmic goiter treated by resection of the thyroid gland followed by transplantation of two scraps from the thyroid gland. They were implanted under the skin over the right acromion. The scraps were histologically normal, and in course of time developed just as if they had remained in their normal place, showing functional hypertrophy when excised three years afterward. He thinks that there is no doubt but that the implanted scraps participated in the total thyroid functioning. Another patient had been operated on at the same time for approximately the same indications, but no attempt was made at transplantation of any of the extirpated gland tissue and the patient succumbed to cachexia thyreopriva. More of the thyroid gland had been left *in situ* in this than in the first case. In conclusion, Cristiani affirms anew that experience is confirming his assertions in regard to the possibility of producing new thyroid organs which not only retain their vitality and functionate, but which grow in time to be actual new thyroid glands of respectable size.

99. **Eosinophile Intestinal Affections.**—Neubauer and Stäubli report 6 cases of severe diarrhea or catarrhal affections of the intestines characterized by yellowish deposits on the reddened rectal mucosa, leaving bleeding erosions as the deposits are brushed off by the passage of stools. The deposits consist of eosinophile leucocytes, debris and Charcot-Leyden crystals. The local eosinophilia is accompanied by increased proportions of eosinophiles in the blood, similar to that observed in other local eosinophile affections, such as asthma and pemphigus. The intestinal affection may appear abruptly and may exhibit severe exacerbations lasting for weeks or months, with a mild chronic tendency in the intervals. A nervous predisposition is evident, as in asthma and membranous enteritis. A tendency to eruptions was also pronounced in 2 of the patients, such as is sometimes observed with the asthmatic tendency. These facts suggest that eosinophile proctitis with focal deposits is the local expression of some general constitutional anomaly.

100. **Early Bacteriologic Diagnosis of Typhoid.**—Conradi announces that an early diagnosis of typhoid fever can be made from the smallest amount of blood available for the agglutination test. The serum can be utilized for the agglutination test. It will be found sterile, as the typhoid bacilli present are caught in the fibrin in the rest of the blood. Experiments with blood from 60 typhoid patients showed the presence of the bacilli in the coagulum from amounts of blood ranging between 0.05 and 0.2 c.c. The little thread of coagulum is extracted from the capillary tube with forceps and transferred to a test tube containing 5 c.c. of beef bile, with 10 per cent. peptone and 10 per cent. glycerin. The tube is then kept at a temperature of 37 C. for from 12 to 16 hours. It is then well shaken, and 0.1 and 1 c.c. of the contents are spread out with a glass spatula on dried plates of litmus-milk sugar agar. In 24 of the 60 cases typhoid cultures developed on the plates, that is, in 40 per cent. Restricting the figures to the patients in the first or second week of the disease, the proportion was 50 per cent. By this simple means it proved possible to make a positive diagnosis even with the minimal amounts of blood sent in for the agglutination test. He adds that the "bile cultures" offer a prospect of being able to detect typhoid fever in its earliest stages.

104. **Treatment of Anthrax.**—Lengfellner reports the complete cure of 15 patients with anthrax treated merely with a simple salve and dressing to protect the lesion, and suspension and fixation to ensure absolute rest for the part, without further measures.

105. **Tamponing the Nose in Treatment of Ozena.**—Sondermann recommends the following method of removing the crusts in ozena as easy for the patient while a great aid in the cure. A rubber condom is introduced collapsed into the nose. It is then inflated by a connecting tube and bulb, when it fits



close against the walls of the nose, adapting itself to all nooks and crevices. After from 5 to 10 minutes the stopcock is turned and the air allowed to escape from the condom, after which it is easily removed and transferred to a vessel containing water. Many of the crusts stick to it and are thus removed with it, while those remaining in the nose are loosened and can then be readily expelled spontaneously. During the first week the patient repeats this twice a day and later once a day. This procedure is supplemented by aspiration of the secretions according to Sonderrmann's technic recently described in these columns on page 87.

**106. Supporting Plate for Speculum.**—Schallehn's plate fits under the patient's pelvis and lower part of the back and carries the speculum fastened to the plate by a standard. The whole moves with every movement of the pelvis and thus obviates the danger of injury liable with instruments fastened to an immovable table.

*Zeitschrift f. Geb. u. Gynäkologie, Stuttgart.*

*Last indexed XLVII, page 1774.*

- 107 (LVIII, No. 3, Pp. 363-531.) \*Epithelioma of the Duct of Gland of Bartholin. A. Sitzenfrey. (Hornkrebs des Gangsystems der B. schen Drüse.)
- 108 \*Cancer of Fallopian Tube. E. G. Orthmann. (Maligne Tubenneubildungen.)
- 109 \*Relationship Between Saprophytic and Pathogenic Puerperal Streptococci, and Study of Streptococcus Immunity. W. Zangemeister and T. Meissl. (Verwandschaft sapr. und path. Puerp.-Strept., und über die Strept.-Immunität.)
- 110 \*Infection of Umbilicus in Infantile Mortality. C. Keller. (Nabelinfektion in der Säuglingssterblichkeit, 1904-5, Berlin.)
- 111 Uterine Myoma. Henkel. (Zur Klinik und zur Chirurgie des Uterusmyoms.)

**107. Epithelioma of Gland of Bartholin.**—Sitzenfrey's patient was an unmarried woman of 29 who had been infected with gonorrhea seven years before. The gonorrhea had assumed a chronic form with several acute exacerbations. The epithelioma recurred six months after removal of the primary growth, but the patient has been cured to date since removal of the recurrence. She returned a year after the last operation on account of prolapse of the vagina from the defect left after the resections. He discusses the technic of repair.

**108. Primary Cancer of the Tubes.**—Orthmann adds 2 new cases to the 84 that have been recorded since he published the first in 1886. He also describes 3 other cases of malignant disease of the tubes secondary to carcinoma or sarcoma of the ovaries. Malignant disease of the tubes secondary to primary carcinoma of the uterus seems to be extremely rare, while it is common as a sequence of malignant affections of the ovaries. In one of Orthmann's patients the primary carcinoma of the left tube accompanied a tubo-ovarian cyst, probably the primary lesion. The patient survived a year before she succumbed to a recurrence which was found inoperable at the ninth month. In 9 of the cases on record this connection between a tubo-ovarian cyst and malignant disease of the tubes was apparent. In the second patient primary malignant disease was encountered in both tubes. In one it had developed secondary to a cystic affection of the tube, and in the other it was still in an incipient stage. The tubes and ovaries were removed and the patient is still in good health, seven months later.

**109. Transformation of Streptococci and Immunization During the Puerperium.**—The extensive researches reported by Zangemeister and Meissl demonstrate, they think, that ordinary saprophytic streptococci are liable to assume pathogenic properties under conditions such as those of the puerperium, and that all the facultative anaërobic streptococci belong to a single species. Two important consequences follow from this assumption, namely, the possibility of infection from streptococci which have hitherto led a saprophytic existence, and the possibility of successful immunization of the patient against all strains of streptococci. With the aid of two polyvalent antistreptococcus sera they were able to protect mice against a large number of extraneous strains of streptococci of various origins.

**110. Umbilical Infection as a Factor in Infantile Mortality.**—Keller finds on examining the vital statistics of Berlin during 1904-5 that 2 per cent. of the total mortality is due to umbilical infection during the first month of life, entailing sep-

sis, tetanus, local infection or hemorrhage or peritonitis. The proportion of the first year of life is 1 per cent. and the annual average is 1.3 per cent. The percentage of deaths from tetanus and from sepsis is extraordinarily high during the first month of life, showing the influence of umbilical infection. He treats the umbilicus by applying a piece of mull kept until needed in alcohol. The alcohol is squeezed out just before using, to prevent eczema of the genitals, but enough is left to exert a drying and disinfecting action on the part. After the alcohol has evaporated a simple aseptic dressing is left which answers every purpose if asepsis has been the rule otherwise in respect to the hands, instruments, etc. The alcohol dressing is renewed every two hours. He makes a practice of taking the rectal temperature twice a day of all the new-born infants, and is thus able to detect umbilical infection in its incipency.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**INTERNATIONAL CLINICS, A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, and others.** By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D. Vol. IV. Sixteenth series, 1906. Cloth. Pp. 322. Price, \$2.00. Philadelphia: J. B. Lippincott Company, 1906.

**A TREATISE ON ORTHOPEDIC SURGERY.** By R. Whitman, M.D., Clinical Lecturer and Instructor in Orthopedic Surgery in the College of Physicians and Surgeons of Columbia University, New York. Third edition, revised and enlarged. Illustrated with 554 Engravings. Cloth. Pp. 871. Price, \$5.50 net. Philadelphia: Lea Brothers & Co., 1907.

**CONSERVATIVE GYNECOLOGY AND ELECTRO-THERAPEUTICS. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity.** By G. B. Massey, M.D., Attending Surgeon to the American Oncologic Hospital, Philadelphia. Fifth revised edition. Cloth. Pp. 467. Price, \$4.00 net. Philadelphia: F. A. Davis Company, 1906.

**TROPICAL MEDICINE, with Special Reference to the West Indies, Central America, Hawaii and the Philippines, Including a General Consideration of Tropical Hygiene.** By T. W. Jackson, M.D., Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia. Cloth. Pp. 536. Price, \$4.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

**A TEXT-BOOK OF DISEASES OF WOMEN.** By J. C. Webster, B.A., M.D., F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynecology in Rush Medical College, in affiliation with the University of Chicago. With 372 Illustrations and 10 Colored Plates. Cloth. Pp. 712. Price, \$7.00. Philadelphia: W. B. Saunders Company, 1907.

**PRACTICE OF OBSTETRICS, Designed for the Use of Students and Practitioners of Medicine.** By J. C. Edgar, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College. Third edition, revised. Cloth. Pp. 1071. Price, \$6.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

**REFRACTION OF THE EYE, Its Diagnosis and the Correction of Its Errors, with a Chapter on the Use of Prisms.** By A. S. Morton, M.B., F.R.C.S., Surgeon to the Moorfields Ophthalmic Hospital. Seventh edition. Cloth. Pp. 96. Price, \$1.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

**JAHRESBERICHT, Ueber die Fortschritte in der Lehre von den Pathogenen Mikroorganismen umfassend Bakterien, Pilze und Protozoen.** By P. von Baumgarten and F. Tangl. Zwanzigster Jahrgang, 1904. Paper. Pp. 1106. Leipzig: Verlag von S. Hirzel, 1906.

**BEITRÄGE ZUR ERKENNTNISS DES URANISMUS, Heft I. Die Uranische Familie, Untersuchungen ueber die Ascendenz der Uranier.** By L. S. A. M. von Römer. Paper. Pp. 107. Leipzig: Verlag von Maas & Van Suchtelen, 1906.

**THE HARVEY LECTURES, Delivered Under the Auspices of the Harvey Society of New York, 1905-06.** By Prof. H. Meyer, Prof. C. von Noorden and others. Cloth. Pp. 337. Philadelphia: J. B. Lippincott Company, 1906.

**PHYSICAL CHEMISTRY in the Service of Medicine.** Seven addresses. By W. Pauli. Authorized translation by M. H. Fischer. First edition. Cloth. Pp. 156. Price, \$1.25 net. New York: John Wiley & Sons, 1907.

**TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION at Its Twenty-ninth Annual Meeting, held in New York, Dec. 28-30, 1905.** Paper. Pp. 239. Official report of the proceedings. By C. J. White, M.D., Secretary.

**TUMORS OF THE CEREBRUM, Their Focal Diagnosis and Surgical Treatment.** By C. K. Mills, M.D., C. H. Frazier, M.D., and others. Cloth. Pp. 35. Philadelphia: E. Pennock, 1906.

**BIENNIAL REPORT OF THE DEPARTMENT OF HEALTH OF THE CITY OF CHICAGO for the Years 1904-1905.** By C. J. Whalen, M.D., Commissioner of Health. Paper. Pp. 308.

**THE MYSTERY.** By Stewart Edward White and Samuel Hopkins Adams. With 16 Illustrations. Cloth. Pp. 286. New York: McClure, Phillips & Co., 1906.

**STUDIES FROM THE BENDER HYGIENIC LABORATORY, Albany, N. Y.** Reprints. Vol. III, 1906. Paper. Pp. 188. Albany, N. Y.: Fort Orange Press.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVIII.

CHICAGO, ILLINOIS, FEBRUARY 2, 1907.

No. 5.

## Original Articles

### GONORRHEAL ARTHRITIS.\*

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Gonorrheal arthritis is a specific infection of one or more joints, occurring as a sequela or complication of gonorrhea, usually in its subacute or chronic stages, only a very limited number of cases having been reported during the acute stage of gonorrhea. The oft repeated expression that this disease is not equal to a "bad cold" must be corrected by the profession. The falsity of this description is quickly appreciated by its unfortunate victim, should arthritis develop, as few joint troubles are so painful. The infection is transmitted usually by the blood, and therefore is a general infection in which the joint pathology is but a local manifestation, and while the local symptoms are the principal ones to attract the attention of both patient and physician, my observation is that the general system suffers far more seriously than is usually appreciated.

#### ETIOLOGY.

The infective agent is primarily the gonococci, or the toxins generated by them, and in very severe cases the germs are present in the fluid which forms in or around the joint; while in the mild cases they are frequently absent, but the toxins are responsible for the lesion in the joint. In the suppurative cases, which are fortunately not common, there is a mixed infection and the pyogenic bacteria (usually of the staphylococcus variety) predominate.

In the vast majority of cases the infection is disseminated from the primary focus in the urethra, or from a gonorrheal vesiculitis, but it is a mistake to contend, as do some writers, that this is always true, as cases have been reported following gonorrheal ophthalmia, and arthritis has developed in cases of ophthalmia neonatorum. It is also worthy of notice that gonorrheal infection has been reported to have primarily attacked wounds, and arthritis has been developed from this focus of infection by Kimball as gonorrheal pyemia.

In gonorrheal arthritis, as in all infections, there is great variation in the individual susceptibility. This, as in other diseases, must be considered in the development of arthritis, and its tendency to return under favorable conditions.

I am unable to accept the statement of some authors that a rheumatic subject is more liable to gonorrheal arthritis, except in the possible lessening of the resisting powers of tissues previously affected by rheumatic inflammation. We must appreciate the fact that they are independent infections, and that gonorrheal rheumatism

is incorrect and misleading, and should not be used in text-books.

#### PATHOLOGY.

Gonorrheal arthritis occurs in two forms, which are not infrequently combined. In one type, the synovial membrane is inflamed, the effusion is in the intra-articular structures, and permanent ankylosis may follow. In the other type the periarticular structures are the principal tissues affected by the infection, with very little or no effusion in the joint proper, but there may be marked infiltration of the surrounding structures. The parts are edematous, with softening of external ligaments. Fascia contractures are not infrequent, as in plantar region, leaving stiffness. The Achilles and other large tendons are sometimes painfully inflamed. The amount and character of the effusion varies according to the severity of the attack. It is serous in the majority of cases, but may vary in the mildest form from serum with flocculent lymph to all grades of infective fluid, to a seropurulent or purulent accumulation. While, as a rule, one or two joints are affected, and those most commonly involved are the knee, ankle and wrist, in severe cases no joint in the body is immune, as the sacro-iliac and the sterno-clavicular, which as has been pointed out, are rarely, if ever, involved in articular rheumatism. In my experience, the left knee has been the joint involved with greater frequency.

#### SYMPTOMATOLOGY.

Gonorrheal arthritis may be divided into two clinical types, acute and chronic. In the acute the onset is sudden, with a chill or chilly sensations, a moderate rise of temperature, rarely above 102 to 103 F., a heavily coated tongue, full bounding pulse, constipated bowels, scanty high colored urine, which may be albuminous, always flocculent. In this type rarely more than one or two joints are involved, but the swelling is rapid and the skin over the joints is red and tense, and very sensitive to the touch. Pain, the most prominent symptom, is sometimes excruciating, and is exaggerated on motion. In a few days the joint pains subside in a measure, and the parts become edematous and fluctuant, the fluid usually being serous in character, but if it becomes purulent, then we have the additional symptoms of repeated chills, irregular fever and sweats. The discharge from the original site of infection often lessens, or stops entirely, during an acute attack of arthritis, but will reappear usually on the subsidence of the joint trouble.

These attacks may run a rapid course and convalescence may be satisfactory, but it must be remembered there is a marked tendency to return under favorable conditions. Ankylosis in this type is rare, but even after all acute symptoms have disappeared, the stiffness and swelling of the joint subside very slowly.

In the chronic type the symptoms are not so acute and marked decline in general health suggests general in-

\* Read in the Section on Practice of Medicine of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.



fection. In this there is progressive loss of weight and strength, anemia is marked, the skin is sallow, the appetite is lost, the muscles lose their tone, and general exhaustion, with malaise, shortness of breath and loss of energy is noted. The pulse is often slow and compressible and unstable, becoming rapid on exertion or excitement. Palpitation of heart is common, even pain in the precordial region is sometimes present, and occasionally endocarditis. In the more severe cases digestive disturbances with lumbar tire or aching will be found, the urine is scanty and high colored, containing pus and shreds floating in specimen. The joint symptoms may be mild, or absent at intervals, but with a tendency to return. Sometimes this occurs after the passage of a sound in a chronic gleet, or even following strong urethral injections. I have known a joint trouble to develop following a nocturnal carousal. In these sub-acute or chronic cases, there may be a mild grade of fever, or it may be absent, the joint is not so hot and red, it may even be glazed and white in appearance, resembling a tuberculous joint, but more commonly it is a dark red or a leaden hue, the pain, at times, may be severe, but is not, as a rule, so great as in the more acute cases. The arthritis in this type is usually multiple, and while the edema and effusion may be considerable, yet in some the joints may be but little enlarged. Ankylosis is the rule, unless treatment is prompt and efficient.

#### DIFFERENTIAL DIAGNOSIS.

Differential diagnosis from acute inflammatory rheumatism should be easy in most cases. In gonorrheal arthritis the presence of the primary disease, while not pathognomonic, is important, the fever is not so irregular, the lactic acid sweats are absent, the joints are brighter red, more painful and tend more to suppuration. While this is rare in both, yet it is more common in gonorrheal arthritis. There is not that sudden subsidence of trouble in one joint, and the sudden involvement of another, as seen in acute rheumatism. The endocardium is rarely involved in gonorrheal arthritis. The case is much more prolonged and does not yield to the salicylates. The differentiation between the chronic form and tuberculous arthritis is more difficult, as was proven in a case I recently saw. In both the health is gradually on the decline. In both variable temperature exists, and many other symptoms in common might be mentioned, but I shall pass on to the differences.

In chronic gonorrheal arthritis we usually have multiple joints involved; not so in tuberculous, yet the opposite may be true in both. The joints are more painful, more swollen, have some redness and have larger effusions and more tendinous involvement, more edema than in tuberculous cases, when the joints are often white and glazed in appearance, and the trouble is more central, often involving the epiphyses of the bones. The patient has a tuberculous tendency, dates his trouble back to some slight injury, whereas in gonorrheal arthritis it is dated back to an old gonorrhea. In the case mentioned, only the left knee was involved, and the lymphatic glands in the left groin were enlarged, which might exist in both, but examination of fluid from the joint showed no tubercle bacilli or gonococci. The fact, however, that the effusion, which was sero-purulent, was in the periarticular structures, and was in large amounts, and the boy had an uncured case of chronic gonorrhea, and a removed inguinal gland was septic, together with the absence of any tuberculous history or

lesion elsewhere, forced me to the conclusion that it was not of tuberculous but gonorrheal origin. In the fear that I may make this paper too long, I shall not pursue the differentiation further, but respectfully suggest that the tendency of the profession to call all joint trouble rheumatism is far from correct.

#### PROGNOSIS.

The prognosis in gonorrheal arthritis is always uncertain, and I do not think the serious character of the initial disease is appreciated, as is well shown by the utero-tubal troubles seen in innocent women after marriage, or in the constitutional disturbances and arthritis which may develop years after the acute gonorrhea has disappeared.

The infection is often latent, especially in the glandular type, as in the cases reported in which the germ has been found in the semen for years, and while in these cases it is usually innocuous, yet it is sufficient proof of the difficulty of cure, and impresses the necessity of the profession teaching the laity that marriage is a crime when an uncured case of gonorrhea is present or suspected. Should endocarditis develop it is due to the gonococci, not to the toxins, and is always of grave prognostic importance. It should be remembered that ankylosis is prone to occur, and is often permanent.

#### TREATMENT.

Treatment is as varied as it is unsatisfactory. In the acute types rest in bed, fixation of joint by splints to relieve pain which may be so severe as to demand an opiate. In England they insist on large doses of quinin. Local applications, hot or cold, are often grateful, one of the best local applications being a 50 per cent. ichthyol ointment early in the case. Internal administration of drugs rarely influences the trouble, and is not advisable, except to meet symptomatic conditions. The salicylates are harmful, and add to the patient's discomfort by disturbing the stomach, and yet they are almost universally given. In chronic cases general reconstitutives are useful, and potassium iodid. In both the cure of the initial lesion is to be recommended as rapidly as possible.

I can not agree with the writers who condemn all surgical interference. Great benefit is often derived, according to the case. In some, strapping the joint with adhesive plaster, being careful not to surround the whole joint, will give relief. In others, aspiration must be advised, and in suppurative cases incision and drainage is the only treatment.

Some very remarkable cures have been reported by Dr. Fuller of New York, who insists that the infection comes from a gonorrheal vesiculitis, and by opening and draining them immediate amelioration of the arthritis takes place. With this I can speak only of one case operated on by Dr. W. A. Bryan of Nashville. The case was of two years' duration, and great emaciation and general bad health existed. Both knees were swollen and painful. Much relief followed the operation, and rapid improvement of the arthritis was noted in a few days. In view of the pathology in the joint and the presence of the infective agent found in the effusion, it is difficult to explain the rationality of this treatment.

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**Free Antitoxin.**—Dr. Geo. Webster (*Bulletin Ill. State Board of Health*, October, 1906) advocates that the state of Illinois furnish diphtheria antitoxin to its citizens free of cost on the ground that "an ounce of prevention is worth a pound of cure"; that it is primarily a means not of curing the disease, but of preventing it.



REVIEW OF THE BACTERIOLOGY OF ACUTE  
ARTICULAR RHEUMATISM.\*

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The view that regards acute rheumatism as an infectious disease has now gained such general acceptance and has so completely superseded the older "chemical" and "neurotrophic" theories as to its nature that time need not be taken to review the facts which have led to such a general belief.

With the growth of this idea of the infectious nature of the disease it was but natural that a search for the infectious agent should begin and but natural also, considering the importance of the disease, that the search should be both eager and persistent.

To trace in detail the history of this search for the microbic cause would take us far beyond the scope of this brief paper. A great amount of work on this subject has been done during the past ten years and we can hope only to review briefly the results of this work.

As was perhaps to be expected, these results are far from being uniform and consistent. Different investigators have reached very different and conflicting conclusions, which, however, may be grouped under the following heads: 1. That acute rheumatism is not caused by any one organism, but is a particular reaction to various infections. 2. That the disease is only an attenuated pyemia resulting from infection by the common pyogenic streptococci and staphylococci. 3. That the disease is due to a specific anaërobic bacillus. 4. That it is due to a specific diplococcus or streptococcus. 5. That acute rheumatism is a specific infectious disease whose microbic cause has not yet been discovered. Thus it will be seen that there is disagreement not only as to the special organism causing the disease, but also as to whether it is a definite and specific disease at all.

## IS ACUTE RHEUMATISM A SPECIFIC DISEASE?

Obviously the first point to be decided, if possible, is whether acute rheumatism is a distinct and specific disease. To most of us, I fancy, the answer will seem so simple and clear as hardly to warrant a serious discussion of the question, and it will come to us as something of a shock to find so sound a man as Chvostek<sup>1</sup> willing to make such a statement as the following:

A separation of the so-called genuine articular rheumatism from the pseudo-rheumatic or rheumatoid affections is not possible. The small group of cases in which we do not know the exciting agent and its portal of entrance, and which for this reason we class together as a single disease, is constantly growing smaller, and the time may not be distant when acute articular rheumatism, as a distinct disease, will find its well-deserved end.

The view that acute rheumatism is not a disease *sui generis* has been advocated also by Birch-Hirschfeld,<sup>2</sup> Sahli,<sup>3</sup> Singer,<sup>4</sup> Menzer<sup>5</sup> and others. Birch-Hirschfeld, Sahli and Singer are convinced that the disease is only a modified and attenuated pyemia caused by the common pyogenic cocci. Singer especially has been aggressive in upholding this idea and insists that further search for a specific agent is merely a waste of time. Menzer re-

gards the disease as the result of infection through the tonsils by the ordinary parasites of the mouth (chiefly streptococci), which for some reason have become pathogenic.

Against the view of these few investigators must be set the almost unanimous belief in England and America and that of the great majority of observers on the Continent that rheumatic fever, not only in its clinical picture, but in its pathogenesis as well, is a single and specific disease. The frequency of the disease; its seasonal relationship and epidemic character; its distinct and characteristic clinical course; the frequency and specificity of its visceral and other abarticular manifestations; the tendency to complete recovery, as well as the proneness to subsequent attacks; its specific reaction to the salicylates—all these and many other facts point toward the view that rheumatic fever is a distinct clinical and pathologic entity and not merely an atypical form of sepsis of heterogenous origin.

Singer bases his belief chiefly on the postmortem bacteriologic findings in cases of rheumatism or rheumatic chorea in which he found now streptococci, now staphylococci, in the blood and tissues. The very fact that different organisms were recovered from different cases would suggest strongly that he must have been dealing with cases in which there had been a secondary or terminal infection such as is so commonly found in various other infectious diseases. The idea that acute rheumatism is only a clinical syndrome which may be produced by the action of any of the ordinary pyogenic cocci can, it seems to me, be dismissed from further consideration.

## HAS ITS MICROBIC CAUSE BEEN FOUND?

Assuming, then, that it is a specific disease, we have now to consider whether or not its microbic cause has been found. In 1897 Achalme<sup>6</sup> described a large, spore-bearing anaërobic bacillus which he found in the postmortem examination of cases of rheumatism and which he believed to be its cause. This view was endorsed by Thiroloix and others in France. Further investigations, however, have demonstrated that this was almost certainly a contaminating organism and Achalme's claims have been almost universally rejected.

The assertion that the bacterial cause of acute rheumatism is a specific diplococcus or streptococcus can not be dismissed so readily. As early as 1894 von Leyden<sup>7</sup> found in the inflamed endocardium of several cases of rheumatism a fine diplococcus. A similar diplococcus was found by Triboulet<sup>8</sup> and others in France. In 1899 Wassermann,<sup>9</sup> in a fatal case of post-rheumatic chorea recovered from the heart blood, from the heart valves and from the brain a fine streptococcus which grew with difficulty, but which in a series of eighty rabbits regularly produced joint inflammations.

*The Work of Fritz Meyer.*—This work was soon followed by that of Fritz Meyer.<sup>10</sup> Meyer examined in some thirty cases of rheumatism, during life, the blood and joint contents with absolutely negative results. As a result of these negative findings he was led to examine the inflamed tonsils in cases of rheumatism with the idea that the organism might be found only there and that the joint symptoms might be caused by its toxin alone. After making broth cultures of the mixed growth of bacteria found in such inflamed tonsils he injected this

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906

1. Wien. klin. Wochschr., 1895, p. 469.

2. Verhand. VII Congress. Inn. Med., 1888, p. 346.

3. Deutsch Arch. f. Klin. Med., 1892, vol. II, p. 451.

4. Verhand. XIX Congress. Inn. Med., 1901, p. 441.

5. "Die Aetiologie d. Acute Gelenksrheumatismus," Berlin, 1902.

6. Ann. de l'Inst. Pasteur, 1897, p. 845.

7. Deutsch. med. Wochschr., 1894, p. 913.

8. Compt. rend. de la Soc. de Biol., 1898, vol. v, p. 214.

9. Berliner klin. Wochschr., 1899, No. 29, p. 638.

10. Ztschr. f. klin. Med., 1902, vol. xlv, p. 311.



culture intravenously into rabbits, and in the exudate of the inflamed joints which resulted he found only one kind, a diplococcus, and this only in small quantities.

In this way he isolated the same organism from the throats of 25 cases of rheumatism. This diplococcus produced in rabbits very characteristic joint inflammations, in which the lesions were confined solely to the synovial membrane. The organisms could be found in the mononuclear leucocytes and in the endothelial cells, but not in the blood nor in the serous effusions of the joints. On the other hand, if he injected the ordinary streptococci and staphylococci he produced much more severe and destructive lesions of the joints and the organism could always be recovered from the blood. In another series of rabbits he injected the specific diplococci and some staphylococci together, and in a few days the animal showed in the blood only the staphylococci and in the joints only the diplococci. He then sought to determine if this organism possessed any special tendency to excite endocarditis, and in a series of 100 rabbits, without previously injuring the heart valves, he produced endocarditis twenty-one times. In these the blood, and sometimes also the valve vegetations, were sterile. In a control series of 100 rabbits, using other bacteria, he produced endocarditis only twice. Meyer's work impresses one as careful and thorough and, because of the large number of control experiments, seems entitled to serious consideration.

*The Work of Poynton and Paine.*—During the past five years the idea that a special diplococcus might be the exciting cause of rheumatism has received considerable support from the work of Poynton and Paine<sup>11</sup> and their followers in England. The results of their work is briefly as follows:

In 32 cases of acute rheumatism they have isolated a diplococcus which they believe to have specific characteristics and to be the cause of rheumatism. They have recovered the organism in culture from the heart blood after death, from fragments of the valve granulations, from the throats of rheumatic patients, from the urine in rheumatic pericarditis and three times from the circulating blood. They have demonstrated the diplococcus in tissue from the heart valves, pericardium, tonsils, pleura and from a subcutaneous fibrous nodule. Inoculated into animals the organism produces polyarthritis, endocarditis, bursitis and teno-synovitis. Moreover, in four fatal cases of rheumatism, in three of which there was chorea at the time of death, they isolated and cultivated the diplococcus from the cerebrospinal fluid; three times in chorea they demonstrated the organism in the cerebral pia mater and once in the brain. They are inclined to believe that rheumatic chorea is due to a slight meningo-encephalitis caused by the local action of the specific diplococcus. Poynton and Paine emphasize the fact that the diplococcus is not to be found in the circulating blood nor in the joint effusions of ordinary cases of rheumatism. It is only in the very severe and fatal cases that it can be readily discovered. In the joints the organism is found in the areolar tissue beneath the synovial membrane, but, because of the phagocytic action of the cells lining the membrane, it is not usually to be found in the joint fluid. They believe that, while there is no single specific test by which the organism can be distinguished from the ordinary streptococci, it nevertheless possesses a number of qualities which together differentiate it from them. These features are

briefly: its minute size, its greater tendency to grow in pairs, its feeble retention of Gram's stain, its greater resistance to drying, its earlier and greater production of acid, its ability to grow readily in filtered cultures of *Streptococcus pyogenes* (Marmorek's test), and, finally, its more constant tendency to produce polyarthritis and endocarditis in rabbits, its low grade of virulence and its freedom from the production of pyemic abscesses. They believe their diplococcus to be identical with the diplococcus of Triboulet and Meyer and the streptococcus of Wassermann and to be the specific agent in the causation of rheumatic fever, and they suggest for it the name *Diplococcus rheumaticus*.

Their work has been supported by that of a number of other observers in England. Beaton and Walker<sup>12</sup> isolated a similar organism in 15 cases of rheumatism, chorea and rheumatic endocarditis. Walker and Ryffel<sup>13</sup> found that this diplococcus had a hemolytic action greater and more rapid than that of any streptococcus they examined and suggest that the rapid development of anemia in rheumatism may find its explanation here. They also showed that the organism was peculiar in that it produced relatively large amounts of formic acid, and this acid was present in considerable amounts in the urine of those suffering from rheumatism. Shaw<sup>14</sup> procured from Poynton, Walker and Wassermann cultures of their respective organisms and, after studying them culturally and experimentally, concludes that all three organisms are identical. All of them produced in rabbits and monkeys arthritis, pericarditis, endocarditis and myocarditis. He believes that this organism is the causal agent in rheumatism. Beattie,<sup>15</sup> who also confirmed Poynton and Paine's work, believes that he has produced in rabbits chorea as well as polyarthritis and endocarditis.

In this country Lewis and Longcope<sup>16</sup> report the finding of a streptococcus in the blood, during life, of a fatal case of rheumatism, endocarditis and chorea, which in rabbits produced constantly a very characteristic polyarthritis and which they believe to be identical with the coccus described by Wassermann, Meyer and Poynton and Paine.

Whether the bacterium under discussion should properly be classed as a diplococcus or as a streptococcus is of much less practical importance than is the question whether the cocci described by Triboulet, Wassermann, Meyer, Poynton and Payne and others are one and the same organism. While a positive answer to this question is not possible, it may be said that the morphologic and cultural features agree very well in the main; that the results of animal inoculation are surprisingly consistent and uniform and that the writers themselves seem to be in very general agreement as to the identity and unity of these organisms.

*Arguments of Opponents.*—Turning now for a moment to those who believe that the infective agent of rheumatism has not yet been found, it must be said that to this number belong the great majority of those who have carefully investigated the subject. The arguments against the claims of the *Diplococcus rheumaticus* are chiefly four:

1. That many careful investigators (Pribram,<sup>17</sup> Phil-

12. Brit. Med. Jour., 1903, vol. I, p. 237.

13. Brit. Med. Jour., 1903, vol. II, p. 659.

14. Jour. Path. and Bact., 1904, p. 158.

15. Brit. Med. Jour., 1904, vol. II, p. 1510.

16. Amer. Jour. Med. Sciences, 1904, vol. cxxviii, p. 601.

17. "Der Acute Gelenksrheumatismus," Nothnagel Series, vol. v, Part I, p. 312.

11. Lancet, 1900, II, p. 861; also Brit. Med. Jour., 1901, II, p. 779; Zentralbl. f. Bact., 1902, xxxi, p. 502; Lancet, 1905, II, p. 1760.



lip,<sup>18</sup> Menzer,<sup>5</sup> Lenhartz,<sup>19</sup> Canon,<sup>20</sup> Cole<sup>21</sup> and others) have had uniformly negative results from the bacteriologic examination of the blood and joint fluid during life in large series of cases of undoubted rheumatism.

2. That the morphologic and cultural characteristics for *D. rheumaticus* are not sufficient to differentiate it certainly from other varieties of the streptococcus.

3. That the ability to produce in rabbits arthritis and endocarditis is by no means peculiar to this organism, but is shared by the common types of streptococci and staphylococci.

4. That the finding of a coccus in the blood or tissues shortly before death, or postmortem, may be readily explained by assuming either that the case has been one of septic disease and not of true rheumatism, or that to the rheumatic infection has been added a terminal streptococcus infection, such as is often seen in such other infectious diseases as scarlet fever, diphtheria, smallpox, etc.

The fact that most observers have failed to isolate any organism from the circulating blood or joint fluid should not, in itself, I think, be given much weight in opposing the claims of the diplococcus. It was just such negative results that led Meyer to direct his attention to the tonsils, with the idea that the germs might be localized there and that the joint symptoms, in many cases at least, might be due to their toxin alone. Poynton also insists that the organism is rarely to be found in the circulating blood or in the serous joint effusions, and both writers believe that the germs should be sought for in the periarticular tissues rather than in the contents of the synovial sac.

Whether the diplococcus possesses at present morphologic and cultural peculiarities sufficient to separate it with certainty from other streptococci is open to doubt. Even those who believe in the specificity of the organism are not in accord on this point. The English workers, for the most part, believe that it can be so differentiated. Meyer, on the other hand, could separate his organism from the various other cocci of the throat only by the inoculation into rabbits. The question is one of much complexity and difficulty and must be left for further bacteriologic study to settle.

That the common forms of pyogenic cocci are capable of producing joint inflammations in animals has been repeatedly demonstrated. Cole,<sup>21</sup> especially, has shown recently that various strains of streptococci, when introduced intravenously into rabbits, are able to produce an arthritis similar to that described as resulting from the *D. rheumaticus*. In two instances out of twenty-one the inoculated rabbits showed endocarditis as well, and Cole concludes that one is not warranted in describing a distinct species of streptococcus merely on the basis of this property of producing arthritis and endocarditis in animals. On the other hand, most of the workers with the diplococcus have been impressed with the constancy and fidelity with which the inoculated animals have reproduced the lesions of rheumatism in man. Meyer especially offers a large series of control experiments to show the marked differences between the lesions produced by the diplococcus and those excited by the common pus-forming organisms.

The only effective answer to the fourth argument against the claims of the diplococcus can be that the or-

ganism found in the blood and tissues of these severe and fatal cases is not any of the usual pyogenic cocci, but is a specific diplococcus and is identical with that found in the inflamed tonsils only, in the milder cases. It will be seen, therefore, that the whole case for the *D. rheumaticus* rests on the proofs of its specificity and identity. Thus far the evidence offered can hardly be said to be convincing on this point. Nevertheless, the fact that so many workers, in different countries, should have obtained results so strikingly uniform and similar is interesting and impressive and can not be dismissed lightly. These results justify and demand, it seems to me, further careful investigation along these same lines.

#### CONCLUSIONS.

We are justified, I think, in believing:

1. That acute rheumatism is a specific, infectious disease, and is not merely an attenuated pyemia resulting from the common pyogenic organisms.

2. That the bacillus of Achalmé has no etiologic relation to acute rheumatism.

3. That while there is considerable evidence in favor of the view that the disease is caused by a specific diplococcus or streptococcus, positive proofs of the specificity and identity of this organism and of its causal relation to rheumatism are still lacking.

#### DIFFERENTIAL DIAGNOSIS OF RHEUMATOID JOINT AFFECTIONS.\*

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The title of this paper, if liberally interpreted, might lead one to discuss the differential diagnosis of a great variety of joint affections that present certain features resembling those of true rheumatism and which might, therefore, be called rheumatoid.

Rather arbitrarily, perhaps, I shall narrow the discussion and not consider such conditions as sarcoma of the joint, ordinary monarticular tuberculosis, sprains and other traumatic arthritides, though, as is well known, there is often a necessity for differentiating between rheumatism and these conditions. Nor shall I do more than mention the arthritides occurring in connection with definite infectious diseases, such as scarlatina, pneumonia, epidemic meningitis, septicemia, pyemia, etc. Here diagnosis is comparatively easy if the existence of the primary disease is known, though in some instances, e. g., during convalescence from a mild and ambulatory scarlet fever, diagnosis may not be simple.

In epidemic meningitis, too, joint pains with articular and periarticular swellings may be early and somewhat confusing, though the equally early cerebral and spinal symptoms usually give the clew. Mistakes in regarding as rheumatism an arthralgia or arthritis, even a suppurative arthritis, of septicemia are made, but it is generally due to hasty study of a case rather than to any inherent difficulty in differentiation. The fact that just preceding an arthritis there has been a definite infectious disease should lead one to hesitate before deciding on true rheumatism. And the arthralgias, etc., following injection of diphtheria antitoxin and other therapeutic sera should be thought of.

Laying these affections aside, therefore, there still remain a goodly number of joint troubles more or less

18. Deutsch. Arch. klin. Med., 1903, vol. lxxvi, p. 150.

19. "Die Septischen Erkrankungen," Nothnagel Series, p. 187.

20. "Bacteriologie des Blutes bei Infect. Krankh.," Jena, 1905, p. 53.

21. Jour. of Infectious Diseases, 1904, vol. i, p. 714.

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



rheumatoid in type whose exact recognition is no easy task. I mean such conditions as gout, arthritis deformans, gonorrheal arthritis, some of the arthropathies of nervous diseases, the joints of hemophilia, scurvy and the purpuras, some cases of tuberculous polyarthritis, etc. Their exact recognition is not easy because there is no accurate etiologic classification, because differentiation on the basis of postmortem morbid anatomy is none too clean cut and the anatomic changes *intra vitam* are not always easily recognized and are liable to be confused one with another.

Diagnosis, therefore, becomes in a measure empirical and one must depend on a study of symptoms and signs, mode of onset and advance of the disease, temperature, pulse, number of joints involved, predilection for certain joints, anatomic characteristics of the local lesions, lesions in other organs and tissues, x-ray examination, tendency to relapse and influence of therapy in order to arrive at a diagnosis that has in it a reasonable probability of truth. Such a study, often involving some little time, usually results in a diagnosis as accurate as our still imperfect classification permits. Yet borderline cases occur in which the line of demarcation is blurred and in which one physician might claim the case as one of chronic rheumatism, another as gout, a third as arthritis deformans. What I shall say will be chiefly in the way of suggestive hints as to diagnosis and of trying to emphasize certain facts concerning which there has been, and is still in the minds of many, misapprehension. No detailed exposition of this formidable topic is attempted.

1. *Arthritis Deformans*.—There are three notions concerning this disease that are rather widespread and that are really wrong, at least only partly true. These are that arthritis deformans is always chronic in onset and course, does not cause fever and begins in the small joints. These statements may be true, as a rule, but exceptions are numerous. In fact, the more carefully these cases are observed the oftener is it found that supposed chronic rheumatism with recurrences in the shape of acute exacerbations is in reality arthritis deformans with acute manifestations or gout.

The onset is often rather abrupt with distinct pain, redness and swelling of the affected joints and with rise of temperature, say 101° or even higher. And in not a few instances the joints first involved either acutely or gradually, may be the larger ones, as the knee or shoulder. These facts easily lead to confusion. Many sidelights are thrown on these cases by a consideration of details. In the acute type of arthritis deformans there is not the shifting of the process from one joint to another as in acute rheumatism, or, to put it in another way, though one joint after another may be involved, those first involved do not clear up as the trouble advances but show more or less persistent signs of damage. Another point, emphasized by Spender, is the rapid pulse. Even in the chronic cases a pulse of 90 to 110 is common. The profuse, drenching sweats of acute rheumatism are lacking, endocardial and pericardial complications are scarcely ever seen. Salicylates are comparatively inert.

The acute process is slower to subside than in acute rheumatism and as time goes on one may see suggestive indications that one is in reality dealing with arthritis deformans in the muscular atrophy, the increased reflexes, the local, particularly palmar cold sweating, the tremors and in the characteristic osteophytic growths and atrophic joint changes and the beginning de-

formities. This possible acute onset of polyarticular arthritis deformans and the fact of acute febrile exacerbations of the more subacute and chronic forms should be kept in mind and looked on as of not infrequent occurrence. In reality such an onset is common. Thus McCrae<sup>1</sup> found a sudden onset in over 40 per cent. of 92 cases.

It is true that the small joints of the hands show early and frequent involvement in arthritis deformans and that the deforming changes are here more marked than in rheumatism. But it is important to remember that similar changes are seen in the larger joints, the knee, hip, shoulder, that these changes may be earlier than those in the hands and the pain and deformity more marked. Arthritis deformans is more apt to attack the temporomaxillary, sternoclavicular and vertebral joints than in true rheumatism and this may help in diagnosis. Heberden's nodes, though often absent in the severer types, may disclose the nature of the joint affection. I have sometimes seen physicians hesitate to declare a case arthritis deformans because of the evident presence of a considerable amount of fluid in a joint. This can often be found as in the knee, elbow, wrist, knuckles, and it should not be forgotten that in some cases (some say a special type of the disease) atrophic and not hypertrophic changes are met with, the fusiform and other swellings being not bony but due to thickened capsules or capsules distended with fluid.

Localized spondylitis may simulate tuberculosis of the vertebræ with pain and other cord symptoms due to pressure, and thus be harder to recognize than the more massive rigidity of the back due to panspondylitis. In some of these cases of local spondylitis careful search may reveal a stray joint here and there in some other part of the body involved in typical manner that betrays the nature of the vertebral disease. Thus, I have seen the rather obscure nature of a torticollis in a morphin habitué, with stiffened cervical joints, cleared up by finding one thumb and finger typically deformed. In the same way a solitary thumb gave the clue in a peculiar symmetrical, painful, osteophytic deformity on the outer side of the tarsus in an elderly woman.

Some of the earlier symptoms described by patients sound like the stories of neurasthenic or hysterical individuals. Spender<sup>2</sup> mentions a burning in the hand, a sudden weakness in the hand, a tenderness along the carpus, a sudden chilliness, a sudden weakness so that small objects are dropped, numbness, a feeling that the fingers are "going to be paralysed." If these sensations are really present in a woman who is neurotic or even hysterical—and such associated neurotic condition is often found—it may be that a serious blunder is made in not recognizing the true nature of the ailment until joint changes become so prominent as to attract the notice even of the physician, whose attention has heretofore been wholly taken up by what he has been pleased to regard as hysterical exaggeration. This lesson was taught me about twelve years ago by an experience with a woman who, with complaints of pain, paresthesiæ, etc., had hysterical aphonia, amaurosis, what I took for hysterical arthralgias, etc., but who gradually and uninterruptedly developed one of the worst cases of arthritis deformans I ever saw.

1. McCrae, Thomas: "Acute Articular Rheumatism," THE JOURNAL A. M. A., vol. xl, p. 211.

2. Spender: In Allbutt's "System of Medicine," vol. iii, p. 81.



Diagnosis is often helped by the *x*-ray revealing the bony nature of the deformities or the atrophic changes in the joints. And I have learned to look on a supposed polyarticular chronic or subacute rheumatism that is treated at the springs or baths and is worse than before, or at least no better, as a case acting suspiciously like arthritis deformans, for I have never seen any good in this disease come from the baths as such.

One must not forget that polyarticular deforming arthritis occurs in children, often with glandular and splenic enlargement (Still's disease).

The early recognition of arthritis deformans is of great importance from the standpoint of prognosis and therapy. Too often the incorrect diagnosis of rheumatism, more rarely of gout, leads to an unnecessary or even decidedly harmful restriction of diet, to a useless course of treatment at the baths, or a needless deluging of the system with salicylates, colchicum, etc. Of the recognition of the Heberden's nodes and the monarticular form, e. g., morbus coxæ senilis, I will not speak, though the possible existence of this latter deforming arthritis limited to one or two large joints should always be remembered in attempting to explain an obscure affection of some of these articulations.

2. *Gout*.—A few words concerning gout. There are some rather prevalent misconceptions concerning the clinical features of this disease that if removed will make it oftener recognized. In the first place, gout is commoner in the United States than is generally believed. Either the disease is on the increase here, or we are recognizing it oftener; perhaps both statements are true.

In the second place, it is by no means confined to the well-to-do or the high livers. I recall seven cases of gout seen since January 1, 1906. Two of the patients were wealthy, had lived well but were in no sense of dissipated habit; a third was a fat adult who had worked in a brewery and consumed much beer; a fourth was a moderate beer drinker who worked on a delivery wagon; the fifth was a paper-hanger and calciminer; the sixth, an old negro, a painter, who had perhaps had lead poisoning and whom I had once treated in the hospital for what I called rheumatism; the seventh was an old lady of 65, in moderate circumstances, whose tophi left no doubt as to the gouty nature of her joint changes. This, by the way, is the only case I have seen in woman. Beer drinking, lead intoxication, heredity, intemperance as regards quantity of food with poor utilization of the food largely through a sluggish or sedentary mode of life, seem to be the most potent agents in causing gout, at least in this country. So it is not exclusively confined to the upper classes.

A third fact is often lost sight of by the practitioner. Somehow he gets the idea that the patient with gout will come to him with the atypical big-toe arthritis, testy of temper, eczematous and rich. When a poor, meek, good-natured chap consults him for a lame knee and a swollen wrist and stiff finger joints, the thought of gout doesn't occur. But it should occur in all atypical rheumatism, especially when there is frequent recurrence with tendency for the joints to show more and more a condition of chronic stiffness, soreness and swelling. Now, while it is comparatively rare, at least in my experience, to be called to see a patient with the typical acute, febrile big-toe attack there is nothing, except the finding of tophi, so valuable from the standpoint of diagnosis and so frequently found as a history of such attacks. Very often, indeed, the history will show that the first attacks of "rheumatism" were limited

to the great toe. This should always be regarded as suggestive. But because, later, other joints are implicated or bear the brunt of the attack and suffer most from permanent changes, one should not by any means throw out gout.

Tophi are generally sought for in the ear. They may be exceedingly small and readily overlooked. Doubtful small whitish spots should be pricked and the contents examined microscopically for crystals. But other regions should be examined for tophi, not only the cartilages of the nose and larynx, but the vicinity of the joints. I think oftentimes tophi are overlooked because they are very small, but, perhaps as often, because they are so large and so soft. "Chalk-stones" seems to imply hardness and the soft tophus is passed over as an inflammatory exudate, a thickened capsule, or perhaps a swollen bursa, as anything except a "stone," and the physician who has, perhaps, seen only small tophi on the ear is not prepared for some of the larger deposits sometimes seen about the fingers, wrists, elbows, knees, etc. An inquiry into the history will sometimes reveal the fact that swellings, yellowish or whitish in color, have been present on the ear or about the joints, have disappeared spontaneously or have ruptured and discharged. The *x*-ray may show deformity, but shows a lack of osteophytic thickening such as is seen in the arthritis deformans.

In cases of long standing, cardiovascular and renal changes can generally be made out. The urine is often of the type met with in chronic interstitial nephritis, the palpable vessels show sclerotic changes, cardiac hypertrophy is common and symptoms suggestive of chronic fibrous myocarditis may be present. An asthmatic tendency with emphysematous changes in the lungs can occasionally be made out. A study of the urine in cases for any length of time under observation may show typical variations in the output of uric acid and phosphoric acid in the intervals and during the attacks, both being low in the intervals and increased soon after the more acute joint symptoms occur. Fletcher's<sup>3</sup> charts along this line are very instructive.

If one takes into consideration these points, if he is on the lookout for gout, is ready to meet it in people of all classes, watches for tophi, gets the big-toe history from the beginning, examines for cardiovascular accompaniments of the disease, studies the uric acid and phosphoric acid output, employs the *x*-ray, he will generally be sure of his diagnosis. Yet without tophi there are occasionally cases that are not only difficult of recognition, but baffling and in which a provisional diagnosis must be temporarily made.

The arthropathies of nervous diseases and gonorrheal arthritis are discussed in this symposium by others; I, therefore, omit all reference to them.

The joints of scurvy and hemophilia deserve mention, but lack of time forbids their consideration. Suffice it to say that the evidence at the time, of the hemorrhagic tendency, or the history of the same, usually puts one on the right track. The same may be said of the joints of the purpuric group of diseases.

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3. Fletcher, T. B.: The Practitioner, August, 1903.

Damages for Publishing Testimonial.—A Paris pharmacist advertising a certain "infallible remedy" published in his circulars some testimonials from patients stating that they had been cured of certain maladies by the remedy. One of the writers, a woman, sued the pharmacist for damages and the court decided in her favor, allowing her \$60 damages.



## JOINT AFFECTIONS IN NERVOUS DISEASE.\*

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America has the honor of having first seriously directed the attention of the medical world to the intimate relation between disease of the joints and of the nervous system. Since Dr. John Keasley Mitchell<sup>1</sup> wrote his suggestive articles in 1831 and 1833 our knowledge of this relation has made remarkable progress.

If we leave out of consideration the atrophic joints and limbs of the cerebral and spinal palsies of children and the joint changes in acromegaly the most important joint affections in nervous disease fall into the following groups:

1. The intermittent joint effusions (*hydrops articularum intermittens*).
2. The arthropathies of tabes and dementia paralytica (*arthropathia tabetica*).
3. The syringomyelic arthropathies (*arthropathia syringomyelica*).
4. The painful joints of the psychoneurotics (*arthralgia psychoneurotica*).

THE REGULARLY INTERMITTENT JOINT EFFUSIONS  
(*Hydrops Articularum Intermittens*).

This remarkable affection early described by Moore<sup>2</sup> has been carefully studied in this country by Kennedy,<sup>3</sup> Barnes,<sup>4</sup> Brackett and Cotton<sup>5</sup>; in England by Marsh,<sup>6</sup> in France by Féré,<sup>7</sup> Crepin, Rejou,<sup>8</sup> and Panas<sup>9</sup>; in Germany and Austria by Seeligmüller,<sup>10</sup> Pierson,<sup>11</sup> Kapper,<sup>12</sup> Linberger,<sup>13</sup> and especially by Schlesinger,<sup>14</sup> who has been able to collect fifty-five cases from the literature.

In this disease there is an acute swelling of a joint which occurs periodically. The intervals vary; usually the attacks occur every fourteenth day, but in some instances they occur every third or fourth day, every ninth or sixteenth day, or even every thirtieth day. In one case the swelling occurred at the menstrual period. The periodicity is often so regular that, as in malarial affections, the patient will be able to foretell the day when the joint will be attacked. The joint may or may

not be painless. There is, as a rule, no fever, nor is there local redness or heat. The knee is the joint most frequently attacked, usually on one side only; sometimes both knees are simultaneously involved. Other joints may be the seat of the affection; even, it is asserted, the mandibular articulation and the joints of the spine.

The duration of the attacks is also variable; usually the swelling lasts only three or four days, but it may continue for a week or longer.

The disease has nothing to do with infection (pyogenic, tubercular, syphilitic, malarial or rheumatic). It is almost certainly angioneurotic in origin and is probably closely related to the angioneurotic edema which affects the skin and mucous membranes. Not infrequently an attack is accompanied by other neural manifestations, or, instead of an attack of the joint swelling, there may be an "equivalent" in the form of polyuria, profuse sweating and reddening of the face.

The diagnosis is the most important in order that the mistake of treating by surgical methods may be avoided. A surgeon, if unfamiliar with the disease, may be tempted to suspect an "irritable synovial fringe" or a loose semilunar cartilage and advise operation. Unluckily, too, the cases are sometimes mistakenly supposed to be instances of tubercular arthritis and are treated by fixation and prolonged rest.

The sudden onset, the absence of fever, the short duration of the attack and the periodic recurrence make the diagnosis, in a majority of cases, really easy. Tuberculosis is not difficult to exclude, especially if the tuberculin test be employed in doubtful cases.

The treatment of the individual attacks consists of rest, encouragement and the application of a flannel bandage. Aspiration of the joint or injections are wholly unnecessary. The attacks will often cease if proper general hygienic measures are followed. Most individuals suffering from the disease require antineurotic measures—psychotherapy, hydrotherapy, occupation-therapy and the like. Arsenic in small doses, long continued, appears to have been beneficial in some cases. Now and then a case will resist all attempts at cure; the disease has been known to persist through a large part of a lifetime. In view of what we now know of the relation of a slowed coagulation time for the blood in connection with serous effusions, it might be worth while to test the time in cases of intermittent hydrops and perhaps by the therapeutic effect of calcium lactate.

II. THE ARTHROPATHIES OF TABES AND DEMENTIA PARALYTICA (*Arthropathia Tabetica*).

Since Charcot,<sup>15</sup> in 1868, published his careful clinical study of the joint lesions which occur in the course of tabes many writers have dealt with the subject, and a large number of cases have been placed on record. In late years the topic has been dealt with in a number of important monographs and collective reviews. Among these the articles of Rotter,<sup>16</sup> Pansini<sup>17</sup> and Henderson<sup>18</sup> may be especially mentioned. Full references to the literature are to be found in these articles. Nearly 400 cases are now on record, and the analyses begin to be of value. In America Drs. S. Weir Mitchell, H. M. Thomas and others have made reports on the condition.

15. Charcot: "Sur quelques arthropathies qui paraissent dépendre d'une lésion de cerveau ou de la moelle épinière," Arch. de Physiol. Norm et Path., Paris, 1868, No. 1, pp. 161, 379, 1 pl.

16. Rotter: "Die Arthropathien bei Tabiden," Arch. f. klin. Chir., 1887, vol. xxxvi, p. 1-71, 2 pl.

17. Pansini: "Sull'artropatia tabetica," Naples, 1896.

18. Henderson: "Joint Affections in Tabes Dorsalis," Jour. Pathol. and Bact., Edin. and Lond., 1905, vol. x, p. 211-264.

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Mitchell: "A New Practice in Acute and Chronic Rheumatism," Amer. Jour. Med. Sc., 1831, No. viii; "Further Cases and Observations Relative to Rheumatism," Ibid., 1833, vol. xii.

2. Moore: "Periodical Inflammation of the Knee Joint," Lancet, 1864, No. 1, p. 485; "Two Cases of Periodical Inflammation of the Right Knee Joint," Med.-Chir. Trans., Lond., vol. L, p. 21-38.

3. Kennedy: "Hydrops articularum intermittens," THE JOURNAL A. M. A., 1894, p. 900.

4. Barnes: Ref. Handbook, Med. Sc. (Wood's) 1895, vol. xi, No. 7, p. 484.

5. Brackett and Cotton: Boston Med. and Surg. Jour., 1901, vol. cxiv, p. 484.

6. Marsh: "Cases of Intermittent Hydrops of the Joints," Trans. Clin. Soc., Lond., 1905, vol. xxxviii, p. 147-149.

7. Féré: "Contribution à l'histoire de hydrarthroses intermittentes," Rev. neurol., Paris, 1893; also: "Notes sur quelques de l'hydrarthrose intermittente neuropathique," Rev. de chir., Paris, 1893, p. 616.

8. Rejou: "De l'hydrarthrose intermittente," Parls, 1877.

9. Panas: Communication sur l'hydrarthrose intermittente. Bull. et mem. Soc. de Chir. de Paris, 1878, vol. iv, p. 401-405.

10. Seeligmüller: "Hydrops articularum intermittens," Deutsche med. Wochenschr., 1880, vol. vi, No. 52, p. 61.

11. Pierson: "Zur Kenntniss der Hydrops articularum intermittens," Deutsche med. Wochenschr., Berlin, 1881, vii, 169.

12. Kapper: "Zur Therapie des Hydrops articularum intermittens," Allg. Wien med. Ztschr., 1885, vol. xxx, p. 362-382.

13. Linberger: "Ueber intermittirenden Gelenkhydrops," Beitr. z. klin. Chir., vol. xxx.

14. Schlesinger: "Die intermittirenden Gelenkschwellungen," Nothnagel's Spec. Pathol. u. Ther., Wien, 1903, p. 1-27.



In Chareot's original description the main clinical features of the tabetic arthropathy were pointed out—the sudden appearance of a firm, painless swelling of a joint, extending to the surrounding soft parts, occurring often independently of traumatism, and followed by rapid changes in the joint surfaces, the latter leading to dislocations or subluxations and to false positions of the bones in a very short time.

Pain, while usually absent, is sometimes present. Its rarity, however, is shown by Henderson's analysis; in his statistics the presence of pain, other than the frequently occurring tabetic pains, was noted in only 20 out of 333 cases. The joint is rarely red, though in some instances slight redness appears and lasts for a few days.

The sudden firm swelling is very characteristic. It does not pit on pressure and is quite different from an ordinary edema. It extends, too, with great rapidity, often reaching its height in a few hours, and involves structures beyond the capsule and bursæ of the joint. More rarely the swelling comes on gradually. Occasionally crepitation can be made out very similar to that met in ordinary arthritis deformans.

After the full development of the swelling, the joint may rapidly grow smaller again, the swelling often entirely disappearing within a couple of weeks. Most authors distinguish a benign and a malignant form, the latter, unfortunately, being that most frequently met. In the benign form the swelling may entirely disappear and the joint return almost to its normal state, except, perhaps, for slight crepitation. In the malignant form there is rapid loosening of the ligaments, alteration in the bones, subluxation or dislocation often following within a few days or weeks. Not infrequently free bony masses appear in or about the joint. If the knee be involved, a genu-recurvatum may rapidly be formed. Flail joints are common sequels of tabetic arthropathies.

The tabetic arthropathies may occur at any stage of development of the disease. They may even be among the premonitory symptoms, though this is unusual. The majority of the cases appear to have been observed first in the ataxic period. It was Charcot's opinion that the joint affections usually appeared in the transitional period; that is to say, just before the onset of the ataxia, and he thought that if they occurred in the ataxic period the arms were usually involved rather than the legs; that is, joints in limbs in which the disease was not so far advanced. Henderson's statistics indicate a somewhat different incidence. In a total of 246 patients analyzed by him the first arthropathy occurred in the pre-ataxic stage in 54 cases, in the transitional in 36 cases, in the ataxic in 156. It is rare to have an arthropathy appearing first in the paralytic stage.

If the joint be tapped in the stage of acute swelling, a clear yellow fluid is usually obtained; sometimes it is blood-stained. In the joints which have been incised a slightly reddened synovial membrane has been found, with some thickening of the fringes. In later stages the fringes are lengthened, have bulbous extremities, and may contain nodules of bone or cartilage, or areas of necrotic tissue.

In the milder cases the capsule of the joint and the periarticular ligaments may suffer but little, but in the severe arthropathies these fibrous structures become thinned and fuse with neighboring structures to form a general fibrous mass in which small bony or cartilaginous nodules frequently appear. An arthropathy which might have remained benign had the joint been kept at rest is often converted into a malignant arthropathy

by neglect and overuse. The painless character of the affection tends to lead patients to use the joint, unless they are strictly warned against this by the medical attendant.

The changes in the bone and cartilage of the joints themselves have attracted the attention of many investigators. In the benign cases there may be no changes whatever, though it is rare that erosion of cartilage is entirely missed. Most often, and especially in the malignant cases, changes in the bones and cartilage occur very similar to those which are found in arthritis deformans; indeed, a number of pathologists class tabetic arthropathy as one form of arthritis deformans. As in arthritis deformans, atrophic and hypertrophic lesions are described, the former being most often met in the hip and shoulder. Subclavicular dislocation of the shoulder and dorsal iliac dislocation of the hip are common deformities in these cases. Sometimes the head, neck and great trochanter of the femur entirely disappear, with formation of the so-called "drum-stick femur."

Hypertrophic changes are more common in the knee and ankle. The ends of the bones taking part in the formation of the joint become enlarged and numerous osteophytes appear in and about the joint. The joint surfaces become eroded, the tibia suffering more than the femur at the knee. The tibia is often dislocated backward.

Enlargement of the lower ends of the tibia and fibula is very common when the ankle is affected by tabetic arthropathy. This is frequently referred to in the bibliography, and is very evident from the x-ray pictures which Dr. Baetjer has taken in the Johns Hopkins Hospital.

Almost any joint in the body may be affected, though the small joints appear to be less often involved than the large. Even the maxillary joint may become affected.

Two very interesting special types of tabetic arthropathy are occasionally met: (1) The tabetic foot (*piéd tabétique* of the French) and (2) the tabetic spine.

In the tabetic foot the bones of the arch are especially affected. I mean those taking part in the formation of the intertarsal and tarsometatarsal articulations. The bones, the joint cavities, the ligaments and the adjacent soft parts may all be involved. Henderson describes and illustrates two characteristic displacements of the metatarsal bones; one lateralward, the other dorsalward. The term tabetic foot should not be applied to a tabetic arthropathy of the ankle; in the tabetic foot proper it is not the talocrural articulation which is involved.

The bony lesions in the tabetic spine resemble very closely those of other varieties of spondylitis deformans, but the sudden onset and the extensive destruction of the parts, along with the existence of other tabetic signs and symptoms help to distinguish it.

### III. THE JOINT AFFECTIONS IN SYRINGOMYELIA

#### (*Arthropathia syringomyelica*).

The joint affections in syringomyelia resemble very closely those that occur in tabes. The cases have been collected and analyzed by Sokoloff<sup>19</sup> and later by Graf.<sup>20</sup>

19. Sokoloff: "Die Erkrankungen der Gelenke bei Gliomatose des Rückenmarks (Syringomyelie)," Deutsche Ztschr. f. Chir., vol. xxiv, Festschr., C. Thiersch, Leipzig, 1892, p. 505-548.

20. Graf: "Ueber die Gelenkerkrankungen bei Syringomyelie," Beitr. z. klin. Chir., Tübingen, 1893, No. 10, p. 517-550, 1 pl.



Sokoloff had compiled 20 cases of the joint affections, including 6 in Morvan's disease. Graf added 13 more to the list. The arthropathies of syringomyelia are also well described in Schlesinger's<sup>21</sup> monograph. It has been estimated that about 10 per cent. of syringomyelic cases suffer from joint involvement; men are about twice as often affected by syringomyelia as are women, and of 34 cases of syringomyelic arthropathy 26 were in males and 8 in females. The average time of onset of the joint affection is the fortieth year, but it may occur in childhood. Usually the arthropathies precede the muscular atrophies and the muscular disturbances, but this is not a constant relation; occasionally the reverse is seen. The joints on one side of the body are as prone to involvement as those on the other. The joints of the upper extremities, and especially the shoulders and elbows, are most often affected (80 per cent. of the cases). Even the wrist appears to be twice as often attacked as either the hip or ankle. As we have seen, this is in marked contrast with the arthropathia tabetica, which is most often located in the joints of the lower extremities (80 per cent. of the cases). The reason for this may lie in the fact that the gliosis spinalis most frequently affects the intumescentia cervicalis, the tabetic degeneration most often attacking first the intramedullary axones of the peripheral sensory neurones which innervate the lower extremities. Trauma frequently precedes the arthropathy. The swelling is usually sudden, as in the tabetic joint lesion. Unlike the latter, the joints are not wholly painless as a rule. After a few days the swelling subsides, but some crepitation remains in the joint. In the course of time this subsidence of swelling is followed in turn by a gradual increase of swelling, now entirely painless. It may be years before this leads to marked enlargement and deformity of the joint. The patients finally apply for treatment, less on account of the disease of the joints as such than for the progressive atrophy of the limb and the corresponding loss of power.

On examination of an advanced case of syringomyelic arthropathy, the hypertrophic enlargement of the extremities of the bones entering into the formation of the joint is usually a striking feature; the capsule is thickened and often ossified in places; distinct crepitation can be elicited on movement of the joint owing to erosion of the cartilages or to changes in the synovial membranes. In other cases atrophy of bone is seen instead of hypertrophy; the whole end of a bone may have been absorbed, the passive hypermobility of the joint is extreme, the capsula articularis is thinned and expanded, and spontaneous dislocation frequently occurs. Exostoses develop in and near the joint; spontaneous fracture is not rare. The diagnosis is made certain by finding the muscular atrophy, the syringomyelic dissociation of sensation (analgesia and thermanesthesia with retention of tactile and muscle sense), or, in Morvan's type, the panaritium and mutilation of the digits. Occasionally a syringomyelic arthropathy suppurates, but this, as in the suppurative tabetic arthropathy, is an accident, due to secondary infection with pyogenic micro-organisms.

The frequent occurrence of habitual dislocation of the shoulder in syringomyelia has been emphasized by Schrader (13 cases in the literature). Scoliosis and kyphoscoliosis are also commonly met. The recent literature contains references to several rare cases in which

the joints of the lower extremities have been involved. In Merton's patient, studied in Trendelenburg's clinic, the joints in both feet were affected; the exact changes in this and in a number of other cases have been studied in x-ray photographs.

The course of the syringomyelic arthropathy is usually longer than that of the tabetic. There are on record cases which developed very gradually, one over a period of twenty, another of thirty-five years (Sokoloff). In the gliomatous arthropathies it is rare, too, to see such large exudations as are met in tabes.

The treatment of the disease is limited to rest, orthopedic measures and the avoidance of trauma. Operative interference is rarely desirable.

Two main theories have been advanced to explain the origin of the tabetic and syringomyelic arthropathies. According to the older theory, they are directly dependent either on the disease in the spinal cord or on a disease of the peripheral nerves accompanying these maladies. Charcot and Joffroy assumed the existence of a trophic center for the joints in the anterior horns, but many facts speak against this view. The neuritic explanation seems plausible for tabes, but there is no evidence in favor of it in syringomyelia.

According to the second theory, that held by Virchow, v. Volkmann and Rotter, the relation of the arthropathies in tabes and syringomyelia is totally other than that assumed in the first theory. These authors maintain that these arthropathies are really cases of arthritis deformans; they have their rapid course and are painless, or relatively painless, on account of the analgesia, the ataxia, and the unnoticed traumatism which occurs. But (1) there is rarely any ataxia in syringomyelia or in the cases of arthropathia which occur in incipient tabes; (2) analgesia, though frequent, is not constant; (3) the joint disintegration often advances in spite of absolute rest; (4) the periarticular processes are too extensive to be thus explained (Graf), and (5) the frequent simultaneous involvement of several joints speaks against the conception that the connection between the diseases of the cord and the diseases of the joints is simply indirect (Sonnenburg). A brief but interesting review of the theories will be found in Joachimsthal's article<sup>22</sup> and in the article of Henderson<sup>18</sup> on tabetic arthropathy.

#### IV. THE PAINFUL JOINTS OF THE PSYCHONEUROTICS

##### (*Arthralgia Psychoneurotica*).

Under this heading I include the arthralgias of hysteria (Brodie's joints), of traumatic neurosis, of neurasthenia and psychasthenia. Good accounts of the hysterical joint are to be found in Brodie,<sup>23</sup> Briquet,<sup>24</sup> Charcot,<sup>25</sup> and Binswanger.<sup>26</sup> In the surgical textbooks of Tillmann and Da Costa the condition is adequately recognized.

The knee is most often affected (gonalgia), the hip next (coxalgia), the shoulder frequently, the talocrural and the intertarsal joints occasionally. The cervical spine may be the seat of symptoms and the condition be

22. Joachimsthal: "Knochen- und Gelenkveränderungen bei Nervenaffektionen," Handbuch der pathol. anat. des Nervensystems, Hrsg. von Flatau, Jacobsohn u. Minor. Berlin, 1904, p. 1397-1417.

23. Brodie: "Pathologic and Surgical Observations on Diseases of the Joints," from the 4th London edition, with the author's alterations and additions, Philadelphia, 1843.

24. Briquet: "Traite clinique et therapeutique de l'hysterie," Paris, 1859.

25. Charcot: "Lectures on Hysterical Contraction of Traumatic Origin," Med. Press and Cir., London, 1883, vol. xxxv, p. 417; 439.

26. Binswanger (O): "Die Hysterie," Wien, 1904, p. 283-293.

21. Schlesinger: "Die Syringomyelie," Ein Monograph, 2 Aufl., Wien, 1902.



mistaken for cervical caries. One joint is usually affected at a time, though in rare instances two or more are concerned. Redness, heat and swelling are rarely present; pain and disturbance of function are the two prominent symptoms. Spasm (contracture) of the muscles proximal and distal to the joint frequently exists. The muscular atrophy is generally slight in amount, but in long-standing cases may be profound. The position assumed by the limb may or may not simulate that found in organic disease.

Many of the cases follow trauma of some sort (Charcot). The trauma may be followed immediately by the joint neurosis; more often there is an incubation period of "psychic meditation." In some cases no preceding physical trauma can be made out, the malady then developing after an emotional shock, after a convulsive seizure, or by imitation after seeing an organic joint affection. The arthralgia is sometimes the first symptom of the psychoneurosis; as a rule, however, the stigmata of hysteria, of psychasthenia or of neurasthenia have been recognizable, in cases carefully studied, for some time preceding the joint trouble.

The great importance of the differential diagnosis of these arthralgias from organic disease, especially from tubercular gonitis and coxitis, is obvious. The nocturnal exacerbations of the pain, which frequently occur in sleep and awaken the patient in tubercular coxitis, are absent in psychoneurotic coxalgia. On making passive or active movement of the joints in cases of joint neurosis, the patients complain of "horrible, unbearable pain:" sympathy only increases the pain, while if the attention can be diverted temporarily the movements can often be carried out without severe pain. It is often found, further, that the pain is more intense in the skin and soft parts than in the joints themselves. Careful esthesiometric tests nearly always show a distinct hyperalgesia of the skin over the joints between the attacks of pain. In hysterical coxalgia, for example, there exists frequently an area of cutaneous hyperalgesia, triangular in shape, the apex of the triangle being at the lower margin of the symphysis pubis, the base at the middle of the sacrum. When the knee, elbow or wrist are complained of, the hyperalgesia of the skin is usually cuff-like in form, the area surrounding the whole joint. During the severer neuralgiform seizures the hyperalgesia may change to a total hyperalgesia of one-half of the body. Analgesias are sometimes demonstrable in hysterical cases.

In psychoneurotic coxalgia the attitude of the lower extremity may resemble most closely that met in organic disease of the hip joint; there may be apparent shortening, abduction, lateral rotation, or, later on, adduction and medial rotation. The limping gait, accompanied by lumbodorsal pseudoscoliosis, may strikingly simulate that of organic hip disease. Some of these patients refuse after a time to make any attempts to move their joints, and lie in bed for months or even for years.

A few cases of psychoneurotic arthralgia are associated with a higher grade of muscular atrophy than is commonly seen from simple inactivity, and these may be puzzling. According to Gilles de la Tourette, the atrophy differs from that of organic disease, being more general in the extremity with the psychoneurotic joint, while with the joint of organic disease it is localized chiefly in the muscles which extend the limb.

With x-ray examinations and tuberculin reactions organic arthropathies are now less likely than formerly to be mistaken for joint neuroses, but there is still dan-

ger that the psychoneurotic joint will be looked on as an organic disorder. Very skilled surgeons and physicians have been deceived before now; even to-day it is the neurologist who often saves the psychoneurotic joint from the knife and saw or plaster-of-Paris fixation. In doubtful cases the deep chloroform narcosis recommended by Charcot should be resorted to for diagnostic purposes. Not only do the contractures disappear when the patient is anesthetized, but a careful physical examination of the joint can be made and the physician can assure himself of objective negativity. In addition the phenomena observable during recovery from anesthesia are helpful in differential diagnosis. It is the sensitiveness of the skin which returns first in the psychoneurotic joint, the tenderness and pain in the deeper parts, elicited by tapping the trochanter or the heel, coming back later. It is only after the patient has rather fully recovered from the anesthesia, say in the course of from twenty to thirty minutes, that the deep pain and contractures return. It is just the opposite with the joints of organic disease.

The treatment of the psychoneurotic arthralgias should be mainly directed toward the general psychoneurosis which underlies the symptom. Nothing is more harmful than a predominantly local therapy. Isolation and psychotherapy are the sovereign remedies in these cases. After a thorough examination has been made and the absence of organic disease has been determined, the patient should be told that the joint trouble is nervous in origin, and that, in the physician's opinion, there is no reason why it should not speedily get well. After a few days of complete separation from the family and friends, and when "medical obedience" has been fairly well established (frequently easily obtainable by encouragement and by keeping the patient for a short time in bed on a diet consisting exclusively of milk), the patient's intellect and will are to be appealed to by "persuasion."<sup>27</sup> Passive movements of the joints are to be begun and gradually increased; hydrotherapy and electrotherapy may be used as adjuvants. After a few days the patient may be induced voluntarily to move the joints a little, and very soon normal motility may be regained. The patient, through occupation therapy and will-gymnastics, should be taught gradually to improve in self-control.

It is surprising to see the "wonderful" transformations of which psychoneurotics are capable when simple measures of the kind mentioned are employed. The length of time the symptom has persisted need not make one skeptical of recovery. The miracles of St. Anne de Beauprès and of Lourdes, of osteopathy and of Christian Science amaze the laity. Just as marvelous cures, but more lasting ones, attend the efforts of the physician who knows how to recognize quickly and to treat rationally the psychoneurotic manifestations.

27. Barker: "Some Experiences with the Simpler Methods of Psychotherapy and Re-education," Trans. Assoc. Amer. Phys., 1906.

**Sterilization of Sewage Filter Effluent.**—At the meeting of the Society of American Bacteriologists, held in New York, Dec. 27-28, 1906, E. B. Phelps, of the sanitary research laboratory of the Massachusetts Institute of Technology, reported the failure of the sprinkling or contract method to remove the pathogenic forms of bacteria. He stated that he has found that the addition of bleaching powder in the proportion of 5 parts chlorine to 1,000,000 gallons of sewage is a thoroughly reliable method. Mr. Phelps has found copper sulphate to be fairly effective in the proportion of 2 parts of the sulphate to 1,000,000 gallons of sewage.



THE TREATMENT OF NON-TUBERCULOUS  
CHRONIC ARTHRITIS.\*

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The past few years have marked a greater advance in the success attending the treatment of chronic arthritis than of almost any other disease. This advance, we believe, is due largely to the many important studies made as to the etiology and pathology which have resulted in the differentiation of various types, thus rendering possible more rational therapeutic indications. In the brief time allotted us we are obliged to omit entirely any account of these investigations or discussion of their bearing on treatment, and shall confine ourselves to a general outline of the treatment which, in our hands, has proved most successful.

The treatment of chronic arthritis consists essentially, first, in the employment of methods influencing general metabolism, and second, local treatment of the affected joints. The first are almost universally applicable to all cases, while the second varies somewhat with the particular type. For purposes of presentation, therefore, the discussion will be grouped under two heads, viz.: (1) General treatment applicable to all cases; and, (2), Local treatment according to the type of joint affection.

No generally accepted or entirely satisfactory classification has yet been suggested, but in this paper the non-tuberculous joint diseases will be grouped according to the scheme of Goldthwait<sup>1</sup> as follows: 1. Villous arthritis. 2. Infectious arthritis. 3. Atrophic arthritis. 4. Hypertrophic arthritis. 5. Chronic gout (not considered in this paper).

This division of chronic arthritis into the above types is purely for purposes of study and is well recognized as imperfect and probably transitory. On the one hand our increasing familiarity with the types demands a more satisfactory grouping than the old nomenclature offers, while on the other, the present state of our knowledge warrants no more elaborate scheme. This paper does not attempt to discuss thoroughly this classification, yet a brief definition of the terms is essential to the understanding of the authors' views on treatment.

1. Villous arthritis is not an entity. Although it often occurs following trauma, or is even found to exist without discoverable etiology, and without evidence of any other complicating joint condition, it nevertheless may accompany the so-called infectious, atrophic, or hypertrophic types as a part of the symptom complex.

2. Under infectious arthritis are included that great number of joint affections, chronic in nature, often more periarticular than articular, and believed to have their cause in a constant vitiation of the blood stream from some focus of infection such as the tonsil, alimentary canal, or genitourinary tract, or in the presence of micro-organisms in the joint. The articular cartilages are in this group less likely to show marked changes than in the two following.

3. By atrophic arthritis is meant the type in which, associated with much debility and general constitutional disturbance, there is found an atrophy of the joint structures, showing in the examination of fresh joint

material and in the skiagraph as decalcification of bone with erosions of bone and cartilage. This group includes many of the cases usually classed as rheumatoid arthritis.

4. In the hypertrophic type there is little if any debility or evident constitutional disturbance and, as opposed to the atrophic type, an hypertrophy of cartilage and bone. While this process is active and in the early stages the shadows cast by the bones in the skiagraph may be denser than normal. Osteophytes are seen along the lines of the ligaments and at the articular edges. Pathologic examination of fresh specimens confirms this clinical and x-ray picture. The so-called osteo-arthritic types are included here.

## I. GENERAL TREATMENT FOR ALL CASES.

A. TREATMENT OF SUCH CONDITION AS PRIMARILY OR  
SECONDARILY AFFECTS THE CONDITION OF  
THE JOINTS.

1. *Disturbances of the General Health.*—Of the first importance is the most careful attention to the treatment of these disturbances. We should always bear in mind that, as a rule, the treatment of the patient is of as much, if not greater, importance than the affected joint. Any abnormal condition, such as anemia, malnutrition, nervous debility, emaciation, obesity, etc., should be corrected as promptly as possible, and in a majority of instances such a correction leads to a very definite amelioration of the symptoms. Very commonly the patient suffering from chronic arthritis is emaciated and anemic, and for this type the "fat cure," together with tonic treatment, is best suited. Likewise the plethoric, obese patient is frequently relieved by a carefully administered "reduction cure." The associated mental depression resulting from the constant pain and incapacity for work also merits the closest attention, for a cheerful, hopeful disposition is a most efficient tonic. Perhaps the best plan is to be found in a régime of open air treatment in a mild, sunny climate similar to that employed with the consumptive. Attention is necessary to the regulation of the various eliminative functions of the body.

2. *Suppurative Processes, as in the Middle Ear, Tonsil, Alveolar Process, Fallopian Tubes, and Urogenital Tract.*—These may act as infective foci which keep the process in the joints active and a most thorough search for such should always be made, and if found, radically treated. We have seen most striking relief of joint symptoms follow the removal of chronically inflamed tonsils or the cure of pyorrhea alveolaris when all forms of local and general management had failed.

3. *Correction of Deformity by Operative Measures and Apparatus.*—If these cases can be observed from the start prevention of deformity is usually possible and more satisfactory than its correction after the joint changes have taken place. Very much, however, can be done in the later stages to relieve deformities, especially of the weight-bearing mechanism. These deformities constantly tending to increase, finally induce a bedridden or wheel-chair life. Although, judged from an anatomic standard, the surgical results may not be brilliant, yet from a functional point of view they are often most satisfactory to the patient. They include osteotomies, tenotomies, and forcible manipulations, to be followed by retentive apparatus. The methods above mentioned will be discussed later.

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Goldthwait: "Differential Diagnosis and Treatment of the So-Called Rheumatoid Diseases," Boston Med. and Surg. Jour., Nov. 17, 1904, cli, No. 20, pp. 529 to 534.



4. *Organic Disturbances.*—These disturbances, as of the circulation or kidneys, although much less frequently exerting an influence on the disease process in the joints, are, nevertheless, of moment in exceptional instances. Certainly in all cases any disturbance of function in the vital organs must exert a deleterious influence on the general health of the patient and demands attention if we are to treat the patient in the most rational manner.

#### B. DIET.

All that is important regarding diet can be summed up in the statement that for practically all cases it should be selected purely with reference to the general nutrition and not according to any theory of its direct influence on the arthritic process. That food is best which affords the best nutrition and does not lead to fermentation in the gastrointestinal tract. The poorly nourished and emaciated need a full nutritious diet, comprising an abundance of fat and carbohydrates, and the obese should be subject to such restriction as will reduce the adiposity without diminishing the strength. The ingestion of large amounts of water has a favorable influence through its aid in the elimination of waste and toxic products, and to this fact is probably due the efficiency of certain mineral waters rather than to any specific properties which they possess by virtue of their particular alkaline qualities.<sup>2</sup>

#### C. PHYSICAL THERAPY.

Under this term we include hydrotherapy, hyperemia, counter irritants, massage, and active and passive motion. To the substitution of these for drugs is due much of our success to-day in the treatment of arthritis. The favorable action of all these methods, though obviously differing somewhat in the nature and extent of the effects produced, can best be explained by a common influence on the nutrition of the joint through the circulatory changes induced.

1. *Hyperemia.*—Hyperemia holds the place of chief importance among the methods of local treatment of the joints, and is, with very few exceptions, applicable in one form or another to the treatment of all forms of chronic arthritis. A great variety of methods inducing local congestion have been employed, including hot water, baking, hot sand, Fango baths, Bier congestive method, "Saugeapparat" (Bier), sweating, counter irritation, and many others. Varying effects are undoubtedly produced, yet the essential condition in each is the varying degree of hyperemia. Bier and others divided hyperemia into two groups, active or arterial, and passive or venous; the former resulting chiefly from local application of heat in some form or counter irritation, the second principally as a consequence of some interference with the venous blood flow. The above mentioned author believes that in cases of the chronic forms of arthritis the best results are obtained by active hyperemia, and with this view our own experience entirely agrees. In acute inflammatory conditions of the joints we have repeatedly found arterial hyperemia to fail to relieve the pain or actually increase it, while in as many instances of the chronic form the application of the "Bier method" of venous hyperemia has failed to relieve

the pain as effectively as baking (arterial hyperemia). As to the exact method of application of the hot air, only a few general rules need be given, as the degree of heat registered by the thermometer, its mode of application, etc., must vary greatly with the special form of apparatus used. There is little choice in the particular form of baker so long as it makes possible the confining of the hot air to the affected joint and is so constructed as to admit of easy regulation of the temperature. The most convenient covering for the joint we have found to be a small thin towel, as it absorbs the perspiration sufficiently, prevents the possibility of direct burning, and does not necessitate the extreme degree of heat in the chamber which must be produced when the joint is covered with a thick layer of cotton and a bandage. Within certain limits the degree of hyperemia varies directly with the degree of heat in the oven, but we have observed no advantage in the highest temperature which the patient is able to bear. In general, the temperature should be gradually raised until the patient feels it approaching the limit of tolerance, maintained for fifteen to twenty-five minutes, and then allowed to fall gradually. Depending on the severity of the symptoms, this treatment should be applied from once or twice weekly to once or twice daily, and continued for weeks or months. The results obtained in this manner are: 1, A lessening of pain; 2, bactericidal action; 3, an increase in absorption; 4, resolving of proliferated tissues; 5, a regenerative influence on the tissues (Bier).

2. *Massage.*—In nearly all cases except in the hypertrophic variety massage is an important factor in the management and should usually be combined with carefully regulated active and passive motion. The favorable action of massage is seen in 1, an increase in the nutrition of the joint; 2, absorption in the joint effusion; 3, diminution of the edema; 4, a loosening of adhesions; 5, stimulation of trophic nerves; and, 6, relief of muscle spasm. It is undoubtedly of the greatest value in those cases accompanied by effusion and is best applied immediately following the period of hyperemia when the relief from pain is most marked. Gentle kneading, squeezing, and stroking centripetally with careful manipulation are the methods to be employed.

3. *Hydrotherapeutic Measures.*—Applied both locally and generally, these play an important part in the treatment of all forms, but unfortunately their use is largely restricted to special institutions equipped with the necessary apparatus.

#### D. REST.

Rest is essential in all acute stages, though to be advised with extreme care, as in many forms, especially the infectious, very marked muscular atrophy and firm adhesions may form even within a few weeks. This will be considered under the various types discussed below. Immobilization in itself may cause inflammation resulting in erosion of cartilage, adhesions, and binding together of the periarticular tissues, as shown by animal experiments made by several investigators.

#### E. DRESS.

In certain instances dress is a more important factor than is commonly recognized. Thin woolen underclothing, preventing the rapid evaporation of the perspiration and affording a protection against the sudden changes of temperature, diminishes the pain and probably to some extent the tendency to acute exacerbations.

2. The exhaustive work of Mr. McCrudden on "Uric Acid" (Paul B. Hoeber, Publisher, 69 East 59th Street, New York City) disposes finally of the theory that this substance is the sole, or even an important cause of the so-called rheumatic diseases. The more perfect technic of modern physiologic chemistry would seem to show that in some instances diametrically opposite conclusions would have been drawn by Haig from his experiments had they been performed with the accuracy of the present methods.



## F. CLIMATE.

A dry, relatively warm climate is occasionally of help, particularly in the atrophic type. Many patients find great relief from a winter's sojourn in a climate like upper Egypt or Arizona. As in tuberculosis, the climate best suited to arthritic patients is that which, by virtue of its dryness, equability, and abundance of sunshine, admits of the maximum number of hours in the open air.

## G. DRUGS.

The salicylate preparations, which are so efficacious in the acute forms of arthritis, possess slight if any value in the treatment of the chronic forms except in the acute exacerbations, in which they occasionally afford some relief from pain. Their depressing effects on the heart, their irritation of the gastrointestinal tract, and their destructive action on the red blood corpuscles make it inadvisable to employ them even in the latter cases. It is but rarely impossible to relieve the pain by local applications. Tonics, especially arsenic and iron in some form, are to be administered in practically all cases and for long periods. Many authors testify to the usefulness of potassium iodid and creosote, but we have never been able to observe any striking results follow their use. Various salines, especially sodium phosphate, are very largely employed in these conditions, but we do not know of any definite indications for their use, based on their physiologic action except the cathartic action and consequent tendency to diminish intestinal putrefaction. Admitting the fact that there are no specific drugs, the indications for their use are clearly those given by the complicating conditions.

## II. SPECIAL TREATMENT ACCORDING TO TYPE.

Supplementing the above described general régime certain special rules are applicable to individual types, but here the application is a very indefinite one, as each case must be judged according to the special symptoms and their severity. In the more severe stages the condition at times demands surgical treatment, and very frequently the application of orthopedic methods. These will be mentioned in the discussion of the local measures adopted in the management of the special types.

## A. CHRONIC VILLOUS ARTHRITIS.

Since the commonest cause of this condition is some underlying condition producing an abnormality in the function of the joint, the correction of such sources of strain or weakness is of prime importance. The examples are flat-foot, obesity, and certain strained position necessitated by occupation. Hyperemia, though of value, if carefully and persistently used, is much less effective than in other types with more severe inflammation. Supporting bandages and apparatus which restrict motion more often afford relief.

After a failure of the methods above indicated and when the villi still persist in spite of partial or complete immobilization of the joint, operative measures are indicated. It is certainly rational to remove the cause of the irritation and the results obtained fully warrant this procedure. The villi are partly fibrous, partly fatty, and covered with synovia. They hang as fringes into the joint, often interfering with free motion, and in many cases acting as foreign bodies. The pinching of one of these fringes or tabs between the opposing articular surfaces gives rise to sudden pain and a train

of symptoms closely simulating those caused by a loose semilunar cartilage.

The exact technic of the operation need not concern us here. The joints are best opened by linear incisions, usually on both sides of the patella, and carried through the capsule. The villi are seen hanging like stalactites or stalagmites into the joint cavity, most often arising from a much enlarged infrapatella pad. These are removed with scissors. The hemorrhage is ordinarily not extreme and is easily controlled by temporary packing. The capsule and fascia are now approximated with interrupted suture of catgut or silk, and the skin incisions closed without drainage, unless the bleeding is excessive. Passive motion is begun on the seventh day subsequent to operation and a restoration to approximately previous functional ability can be expected at the end of two or three weeks.

Several joints which we have seen opened later for one cause or another have shown no further villous formation occurring from the scar tissue formed at the seat of previous removals.

## B. INFECTIOUS ARTHRITIS.

Notwithstanding the fact that in this form the initial symptoms may be more severe than in any other, with proper treatment the prognosis is usually the most favorable. The use of active hyperemia once or twice daily, followed by careful massage and hydrotherapy applied locally, will often produce very striking improvement or a complete cure in the condition. Rest by fixation, although absolutely essential during the period of acute inflammation, must not be employed for too long a period, as adhesions and atrophy take place with astonishing rapidity and can only be avoided by massage and manipulation of the joint. The frequent accompanying hydrops is best relieved by fixation and massage. We feel that in this type emphasis should be laid on early passive and active motion, since without this troublesome adhesions are sure to follow. In those joints which have been allowed to become stiff and when the x-ray shows no change in the articular surfaces we believe *brisement forcé* under complete anesthesia is the best initial procedure. Following this manipulation only temporary immobilization, if any, can be safely employed. It should be left in a different position from that assumed before the operation in order that the previously adherent surfaces may not oppose each other, and therefore again become glued together. Passive and active motion are indicated within twelve to twenty-four hours, under an anesthetic if necessary. These exercises, which are made possible by the Zander machines, seem to us almost ideal for this after treatment, and in our hands have given most satisfactory results. Tenotomies for obstinate contractures should be performed. Before *brisement forcé* is employed the manipulator should be sure that the patella is not adherent, since forcible flexion under these circumstances will often detach the tendon from the tibial tubercle before the patella adhesions give way.

## C. ATROPHIC ARTHRITIS.

This form sometimes obstinately resists all treatment. Its persistently progressive character, together with the many joints involved, demands the most careful attention to every therapeutic detail. As in Class 2 the tendencies to atrophy and early fibrous ankylosis are sufficient indications for early massage with active and passive motion. A warm, dry climate has unquestion-



ably given relief to many when all other means of relief have failed. Although operative measures offer less brilliant results than in the cases of simple villous arthritis and those of the infectious type, they are by no means to be neglected. The knees and feet present the most favorable opportunity for correcting the existing deformities and for obtaining a more perfect weight-bearing mechanism. This is of value not alone because of the greater freedom it affords the patient, but also because thereby a reasonable amount of exercise can be taken, the effect of which on the general condition is obviously important.

In the feet, the position assumed is almost always one of valgus and eversion, the weight-bearing line falling much too far toward the inner side of the foot and ankle. The consequent strain is not alone on the foot, but also on the knee and hip, as in the common cases of so-called "flat-foot." Forcible manipulation under an anesthetic and retention in the corrected position by plaster bandages or splints is the method we have followed. The retentive apparatus should be worn constantly for two or three weeks, and then changed for a supporting but less efficient foot plate or brace to be worn in the shoes, and for a long period the retentive apparatus should be applied at night. Several manipulations may be necessary. The Achilles tendon is not infrequently contracted and should be fearlessly lengthened or divided so that the foot may attain at least right angle dorsal flexion.

With flexed knees the same principles hold, though greater care is obviously necessary in reducing the more acute ones. The patella should always first be freed, else the patella tendon will sometimes be torn from the tubercle before the adhesions give way. Too forcible manipulation has led to rupture of the popliteal vessels and nerves, with subsequent gangrene. The contracted posterior capsule offers great resistance, but generally yields to repeated manipulations at perhaps one or two week intervals. The hamstring tendons should be divided by open incisions whenever they represent resisting factors at the time of operation or cause obstinate pain by spasms and contracture while the limb is in retentive apparatus. Plaster is the best first dressing until the tendency to acute recurrence of the deformity is past. The apparatus which has been found most useful for after treatment is the "caliper splint." This consists of a posterior thigh band from which two quarter-inch wire rods descend. Their lower ends are bent at a right angle into two horizontal pieces, each an inch or so long, which fit into a circular iron socket in the heel of the shoe. A strap about the ankles keeps these from slipping from their sockets. A quadrilateral knee-cap with buckle and strap at each corner is placed over the knee and strapped round the rods on each side and buckled into itself at each corner. This may serve as an ambulatory apparatus, the knee-cap taking the strain off the joint. The splint may be worn a part, or all, of the day, the knee being from time to time brought into the most complete tolerable extension by gradually tightening the straps. The above methods serve to illustrate the principle of corrective operative measures and retentive apparatus.

#### D. HYPERTROPHIC ARTHRITIS.

Local treatment, on the whole, yields less favorable results than in the other types because of mechanical ankylosis due to bony proliferation. This obviously can not be entirely relieved by measures affecting the nutri-

tion of the joint. Furthermore, passive motion, unless employed with the greatest care, may do considerable harm to the soft tissues. Mechanical support, however, by relieving the danger of mechanical irritation, may greatly relieve the pain and allay the inflammation and favorably influence the absorption of the thickened cartilage. The main principle of treatment in this type is rest. The fixation need not necessarily be complete to afford relief. Adhesive plaster strapping, flannel bandages, etc., often furnish sufficient support, but we feel that complete fixation in plaster or leather splints is the best method of treatment to the more sensitive joints of this type. By reducing the swelling and local irritation of the soft parts, return to painless function is favored. The pointed spicules seem to round off and some of the hypertrophy of the cartilage to disappear.

When it can be definitely ascertained that one or more bony overgrowths are the chief obstacle to greater mobility these osteophytes may be removed and at least temporary relief of pain and greater power of motion gained. The patient should definitely understand, however, that this has no effect on the general tendency to proliferation and gives no assurance that these overgrowths will not recur. Occasionally the onset or the exacerbations may be quite acute, seemingly coincident with the rapid development of a bony spur. At these times baking offers the most speedy relief.

#### SUMMARY. •

In conclusion, it is well to remark, that we can no longer consider this group of diseases as hopelessly incurable. The success of modern therapy offers the greatest encouragement. Briefly stated, the régime of treatment applicable to all types is improvement of the general health.

In cases of simple villous arthritis, after a fair trial of conservative methods, radical operation is advised. In the infectious cases early motion and as little fixation as possible is indicated. In the atrophic, a judicious combination of fixation and motion affords the greatest relief, and in the hypertrophic, partial or complete fixation with as little motion as possible most favorably arrests the process.

The final results will depend largely on two factors: First, the stage of the disease at which a diagnosis is made, and second, the skill and persistence with which a régime of treatment is carried out. If treatment is delayed until marked pathologic alterations have taken place in the joint tissues and the general health has become much impaired the prognosis is of necessity much less hopeful. In the early stages, we may hope by patient, persistent, careful application of the above methods to arrest the process in a majority of cases and to effect a complete cure in a considerable number. In the more advanced forms we can usually relieve, sometimes arrest, but practically never bring about a complete cure.

#### DISCUSSION

ON PAPERS BY DRS. CONNER, WITHERSPOON, HERRICK, BARKER, LOCKE AND OSGOOD.

DR. JOEL E. GOLDTHWAIT, Boston, said that one could not but contrast the articles in the symposium with those read a few years ago. If he remembered rightly not once in the papers had the "grandfathers" been mentioned; nor had uric acid been mentioned but once and then only as a feature of the disease and not as a cause. It seemed very encouraging that medical men, generally, are working intelligently and honestly to unravel the many features of these diseases about which so much uncertainty exists. Meetings of this sort he thought



must stimulate all. It is most important that every individual should have a thorough examination; it should not be taken for granted that the patient has "rheumatism," but he should be examined thoroughly, with every available method, in order to determine all the possible features of the disease. He emphasized the importance of trying to get at the pathology, a knowledge of which must underlie all treatment. After the examination has been made as carefully and perfectly as possible then some plan of treatment can be adopted irrespective of old theories, so long as the treatment is along the lines indicated by the pathology. Whatever terms one may use to indicate the individual case or type of cases under treatment is entirely a matter of no importance, provided the pathologic conditions which underlie the features in a given case are understood. If it is an atrophic case, a progressive atrophy, one will not wish to deplete the patient any more than one will deplete a patient with some other wasting, progressive disease. The pathology should be the guide in the treatment of disease. It means reconstruction, and until more is known of the etiology the treatment must be along these lines. Whatever drugs be used, so long as they are reconstructive, they are the proper ones to use. If the hypertrophic condition exists and if, after examination, one finds joint limitations due to mechanical presence of nodes, they should be removed, if possible, so as to allow the joint to have freer motion. This is merely a mechanical problem. In infectious cases one should remember that he is dealing with an infection, whether it is a direct infection of the joint or a sequela of some other infection. With this fact in view the line of treatment is obvious.

Dr. Goldthwait said that it is his privilege, through the kindness of the staffs of two hospitals in Boston, to see a great many patients with various forms of rheumatism so-called, both the acute and chronic forms. What impresses him is that apparently in these joint conditions the same features are present as in other infections. So far as he could tell a given organism may produce an acute disease, or the same organism under certain conditions, in which the resistance is lessened, or the organism more virulent, may go on to a more serious type of inflammation, the lesions lasting for a longer period of time. Therefore, the more he sees of these cases, the more and more difficult does it become to classify them properly, except that they are all infectious. His plea was that they all do their best and contribute even a mite to the knowledge of a large subject which represents the cause of more of the helpless cripples than any other disease which confronts them. He believes hydrops intermittens to be more common than appreciated. Variations in the frequency of the attacks are very great. As to their being infectious, it seems to him that they are not yet in a position to make as broad a statement as that; many suggestions show that they are dealing with infection, similar to a malarial infection, for instance, which developed once in so often. Investigation along this line is very suggestive. In one case then under treatment the joint was opened and a diplococcus obtained. The intermittent character in that joint (knee) was controlled, while the character in the other knee was not. Drugs of the greatest benefit are those of the antiseptic character.

With regard to the so-called hysterical joints he thought that the greater our knowledge the fewer would be such cases. A great many cases which he used to call functional or hysterical it had been his privilege to correct with greater knowledge of the joint conditions.

Dr. GEORGE W. McCASKEY, Fort Wayne, Ind., said that in dealing with cases of acute articular rheumatism, so-called, one can assume that he is dealing with an infection. The point that bears directly on the problem of the etiology of rheumatism is that in infectious disease a chemical poison is the really active agent. It is perfectly well known that the bodies of bacteria do not of themselves produce disease. Acute articular rheumatism he believed to be some particular poison to which there is a special susceptibility on the part of the joint structures, heart, etc. It is possible that the same poison may be developed by different, but related, organisms. But just what its nature is, whether an alkaloid or acid, or something else, he did not know. It may be produced by a diplococcus, a streptococcus, or some other organism which secretes (or from the

dead bodies of which there can be extracted) a poison which has a special reaction on the structures involved.

In regard to Dr. Witherspoon's reference to the general infection of the system from the gonococcic organism, he said that he recently had seen a case which illustrated the dangers of any operative manipulations on a patient during the time of the active local infections. In this case a divulsion of an old stricture was performed during an attack of an acute gonorrhea. Within three or four days acute heart symptoms developed and two weeks later the patient was in an advanced stage of gonorrheal endocarditis, which proved rapidly fatal. There is great danger, he believed, in operative procedures on the urethra under such conditions.

Dr. JAMES J. WALSH, New York, referred to the various groups of diseases that had been in existence during the past years, such as the measles-scarlet-fever group at the beginning of the nineteenth century, then the German measles group in the twentieth century and the throwing out of each group various diseases and he thought that the so-called rheumatism should go the same way. We should get rid of the term rheumatism. Acute arthritis may be traumatic or infectious. It may be caused by traumatism, as an injury, or by a strain put on the joint. When in Paris he saw 160 cases of mumps in soldiers and in 11 of them a mump arthritis developed.

Dr. Walsh referred to another form which had been encountered in New York. This started with a sore throat lasting three or four days; then in a day or two the joint became sore and tender, with usually no swelling; in eight or ten days the patients would be better. These were cases of mild infection, and seemed to be due to a diplococcus. It was a mild form of acute arthritis. Then there were the severer forms which ran about six weeks, more commonly met with years ago than now. Ordinarily, forty years ago such patients stayed in the hospital 18 days; now they remained in the hospital 16½ days under the salicylate treatment; that was all the salicylates had done for us. These cases should not be called rheumatism at all, but arthritis. There are cases of subacute arthritis with the recurrences of marks in the joints, a secondary infection. If there are marks about the joints they are not the result of an acute articular rheumatism, so-called; they are due to some secondary infection like gonorrhea.

In the chronic form of rheumatism fall the arthritis deformans group. The term "chronic rheumatism" has no business in the nomenclature at all. Most neuroses, musculoses, flat feet, writer's cramp, telegraph cramp, etc., are all called rheumatism when the pains are around the joints, which is wrong.

Dr. JOHN ROGERS, New York, said that in the paper on gonorrheal rheumatism he heard no mention made of the treatment which he has found to be reasonable and of value and which gives satisfactory results. Six months ago Dr. Torrey and himself published an article in THE JOURNAL A. M. A. on a specific bactericidal serum for use in gonorrheal rheumatism. Dr. Rogers had the clinical side of the observations. They had a total of 45 cases and of these 64 per cent. of the total acute and chronic cases were cured within from one to four weeks. It made much difference in what stage of the disease the anti-gonococcal serum was administered. In the acute stage 83 per cent were cured; in the subacute cases, running three, four or five weeks, 74 per cent. were cured; in the chronic cases, which had lasted six months and over, out of 13 cases only 4 were cured. In three cases there was no improvement. Dr. Rogers recommends this treatment as a reasonably simple treatment and of great efficacy in acute cases. Personally he has not tried it in acute gonorrheal epididymitis, but others have found it very efficacious. It is of no value for gonorrheal urethritis or gonorrheal ophthalmia. It seems to be of considerable value in gonorrheal septicemia. The serum can be obtained by application at the Cornell Medical College, New York City.

Dr. WOODS HUTCHINSON, Arrowhead Springs, Cal., said he was glad that the word rheumatism was gradually being left out, the name so often not being creditable; all sorts of disturbances, especially of the motor mechanism, had been dumped into that pile. Its chief value to many resides in its giving a reason for the administering of the salicylates. He said that not only have we confused our classification as



already pointed out, but under the term rheumatism conditions are often included in which the joints are not involved at all.

Last winter he had under his care from 60 to 70 cases of chronic rheumatism, so-called, and out of this number more than 60 per cent. of them could be clearly traced to acute infectious disorders, such as influenza, tonsillitis, pneumonia, typhoid fever, etc. In many cases the chief involvement was not in the joints at all, but in the muscles about the joint and in the nerves supplying that joint. A large number of patients were essentially neurotic in type and showed a peculiar susceptibility to the influence of diet and drugs.

Dr. Goldthwait's reference to red meats was very interesting to him, as most patients that come to the springs are on a special diet, avoid red meat, and still have rheumatism. They seem to do better when on a free proteid diet. Most of them are peculiarly susceptible to a small group of articles of food, such as strawberries, grape fruit, oranges, asparagus, spinach, shell fish, coffee, beef steak, cheese, etc. In many there was actually a neuritis present as attested by wasting of particular muscles, nerve trunks swollen and tender on pressure, areas of anesthesia, numbness and tingling. In short, chronic rheumatism was beginning to present to his eye the picture of a toxic neuritis, with or without articular complications. As to acute rheumatism he would not venture to say. The evidences seemed to point toward the probability that many cases of the acute articular variety were at bottom toxic disturbances of the nervous system, with joint involvements on the order of angioneurotic edema. For instance, the pain and swelling of a joint usually begin on one aspect only of that joint, corresponding to a particular nerve twig, and often are confined entirely to that aspect. This area is later found anesthetic. The pain and swelling develop, subside and shift to another joint with such astonishing rapidity and leave no adhesions or any changes visible to the naked eye. The skin is glossy and pink as in other neuritides. The pain on movement is often not in the joint but in the muscles flexing or extending. The attack comes on with spasmodic contractions and limbs are cramped in one position. Some years ago Osler pointed out that salicylates relieve the pain in these cases the same as any other analgesic would.

DR. CLARENCE E. SKINNER, New Haven, called attention to the paper on the treatment of these conditions, which he read at the Atlantic City meeting two years ago, in which he stated his belief that the body dry-hot air treatment two or three times a week, and static or high frequency electricity every day, constitute the sheet anchors of hope in the management of arthritis deformans. In that paper he reported 50 cases thus treated. He has been using the same treatment ever since and, inasmuch as none of these remedial measures had been mentioned in the present Symposium, he desired to say that the results obtained during the last two years had served to confirm the belief expressed in this paper.

DR. LEWIS A. CONNER, New York City, said that there seems to be little doubt that in many of the milder cases of acute rheumatism the joint manifestations are due to a toxin rather than the presence of the organisms themselves. Similar effects of such chemical poisons are to be seen in the joint inflammations, which sometimes follow the use of antitoxic sera. But whether in rheumatism the toxin is produced only by one specific organism or may result from the action of various micrococci is the question.

DR. JOHN A. WITHERSPOON, Nashville, Tenn., said that he considered serum therapy as yet in the embryonic state and that we are not warranted in recommending it now. He agreed with Dr. Goldthwait that the pathology should be first recognized if one is to have success in the treatment. He also was glad to hear that the red meats had not been mentioned in the symposium.

DR. JAMES B. HERRICK, Chicago, emphasized the importance of the treatment already referred to in the gonorrheal cases, that was, aspiration of the fluid in the earlier stages. This not only lessens pain and hastens the absorption of exudate, but at times prevents the extension of the inflammation to the periarticular structures.

DR. LEWELLYS F. BARKER, Baltimore, said he was glad to hear the suggestion made that intermittent hydrops is possibly

of infectious origin. With regard to the serum treatment of gonorrheal rheumatism he said that more should be known regarding the exact nature of this serum before it is generally advocated, because if Pfeiffer's views regarding endotoxins are true, there are possibilities of its doing harm. The endotoxins would be set free from the bacteria killed by the bacteriolytic serum. The gonococcic serum appears to have a bacteriolytic action. He said that Pfeiffer might be wrong in his opinion, but his views should be borne in mind when experimenting with the treatment.

Dr. Woods Hutchinson's hypothesis was interesting, but if there is a neuritis present, then they have to deal with a neuritis with surprisingly few other symptoms of the disease; analgesia, tactile anesthesia, muscular paralysis, etc., are absent.

## PHYSIOLOGIC EFFECTS OF ALCOHOL ON THE HUMAN SYSTEM.\*

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### • THE RELATION OF ALCOHOL TO LIVING PROTOPLASM.

(a) *The Source of Alcohol.*—Ethyl alcohol is one of the normal products of metabolism of the yeast plant. Most species of white mold form alcohol under abnormal conditions. The conditions which lead to a formation of alcohol by the white mold, lead also to a marked increase in the formation of alcohol by yeast.

The yeast plant is a fungus and in common with other fungi reproduces by means of spores. The yeast plant possesses another method of reproduction, gemmation or budding. This method is used when all conditions are favorable to vegetative growth.

The fungi belong to the lowest sub-kingdom of plants, and are distinguished morphologically by absence of root, stem and leaf; and physiologically by the absence of chlorophyll—the green coloring matter of leaves and stems.

According to the plan of nature, only those organisms which possess chlorophyll are able to build up complex food substances from simple inorganic compounds. Thus we find the green-leaved cereal grasses building up cellulose, starch, sugar, oil and proteids from such inert compounds as  $\text{CO}_2$ ,  $\text{H}_2\text{O}$ , and the mineral salts of the soil. The energy which is made latent in this wonderful constructive process is derived from the sunlight by the chlorophyll.

Organisms not possessing chlorophyll are unable to utilize the inert organic materials of their environment. They are dependent on the chlorophyll-bearing plants for their food. Animals live on the cellulose, starch, oil and proteid elaborated by green plants for their own use. Fungi subsist in a similar, though perhaps somewhat humbler way—the toadstool and mushroom appropriating the decaying vegetable matter of field and forest, the yeast plant consuming the sugar of decaying fruits, while molds and bacteria are found wherever vegetable or animal matter is in process of degenerative change. In fact, the presence of these non-chlorophyll-bearing organisms promotes decay.

(b) *The Metabolism of the Yeast Plant.*—From the above we see that the fungus possesses many points in common with animals. Its life energies are liberated from the highly organized foods which it first consumes, then decomposes.

The food of the yeast plant must contain nitrogenous

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



matter, otherwise there will be a wasting of the cell substance, as shown by Pasteur.<sup>1</sup> Mayer<sup>2</sup> has shown that this nitrogenous matter may be in the form of such soluble and diffusible proteids as peptone, proteoses, syntonin or yeast extract. A portion of the nitrogenous matter may also be in the form of ammonium nitrate, tartrate or oxalate.

Besides the nitrogenous food, there must be carbonaceous food, which is represented by sugar. Then there must be water and salts; the latter must represent iron, potassium and magnesium in phosphates and in some sulphur combination (not sulphate—Mayer).

As these foods are all soluble, they may be directly absorbed by the yeast cells without the intervention of any digestive processes. They are absorbed through the cellulose wall of the yeast cells, and become a part of the cell protoplasm.

How the cell accomplishes the building up of the new material out of food stuffs is not known. How it finally causes disintegration of portions of its own living substance is also unknown.

Something is known, however, of the processes by which the living cell-plasm extracts energy from the foodstuffs of the cytolymph. A study of the phenomena of fermentation has revealed the existence of soluble ferments or enzymes, which are the catabolic agents of the living substance.

Enzymes may be either secreted by the cell or retained within the cell; in the first case they perform an extracellular fermentation. In the latter case, an intracellular fermentation (Green<sup>3</sup>).

Buchner<sup>4</sup> has shown that the yeast plant possesses an enzyme—*zymase*—which has the power, when extracted from the cell, of causing dextrose to break up into ethyl alcohol and carbon dioxide. No one has expressed a doubt that this enzyme is the agent through which the living protoplasm of the yeast cell liberates the energy of the sugar. The *zymase* is not secreted by the yeast cell, but does its work as an intracellular ferment.

Very early in the study of alcoholic fermentation it was discovered that when the yeast cell has an ample supply of oxygen there is a rapid growth and reproduction of the cells with a much decreased production of alcohol and a quantity of carbon dioxide out of proportion to the amount of alcohol (Buchner u. Rapp<sup>5</sup>). On the other hand, with a deficiency of free oxygen there is a great decrease in cell proliferation, while the energy for the life processes of the cell is liberated from the sugar through the action of the enzyme; the reaction being something as follows:  $C_6H_{12}O_6$  (+ latent energy)  $\rightarrow 2CO_2 + 2C_2H_5OH$  (+ kinetic energy), which was first suggested by Gay-Lussac,<sup>6</sup> but is now accepted for practical purposes by Oppenheimer.<sup>7</sup>

Every living organism absorbs certain foodstuffs, assimilates these and either directly or indirectly causes their catabolism. The catabolism of complex substances results in the formation of a number of substances of simpler composition, which are passed out of the cell or organism.

Among the substances which leave the yeast plant are:  $CO_2$ ,  $H_2O$ , glycerin, succinic acid, ethyl alcohol, and a nitrogenous substance. (Oppenheimer<sup>7</sup>).

But the matter which passes out of living cells may be divided into two categories: (1) Matter which is elaborated within the cells and passes out into the surrounding medium where it performs a function or serves a purpose advantageous to the cell or to the organism of which the cell may be a part; (2) matter which has been more or less completely catabolized and, being useless to the cell, is passed out in order that its accumulation within the cell may not clog the vital processes or otherwise injure the cell.

As examples of the first category one thinks at once of the enzymes of the digestive glands, elaborated from substances within the cell plasma, passed out into the lumen of the alimentary canal, where they induce in the contents of the canal chemical changes which are highly advantageous to the organism as a whole. Then there is mucin formed and passed out to lubricate and to protect the delicate surface of the alimentary, respiratory and other membranes; also oil prepared in the sebaceous glands and thrown out on the skin to keep it soft and non-absorbent.

As an example of the second category one may name carbon dioxide, a product of the oxidation of the carbon of the cell protoplasm. In the case of the higher animals urea and uric acid—products of the catabolism of the nitrogenous matter—are good examples of the second group.

The line of division between these two classes of substances is a very clearly marked one. Johannes Müller first made this division, and it has been generally accepted. The substances belonging to the first category are called secretions and those of the second excretions. The term excretion is used in this sense by physiologists generally.<sup>8</sup>

Accepting the use of the word excretion as it appears in the literature of nutrition, we can formulate the following definition which would be acceptable to any modern pathologist: An excretion is any substance (1) which is the product of catabolism of food; (2) from which the organism has extracted the maximum energy possible for it; (3) which would injure the cells that formed it if retained in them; (4) and which is expelled by the cells immediately after its formation.

All the substances mentioned above as leaving the yeast plant fulfill these conditions and must, therefore, be classified as excretions. In no case could they be looked on as secretions in the sense in which that term is generally used. No one has ever contended that the yeast plant makes any use of these substances after they are thrown out of the body. The fact is that the yeast cell throws them out because it can get no further energy out of them. They are thus typical excretions.

(c) *Biologic Significance of Excretions in General and the Influence of Excretions on Living Matter.*—The living organism throws out excretions for two reasons: (1) It can make no further use of them and (2) if retained the substance injures the organism. A clini-

1. Pasteur: Cited by Schurtzenberger in "Fermentation," New York, 1893.

2. Mayer: Cited by Oppenheimer, "Die Fermente u. ihre Wirkungen," Leipzig, 1900.

3. Green: "The Soluble Ferments and Fermentation," Cambridge, England, 1900, page 13.

4. Buchner: "Alkoholische Gährung ohne Hefezellen," *Bed. d. d. Ch. Ges.* Berlin, 1897-98-99.

5. Buchner u. Rapp: *Zeitsch. f. Biol.*, 1899, No. 37, p. 82.

6. Gay-Lussac: *Ann. de Chemie*, No. 95, p. 311, 1815.

7. Oppenheimer: "Die Fermente u. ihre Wirkungen," Leipzig, 1900.

8. Howells: "Amer. Text-book of Physiol.," 1900, vol. 1, p. 213. Schaefer: "Text-book of Physiol.," 1898, vol. 1, p. 635. Voit: In Herrmann's *Handbook of Physiol.*, vol. vi, p. 13. Landois and Sterling: "Human Physiol.," p. 491. Verworn: "Allgemeine Physiologie," 1895, p. 171. Mills: "Animal Physiol.," 1889, p. 412. Waller: "Human Physiol.," 1896, p. 22. McKendrick: "Special Physiol.," p. 378. Stewart: "Manual of Physiol.," 1897, p. 330. Dalton: "Human Physiol.," p. 329. Coleman: In Klrk's "Handbook of Physiol." (15th Amer. Edit.), 1899, p. 291. Lecharlier and Bellamy: *Compt. rend.*, vol. 1, xxix, p. 949. See Bersch, *Gährungs Chemie*, vol. 1, chap. vi, p. 135, et seq. See Sims Woodhead.



cal fact long known and frequently illustrated is that retained urea and uric acid cause profound disturbance of the nervous system, followed by convulsions and death. It is a biologic principle universally recognized that the decomposition products of any organism are injurious to that organism (Vaughan<sup>9</sup>). Vaughan expresses this law in the following words: "They (the cells of the body as well as bacteria) are injured when the products of their own activity accumulate about them."

The excreta of bacteria are all classed as ptomains by Vaughan,<sup>10</sup> and he subdivides these into two classes: (1) Toxic ptomains, formed in the presence of little oxygen (scarcity of O); (2) non-toxic ptomains, formed in the presence of abundant free oxygen. Quoting further from Vaughan,<sup>9</sup> "It is true, without exception, so far as we know, that the excretions of all living things, plants and animals, contain substances which are poisonous to the organisms which excrete them. These poisons originate in the metabolic changes by which the complex organic molecule is split up into simpler compounds."

We must now inquire whether or not alcohol is one of the constituents of the yeast plant excretion which is injurious to that organism. The latest authority on fermentation, Carl Oppenheimer,<sup>11</sup> says: "The question as to how far the cleavage products affect the ferment injuriously can be answered very easily in the case of alcoholic fermentation, since in this case one of the cleavage products, namely, alcohol, is, in a certain degree of concentration, a protoplasmic poison, and injures the yeast and decreases the fermentation. When the alcohol has reached a strength of 12 per cent., the growth of most species of yeast is much decreased, while with 14 per cent. all activity stops."

White mold in general and some species of yeast are much more sensitive to alcohol, from 1 to 4 per cent. being sufficient to stop completely all further growth as well as fermentation.

Not only will the toxic excretion of any living organism poison the organism which produces it, but it will have a toxic action on any organism of a higher rank. Thus the excretion of a mammal might serve as food for some of the lower invertebrates and certainly for fungi and bacteria; while the excreta of the yeast fungus (alcohol) serves as pabulum for the bacterium of acetic acid fermentation. The toxic excretion of the bacteria (toxic ptomains), however, are poisonous to the bacteria and to the yeast fungus and higher organisms, while the toxic excretion of the yeast (alcohol) is toxic not only to the yeast, but also to all animals.

The biology of ethyl alcohol may be thus summed up: (1) Ethyl alcohol is the excretion of a fungus; (2) excretions which are toxic to the organism which excretes them are also toxic to all higher organisms; (3) alcohol is, from its inherent nature, therefore, toxic to all animal protoplasm.<sup>12</sup>

Having set forth the relation of alcohol to living tissue; having shown that because it is an excretion of a fungus, it must, in conformity to the universal biologic law, be toxic to all higher organisms, the effect of alcohol on the human system may be much more clearly comprehended.

## THE PHYSIOLOGIC EFFECT OF ALCOHOL ON THE ANIMAL BODY.

(a) *The Effect on Nutrition.*—The first question that arises in this connection is an old one: Is alcohol a food?

Ethyl alcohol possesses several characteristics in common with the carbonaceous foods, e. g., (1) it is composed of C, H and O; (2) it is readily oxidized in the liver, yielding CO<sub>2</sub> and H<sub>2</sub>O, which are excreted; (3) it yields heat incident to its oxidation, and this heat naturally augments the body income of heat; (4) ingestion of ethyl alcohol leads to a decrease in the catabolism of carbonaceous foods and may even "spare" proteins.

In this connection, one must not lose sight of the following facts: (1) All vegetable toxins and alkaloids are composed of the same kind of chemical elements as enter into foodstuffs, viz., C, H, O and N.

(2) Toxins and alkaloidal poisons in general are oxidized in the liver, through the agency of oxidases, whose function is to oxidize and thus to make harmless substances which would act as protoplasmic poisons on all cells with which they come in contact. When moderate amounts of such toxins are taken the defenses of the system are sufficient to reduce them to a harmless condition and no immediate injury results. If larger quantities are ingested the full drug effect (narcotic in the case of alcohol) is immediately experienced, the oxidases of the system being unable to defend it against a large dose.

(3) All oxidation yields heat, whether it is a normal catabolism or a protective oxidation. That the heat from the oxidation of alcohol is not a normal catabolism for the purpose of heat liberation is evident from the fact that, notwithstanding the liberation of heat through oxidation of alcohol, the temperature of the body falls, because of increased loss of heat from the surface. This increased loss is due to dilatation of peripheral vessels.

(4) Decreased catabolism of carbonaceous or nitrogenous foods following ingestion of a narcotic is a universal fact depending on the drug effect and giving to the oxidized narcotic no significance as a food. It may be said without reservation that ethyl alcohol is not a food in the scientific significance of the word.

### DEMONSTRATED FACTS.

We note so many antitheses between alcohol and food that we are inclined to try the deadly parallel on the two substances.

#### FOOD.

1. A certain quantity will produce a certain effect at first, and the same quantity will always produce the same effect in the healthy body.

2. The habitual use of food never induces an uncontrollable desire for it, in ever increasing amounts.

3. After its habitual use a sudden total abstinence never causes any derangement of the central nervous system.

4. Foods are oxidized slowly in the body.

5. Foods, being useful, are stored in the body.

6. Foods are the products of constructive activity of protoplasm in the presence of abundant oxygen.

7. Foods (except meats) are formed in nature for nourishment of living organisms and are, therefore, inherently wholesome.

#### ALCOHOL.

1. A certain quantity will produce a certain effect at first, but it requires more and more to produce the same effect when the drug is used habitually.

2. When used habitually it is likely to induce an uncontrollable desire for more, in ever increasing amounts.

3. After its habitual use a sudden total abstinence is likely to cause a serious derangement of the central nervous system.

4. Alcohol is oxidized rapidly in the body.

5. Alcohol, not being useful, is not stored in the body.

6. Alcohol is a product of decomposition of food in the presence of a scarcity of oxygen.

7. Alcohol is formed in nature only as an excretion. It is, therefore, in common with all excretions, inherently poisonous.

9. Vaughan: "Ptomaines, Leucomains, Toxins and Antitoxins," 1896, vol. ix, pp. 549, 550.

10. Refer also to Aitken, "Animal Alkaloids," 1889, p. 14, et seq.

11. Oppenheimer, loc. cit., S. 226.

12. Experiment has shown that it is also toxic to the protoplasm of all higher plants.



8. The regular ingestion of food is beneficial to the healthy body, but may be deleterious to the sick.

9. The use of foods is followed by no reaction.

10. The use of food is followed by an increased activity of the muscle cells and brain cells.

11. The use of food is followed by an increase in the excretion of  $\text{CO}_2$ .

12. The use of food may be followed by accumulation of fat, notwithstanding increased activity.

13. The use of food is followed by a rise in body temperature.

14. The use of food strengthens and steadies the muscles.

15. The use of food makes the brain more active and accurate.

8. The regular ingestion of alcohol is deleterious to the healthy body, but may be beneficial to the sick (through its drug action).

9. The use of alcohol, in common with narcotics in general, is followed by a reaction.

10. The use of alcohol is followed by a decrease in the activity of the muscle cells and brain cells.

11. The use of alcohol is followed by a decrease in the excretion of  $\text{CO}_2$ .

12. The use of alcohol is usually followed by an accumulation of fat through decreased activity.

13. The use of alcohol may be followed by a fall in body temperature.

14. The use of alcohol weakens and unsteadies the muscles.

15. The use of alcohol makes the brain less active and accurate.

## ALCOHOL AND THE DISABILITIES OF SCHOOL CHILDREN.\*

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For some years I have been making investigations into the intellectual, moral, and physical conditions of school children. These investigations found their original impulse when, as a member of a suburban board of education, I and a former prominent public educator of Brooklyn, were engaged in a study of the best methods of dealing with refractory and stupid children. Subsequently when in the homes of the poor, as medical visitor for a metropolitan hospital, and more recently when making investigations into the elemental and contributing factors of mental deficiency for various medical societies. I have been impressed with the alarming and the widespread disabilities of school children and their close relation to alcohol.

In several schools examined less than 20 per cent. and in some classes less than 2 per cent. of the children were found absolutely normal in mind and body. In an examination of the records of 63,000 school children, representing 150 schools and 1,749 classes, we found 58 per cent. below standard in their studies; 25 per cent. of them very deficient.

The alarming lack of self-control, the impulsive restlessness, with frequent explosions of passion, and the manifestations of criminal tendencies evidenced by the rising generation, are matters for serious thought. A few weeks ago a boy seven years of age, when refused a simple request, in a fit of anger, drew a revolver from a desk drawer, and shot and killed his mother. Within a brief period in New York City, six boys, aged seven, nine, ten, eleven, twelve and fourteen years respectively, were convicted of burglary, three of them having developed a shrewd plot to rob sixty houses. Two boys fifteen and seventeen years old were found guilty of assault and highway robbery. Three boys, ten, fourteen and sixteen years of age were convicted of murder. In each of these instances alcohol bore a conspicuous part in the family history. Hardly a day passes without its record of juvenile crimes. Few of these criminals are haled to court, and still fewer juvenile crimes are reported in the public print.

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.

The prevalence of organic diseases among school children in our cities is a forecast of a greatly reduced physical standard. Of 10,000 children in city schools, 35 per cent. have diseases of the heart; 20 per cent. have spinal defects; 27 per cent. are tuberculous; 60 per cent. are anemic; and 80 per cent. suffer from some neurosis. Of 500 children in country schools, 5 per cent. have diseases of the heart; 8 per cent. are tuberculous; 12 per cent. are anemic; and 15 per cent. suffer from some neurosis. So common are organic and functional diseases among school children in New York City that should the facts already secured hold good over the entire city and those afflicted be excluded from attendance, two-thirds of our schools would be compelled to close for lack of pupils. The effects of these physical conditions on life and capability of the future citizen is far-reaching.

The etiologic factors conspicuous in the disabilities of school children are environment, personal habit and heredity. Of those suffering from organic diseases, 30 per cent. live in an unhealthy and squalid environment, in an atmosphere of drunkenness and immorality—during the day beaten and cursed and at night permitted to sleep on the floor. Thousands fill premature graves and other thousands with enfeebled constitutions labor through life under the curse inflicted on them by parents ignorant of the laws of life.

The condition of the children of the "submerged tenth" is pitiable. Few normal children are to be found among them. Undoubtedly much of their disease is born in filth and nurtured by vice, but no inconsiderable proportion finds its genesis in the bottle. These children have little to curb the animal passions, but every opportunity for the expansion of depraved natures. The drink environment is such a menace to growing girls that virtue is maintained with difficulty. An extensive study warrants the belief that 50 per cent. are likely candidates for lives of prostitution. Within eight weeks, girls seven, eight and eleven years of age have been outraged. There are certain houses known to the authorities which appear to make a specialty of this line of business.

Why are these things allowed? Are there not charity organizations, children's aid societies, and boards of health to supplement an elaborate and costly police department? Yes: but the conditions which we would correct are so intimately related to the legalized liquor traffic that any move to protect the child is met with a counter-move to protect the income of the political grafter and to throw a halo of sanctity about the denizens of the saloon. Dangers to our girls grow less as the protecting agencies grow stronger.

### COMPARISON OF CITY AND COUNTRY SCHOOLS.

The city, with its strain and rush, its mad struggle for gain, its turbid currents of crime and poverty, augment the burdens of life. True, there are multitudinous avenues for advancement, but on the other hand, there are unbounded opportunities for the operation of retrograde forces; hence the child of the city lacks the virility and sturdiness of the country child, is more prone to disease, more subject to degeneracy, and more deficient. Of 51,000 children in city schools, 46 per cent. are deficient. Of 12,000 in country schools, 22 per cent. are deficient.

Agencies which contribute strength to the body and moral fiber to the character are for the time overshadowed by a pall of disease and moral corruption well nigh past belief. When the saloons crowd into a neigh-



borhood, there is a corresponding physical and moral decline among the children. Either the saloons are attracted thither by the presence of disease, vice and crime; or disease, vice and crime result from the influence of the saloon.

Drinking, smoking, debilitating diseases and various immoralities are less likely to afflict the country child, freed from an alcohol environment, flushed with the buoyancy of country air, and the invigorating influence of healthful sports.

#### PERSONAL HABITS.

Dividing the children into two classes, (a) representing those in good circumstances, (b) representing those in poor circumstances, we note the following: (a) In this class 30 per cent. of the boys smoke; 6 per cent. do regular work after school. (b) In this class 80 per cent. of the boys smoke; 25 per cent. of the boys and 47 per cent. of the girls work after school hours. The girls receive from thirty to forty cents a week for minding the baby of some neighbor; the boys receive from forty to fifty cents a week for running errands and delivering parcels for groceries, dairies, bakeries, drug stores, dry-good stores and butchers. Some of these lads from ten to fourteen years of age begin work at four or five in the morning, attend school during school hours, and resume work in the afternoon, continuing at their labor until nine or ten at night. Hence, in addition to attending school five hours, they perform a day's work of ten hours. The average amount of rest secured by these lads must be very small. An investigation into the records of a half dozen boys revealed the fact that they had only from three to four hours' rest in the twenty-four, and their daily labor was such as would try the endurance of an ordinary man. These boys do not have the luxury of a bed. They know nothing of ordinary home comforts. When the drinking and carousing cease for the night, like neglected household animals, these boys curl up on the floor and go to sleep.

What wonder if such children grow up out of harmony with law, seek pleasure in devious moral ways, or abandon themselves to lives of crime?

#### HEREDITY.

Regardless of environment, there are certain forces inherent in the constitution which unfold characteristics of the progenitor with unerring fidelity. Talents for certain departments of activity may thus descend from parent to child. Degenerations in nerve structure and tendencies to evil are also transmitted. An alcoholic environment accentuates evil proclivities and offers opportunity for the unfolding of physical weakness and moral perversion.

Alcohol by destroying the integrity of nerve structures launches hereditary influences and implants tendencies which a good environment may not hold in check. Those forms of physical and moral disorder that stand in close relation to the nervous organization, are among the first to impress themselves on the descendant.

#### DRINKING HABIT AMONG CHILDREN: HOW CULTIVATED.

From early childhood many children of foreigners are taught to drink beer or wine with their meals. Some drink because of association with drinkers. Others are led to drink through the inducement offered to children at the free lunch counter and in the play-rooms connected with certain saloons. Those in the fourth class have inherited a susceptible nervous system which on the first taste of some spirit is aroused to a passionate fond-

ness. Two little girls, four and six years of age, had the desire for drink aroused by a medicinal dose of whiskey and for months greedily drank feed whiskey which an indulgent mother provided in response to their strenuous appeals. A child four years old in another wealthy family found the passion for drink awakened at the sideboard, and so bitter were her cries for claret that the combined efforts of mother and physician were necessary to keep an indulgent father from acceding to the child's demands. Similar cases can be duplicated in other homes.

*Extent of Drinking Habit Among Children.*—Dividing the children into two classes, (a) prosperous; (b) poor, we have the following:

(a) Cases reported, 34,000; abstainers, 73 per cent.; drinkers of beer, 23 per cent.; drinkers of spirits, including wines, 4 per cent.; drinkers of beer and spirits, 12 per cent.

(b) Cases reported, 6,879; abstainers, 50 per cent.; drinkers of beer, 43 per cent.; drinkers of spirits, including wines, 7 per cent.; drinkers of beer and spirits, 40 per cent.

In class (b) 36 per cent. of the Americans, and 50 per cent. of the foreigners (children of foreign parents), drink. Ninety per cent. of the drinking Americans have foreign-born grandparents and great-grandparents.

Scientific instruction in the laws of health and the effects of alcohol and other narcotics has resulted in a very perceptible increase in the number of abstainers and improvement in the hygiene of the home. Some teachers report 20 per cent. less drinking among their pupils now than five years ago.

A vast immigration of inferior peoples, attracted by our great material prosperity and the hope of political liberty, bringing with them their vices as well as their virtues, augmenting our drinking classes, furnishing additional soil from which to propagate criminals, thereby increasing our burdens and responsibilities, renders more imperative the necessity for those movements which will alleviate and enlighten.

*Relation of the Drinking Habit to Mental Deficiency.*—Beer-drinking children are notoriously sluggish in their mental operations, while spirit drinkers gravitate into habits which seriously impair the higher intellectual properties and cloud the judgment.

When the drink habit is linked with an hereditary alcoholic taint, dullness is perceptibly increased. From 15 to 25 per cent. of drinkers, free from hereditary alcoholic taint are dullards. From 53 per cent. to 77 per cent. of the descendants of a drinking ancestry are dullards. From 4 per cent. to 10 per cent. of the descendants of a total abstinence ancestry are dullards.

#### DRINKING HABITS OF PARENTS.

Dividing the pupils into two classes, (a) prosperous; (b) poor, we have the following:

(a) In this class, 32 per cent. have drinking parents; 68 per cent. have abstaining parents. (b) In this class, 85 per cent. have drinking parents; 15 per cent. have abstaining parents. (a) Of 12,919 dullards, 9,689 had drinking parents. (b) Of 3,195 dullards, 2,715 had drinking parents.

*Proximate and Ultimate Effects of Alcohol on Offspring.*—Dipsomania sacrifices the central nervous system and the subject transmits to his descendants tendencies to the severest forms of psychic degeneration and organic disease, and each succeeding generation finds a



lessened power of resistance to the vasoparalytic and direct toxic effects of alcohol.

One hundred and two children in twenty-five families of heavy drinking parents show the following: Seven had tuberculosis, 8 had diseases of the heart, 31 had functional diseases of the nervous system, 41 were drinkers, 6 were degenerates and 4 were idiots. Only 5 of the entire number were normal.

In moderate drinkers alcohol produces a modification of function in the highly organized nervous elements. The degeneration is neither so radical nor extensive as in the heavy drinkers, and the defects are often overlooked or concealed until the third or fourth generation, when severe psychic or organic infirmities are recognized, the so-called "misfortunes," "unaccountable afflictions" and "visitations of Providence."

Tracing ten families of total abstaining parents, we note the following: First generation, 34 children, of whom 11 per cent. suffered from organic or functional diseases; second generation, 38 children, of whom 26 per cent. suffered from organic and functional diseases; third generation, 58 children, of whom 7 per cent. suffered from organic and functional diseases.

Ten families of moderate-drinking parents show the following: First generation, 47 children, of whom 59 per cent. suffered from organic and functional diseases; second generation, 90 children, of whom 62 per cent. suffered from organic and functional diseases; third generation, 82 children, of whom 95 per cent. suffered from organic or functional diseases.

The neuropathic constitution which is so characteristic of the age in large measure arises from an hereditary basis; is extremely susceptible to disease, and succumbs to the slightest injurious influence. The psychopathic degenerative factor becomes more potent with each transmission, and induces the most serious pathologic lesions.

The alcohol habit superadded to the strenuous demands of modern life puts on each succeeding generation an increased strain. Constitutions impaired by habit or undermined by disease are bequeathed to the children. Through this cumulative transgression, disastrous consequences must result.

#### CONCLUSIONS.

First, when money goes for drink, poverty with its attendant evils prevails, and the burdens of childhood are increased.

Second, alcoholic environment is unfavorable to the production of the best school work.

Third, alcohol, by producing a train of psychic and organic degenerations in the offspring, debases the morals and lowers the sum total of human happiness.

Fourth, alcohol, by laying the foundations of a diseased and criminal citizenship, threatens the stability of our government.

Fifth, to reduce the burdens and dangers of childhood and to improve the manufacture of future citizens, we must continue, in the largest measure, scientific instruction in the effects of alcohol and in the essentials of health; increase the number of our public gardens, playgrounds and improved tenements. But these should be supplemented by measures which will not only lessen the effects of alcohol and the other deteriorating agencies, but also purify or remove the sources from which degeneracy springs.

## ALCOHOL AS A FACTOR IN THE CAUSATION OF PULMONARY CONSUMPTION.\*

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I am not one of those who believe that the world would be better off if alcohol had never been discovered. Yet there is no gainsaying the fact that directly and indirectly it is the cause of a great deal of misery and suffering. Its prominence as a factor in producing pulmonary consumption is certain; any one who watches the dissolution of families sees the frequency of alcoholism in the forbearer of consumptive sufferers. One of the saddest experiences in a large dispensary service is the almost daily application of young consumptives, of both sexes, for help, whose family history is absolutely free from the trend of inherited phthisis, but who, on inquiry, tell you with a blush of innocence on their faces, that their father or their mother, perhaps both, or some other near relatives, were accustomed to the inordinate use of alcohol.

In the Clinic for the Home Treatment of Consumption, which we recently started in Philadelphia, of the first twenty-eight consumptive male patients, 58 per cent. were, or had been, alcohol tipplers. One of the most remarkable demonstrations of the close affiliation between alcoholism and phthisis, and one which speaks more eloquently than many similar cases that could be related, is the following case, contributed by Dr. T. D. Crothers:<sup>1</sup>

G. came from England in 1798 and settled in Connecticut. He was a harnessmaker, a beer-drinker, and after middle life drank rum to excess until he died at the age of 61. His wife was healthy and lived to the age of 80. Eight sons grew up and married. Six of them died of consumption under 45. One was killed by accident and the other died from the excessive use of spirits. Two daughters grew up and were married; one died of consumption and the other in childbirth. The daughter left four children; two were inebriates and the two others were eccentric and died of consumption. Of the children of the eight sons, only ten grew up to manhood. Four of these drank to excess and died. Three of the remaining six died of consumption and two others were nervous invalids until death in middle life. The last one, a physician of eminence, became an inebriate. He is the only surviving member of all this family, the male members of which were farmers, tradesmen and men of more than average vigor in appearance. They married women (so far as can be ascertained) without any hereditary tendency to consumption or inebriety.

In a very interesting paper<sup>2</sup> on "Alcoholism and Degeneration," Professor G. von Bunge discusses the influence of alcohol, in the first place, on the capacity of mothers to suckle their infants. Thus in 422 cases, in which both mothers and daughters were capable of suckling their children, it was found that 98.7 per cent. of the daughters, 98.9 per cent. of the mothers, and 90.4 per cent. of the fathers were abstemious or moderate drinkers; and 1.3 per cent. of the daughters, 1.1 per cent. of the mothers, and 9.5 per cent. of the fathers were immoderate and excessive drinkers. On the other hand, 281 cases, in which the mothers were capable and the daughters were incapable of nursing their infants, it was found that 94.8 per cent. of the daughters, 97.2 per cent. of the mothers, and 22.2 per cent. of the fathers, were abstemious or moderate drinkers; and 5.3 per cent. of the daughters, 2.9 per cent. of the mothers, and 77.9

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.

1. Quart. Jour. of Inebriety, Oct., 1888, p. 390.

2. Virchow's Archiv., vol. cxxxv, p. 185.



per cent. of the fathers were immoderate or excessive drinkers. By comparing the amount of alcohol consumed by the father, in the two groups, its influence in producing incapacity in the daughters to suckle their young, is quite obvious. For in the first group in which both daughters and mothers were "capables," the fathers were abstemious or moderate drinkers in 90.4 per cent. of the cases; while in the second group in which the daughters were "incapables," the fathers drank immoderately and excessively in 77.9 per cent. of the cases.

In the second place, Professor von Bunge investigated the influence of alcohol as a cause of consumption and of nervous diseases and psychoses in the same groups of cases. Thus in the first group of 422 cases, in which the fathers, mothers and daughters were on the whole, abstemious, and in which both mothers and daughters were "capables," consumption prevailed as follows: fathers, 3.3 per cent., mothers, 2.8 per cent., daughters, 1.6 per cent., and sisters and brothers of daughters, 8.9 per cent. In the same group, nervous diseases and psychoses prevailed as follows: fathers, 0.5 per cent., mothers, 1.7 per cent., daughters, 1.6 per cent., sisters and brothers of daughters, 3.0 per cent.

In the second group of 281 cases in which the fathers used alcohol to excess in 77.9 per cent. of the same, and in which the mothers were "capables" and the daughters "incapables," consumption prevailed as follows: fathers, 7.7 per cent., mothers, 5.5 per cent., daughters, 7.0 per cent., and sisters and brothers of daughters, 21.3 per cent. In the same group, nervous diseases and psychoses prevailed among fathers, 3.4 per cent., mothers, 5.5 per cent., daughters, 10.7 per cent., sisters and brothers of daughters, 9.3 per cent.

In a third group of 435 cases in which the fathers, mothers and daughters used alcohol to a greater extent than in the first and second groups, and in which both mothers and daughters were "incapables," consumption prevailed as follows: among fathers, 16.2 per cent., mothers, 18.2 per cent., daughters, 16.5 per cent., and sisters and brothers of daughters, 27.8 per cent. In the same group nervous diseases and psychoses prevailed as follows: fathers, 12.6 per cent., mothers, 18.5 per cent., daughters, 25.9 per cent., and sisters and brothers of daughters, 18.6 per cent.

The last three groups do not, however, represent the real pernicious power of alcohol in producing consumption and nervous diseases in the offspring, because in a certain number of instances the fathers themselves were sufferers from these diseases and hence Professor von Bunge constructed another group in which these defects are eliminated. Thus in 318 cases in which the fathers were abstemious or moderate in the use of alcohol, consumption among the offspring prevailed in 19.4 per cent., and nervous diseases and psychoses in 10.5 per cent.; while in 127 cases in which the fathers used alcohol to excess, consumption flourished to the extent of 38.1 per cent., and nervous diseases and psychoses to the extent of 31.0 per cent., actually showing that the children of alcoholic fathers are 100 per cent. more liable to consumption, and 300 per cent. more liable to nervous diseases and psychoses than those coming from more abstemious fathers.

From what has been said I think it may be taken for granted that alcoholism and consumption are allied to each other as cause and effect, and that the latter is frequently the indirect product of the pernicious influence of alcohol on the nervous system. That alcohol destroys the integrity of the nervous system is certain. Dr.

James Jackson, of Boston, and Dr. Wilks, of England, were, I believe, the first to point out this phase of disease, and they called it alcoholic paralysis. It is now known as alcoholic neuritis. In its early stages it is characterized by numbness, tingling, hyperesthesia at first, and later anesthesia of the extremities, paralysis of motion, loss of knee jerk, quickened pulse, shortness of breath and pulmonary embarrassment. The brain and spinal cord remain comparatively normal, while the principal changes occur in the peripheral nerves.

If we compare the three last groups with each other it will be found that consumption predominates in round numbers from 200 to 400 per cent. in the second group, and from 300 to 1,000 per cent. in the third group, over that of the first group, which represents the normal prevalence of consumption; while nervous diseases and psychoses prevail from 300 to 600 per cent. in group two, and from 300 to 1,500 per cent. in group three over those in group one.

It being established, then, that alcohol destroys the integrity of the nerve fibers, it does not require a reckless flight of fancy to perceive how, by operating on the same tissues, it may bring about that peculiar destruction of lung substance, known as pulmonary consumption. Degeneration of a nerve implies degeneration of the organ which it supplies. Thus degeneration of the sciatic nerve is followed by impaired sensation and motion in the muscles and other tissues of the leg and a condition which is almost constantly present in chronic alcoholism, and degeneration of the pneumogastric nerves, which is frequently present in alcoholic neuritis, is just as naturally followed by disease of the lungs, heart, stomach and of all other organs supplied by them.

## ALCOHOL IN ITS RELATION TO DEGENERACY.\*

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Alcohol has been repeatedly charged with being the factor in degeneracy. Statistics of the first half of the present century seem to justify the conclusion that it is apparently the most potent factor, yet these statistics, as a rule, confound coincidence and cause, or effect and cause, or the vicious circles thereby resulting, to a remarkable degree. There are but few races in which alcohol has not been used and abused. The American Indians<sup>1</sup> had *tizwein*, *chica* and *pulque* long ere Columbus; the Tartars and Russians have *bouza*, *kvas* and *kumyss*; the South Sea Islanders have *ava* and *toddy* (from the cocoanut); the Tunisians have *laymi*. The vast majority of the races of mankind have used alcoholic beverages. Each was called by a local name and not by a loan word, a most demonstrable evidence of local origin.

Even the social insects (bees and ants) at times indulge in fruit ferments. The claim, therefore, that alcohol is the product of high civilization, hence of recent origin, and peculiarly destructive, is untenable. That excess in alcohol frequently occurs in degenerative stocks is, however, undeniable. But, as Krafft-Ebing, Kiernan, Spitzka and others have shown, intolerance of alcohol is an expression of degeneracy. The person in-

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.

1. Johnson: "Chemistry of Common Life," vol. i, p. 239.



tolerant of alcohol becomes either a total abstainer because of a personal idiosyncrasy (like that which forbids certain people to eat shell-fish lest nettle-rash occur), or because of parsimony, or for both reasons combined. Such total abstainers leave degenerate offspring, in which degeneracy assumes the type of excess in alcohol as well as even lower phases. The race tests of the deteriorating influence of alcohol are practically valueless, nor are statistics concerning alcoholism in the ancestry of degenerates of much more use. The enormous amount of idiocy, for example, in the Scandinavian countries, charged by Huss, Langdon Down and others to alcoholism in the parents, has been, by most recent researches, cut down by Roof to less than 7 per cent. Insane hospital statistics vary to a like degree. Bad faith, however, is out of the question in these statistics. Lack of analytic skill and that dangerous, unscientific, canting philanthropic tendency which rebels at statistics unfavorable to preconceived sociologic theories explain these discrepancies.

The ignoring of all but the alcoholic factor produces also great elements of error. Kiernan<sup>2</sup> cites twenty-three cases in which degenerate stocks were charged to alcoholic parentage, but which on analysis proved to be due to a degenerative factor in the parents, of which alcoholism was merely an expression. Nearly all the offspring born after inebriety were prematurely born defective, epileptic, hysteric, insane, idiots or criminals. Some few were healthy, apart from their intolerance of alcohol. In eighteen cases both father and mother were alcoholics. The fathers in four of these cases had been temperate, industrious and affectionate ere being sun-struck. Following this came periods of irritability, excessive drinking and spendthriftiness. The mothers had remained for some years after the fathers' breakdown free from the use of alcohol, but were nervously exhausted from the strain. One became depressed during pregnancy, was given gin for the depression and the habit persisted after the delivery. In the three other cases painful menses developed during the nervous exhaustion. The popular prescription for these, gin, was given, with the result of producing inebriety. In ten cases skull injury to the father had like results on both mother and father. In two cases the mother became a victim of painful menstruation after a railroad accident; gin drinking, to relieve this, followed and became a habit. The father's nervous system broke down under the strain and both became inebriates. In two other cases nervous exhaustion from typhoid and typhus fever produced the same outcome—inebriety on the part of the father and mother. In the remaining cases the inebriety was an expression of nerve exhaustion after various protracted infections. The alcoholism in these cases was clearly an expression of the factors of race deterioration producing degeneracy, and not its cause.

The influence of alcohol must first be studied, therefore, on the individual to determine its value and method of action as a cause of race deterioration. Careful medical researches have shown that alcohol produces a nervous state, closely resembling that induced by the contagions and infections, often accompanied with mental disturbance (delirium and acute types of insanity). The acute nervous state to which the term alcoholism was applied by Magnus Huss has all the essential characteristics of the nervous state due to the contagions and infections. There is, however, a greater tendency to impotence and sterility in the alcohol nervous state than in

the others, and consequently a lesser influence on race deterioration. The condition, moreover, has a tendency to set into action degenerative tendencies latent in the liver and kidneys. This action of alcohol on the liver and kidneys so interferes with their functions as to produce the effect already described as resulting in the contagions and infections from their toxins. Alcohol exerts a similarly deteriorating influence on the anti-toxin-forming organs (especially on the testicles, ovaries and their appendages) to that already described as exerted by the toxins of the contagions and infections. To the direct toxic effects of alcohol are added, therefore, results of imperfect liver and kidney action and defective strengthening powers from deficient antitoxin secretion.

Like all toxic agents, alcohol interferes with the functions of the eye and ear nerves. Special weakness thus created is transmissible to the offspring. In the chronic form, alcoholism may well be compared in its effect with chronic contagions. There is, however, less tendency to infections with the microbes forming pus. There is a greater tendency to deteriorating action on the nervous system. There is in chronic alcoholism, as in syphilis, special tendency to that formation of connective tissue which destroys organs. The chronic mental disorders of chronic alcoholism resemble those of tuberculosis, except that the capricious state and exaltation are less frequent than the suspicious tendency, which is deeper, and takes the direction of delusions of poisoning and insane jealousy. The last are due to the deteriorating influence of alcohol on the generative organs.

Alcohol may limit its action to the central nervous system, and thus produce hereditary losses of power. It causes changes in the peripheral nerves, which in the offspring find expression in spinal cord and brain disorder through extension of the morbid process. But for its deteriorating effects on the ovaries and testicles, alcohol would be a most serious social danger, but through its action on the generative organs it tends to prevent the survival of the unfit, rather than to develop degenerates.

There is very little doubt but that the routine prescription of alcohol by the laity for painful menses, teething, toothache, etc., underlies many cases of degeneracy in the offspring. The prescription is the more dangerous because it is recommended in the hidden guise of nostrums by hysterics with blatant alcoholophobia. One of the most energetic female advocates of the legal prohibition of alcohol beverages indorsed very emphatically the nostrum of one of her hysteric supporters which contained 50 per cent. alcohol and 1 per cent. each of cocain and morphin. As the persons largely under the influence of such indorsement were hysterics, whose zeal for reform was largely an expression of desire for notoriety, the dangers of its use during menstruation can not well be overestimated. To reach this serious source of degeneracy from alcohol and the narcotics, a statement on each bottle of the exact composition of nostrums should be exacted by law.

Government could exercise a potent influence for good on alcohol abuse by improvement of sanitary conditions in the tenement or apartment-house districts. Experience in New York and elsewhere has shown that improvement in tenement houses produces decided decrease in the number of dramshops in tenement-house neighborhoods. The earlier tenement houses in New York, as elsewhere, were originally dwellings intended for one family. As these were replaced by houses specially built

2. *Detroit Lancet*, September, 1882.



for tenements with proper sanitary arrangements and improved ventilation, not only did a tremendous decrease occur in the infantile death rate, but a decrease also in the patronage of dramshops. In many instances it was apparent that alcoholic abuse had grown out of poverty. Foul air and crowded quarters had begotten not only a desire for stimulants, but a desire for social intercourse. The dramshop met social needs as a club. It is along this line that government can make best use of its police power.

The prophylaxis of degeneracy in the mother and father may be summed up as simply the prevention of a state of neurasthenia, or nervous exhaustion, whether this condition (involving the functions of growth, motion and sensation, which, as Marincesco has shown, exist in every neuron and its processes) exhibits itself in the general nervous system or in the organs connected with alimentation, elaboration and excretion. Every factor of acquired degeneracy produces what is practically this condition of neurasthenia are exerting any influence in the production of degeneracy. In other words, the neurasthenia of the ancestor becomes the neurosis of the descendant. Therefore the neurasthenia requires in its treatment in the ancestor the removal of the exciting cause (alcohol) and the treatment of the effect by physiologic rest in the truest sense of the word.

In a general way, therefore, the ordinary principles of hygiene applied to each individual case will suffice to prevent development of this neurasthenia. The part of government in this is very small. It is true here that, as remarked by Johnson:

"How small of all that human hearts endure,  
That part which kings or laws can cure."

Training of the individual rather than governmental regulation must be the factor to prevent degeneracy in the ancestor. Indeed, governmental regulation, by injuring self-reliance (that factor so easily destroyed and so hardly regained), may itself be a potent factor in degeneracy.

THIS SYMPOSIUM ON ALCOHOL WILL BE CONTINUED NEXT WEEK.

## INTRAMURAL ABSCESS OF THE PUERPERAL UTERUS.\*

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With the object of eliminating misleading discussions, I will state that it is not the purpose of this paper to consider the subject of puerperal infection, but to deal with one of the results, that is, intramural abscess of the uterus.

Abscess occurs at the end of the second week or a little later, after the most acute symptoms of sepsis have passed. The cavity of the uterus, therefore, is apparently free from serious infection or debris. The temperature curve is septic and devoid of chills, unless complicated with thrombophlebitis.

When the appendages are not involved, pelvic examination is negative, except in thin or relaxed abdominal walls. When the abscess is single, a rounded, slightly flattened outline may be felt on the surface of the uterus, which, to the sense of touch, feels something like a small, deeply-seated fibroid tumor, but is more elastic, and the outlines are not so sharply marked. When the

Fallopian tubes and cavity of the uterus are not infected and the uterus is firm in texture, diagnosis is not likely to be confused with other diseased conditions, except thrombophlebitis. The latter is marked by chills, sharp rise in temperature, and rapid decline to normal. This is repeated once or twice in 24 hours. In the interval, the patient's condition is apparently good (early in disease). In the late cases, frequent pulse regardless of temperature rise, pyemic temperature curve, and generally bad condition are noticeable. The absence of hard cord-like ridges along the course of the veins is a valuable sign in excluding this disease.

In 1895, I read a paper on this subject before the Southern Surgical and Gynecological Association, detailing 4 cases treated by incision and drainage with 4 recoveries. The paper excited much favorable comment. Since that time 4 additional cases have come into my hands. To those are now added 11 others culled from the literature of the subject. All of them have been verified either by operation or autopsy. A number of doubtful cases have been thrown out as untrustworthy.

Of the 19 cases, 4 were postmortem findings, 4 hysterectomies, with one death, and 11 others that were incised and drained with 11 recoveries. Fourteen followed full term of delivery, 3 abortions, 2 not stated, but all were puerperal in character. The number of abscesses in each case varied considerably, 12 having but one abscess each, 3 two, 3 multiple abscesses, and 1 case not stated. Of the 3 multiple abscess cases, 1 had 10 and another had 20.

The location of the abscess was mainly on the posterior wall near the fundus, 12 occurring at this point, 2 on the anterior surface of the uterus, 1 on the fundus, 1 on the posterior wall of the cervix, 1 on the right side near the fundus. Of the total number, 16 occurred in the region near the fundus, posterior, anterior, side, etc. The abscesses were either subperitoneal or just under the outer muscular layer of the uterus. This is accounted for, perhaps, by the fact that the main blood supply to the uterus is through this layer of muscle; consequently the vascularity of the parts favored phagocytic action at this point, the spread of infection becoming modified, suppuration resulted at the place where the barrier appeared. If such is not the case, suppurating centers should be found in deeper parts of the uterine walls with equal frequency.

When I read my paper in St. Louis, it was a matter of surprise that only 2 cases had infected tubes, neither of which was bilateral. The impression seemed to have prevailed that the Fallopian tubes were the only avenues of infection to the peritoneum, but so many abscesses occurring without involvement of the appendages shows that the infection passes directly through the wall of the uterus, along the lymphatics or blood vessels. In this way, acute peritonitis was excited on the posterior wall of the uterus. And in 2 cases the abscess burrowed through the peritoneum; one resulted fatally, the other became circumscribed by intestinal adhesions and was later drained by me.

In one case there was thrombophlebitis of the pampiniform plexus and uterine and ovarian veins of the right side. The condition was such the veins required ligation and excision as high as the brim of the pelvis. The case also had 4 retention abscesses between the coils of the intestines. Another had 5 abscesses similarly situated. In the latter case a prominent surgeon tried to drain through the vagina, making two attempts, but failed. When I opened the abdomen, the utter

\* Read before the American Gynecological Society at Hot Springs, Va., May, 1906.



hopelessness of drainage, by that route, was apparent. The pus centers were too high in the abdomen and the fundal abscess so inaccessible the fingers could never have reached them from below, or, if perchance the uterine abscess could have been reached, it very likely would never have been detected as its elevation above the surrounding surface was so limited it would not have been located by the sense of touch. Other cases have proved to my mind that such cases are more accessible from above the brim of the pelvis. Certainly they can be better handled through the abdominal incision even if it should be desirable to drain below. The history of these cases shows that the expectant plan of treatment promises nothing. The patients all die.

Hysterectomy gave a mortality of 25 per cent, which perhaps would have been more if a larger number of cases had been treated by such means. The patients in all drainage cases recovered; 11 in number, 8 in my hands, 3 in others. This is a good showing when compared with the high mortality of puerperal hysterectomy.

It is but a reasonable conclusion to say that an abscess in the uterus should be treated as similar pus collections elsewhere; that is, on general surgical principles. Exceptions, however, should be made in cases of multiple abscesses for the chances of successful drainage are doubtful. Beside, the uterine musculature in such cases is so much involved in septic inflammation nothing short of hysterectomy will answer.

Further, I am impressed with the idea that the quickest and best work can be done through the abdominal incision even if drainage is made through Douglas's pouch. Complications encountered in the abdomen and especially thrombophlebitis of the pelvic veins require attention that is impracticable by the vaginal route. In all of my cases the patients were treated by the abdominal incision, but, in three, drains were pushed through into the vagina, one drained through stab wound near the abdominal opening, and four through the primary incision.

If this short paper directs the attention of this society to a diseased condition often overlooked it will serve its purpose.

## DISINFECTANTS AND DISINFECTION.\*

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The subject of disinfection is so broad and covers such a wide range of considerations that it is impossible to discuss it properly in the brief time allowed for this paper. Important as are such subjects as the disinfection of the patient's body, instruments, dressings, discharges of various kinds, etc., I have deemed it more important to view and consider the subject from the broader standpoint, namely, the disinfection of premises following contagious diseases.

For the disinfection of premises following contagious diseases a great many substances might be used. It may safely be said, I believe, that nine out of every ten of the advertised disinfectants are of very little value. Some of them are of some value as antiseptics and deodorants. Many of these advertisements are accom-

panied by good testimonials. There are three agencies that we should always keep in mind in general disinfection: 1, A gaseous disinfectant; 2, heat; 3, a liquid disinfecting solution.

### GASEOUS DISINFECTION.

There are three methods of aerial disinfection: (1) By the use of formaldehyd gas; (2) by sulphur fumes; (3) by hydrocyanic acid gas. For the various contagious diseases the first of these methods is by far the best. Sulphur and hydrocyanic acid are better than formaldehyd only when we have to deal with animal life such as cockroaches, bedbugs, fleas, mosquitoes, etc. I have repeatedly exposed guinea-pigs, rats, bugs, etc., to the action of formaldehyd during fumigation, without any apparent harmful effects.

### FORMALDEHYD.

For disinfection following contagious diseases, formaldehyd is far better than sulphur. Not only is it far more efficient, but has no or scarcely any deleterious influence on anything in the room. Sulphur will partially bleach many of the colors of wall paper and fabrics, dulls gilt and varnished wood and tarnishes metal. Formaldehyd gas has none of these deleterious influences except, when very strong, it sometimes tarnishes steel and iron. Formaldehyd is an irritating gas formed by oxidizing the vapors of methyl alcohol by passing them over platinum sponge or coke heated to redness ( $\text{CH}_2\text{OH} + \text{O} = \text{CH}_2\text{O} - \text{H}_2\text{O}$ ). A saturated aqueous solution of this gas contains 40 per cent. of formaldehyd. Such solutions are sold under the trade names of "formalin," "formal," "formol," etc. When the temperature of the gas is lowered to 68 F. or if attempts be made to condense or concentrate the 40 per cent. aqueous solution, some of the formaldehyd is polymerized into paraformaldehyd, a white solid substance of a soapy consistency. When this is dried (as by sulphuric acid) a white powder is formed known as paraform or trioxy-methylene. These solid polymers when gently heated are reconverted into the gaseous formaldehyd.

The fact that the gas is converted into the solid substance at a temperature of 68 F. is of the highest importance; it means that the temperature of a room to be disinfected should be above that point if the best results are to be obtained; on the whole a temperature of 60 F. has proved satisfactory; never ought the temperature be below 52 F. Formaldehyd will readily combine with organic compounds, making it a good deodorant. It is neutralized by ammonia, making the latter substance of value in getting rid of the formaldehyd-fumes after disinfection has been completed.

How is the formaldehyd to be used? Carefully and thoroughly performed experimental work has demonstrated that several conditions are necessary in order to have the disinfectant action most efficient. Why is it that the results of various experimenters have been so different? Why does one man obtain better results with one method and another man with another method? These are questions of vital importance. In order to determine the cause of these discrepancies and also to find out, if possible, the best and most efficient method of generating formaldehyd gas, I have during the past two years performed a large number of experiments, some under circumstances in which I had control of all of the conditions present and could change or modify them at will, and others with conditions as they are ordinarily met with in practice. I shall not to-day burden you with many figures, but desire simply to state

\* Read before a joint meeting of the Iowa State Board of Health and the Iowa Association of Local Health Officers, at Waterloo, Iowa, July 11, 1906.



that I obtained varying results by using various methods of generating formaldehyd gas. I found it to be an almost invariable rule that the manufacturers and supply houses fail to recommend a sufficient amount of the substance. If disinfection is to be done at all, it should be done thoroughly; otherwise it can not be of much value. As performed by some the only good it does, I believe, is a psychologic one; it calms the mind, and the reason why reinfection is not more common from such work is probably either the law of chance or the old principle, "The lame and lazy are always provided for."

*Conditions for Using Formaldehyd.*—The conditions which should be borne in mind in formaldehyd fumigation are as follows:

1. The amount of the substance used. If all conditions are favorable, a small amount of gas is sufficient, but in the absence of all favorable conditions a liberal allowance should be made for inefficiency of method. Under ordinary conditions when penetration of mattresses, etc., is required no less than 16 oz. of 40 per cent. formalin, all of the gas of which is available, should be used for every 1,000 cu. ft. of room space; if only surface disinfection is necessary, only one-half of that amount is necessary.

2. The gas should be evaporated as rapidly and in as concentrated a form as possible. This depends on the system used and the thoroughness with which all holes and places of leakage have been closed up.

3. The temperature of the room should at least be 70 F., if possible; the higher the better, although, of course, some disinfection will take place at a lower temperature. We can not rely on the disinfection if the temperature is below 52 F.

4. The atmosphere should contain considerable moisture, best if saturated, although 75 per cent. is very satisfactory. If the air is too dry, more moisture may be obtained by boiling water in the room or by simply pouring steaming water back and forth from one vessel into another.

5. The length of time of action. This will vary with the conditions already mentioned, although it is safe to say that the time of exposure in most instances should be from 12 to 24 hours. Very frequently no more than four hours are necessary.

6. Leakage of gas from the room. If care is not taken to close up all cracks and holes in the room carefully, a larger amount of formalin must necessarily be used. The State Board of Maine pays no attention to small openings in the rooms, but, to compensate, recommends that 32 oz. of the formalin be used for every 1,000 cu. ft. of room space.

*Methods of Using Formaldehyd.*—Having these conditions in mind, let us briefly review the different methods of using formaldehyd gas. They are as follows:

1. Formalin, evaporated by heat in the room to be fumigated.
2. Formalin, evaporated in one of the several forms of apparatus—the gas passing through a key-hole in the door.
3. Formalin, as a spray produced by passing air or steam through it.
4. Formalin, sprayed about the room.
5. Formalin used to saturate sheets which are hung up in a room and the solution slowly evaporated.
6. Formaldehyd produced by passing the vapor of methyl alcohol over a heated platinum sponge.
7. Formaldehyd generated by heating one of its solid forms.
8. Formalin evaporated by the adding of a chemical agent such as potassium permanganate.
9. Formalin mixed with equal parts of water and boiled off.

No. 1.—The generation of formaldehyd gas by evaporating formalin in the room to be disinfected by the use of a lamp, has

the great disadvantage of not being able to control the amount evaporated, and the constant danger of fire.

No. 2.—The evaporation of the gas in special forms of apparatus, the gas passing through a key-hole or some other opening, has the special disadvantage that it requires almost invariably a rather complicated form of apparatus which is very liable to get out of order.

No. 3.—The method of spraying a solution of formalin by passing air or steam through it, is better than method No. 2, only in that more moisture is present, but has the disadvantage in that it requires a longer time to evaporate.

No. 4.—The spraying of a solution of formalin about the room is distinctly disadvantageous in that the gas is slowly evaporated. This disadvantage may be compensated for by taking twice the usual amount of formalin (which would mean about two pints for every 1,000 cubic feet), and leaving the rooms exposed to the fumes at least twenty-four hours. The best results are obtained when the formalin is mixed with equal parts of water before it is sprayed. This is the method used in the city of Philadelphia and very satisfactory results are obtained. Every exposed surface in the room must be thoroughly sprayed. The procedure is rather disagreeable to the operator, on account of his being obliged to remain in the presence of the fumes for so long a time.

No. 5.—The remarks made in regard to method No. 4 also apply to the method of evaporating formaldehyd slowly from sheets which have been saturated with a solution of formalin and hung in the room. This method is used in Chicago.

No. 6.—Fumigation by the immediate production of formaldehyd gas by passing the vapor of methyl alcohol over a heated platinum sponge, is as a rule, very unsatisfactory.

No. 7.—The evaporation of the gas from one of the solid forms has several disadvantages: (a), not enough moisture is present; (b), it requires fire in the room in most instances; (c), it is rather expensive, for instance, it requires from 150 to 200 of the Schering pastilles to disinfect properly a room with 1,000 cubic feet of space; (d), the amount generated can not always be controlled. It has the advantage that the formaldehyd exists in a convenient form and as such does not very readily disintegrate.

No. 8.—The method of evaporating formaldehyd vapor by adding to the 40 per cent. solution some chemical agent, such as potassium permanganate, is a comparatively new one, and I believe it to be one of the best, if not the best. The formaldehyd solution is poured into a rather deep vessel in which potassium permanganate has previously been placed. The potassium permanganate, by oxidizing a portion of the formaldehyd, changing it to formic acid, produces enough heat to evaporate the remainder. The first experiments with this method from which we have any reliable data regarding results, were performed by the State Board of Health of Maine in 1904. They obtained perfect disinfection by using two pints of formalin and 13 ounces of potassium permanganate for every 1,000 cubic feet of space. They did not take the usual precautions of sealing cracks and other small openings about the house, and they permitted the gas to act for but four hours.

#### AUTHOR'S EXPERIMENTS.

My first experiments were performed with the view of confirming the results obtained in Maine. Later I modified the method somewhat, with the object principally of lessening the quantity of material used. I have found that if the vessel from which the evaporation is to be made is first slightly heated the evaporation is more rapid and more complete, and the deposit of polymerized formaldehyd on the sides of the vessel is prevented. The radiation of heat may also be prevented by wrapping asbestos paper over the bottom and sides of vessel or by placing it in a wooden bucket. A convenient vessel for this purpose is a tin or galvanized iron pail which consists of two portions, a lower, which is about 10 inches in diameter and about 10 inches high, and an upper portion, consisting of a band of tin



or galvanized iron attached to the lower portion, but which extends outward so as to form an angle of about 25 degrees with the vertical. This portion is about 10 inches high and the upper diameter about 16 inches.

Potassium permanganate in the form of very fine crystals, or in a powdered condition, is placed in the pail preferably previously heated. There should be 8½ oz. of the potassium permanganate for every 1,000 cu. ft. of room space to be disinfected. (Maine State Board of Health recommended the use of 13 oz.). Then the solution of 40 per cent. formaldehyd (formalin) is added—20 oz. for every 1,000 cu. ft. of room space to be disinfected. (Maine State Board of Health recommended 32 oz. of formalin.) Effervescence begins immediately. This method is, we believe, the one best adapted for general fumigation. The formaldehyd is liberated very rapidly, which makes the method very efficient and, when rightly performed, reliable. A small amount of moist residue which has the odor of formaldehyd is always left in the bottom of the vessel. The vessel to be used may be such as the one described or any deep pail or vessel will serve the purpose about as well. It is the best if the vessel is first heated, in that it produces a more rapid and complete evaporation of the formalin and prevents some of the gas from collecting on the side of the vessel in a polymerized form. The potassium permanganate should be in small pieces, preferably in a ground condition, because the action will then take place much more rapidly. Twenty oz. of formalin are used for every 1,000 cu. ft., since there is a loss of about one-fifth of the amount during the process of evaporation. This means that about 16 oz. of formalin become available in its gaseous state. If a low vessel is used pieces of paper should be placed on the floor to prevent the floor from becoming soiled by some of the fluid being accidentally thrown out during the effervescing process. The method is simple, easy to perform, without any danger of fire and does efficient work. I, therefore, most heartily recommend it.

#### LIQUID DISINFECTION.

Most physicians do not rely entirely on gaseous disinfection, but advise the washing of the floors, walls and furniture with some liquid disinfectant. There is some reasonable ground for this feeling of uncertainty. The principal reason, I believe, is the fact that most of our manufacturing houses recommend too little of the fumigating agent, and they are always able to present figures demonstrating the efficiency of their method and often the inefficiency of other methods. Formaldehyd is formaldehyd, no matter what way it is generated, and, to insure efficient action, there are two points that we must always bear in mind: 1, That enough of the agent is used; 2, that the formaldehyd be permitted to work under favorable conditions.

If we are sure that these conditions are fulfilled, then I see no need of following a gaseous disinfectant with a liquid one; if we are not sure, then, I believe, it should always be used. Of course, it may be argued that, inasmuch as the use of the liquid disinfectant following the use of formaldehyd gas does no harm except taking away a little of the shine from varnished furniture, it is better that it should always be used, because it associates the idea of washing with disinfection, which notion is a good one to keep constantly before the people. However much of dirt and bacteria may be removed by washing alone, the terms washing and disinfection are not

synonymous and it is better to have disinfectants stand on their own merit.

There are, however, positive indications for the use of liquid disinfectants. Suppose, for instance, a child who to-day shows signs of being affected with measles attended school or church yesterday and, not feeling well, remained in her seat all afternoon. In such instances I do not think that general fumigation is absolutely necessary and that washing the floors and furniture in the neighborhood of the child's seat is sufficient. I believe, however, it to be a good thing to fumigate school houses and churches several times a year on general principles if there are any contagious diseases among the children of the community.

What are the best liquid disinfectants? The market to-day is flooded with disinfectant agents, nine-tenths of which do not, I believe, merit the term. Except for special purposes, I see no need of using anything aside from carbolic acid or some of the coal-tar proprietary preparations, mercuric bichlorid or biniodid. Carbolic acid may be said to be the king of disinfecting agents. It is stable, it is certain, it has penetrating properties. For washing it should be used in a 5 per cent. solution. The various proprietary coal-tar compounds are, as a rule, also very good disinfectants and have an advantage over carbolic acid in that they are cheaper and, second, they do not have such irritating and caustic properties. Their use can be recommended.

Bichlorid of mercury is a most efficient disinfectant when properly used. If freshly prepared with water that does not contain much organic matter, it may be recommended as the best agent for washing floors, woodwork, etc. It should be used in a 1-1000 solution—if much organic matter is present, in double that strength. Formalin is not to be recommended as a liquid disinfectant. A 5 per cent. solution of it has less than one-tenth the value of a 5 per cent. solution of carbolic acid. The various preparations on the market that go by the names of "ehlorids" and other fanciful terms have but little disinfectant value.

#### OUTLINE OF METHOD.

After having already presented the various phases of the subject, it may seem superfluous to go any further into the detail of method of disinfection, but in this, as in most other things, success depends as much on the details as on the generalities. I will indicate briefly how, under ordinary conditions, I would disinfect a room.

1. The person who disinfects should put on a cap and gown and face, at least mouth and nose, covered with a piece of gauze which are later left in the room to be disinfected with the other objects.
2. All holes and cracks should be sealed by pasting over them pieces of paper or filling them with cotton or cloth.
3. Precautions under certain circumstances:
  - a. If the wall paper of the room is badly torn in several places, it should be removed.
  - b. If, by accident, a rug or carpet should have remained in the room, it should be thrown over the back of a chair.
  - c. If the room has no door which it is desirable to open, one window should be left unlocked, to be thrown open when the fumigation is complete.
  - d. No vessels containing water should be left in the room.
4. The patients' clothing and the bed clothing should



be thrown over the ends of the bed, backs of chairs or over a wire or rope stretched across the room.

5. Valuable books should be opened and placed on end, so that the leaves may be separated as much as possible.

6. Determine the temperature of the room and see that it is above 60.

7. See that the room contains enough moisture in a vaporized state.

8. Potassium permanganate is placed in a vessel which has been slightly heated beforehand; to this the formalin is added; 8½ oz. of the potassium permanganate and 20 oz. of the formalin (40 per cent. formaldehyd) to every 1,000 cu. ft. of room space to be disinfected if penetration of mattresses, etc., is required; if only surface disinfection is necessary no more than one-half of these volumes is necessary. If the formalin is generated by a method which liberates all of the gas only 16 oz. are necessary. These volumes are much greater than those given by the manufacturer of most disinfectants. No doubt, also, the volumes given are somewhat greater than absolutely necessary in all instances. Nevertheless, I think that in using disinfectants we ought to use the same principles used by financiers in estimating profits or expenses. They calculate closely just what they will be and then allow a good margin against themselves for unforeseen circumstances. On account of the variability of strength of many preparations of 40 per cent. formaldehyd, we should be sure that we secure our solution from a reliable house.

9. Let the gas act for 6 to 12 hours and open doors or windows. The placing or evaporation of a little ammonia in the room will neutralize the formaldehyd and thus hasten the disappearance of the odor of that substance.

10. All bedding, patient's clothing, etc., that is not harmed by boiling should next be boiled for one-half hour.

11. Wherever possible, the mattress, rugs, etc., should be steamed; I believe that every large city should have a steam disinfector for this purpose. Where this is not possible, these articles should be taken outdoors and thoroughly aired and beaten. The person beating them should have a piece of gauze tied over his head and preferably should also wear a suit which may be sterilized by boiling.

12. Papers, rags, cheap books and other articles of little value should be burned.

13. In case it is not possible to obtain all of the favorable conditions for formaldehyd disinfection, or if there is any suspicion that there are still organisms that need to be killed, all of the woodwork and, if necessary, the walls should be washed with a liquid disinfectant, such as bichlorid of mercury, 1-1000; carbolic acid, 5 per cent., or one of the various proprietary coal-tar preparations properly diluted.

**Good Suggestions to Medical Writers.**—The *Deutsches Archiv f. klin. Medizin* on the fly leaf begs its contributors to make their communications as short as possible in the interests of prompt publication of their works. Those that would fill more than three printed forms of the *Archiv* can be accepted only exceptionally. The authors are asked never to paste in their illustrations in the MSS. or to draw them on the pages, but to send them separately on separate sheets. Satisfactory reproductions, it adds, are possible only when the originals are entirely correct.

## ROENTGEN RAYS IN THE TREATMENT OF LUPUS VULGARIS.\*

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In presenting this important subject I shall endeavor to be as concise as possible, speaking from the standpoint of the radiologist rather than that of the dermatologist. I will strive to demonstrate two distinct methods of treatment, each applicable to a certain condition of the disease and not to another. Inability to effect a cure when the one method, which for certain forms of the disease would be correct, is used on another form is, I believe, the cause of some reported failures.

Freund reported cases treated in 1897 with success, and in 1900 P. M. Jones, of California, reported very fully his work along this line. Thus we see the length of time the *x*-ray has been used in this disease is considerable, and it should have been placed on an established technic. The diagnosis in my cases rested on microscopic findings in more than half the cases, and in the remainder on the opinion of capable dermatologists. These cases usually run over such long periods, and the patients are seen by so many physicians, that they present themselves with a ready-made diagnosis, which only needs to be confirmed.

Another class of cases showing both signs of lupus and epithelioma can be diagnosticated by the reaction under the *x*-ray.

### PATHOLOGY OF LUPUS.

From the pathology of lupus as a basis, I hope to demonstrate the rationale of the appendix treatment. Hyde and Montgomery state:

The essential lesion in all forms of cutaneous tuberculosis is the nodule of granulation tissue containing small, round cells, larger epithelioid cells and giant cells, having a homogeneous center, and few or many large vesicular nuclei situated for the most part along the border of the cell. Around and between these cellular elements is woven a network of connective tissue bundles.

Here follows a significant fact: Although there is marked proliferation of the endothelium of the vessels, no new vessels are formed, the old ones becoming obliterated and a necrosis or cheesy degeneration of both cells and intercellular substance results. Tubercle bacilli are less numerous in lupus vulgaris than in any other tuberculous skin lesion, but are always present in the nodule and are predisposed to the giant cell.

The above-named authors further state this important fact, that in lupus, more than in any other form of cutaneous tuberculosis, the proliferation of cells leads to a constructive or regenerative process, as a result of which the lupus nodule may be replaced by scar tissue, or there may be an excessive formation of new connective tissue producing the various degrees of elephantiasis so often seen in lupus.

Involution of the lupus tissue is accomplished by, 1, reabsorption of the tissue; 2, fibrous metamorphosis, and, 3, by ulceration. When fibrous metamorphosis takes place a mass of connective scar tissue takes the place formerly occupied by the lupus growth.

I have had a number of microscopic examinations made of lupoid tissue after the diseased area had been subjected to *x*-ray treatment for some time, and the findings seemed to agree very closely with those of Heuter, who, as far back as 1900, stated that the primitive lupus tissue underwent a transformation into fibrous

\* Read before the seventh annual meeting of the American Roentgen Ray Society, Niagara Falls, N. Y., Aug. 30, 1906.



tissue, only a few groups of tuberculous cells remaining. The giant cells were very numerous and were most marked at the margin of the nodule, where they were seen in great masses, almost or fully displacing the leucocytes which normally surround the tuberculous focus. This arrangement of cell elements allows the greatly increased connective tissue immediately and closely to surround the nodule. It makes a well-defined limit to the tubercle. No tubercle bacilli could be found in any case after an extended course of treatment. Dr. Grouven, who has made valuable research in this field, says about the same thing. He is struck by the abundant connective tissue which encapsulates the several tuberculous foci in the form of thick bundles of fiber penetrating more or less freely the interior of the foci themselves. Thus the remainder of the nucleus is enveloped by a closely woven network of connective tissue. The spindle cells, which are present in great numbers, also suggest the active proliferation of connective tissue. Doutrelepon reports of a section from a case after ten weeks' treatment that,

The tubercle is seen to be surrounded by a mass of leucocytes and is replaced almost entirely by connective tissue containing a few lupoid cells with an occasional giant cell.

He claims that the cure by the use of the *x*-ray seems to be as follows: The hyperemia set up by the *x*-rays provokes an abundant migration of leucocytes from the vessels. This action takes place first at the edge of the tuberculous nodule and penetrates by little projections into the substance of the nodule, being in time changed into fusiform cells and fibrous connective tissue. The presence of these fusiform cells bears witness to the active formation of the connective tissue.

These few remarks on the fine anatomy of the parts, both when Nature is attempting a repair alone or when the *x*-ray has been used, give us the clue to a rational treatment, which I hope will meet with the society's approval.

Cases presenting themselves for treatment readily divide themselves into classes in regard to size: the small pea-sized lesion with a single nodule and a surrounding zone of infiltration, and the more extensive disease with numerous nodules and more or less unhealthy intervening skin.

I will speak of the latter first, remembering that Nature's first effort in repair, as demonstrated above in these cases unaided, being to produce connective tissue and, as it were, crowd out the unhealthy deposit, she first sends from the blood vessels in the parts a large number of leucocytes. We can cause just this to occur with the *x*-ray, a mild degree of radiation with a medium tube causes fatty degeneration in the blood vessels near the surface, and the leucocytes pour forth into the tissue and later fibrous connective tissue takes its place. This step being accomplished, we must wait until the skin recovers nearly a normal appearance. Now we have nodules alone to care for, the skin between being simple, non-infected scar tissue. Again, turning to Nature, what does she do with these tuberculous foci? Causes them to slough out. Just so with the *x*-ray.

Protecting the new made connective tissue the ray is applied only to the nodules. Here, as in the first class of cases in which there is a single small infection, this ray must be applied in large and repeated doses, with a low action tube, until necrosis will follow, but not until it actually occurs. All this being accomplished, we have a healthy scar surface, and small non-tuberculous simple ulcers, which heal rather slowly, but seem to be, when

healed, permanent. This is the plan which may be varied in the details at the will of the operator, but with very pleasing success I have found.

#### DETAILS OF AUTHOR'S TECHNIC.

As a generator I use a 12 glass plate static, 32-inch, run at about 400 revolutions a minute. This gives a high voltage, low amperage current of good volume. The tube is the ordinary American made, German type, with a heavy platinum anode. I believe other metals or platinum plated targets are not as effective.

For the treatment of the general surface the tube backs up an air spark gap of from 1 to 2 inches, distance from the anode to the skin about 10 inches, and the treatment 10 minutes in duration. Application is made twice a week until the first idea of hyperemia can be obtained. This averages about a month or less, then the treatments are given once a week for about a month longer.

After this the patient is told to return in a month when usually the surface is of a pinkish healthy color, and nodules can be clearly made out. At times several have been brought to the surface which were not visible before. Now, protecting the intervening tissue, the nodules are alone treated with a tube having less than 1 inch (less than  $\frac{1}{2}$  inch is better) air spark gap.

The anode is 6 inches from surface, the treatment 12 minutes long, and made 3 times a week, until a very decided reaction takes place, which, when the cumulative effect of the treatment occurs produces scabbing and slight ulceration. As soon as the active cauter action commences to subside I have found the high frequency discharge, given off from a low vacuum tube, excited by a Tesla coil and resonator attached to the static machine, to be of great value in hastening the repair and cicatrization.

#### PROTECTION OF THE PATIENT.

I have tried various methods, but none seems as good as thin sheet lead, about like thick tea lead. This I have backed up with cloth stitched around the edge, to prevent from brush discharge, and holes are cut through—first, for the whole surface, and bound with adhesive plaster, making a permanent shield, which will last and remain perfect all through the treatment. For the second part of the treatment a smaller sheet of lead is taken, and individual holes are cut for each nodule. This shield is held exactly in position by 2 or 3 narrow strips of adhesive plaster, which project over the edge and adhere to the skin. Over this is laid the first or large shield, to protect the surrounding parts.

I usually have patients in the recumbent position, as in this way they are the most comfortable, and less apt to move, which changes the target distance. It also allows the shield to be without any support, as in the case of the face a band around the head.

#### ADVANTAGE OF X-RAY TREATMENT.

A word in regard to the usefulness of *x*-ray treatment in comparison with the other methods practiced. The surgical method, either by the knife or curette, is painful and leaves frequently scars. The percentage of returns is large, as the infection often extends much farther than is apparent at the time of operation.

Worse than this, however, is the danger of infection to the adjacent or even more distant parts from the open blood vessels and lymphatics.

The other method, that of Finsen, is a competent rival



SUMMARY OF PATIENTS TREATED.

No.	Name.	Location.	Extent.	Duration, Years	Diagnosis.	Months of treatment.	Years since treatment.	Family history.	Result.
1	H. B. ....	Cheek .....	½ sq. in.	7	Microscopic ...	3	3	Tuberculous ...	Cure.
2	C. W. ....	Tip of nose.....	Pea sized.	4	Clinical. ....	4	3	Tuberculous ...	Cure.
3	C. G. ....	Tip of nose.....	Pea sized.	5	Clinical. ....	5	2½	Tuberculous ...	Cure after relapse.
4	J. S. ....	Cheek .....	3 sq. ins.	11	Microscopic ...	36	1	Non-tuberculous.	Apparent cure.
5	J. B. ....	Neck .....	2 sq. ins.	3	Microscopic ...	3	2	Non-tuberculous.	Cure.
6	D. K. ....	Ankle .....	4 sq. ins.	2	Microscopic ...	6	1	Non-tuberculous.	Stop treat. Not cured.
7	J. H. C. ..	Cheek and head...	1 sq. in.	3	Clinical. ....	3	1½	Non-tuberculous.	Cure.
8	J. D. ....	Face .....	6 sq. ins	2	Clinical. ....	9	½	Tuberculous ...	Cure.
9	H. J. G....	Cheek .....	4 sq. ins.	10	Microscopic ...	9	1	Tuberculous ...	Cure.
10	F. W. H....	Leg .....	1 sq. in.	1	Clinical. ....	3	1	Tuberculous ...	Cure.
11	L. L. ....	Leg .....	6 sq. ins.	20	Microscopic ...	6	¼	Tuberculous ...	Not cured.
12	B. G. ....	Cheek .....	½ sq. in.	5	Clinical. ....	3	½	Non-tuberculous.	Returning.*
13	J. S. ....	Tip of nose.....	Pea sized.	½	Clinical. ....	3	2	Non-tuberculous.	Cure.
14	T. M. ....	Face .....	6 sq. ins.	10	Microscopic ...	9	1	Tuberculous ...	Cure.
15	J. D. ....	Abdomen .....	2 sq. ins.	4	Microscopic ...	3	2½	Non-tuberculous.	Cure.

\* Treated for epithelioma.

of the x-ray treatment, but it has some very serious objections. The treatment extends over a long period, sometimes years, at frequent intervals, now and then as often as twice daily, each sitting being, at times, an hour in length, so that the total time under actual treatment is many times that which is required by the x-ray.

During all this time a competent attendant must be actually with the patient. The best results from the Finsen treatment are obtained by the direct solar rays, and so this method is dependent somewhat on weather conditions.

A very serious drawback with the Finsen ray is the limited area that can be treated at a sitting, making multiple treatment necessary, and again increasing the time to cure. There is also danger of reinfection from the uncured part before the whole area can be treated.

ACTUAL RESULTS.

The table gives a tabulated summary of 15 selected cases treated by me in the last 4 years. These cases were selected, not because of the good results, but because of the certainty of the diagnosis. Many, as you will see, were diagnosticated by the microscope, while all those, in which the diagnosis was made by clinical evidence, had been treated by competent specialists for lupus or referred by them to me with the diagnosis so made. In those marked cured the tissue has every appearance of health, with not the slightest evidence of a return. The skin is smooth, and time enough has elapsed since treatment to assume that the cure is permanent. In those marked apparently cured, there is no evidence of lupoid tissue, but the skin is still a little rough and not as good as in the former class.

This gives an average time of treatment of 6 months, which, if Case 4 were taken out, would be reduced to 5 months. This patient came from a distance and, due to poor general health, was very irregular in attendance, sometimes being absent for several months.

The average time since treatment was discontinued is over 1 year and 8 months, long enough, it seems, to make the results probably permanent.

The percentage of cures is 80, or, if Case 12 is taken out, 87 per cent. This case I treated, by error, for epithelioma and now the growth, which is small and in all probability curable when the proper method is applied, is returning. If only the ones with smooth skin are regarded cured, the percentage falls to 75, which I still consider very good.

19 Maple Street.

FURTHER REMARKS ON THE DIGESTIVE  
BEAD TEST FOR ASCERTAINING THE  
FUNCTIONS OF THE DIGESTIVE  
APPARATUS.

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At the beginning of the year 1906 I devised a new method of testing the functions of the digestive apparatus.<sup>1</sup> It consists in giving the patient in a gelatinous capsule beads with various food substances attached and examining the feces with the stool sieve until all the beads are recovered. The latter are then inspected with regard to the presence or absence of the attached foods. Thus we see whether these have passed the digestive tract unaltered, or whether they have been digested.

TEST SUBSTANCES AND INDICATIONS.

Ordinarily, I give the following six test substances: 1, catgut; 2, fishbone; 3, meat; 4, potato; 5, mutton fat; 6, thymus gland. Physiologically, the two first substances (catgut and fishbone) are usually digested in the stomach and the remaining four (meat, potato, mutton fat, thymus) in the intestine.

All the beads (or at least the greater part of them) usually appear in the stool under normal conditions in one or two days. The beads return, either all empty or there is yet a trace of fat or thymus (or fishbone) left. Deviations from these rules point to pathologic conditions.

With regard to the functions of the digestive apparatus the following conclusions may be drawn: In case all the beads (or their greater number) reappear in a much shorter time than 24 hours there is an accelerated motility; if they reappear after 48 hours a retarded motility exists. The digestive function is good if all the beads are empty or if there are but traces of fat or thymus (also fishbone) left. A reappearance of catgut or meat, potato, much fat, much thymus always indicates a poor digestive function for the food substance in question. If all these test substances reappear in the stool an absolutely poor digestive function exists.

Recently, I have examined the following cases<sup>2</sup> with the bead test, which are grouped together in Table 1.

1. "New Method of Testing the Functions of the Digestive Apparatus," Med. Rec., Feb. 10, 1906.  
2. The cases reported in Tables 1 and 2 are taken from my private practice and from the medical ward of the German Hospital, New York City.



TABLE 1.—NEW CASES EXAMINED BY THE BEAD TEST.

No.	Name.	Disease.	Beads, when found.	Result.
1	E. ....	Hyperchlorhydria .....	4 after 20 hours.....	Everything empty.
2	Mrs. G.....	Enteroptosis; hyperchlorhydria..	2 after 44 hours. 1 after 18 hours.....	Everything empty except fat.
3	M. L.....	Hyperchlorhydria; atonia ven- tricoli.	1 after 32 hours. 4 after 45 hours. 1 after 20 hours.....	Everything disappeared; trace of thymus present; nuclei indis- tinct.
4	H. ....	Hyperchlorhydria; dilatatio v...	3 after 44 hours. 1 after 60 hours. 1 after 24 hours.....	Everything empty; potato bead missing.
5	Mrs. A.....	Enteroptosis; hyperchlorhydria.	4 after 48 hours. 1 after 22 hours.....	Everything disappeared except trace of mutton fat and thy- mus.
6	Q. ....	Dilatatio v.; hyperchlorhydria.	3 after 46 hours. 1 after 58 hours. 1 after 66 hours.	Potato, fishbone, meat disap- peared.
7	I. R.....	Achylia gastrica; anorexia.....	6 after 59 hours.....	Trace of fat; catgut and thy- mus present whole; nuclei disappeared.
8	T. ....	Hyperchlorhydria; ulcer v. (?)	4 after 24 hours.....	Everything empty except potato; one-third present; trace of thy- mus present; nuclei disap- peared; trace of fat present.
9	T. ....	Same 16 days later (after rest in bed and ulcer treatment).	2 after 50 hours.	Everything disappeared except trace of potato.
10	Mrs. F.....	Gastralgia; hyperchlorhydria; ulcer v. (?)	2 after 16 hours.....	Everything disappeared except fat and potato; three-fourths present.
11	J. K.....	Lues; gastralgia; atonia v.....	4 after 30 hours. 2 after 26 hours.....	Everything empty.
12	Miss O.....	Gastralgia; colitis.....	2 after 44 hours. 2 after 56 hours. 1 after 18 hours.....	Everything empty; thymus bead not found.
13	Miss S.....	Atonia v.; membranous enteri- tis; spastic constipation.	5 after 32 hours. 4 after 44 hours.....	Everything disappeared except trace of fat and thymus; nu- clei partly present.
14	Dr. R.....	Chronic gastritis.....	1 after 49 hours. 4 after 77 hours. 1 after 154 hours.	Trace of potato found; fat and thymus present; nuclei disap- peared; everything else empty.
15	Rev. Dr. P.....	Gastritis chr.; atonia coli.....	2 after 18 hours.....	Everything disappeared except catgut, thymus and a trace of fat.
16	Geo W.....	Achylia gastrica; enteritis chr..	4 after 40 hours.	Fat, fishbone, potato, thymus present; nuclei disappeared; meat present; catgut bead not found.
17	I. R.....	Achylia gastrica; anorexia.....	4 after 24 hours.....	Catgut, meat, thymus found; po- tato and mutton fat disap- peared; fishbone bead not found.
18	Louis L.....	Carcinoma v.; achylia gastr.; ent. chr.	1 after 48 hours.	Catgut, meat, fishbone disap- peared; trace of fat present; trace of thymus; nuclei disap- peared.
19	R. ....	Myocarditis chr.; nephritis chr..	4 after 41 hours.....	Fishbone, meat disappeared; trace of fat present.
20	S. ....	Banti's disease .....	1 after 87 hours.	Catgut, meat disappeared; fish- bone present; trace of fat present.
21	Z. ....	Myocarditis; chr.....	3 after 41 hours.....	Catgut and meat disappeared; potato present; thymus pres- ent; nuclei disappeared.
22	A. B.....	Nephritis chr.; arteriosclerosis..	4 after 48 hours.....	Catgut and potato disappeared; thymus present; nuclei disap- peared; the rest not found.
23	E. ....	Cholecystitis .....	4 after 17 hours.....	Meat, potato; fat disappeared; catgut and thymus present; fishbone bead not found.
24	D. B. ....	Pneumonia .....	1 after 24 hours..... 1 after 41 hours. 1 after 60 hours. 5 beads found in course of a week.	

## ANALYSIS OF TABLE 1.

In perusing Table 1, the following may be observed:

Cases 1 to 6, of pure hyperchlorhydria, showed pretty good motor and digestive functions; in 2 everything has disappeared; in one a trace of thymus, in another a trace of fat has remained; in one a trace of fat and thymus, and in one a trace of fat, catgut and thymus (whole) has remained. Cases 8, 9 and 10, of hyperchlorhydria complicated with a probable ulcer, showed good motility and diminished starch and fat digestion. In each of these potato was present (once a third and once three-quarters), as also fat (once trace, once much). A trace of thymus was present in one of them. In one of these cases of probable ulcer of the stomach the digestive bead test was repeated sixteen days after instituting the regular Leube treatment of ulcer of the stomach (rest abed, diet, etc.). In this second test there was only a trace of potato undigested, while everything else had disappeared. Cases 11 and 12, of nervous gastralgia, showed good motor and digestive functions; everything

had disappeared. Case 13, of atony of the stomach complicated with spastic constipation, showed good digestion; everything had disappeared; but greatly retarded motility. Cases 14 and 15, of chronic gastric catarrh, showed the presence of a trace of fat and thymus in one, and in the other (complicated with atony of the bowel) a trace of potato and of somewhat more fat and thymus was found. In the latter the motor function was also greatly retarded.

Cases 7, 16 and 17, of achylia gastrica, showed good motility but somewhat impaired digestion. In one catgut, thymus and a trace of fat remained, while the rest had disappeared; in the other two all the test substances were present. The disappearance of the fishbone in Case 16 (with achylia gastrica) is worthy of special mention. Case 18, of cancer of the stomach complicated with achylia gastrica, had normal motility and impaired digestion. Catgut, meat and thymus were present, while potato and fat had disappeared. The fishbone bead was not recovered. Cases 19 to 24, of various



other (not digestive) diseases, often showed the presence of traces of fat and thymus, occasionally also of potato. The motility was not considerably impaired, except in Case 24 (pneumonia), in which it was greatly retarded.

#### BEAD STRING.

The bead test, as used until recently, has the great disadvantage of necessitating an examination of the stools, especially in pathologic conditions, for a long period of time (several days, sometimes even a whole week,) in order to recover all the beads. To avoid this obstacle I had the idea of stringing the different test beads and tying them together on a silk thread. In this manner they all must appear in one stool, and the period of examinations is thus considerably abbreviated. In order to diminish the number of beads and also the length of the string, two food substances each, may be fastened to one bead, thus, for instance, catgut and fishbone, meat and thymus, potato and fat. The bead string, with the food substances attached, as I now use it, appears as in the illustration. Instead of leaving the ends of the string free, as in the illustration, they may be tied together and, thus, a circle is formed. With regard to the employment of the test this is of no special moment. The bead string is put into a gelatinous capsule and, thus, administered.

In case the bead test is made with a view of examining not so much the motility as the digestive function the method can be still further facilitated by giving the patient a cathartic (two tablespoonsful of castor oil or one to two teaspoonsful of Carlsbad salts and the like)



Bead string with food substances attached; a, mutton fat; b, meat; c, thymus; d, potato; e, catgut; f, fishbone; g, silk thread.

15 to 16 hours after the administration of the test capsule. The bead string is thus often recovered before a whole day has passed.

Table 2 gives all the cases examined with the new digestive test capsule (bead string).

#### ANALYSIS OF TABLE 2.

Table 2 shows the following: In Cases 1, 2 and 3, of hyperchlorhydria, the motility was normal; in Case 6 it was greatly retarded and complicated with spastic constipation. The digestive function was good; everything had disappeared except a trace of fat in one and a trace of thymus in two. Cases 4, 22 and 23, of trichinosis (afebrile period), revealed normal motility and good digestive function. Everything disappeared except a trace of fat and fishbone in Case 22 and thymus in Case 23. Case 5, of ulcer of the stomach complicated with severe anemia, showed good motility but greatly impaired digestive function; meat, fishbone and thymus were present as a whole, two-thirds of potato, while catgut and fat had disappeared. Case 7, of chronic gastric catarrh and atony of the bowel, showed retarded motility and good digestion. Everything disappeared except one-third fat. Case 8, of cancer of the stomach complicated with achylia gastrica, revealed normal motility and impaired digestive function; there were present half of the potato and meat, one-third of thymus and fat (as a whole); catgut and fishbone had

disappeared. Case 9, achylia gastrica complicated with pernicious anemia, showed an absolutely bad digestive function; catgut, fishbone, meat, thymus undigested; fat present in small quantity and two-thirds of potato.

Cases 10 and 11, of severe catarrh of the bowels, showed, during an exacerbation of patient's condition, accelerated motility and poor digestion; meat, thymus, fishbone, potato unchanged; catgut present in traces; fat has disappeared. During an amelioration of patient's condition, however, the bead test revealed normal motility and pretty good digestion; everything disappeared except half of the potato. Cases 12 and 13, of chronic dysentery, revealed during an exacerbation, accelerated motility and absolutely poor digestion; everything was present; while during an amelioration patient showed accelerated motility, but the digestive function was not so greatly impaired; catgut, fishbone, meat disappeared; fat was present; two-thirds of thymus and potato were present. Case 14, acute intestinal catarrh, showed accelerated motility and pretty good digestion. Everything disappeared except half of fat and thymus. Case 15, hydrocephalus complicated with chronic intestinal catarrh, showed accelerated motility and good digestive function for catgut, fishbone and meat, while fat, potato and thymus were present. Case 16, chronic catarrh of the stomach and intestinal tuberculosis revealed normal motility and poor digestion; catgut, meat, thymus, fat were present as a whole; fishbone and potato had disappeared. Case 17, dilatation of the stomach (pronounced atony) and atony of the bowel, showed that catgut, fishbone, meat, fat had disappeared; the whole of potato was present; thymus, trace present.

Cases 18 and 19, of gastroenteritis toxica (one of a severe, the other of a mild type), revealed during the febrile period: the mild case somewhat retarded motility and good digestion, everything disappeared except one-fourth of thymus; the severe case retarded motility and poor digestion; fishbone, meat, thymus, potato were present; catgut and fat disappeared. Cases 20 and 30, of Banti's disease, showed during the ascitic stage normal motility and good digestion. In Case 20 everything disappeared except thymus; in Case 30 everything disappeared except part of thymus and fat. Case 21, achylia gastrica and chronic enteritis, revealed during a period of improvement accelerated motility and pretty good digestion; everything disappeared except fishbone and potato.

Case 14, of sub-acute rheumatism, and Case 25, of acute nephritis, both afebrile, revealed normal motility and good digestion; everything disappeared except once a trace of fat. Cases 26 and 27, same patient, malaria complicated with severe anemia, showed somewhat retarded motility and poor digestion. Case 28 revealed normal motility and pretty good digestion; everything disappeared except potato and one-third of fat. Case 29, pneumonia, showed good motility and poor digestion; meat, thymus, fishbone, potato were present; catgut and fat had disappeared. Cases 31 and 32, of hypertrophic cirrhosis of the liver had normal motility and good digestion; everything disappeared except fat and thymus. Case 33, of diabetes mellitus and Case 34, of splenic leukemia, revealed good motor and digestive functions. In the case of leukemia, however, half of potato and fat was present.

Tables 1 and 2 show clearly that by means of the bead test a thorough insight into the relations of the functions of the digestive apparatus is obtained. The gravest impairments are met with in the chronic diseases of the



TABLE 2.—CASES EXAMINED WITH THE MODIFIED DIGESTIVE CAPSULE (BEAD STRING).

No.	Name.	Disease.	Bead string, when found.	Result.
1	R. ....	Dilatatio ventriculi; hyperchlorhydria.	After 42 hours.....	Everything disappeared; only trace of fat present.
2	P. ....	Ulcus v.; hyperchlorhydria.....	After 42 hours.....	Everything disappeared; trace of thymus present.
3	Mrs. T. ....	Hyperchlorhydria; sitophobia...	After 42 hours.....	Everything disappeared except thymus.
4	M.* ....	Trichinosis; afebrile period.....	After 42 hours.....	Everything disappeared.
5	E. L. ....	Ulcus v.; anemia gravis (post-gastroenterostomy.)	After 24 hours.....	Catgut, fat disappeared; meat, fishbone, thymus undigested (nuclei little changed); potato 2/3 present.
6	G. ....	Dilatatio v., hyperchlorhydria; spastic constipation.	After 112 hours.....	Everything disappeared.
7	M. G. ....	Gastritis chr.; atonia coli.	After 65 hours.....	Everything disappeared, except 1/3 mutton fat.
8	Mrs. O. ....	Carcinoma v.; achylia gastrica..	After 45 hours.....	Catgut and fishbone disappeared; meat and potato 1/2 present; fat and 1/3 thymus present.
9	Mrs. A.† ....	Achylia gastrica; anemia perniciosa.	After 17 hours.....	Fishbone, catgut, meat, thymus undigested; trace of fat present; potato 2/3 present.
10	B. ....	Enteritis chronica; profuse diarrhea (during an exacerbation).	After 14 hours.....	Meat, potato, fishbone unchanged, catgut trace present; fat disappeared; thymus unchanged (nuclei indistinct).
11	B. (same as No. 10).....	Enteritis chr.; profuse diarrhea (during amelioration).	After 26 hours.....	Everything disappeared except potato; about half present.
12	J. S. ....	Dysenteria chr.; splenic tumor during an exacerbation.)	After 15 hours .....	Everything present.
13	J. S. (same as No. 12)....	Dysenteria chr.; splenic tumor (during amelioration).	After 14 hours†.....	Catgut, fishbone, meat disappeared; fat present, potato and thymus 2/3 present.
14	P. B. ....	Profuse diarrhea; enteritis acuta	After 16 hours.....	Everything disappeared except fat and thymus. 1/2 present (nuclei disappeared).
15	A. G. ....	Hydrocephalus; periodic vomiting (in the free interval); enteritis chr.	After 16 hours.....	Catgut, fishbone, meat disappeared; fat, potato, thymus still present.
16	Mrs. C. D. ....	Gastritis chr.; enteritis tuberculose.	After 42 hours.....	Catgut, meat, fat, thymus (entirely) present; fishbone and potato disappeared.
17	R.* ....	Dilatatio v; atonia coli.	After 18 hours.....	Catgut, fishbone, meat, fat disappeared, thymus trace present (nuclei disappeared); potato entirely present.
18	M. ....	Gastroenteritis toxica (caused by tainted meat during the febrile period.	After 51 hours.....	Everything disappeared except thymus, 1/4 still present.
19	N. ....	Gastroenteritis toxica (caused by tainted meat during the febrile period). Severe case.	After 64 hours.....	Fishbone, meat, thymus, potato present; catgut and fat disappeared.
20	S. ....	Banti's disease (in the ascitic stage).	After 24 hours.....	Everything digested except thymus (nuclei disappeared).
21	W. ....	Achylia gastr.; enteritis chr. (during improvement).	After 12 hours.....	Everything disappeared except fishbone and potato.
22	M.* ....	Trichinosis. ....	After 22 hours.....	Everything disappeared except trace of fat and fishbone.
23	B.† ....	Trichinosis (?) .....	After 21 hours.....	Everything disappeared except thymus (nuclei disappeared.)
24	H.† ....	Polyarthr. rheum., (subacute without fever).	After 22 hours.....	Everything disappeared.
25	B. ....	Nephritis acute; hemorrhagica (without fever).	After 24 hours.....	Everything disappeared except trace of fat.
26	J. ....	Malaria tertiana; spleen and liver enlarged; severe anemia.	After 44 hours.....	Meat fishbone, thymus, fat present; catgut and potato disappeared.
27	J. (same as No. 26).....	Malaria tertiana; spleen and liver enlarged; severe anemia (a week later).	After 60 hours.....	Everything present except fat and potato.
28	P. ....	Malaria; splenic tumor (in afebrile stage).	After 40 hours.....	Everything disappeared except potato and fat. 1/3 present.
29	H. ....	Pneumonia (during the febrile period).	After 26 hours.....	Catgut and fat disappeared; meat, thymus, fishbone present; potato 1/3 per cent.
30	A. H. ....	Banti's disease (in the ascitic stage).	After 48 hours.....	Everything disappeared except thymus and fat (partly present).
31	D. ....	Cirrhosis hepatis hypertrophica; dilatatio v.	After 26 hours.....	Everything disappeared except fat (trace) and thymus 1/4 present.
32	Mrs. S.† ....	Cirrhosis hepatis hypertrophica; myocarditis chr.	After 16 hours.....	Everything disappeared except thymus (1/4) and fat (entire) present.
33	B. ....	Diabetes mellitus. ....	After 40 hours.....	Everything disappeared except trace of thymus present.
34	Miss W.* ....	Leukemia splenica.	After 17 hours.....	Everything disappeared except potato (1 1/2) and fat present.

\* One teaspoonful Carlsbad salts.    † Two tablespoonsful castor oil.    ‡ In ninth stool.

intestine, as well as in severe cases of anemia. Finer grades of digestive disturbances referring to certain single food substances (as, for instance, to starch or fat) are, likewise, easily recognizable by this test. It will, however, require a long continued study of these relations in a large number of cases before making use of them diagnostically.

One point of the tables still requires special attention, namely, the behavior of eatgut and fishbones. Until recently the opinion prevailed that these two substances

are digested by the gastric juice only, but not in the intestine. With reference to eatgut, I have already stated previously,<sup>3</sup> that it may be digested in the intestine also, as demonstrated by cases of achylia gastrica, in which the bead test occasionally shows the disappearance of the eatgut. In the above two tables, likewise, this fact is again met with. As regards fishbones, I always had found them to reappear in achylia gastrica in

3. Loc. cit.; also "Remarks on Sahli's Desmold Test of the Stomach," THE JOURNAL A. M. A., May 12, 1906.



my previous investigations. In my new cases, however, a disappearance of the fishbone occurred twice in achylia gastrica (Table 1, Case 16, and Table 2, Case 8). These facts show that fishbones, although rarely, under certain conditions, may be digested in the intestine also.

#### AUTHOR'S EXPERIMENTS.

It appeared of interest to investigate the behavior of catgut and fishbones by further experiments. In previous investigations I once met with a patient suffering from hyperchlorhydria, in whose stomach a catgut and a fishbone bead were suspended on a silk thread for four hours (commencing right after luncheon). After withdrawing these two beads from the stomach it was found that the fishbone had disappeared, while the catgut, swollen, was still present as a whole. Considering the easy way catgut is dissolved in normal gastric juice, this fact was astonishing. In order to explain it I thought of the possibility that a too highly acid gastric juice retards the digestion of catgut. In order to decide this question, the following experiments were made:

EXPERIMENT 1.—Jan. 6, 1906, 10 a. m. One catgut and one fishbone bead each are placed in the gastric filtrate of L. (acidity = 92, free HCl = 72) and that of H. (acidity = 40, free HCl = 20) and kept at blood temperature.

11:30 a. m.: L. Fishbone knot opened, but fishbone still present. H. Fishbone knot as well as catgut knot unchanged.

1 p. m.: L. Fishbone has disappeared; catgut knot present. H. Catgut knot opened; fishbone has disappeared.

7 p. m.: Condition unchanged.

Jan. 8, 10 a. m.; Condition unchanged.

Jan. 9, 10 a. m.: L. Catgut knot opened.

This experiment evidently shows that too high an acidity of the gastric juice greatly retards the disappearance of the catgut knot. For in L. this took place after three days.

EXPERIMENT 2.—Feb. 26, 1906. C., an apparently healthy man, takes a capsule containing 2 catgut beads, with a mutton fat covering. The mutton fat serves the purpose of preventing the gastric juice from acting on the catgut. After 17 hours the two beads are found in the stool, still containing the catgut.

EXPERIMENT 3.—March 10, 1906. M. S., suffering from hyperchlorhydria, takes a capsule containing one catgut and one fishbone bead, both covered with mutton fat. After 24 hours both beads are found in the stool; catgut has disappeared; fishbone is present, unchanged.

EXPERIMENT 4.—June 26, 1906. A bead, with catgut, fishbone, and meat attached, is placed into a pure solution of trypsin (Fairchild), same as used hypodermatically, and kept at blood temperature.

June 27: All the three substances are present.

June 29: Catgut present, swollen, knot not opened; fishbone, knot opened; meat, present in traces.

Experiments 2 and 3 show that catgut is occasionally digested, and sometimes again not digested, in the intestine. Experiment 4 indicates that trypsin is apt to digest fishbone after a long continued action on it. As already mentioned, the possibility of the digestion of fishbones in the intestine was observed twice in patients with achylia gastrica. The conclusion, therefore, appears justifiable, that all food substances underlying changes in the stomach, may, under favorable conditions, become digested without gastric juice in the intestine.

Although the bead test is meant to ascertain, not so much the condition of gastric secretion, as the digestive capacity of the entire digestive apparatus, nevertheless, it would be of considerable value to prove in this manner without the use of the tube, the presence or absence of HCl. As can be easily seen from this paper the digestion of catgut and even of fishbones does not yet positively demonstrate the presence of gastric juice. I have

tried to attach to the beads a red congo thread, which, as is well known, turns blue in free acids, in order to ascertain in this manner the presence of HCl. This procedure, however, failed, because the alkaline secretion of the intestine always changes the blue color of the congo thread into a red one. It thus, always returns red, no matter whether HCl is absent or present. If we could have an indicator for free HCl, which would assume a stable color not changeable by alkalies, we could make use of it for our purpose. I am, at present, working on this problem and shall report on it as soon as I shall have reached some definite results.

#### PREPARATION OF FOOD BEADS.

In conclusion, I will give detailed instructions with regard to the preparation of the test-food beads and also their administration:

1. *Catgut*.—Take raw catgut 00, draw it through the bead and tie the ends together.

2. *Fishbone*.—As the ordinary fishbone breaks, when tied in a knot, it is best to use the long bones from a pickled herring. The bones are washed in water first, then rubbed off with cloth. Then they are kept in water in a bottle. When wanted they are taken out of the water, drawn through the bead and tied in the same manner as the catgut.

3. *Meat*.—The muscular fibers of raw beef are cut lengthwise in the direction of the fibers and in pieces 5 to 6 cm. long, 1 cm. thick. These are preserved in a bottle of alcohol. Take a piece of meat from the alcohol bottle, tear off lengthways a muscular fiber 2 to 3 cm. long, 1 mm. thick, draw the same through the bead and allow the ends to overlap; next tie the ends fast together over the bead with a silk thread.

4. *Thymus*.—Raw sweetbread from the calf is cut in cubes and preserved in alcohol. For use lay a small piece about 2 c. mm. within a small square of gauze, fold the four ends of the gauze together and tie with thread, so that the small piece of thymus lies enclosed as in a purse; then fasten the gauze purse to a bead.

5. *Mutton Fat*.—Beads with a large opening, (1.5 to 2 mm. diameter) should be dropped in hot rendered mutton fat and after a minute taken out with a forceps and placed in a vessel of cold water. This congeals the fat. Then they are laid on a piece of pure filter paper. Allow them to remain on same until thoroughly dried. The beads can thus be kept as long as desired and are ready when wanted for use.

6. *Potato*.—Cook a piece of potato with peel on in boiling water two minutes. Take the same out of the water and cool it off. Now cut a small piece of potato with peel 1 cm. long, 0.5 cm. wide, and 1.5 to 2 mm. thick and attach it to a bead.

Two and more food substances may be attached to one bead. For instance, catgut and fishbone, meat and thymus. The test beads can all be kept on hand with the exception of the potato, which always must be freshly prepared. Meat and thymus beads are best kept in alcohol. Catgut, fishbone and fat beads are simply preserved dry.

Of late I have used the double substance beads and tied them together with a string. The bead string is placed in a gelatin capsule<sup>4</sup> and so administered best shortly after a meal.

4. The digestive test capsule (containing the bead string with the food substances) may be obtained at Elmer and Amend, 205 Third Avenue, New York City. It must be used, however, within a few days after its delivery.



*Indications and Contraindications for the Application of the Bead Test.*—The bead test should be used in all cases in which a more thorough knowledge of the functions of the digestive apparatus is desired.

The bead test is not permissible in all pronounced stenoses of the digestive tract, stricture of the esophagus, stomach and intestine.

### Special Articles

#### THE COLLECTED WORKS OF CARL WEIGERT.\*

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The publication of the collected works of the great pathologic anatomist, Carl Weigert, is a notable event for the many persons interested in the progress of discovery and thought in medicine, for between the covers of these carefully edited volumes may be found the records of methods of investigation, of observations and of generalizations that are exerting a deep and lasting influence on medical science. This influence is the more remarkable because it emanates from a man who was singularly modest and gentle, unapt to contend for the prestige of his views—a man who spoke his message to science not from the vantage-ground of the authority that belongs to high academic rank but from the more obscure and independent focus of an unpretentious laboratory without university connections. So intimate is the relation between the character of this man and the work which he did that it seems fitting to sketch, in a few words, his life and personality before undertaking to review his contributions to biologic science.

#### A SKETCH OF HIS LIFE.

It was the small Silesian town of Münsterberg that in 1845, gave Carl Weigert to the world. Within a decade the same district gave Weigert a cousin destined to develop great gifts as an investigator and to be his sympathetic and helpful colleague through life—Paul Ehrlich. In childhood Weigert showed studious habits and exceptional filial affection, but it does not appear that he early gave indications of his genius as an investigator. During the medical school period he developed a taste for research and had the good fortune after passing the state examinations to be associated with Virchow as his amanuensis. He now came under the influence of the physiologist, Heidenhain, and later worked with Waldeyer, who had himself been a pupil of the great vitalistic physiologist.

The Franco-Prussian War broke rudely into Weigert's studies, but his experience as surgeon to his regiment much widened his view of life. In later days he loved to tell of his military adventures during the siege of Paris and of his subsequent visit to England. During the years immediately following the war, Weigert gave considerable attention to clinical medicine in the Breslau Clinic and this education served him well in later life, when, with wonderful skill and insight, he indicated to the physicians of Frankfurt, in his talks in the dead-house, the relations between the pathologic findings and the clinical phenomena. It was during this early Breslau period that Weigert made his admirable investigations of the eruption in smallpox, in connection with which he developed the conception of cell death or coagulation necrosis and originated methods of staining bacteria in tissues. This research was rich in its yield of new methods, facts and ideas worked out by the young investigator.

But Weigert at this time made little impression on pathologic anatomists, not because his investigations were not original, but because, as Lichtheim says, they were too original. His work on smallpox, nevertheless, brought him to the

notice of the great experimental pathologist, Julius Cohnheim, who soon took Weigert as his assistant at Breslau. The illness of the master threw a large part of the daily work of the institute and of the dead-house on Weigert, who soon developed under the critical eyes of his teacher into a pathologic anatomist possessed of superior technic and objective criticism. One might have supposed that Cohnheim's genius would have led Weigert into the growing and promising field of experimental pathology. There are two reasons why this proved not to be the case. Weigert early attained an individual view of medicine and of the methods most likely to advance it. He believed that pathologic histology might be materially advanced by the development of improved methods of staining, and from the outset was so successful in devising valuable histologic methods that he did not care to turn aside to join Cohnheim in his experimental studies. That Weigert's great master helped him by encouragement and suggestion is certain, but it is equally true that the young pathologist worked out his own salvation in all that pertained to histology. His independence extended still further and was early reflected in his well considered views of general biologic laws. That Cohnheim was influenced by the original thought of his pupil can not be doubted. For example, it appears to have been Weigert's influence that led the master, after having met with failure, to repeat with success his experiment on the inoculation of tubercles. But the strong individuality of Weigert as an original worker was not the sole obstacle to following the paths opened by the great experimentalist. A certain innate tenderness of nature, quite unmixed with false sentiment, gave him an aversion to experimenting on animals—an aversion similar to that which made it impossible for Pasteur to do vivisection. Rieder tells us that the rabbits in the Senkenberg Institute led an enviable existence, for when they came in contact with their master it was to share his mid-day meal.

When Cohnheim, in 1878, was invited to fill the chair of pathologic anatomy at the University of Leipzig, Weigert went with him as extraordinarius, a position which he filled until the death of the master, in 1885. It was during this period that Weigert made some of his best contributions to pathologic anatomy; and perhaps no work of his has had a wider influence on the progress of medicine than the discovery in 1882 of a method by which the medullary sheaths of nerves can be sharply differentiated from the axis cylinder. On Cohnheim's death, Weigert undertook the duties incidental to teaching pathologic anatomy at the Senkenberg Institute in Frankfurt. Here, in the course of nearly twenty years' tenure of the directorship of the institute, he quietly continued his admirable researches in pathologic anatomy and placed many young investigators under an enduring sense of gratitude for the inspiration gained from his guidance.

Although the Frankfurt period was one of happiness for Weigert he never wholly recovered from the disappointment of failing to succeed Cohnheim in the professorship at the University of Leipzig, and throughout his life the failure caused him hours of depression. Weigert knew, what was equally well known to the best qualified judges, that he was the person best fitted to fill the chair vacated by Cohnheim, despite the fact that he was not an experimental pathologist. The thought that his colleagues had rejected him, very largely for the reason of his being a Jew, was a standing offense to his sense of justice. That his great merits were really in a measure recognized by members of the Leipzig faculty seems probable. They offered him a public call to the university on condition that he would not accept it—a proposition which naturally proved highly distasteful to Weigert. It is an indication of the superior nature of the man that in a manuscript dealing especially with the methods of making appointments in universities, found after Weigert's death, this difficult subject is dealt with in a thoroughly objective and judicial way, without the slightest intrusion of personal feeling.

Weigert resembled his great predecessor in pathologic anatomy, Virchow, in not being a good teacher for the man of average ability and poor training. He had none of the didactic ways of the schoolmaster and could not talk for

\* Including a review of the book published with the cooperation of Ludwig Edinger and Paul Ehrlich and edited by Robert Rieder. In two quarto volumes with three lithographic plates. Pages 584 and 744. Price, 50 marks. Berlin: J. Springer, 1906.



artistic effect. It was thus fortunate that in Frankfurt he was not expected to give instructions to beginners in medicine. The special students who came to his little laboratory prepared to do serious work found that Weigert possessed, in the highest degree, the power of intellectually stimulating others and of making their work fruitful. His influence as a teacher extended far beyond the field of medicine and deeply affected the philosophic outlook of many a student. The persons who came into close contact with Weigert recognized that the society of the joyous yet earnest man was ever an education and a delight.

As an investigator, Weigert belongs in a select group of deliberate, careful workers, who regard a problem calmly and from every side while bringing to bear extraordinary powers of analysis and a high degree of ingenuity in overcoming technical difficulties. The manner in which he developed his intricate methods of staining shows his capacity for grasping principles and applying them to special ends. His studies of inflammation and of new growths reveal the constructive philosophic mind, which derives its highest satisfaction in the search for fundamental laws in the midst of a bewildering maze of facts. Weigert's mind was one that advanced step by step and took few risks. His mind was almost too well ordered to lead him into the experimental ventures that produce the most strikingly original results. He never published until he was satisfied that he had done the best work of which he was capable, and when he said to one of his pupils in 1887, "One can never publish anything late enough," he gave the clue to his attitude toward research. In all that he did, Weigert had in mind soundness and conscientious performance. The extreme of this tendency sometimes had the detrimental effect on his work that may come from an exaggerated conscientiousness. For example, he was so anxious to perfect the reliability of his neuroglia stain that he let many more important subjects rest while he pursued an end which he could hope to attain only by a large admixture of good fortune with intelligent effort. Thus he tended at times to grow unproductive. In the admirable critical reviews which Weigert wrote, one finds the same conscientious performance as in his research work and the same interest in the perception of fundamental principles. The reviews on chemotaxis, on new theories of heredity and on antitoxin immunity, are cases in point and all bear the imprint of an original mind.

Weigert was a man of medium stature, with a large, well-shaped head. In his later years he was slightly inclined toward corpulence. His large brown eyes were beautiful, expressing gentleness and great intelligence. His sympathetic, open and joyous nature, which gave him interest in all kinds of human endeavor and all sorts of people, made him greatly liked. He mixed freely with scientific and practical men of all kinds. He often amused his more intimate friends with his powers of ventriloquism and mind-reading, but his greatest social gift lay in a rare talent for telling stories full of a naive humor and kindliness.

Up to the time of his sudden death, from coronary thrombosis, he enjoyed good health and remained steadfastly at work. As his body lay on its bier there stood filtering in the laboratory a solution designed to improve the neuroglia stain. In the last years of his life Weigert devoted much thought to the pathogenesis of new growths and it was his intention to embody his views in a publication dealing with the subject from the standpoint of the laws of cell development. He was deeply interested in De Vries' great work on Mutation and believed it shed important light on some questions connected with the aberrant growth of animal cells. One of the reviewers visited Weigert in his laboratory not long before his death and found him sitting on a high stool with legs folded under him tailor-fashion, perusing De Vries'. "I read this work," he said, "over and over again. Parts of it I find very difficult to understand because it is so technical, but I do not wish to lose a line of it or miss an idea, and so I stick to it."

Despite his many and great contributions to medical science, Weigert in his later days had periods of depression in which he suffered great discouragement in regard to his capacity for work. He felt his powers waning and imagined his researches

to be unimportant. On one occasion, when asked about his work he said, "I am working away at the old things—small, insignificant things. I realize that I can not compete with my younger colleagues. Look at my cousin Paulus (meaning Ehrlich) and his immunity work. How can I keep up with that? Then again this modern chemical pathology which requires so much special training. It is all right for Paulus with his extraordinary memory for those hexagons (benzene ring derivatives), but I can not do it."

The attitude of the universities toward Weigert doubtless contributed to his despondency and even made him at times doubt somewhat his powers, his knowledge and his worth. During the period of nearly twenty years following Cohnheim's death he did not once receive a university call—a fact difficult to understand when one realizes how greatly his figure towers above nearly all contemporary pathologic anatomists. He sought neither fame nor honors, but it was hard to be slighted for men of clearly inferior capacity. It is probably true that the scant appreciation shown him by the faculties was in part owing to lack of forcefulness and will power in certain directions. Rieder aptly says of him: "He had no idea how one makes a career and how necessary it is to-day to associate one's own advantage with that of others." Weigert clearly had the amiable faults of the over-sensitive idealistic student whose modesty makes it impossible for him to appraise his own worth.

In 1904 Weigert was looking forward with eagerness to a visit to the United States, to "the land of unlimited possibilities," as he liked to call it. It was expected that he would lecture at the Johns Hopkins Medical School on certain topics in general pathology on which he had long pondered. It is certain that he would have been enthusiastically received by his many friends and pupils and the visit would surely have helped him to throw off his doubts as to his own merit. "It will bring fresh wind to his sails," said his cousin, Ehrlich, in speaking of the proposed visit. But Fate willed it otherwise. In the summer of 1904, at the close of a Sunday agreeably spent with his friends, Weigert retired to his room to read, as was his wont. The next morning his lifeless body was found. He had apparently had no premonitions of what was impending. Indeed, during the last days of his life his companions had observed with pleasure a return of the buoyancy of spirit that had characterized his earlier days.

The death of Carl Weigert was in every sense premature. Through it humanity lost a singularly simple, noble spirit and the science of medicine was robbed of one of its greatest lights.

#### WEIGERT'S WORKS.

In these two handsome volumes, Weigert's works fill 1,328 pages, which are preceded by a preface and 140 pages devoted to a sketch of the master's life, tributes to his services in neurology and histology by Edinger and Ehrlich, and a chronologic list of Weigert's scientific publications in which reference is made to 97 titles.

It would be a hopeless task to attempt a detailed review of this rich collection. It is possible merely to select certain of these works for particular mention and this may be done almost at random, where all the material bears the marks of deep study and careful exposition. The style is exceedingly lucid and on the whole simple, but so concise and idiomatic as to render translation into exactly equivalent English a matter of great difficulty.

Weigert's works are grouped under six heads: "Bioplastik," "Pathologic Anatomy," "Pathologic Histology," "Bacteriology," "Neurology and Microtechnic," and "Varia;" the last including an obituary of Julius Cohnheim, his master, an article on mind-reading and some remarks referring to the establishment of an institute for experimental therapy in Frankfurt. This division does not follow the chronological order, but brings together those contributions which are naturally related to each other. In some respects the articles included under the collective title "Bioplastik" are of particular interest because they serve admirably to illustrate the breadth of thought manifested by Weigert throughout his writings and his analytical, critical and constructive abilities.



A striking example of the philosophical inclination of Weigert's mind to unify, systematize and correlate the knowledge he possessed is contained in the 186 pages bearing the caption "Attempt at a general pathologic morphology based on the normal," which is the seventh and final division of that part of the whole work designated as "Bioplastik." This study comprises fifteen chapters, only five of which may be regarded as completed, in at least a tentative form, to the satisfaction of the author, for in an interesting foot note of the editor's there is mention of Weigert's characteristic habit of repeatedly revising his writings. An enumeration of these chapters is all that is permitted by our space, but it will suffice to indicate the interest and value of this contribution, as well as the methodical way in which Weigert developed his ideas:

1. An Introduction and Plan.
2. Causality of Vital Phenomena.
3. General Considerations Concerning Function and Matter.
4. Origin of Living Matter.
5. Evolution and Epigenesis.
6. Idioplasm.
7. The Non-idioplastic Germ-Constituents.
8. The Multiplicity of the Germ-Potentialities in Phylogeny and Ontogeny.
9. The Alleged Totipotentiality of the Idioplasm of Somatic Cells.
10. Remarks on the Nature of the Changes in the Idioplasm During Ontogenesis.
11. External Conditions Activating Latent Idioplastic Rudiments.
12. Bioplastic Phenomena. Kinetic and Potential Bioplastic Energy.
13. Regeneration.
14. The Obstacles to Growth Concerned in Regeneration.
15. Idioplastic Activities in Regeneration.

We have selected this study from among those classed as bioplastic, for more detailed notice, partly because it is the final word from this liberal thinker upon these subjects, partly because it is a posthumous work, not published elsewhere. The other works placed in this category by the editors, with the dates of publication, are:

1. Inflammation, 1880 and 1886.
2. Vital Phenomena of Cells Under Pathologic Conditions, 1886.
3. New Problems in Pathologic Anatomy, 1896.
4. New Theories of Heredity, 1887.
5. Recent Works on the Theory of Antitoxic Immunity, 1898.
6. Chats on the Methods of Research in Natural Science, 1898 (first published after Weigert's death).

At the risk of exceeding the limits proper to a review, we can not forbear making brief mention of the work on inflammation. The origin and foundations of our conception of this varied process are subjected to a critical examination based on an historical study of the modifications that conception has passed through, as insight into biologic processes has developed. This constructively critical survey of past achievements leaves the wholesome impression on the reader's mind that knowledge is still in process of evolution and that the final word is not yet uttered. Having, nevertheless, classified and defined in this manner the known factors constituting our conception of the inflammatory process, the author analyzes and classifies its various manifestations in a characteristic and exceedingly lucid exposition of different concrete examples. No one can read such a broad and logical treatment of a complex subject without a refreshing sense of renewed inspiration.

The pathology of tuberculosis is discussed in thirteen articles, the first appearing in 1877, before the demonstration of the tubercle bacillus, and the last published in 1903. These studies, therefore, embrace the most interesting epoch in the development of knowledge concerning this disease and even in those articles which now have chiefly an historical interest one can not but admire the acute and thorough observation and the close and suggestive deductions of the writer. There are also several valuable papers on tumors, malformations, etc.

One of the subjects to which Weigert devoted much productive study is that of coagulation, both in the blood and tissues, and in these volumes will be found his successive papers elaborating the conception of coagulation necrosis and the technic with which the presence of fibrin and similar substances may be demonstrated by a differential stain. These articles afford another example of his patient effort to discover and define the essential facts and processes underlying

biologic phenomena, and to make useful, conservative and guarded generalizations. One would be tempted, in this connection, to dwell upon Weigert's trained powers of imagination which led him to seek consistent hypotheses as an aid to research, were it not that the mere enumeration already made of the titles of the "Bioplastic" papers reveal this quality of his mind; a quality admirably blended with a critical judgment.

That Weigert was an expert histologist, hardly calls for mention. His services to that branch of medical science are well known. The studies of tissue-changes in coagulation necrosis rested upon this technical knowledge, but his widest influence in this direction was exerted by his elaboration of methods of staining with a view to identifying the various constituents of objects subjected to microscopic examination. His writings on these topics are embraced in the 345 pages included in the fourth and fifth divisions of this collection: "Bacteriology" and "Neurology and Microtechnic." The bacteriologic papers are not numerous and do not occupy more than 70 pages of a volume containing 774 pages. The first bacteriologic paper is one published in 1871 on the bacteria in the skin in smallpox. This paper is of interest as marking the first discovery of bacteria in tissues. Weigert shows his excellent judgment in this instance in not falling into the error of concluding that smallpox is due to the micrococci which he discovered in the lesions of this disease. The following paper is one on a mycosis in a newly born child and has to do with the coloration of bacteria. In 1881 Weigert published an important paper on the technic of microscopic investigations of bacteria in which he devotes special attention to methods of staining. Considerable space is devoted to methods of investigation of bacteria in sections. This communication also contains a section on the significance of the dyeing of bacteria. The author brings out here the importance of drying tissues with strong acetic acid or potassium hydroxid in order to render the bacteria capable of taking stains in those cases where they have failed to be readily colored. It is interesting to note that although Weigert considers the introduction of the anilin dyes as extremely important in detecting the presence of bacteria in tissues, he does not draw the conclusion that the failure to take up color necessarily means the absence of micro-organisms. In other words, he clearly recognizes that further experiments are likely to result in the discovery of methods which will render visible micro-organisms which remain untouched even by the greatly improved methods developed by himself.

In 1887 Weigert published a controversial paper of considerable interest dealing with the bacteria question. Although the doctrines for which he contests have long since been established, it is interesting to read this paper even at the present day as an example of searching criticism of the contentions of a writer named Hiller, who energetically contended that his negative results with the inoculation of certain bacteria constituted a proof that these and most other bacteria are innocuous. In the same year Weigert published a paper on glycerin as a method of distinguishing formed and unformed ferments. The bacteriologic section is completed by three papers relating to Obermeyer's spirillæ of recurrent fever.

The section dealing with neurology and microtechnic constitutes one of the most important portions of the volume, embodying, as it does, Weigert's extremely important and fundamental methods for the differentiation of tissues. This section contains the following papers: First, a paper on microscopic technic which deals with the subject of section cutting, certain improvements in the microtome introduced by Weigert and the coloration and impregnation of preparations. This paper was published in 1894. It is followed by one dealing with the histologic technic of the central nervous system, published in 1896. This constitutes an admirable historical review of the subject and contains much of interest to histologists of the present day. It discusses the method of Golgi at great length and in a critical manner. The second contribution to the histologic technic of the central nervous system is dated 1897 and deals in an exhaustive manner with the subject of staining the medullary sheath of a nerve fiber and with the principles concerned in such staining. The third of



this series of contributions on the histologic technic of the central nervous system is likewise dated 1897 and is devoted to the Marchi method. Then follow two papers dealing with the methods of staining fibrin. The first is dated 1887, giving Weigert's original method of selective coloration by means of anilin dyes. The difference between this method and that of Gram is very clearly brought out. This subject is brought up to date in a paper dated 1903, dealing again with the fibrin stain. These papers are followed by one dated 1898 giving Weigert's method of staining elastic fibers.

A section now follows which is devoted mainly to the papers of Weigert in which are presented his discoveries of methods of staining the medullary sheaths of the central nervous system. In 1890 Weigert brought out his extremely important method of staining the neuroglia structures of the central nervous system in man. His two papers dealing with this discovery are printed in this volume and are followed by a long contribution, of the utmost significance to histology, in which the normal human neuroglia is discussed from the historical standpoint and in the light of his own methods. This paper is dated 1895. Weigert's last contribution to the technic of the neuroglia stain was made in 1903, in which he treats of ways of improving his own, previously described, methods and also discusses similar methods for the study of neuroglia which have been developed by others. The rest of the volume is given up to papers of less importance. It should be mentioned, however, that among the papers which have been collected at the end of the volume is an extremely appreciative necrolog relating to Weigert's master, Julius Cohnheim. This paper was written in 1884. In the same year also was published a short discussion on the subject of mind-reading. The last contribution deals with the question of the establishment of an institute for serum investigation and experimental therapy in Frankfurt a-M., and will be read with interest by those who have followed the classical contributions that have come from this institute under the guidance of Ehrlich in the past nine years.

It was as a morphologist and resourceful microscopic technician that Weigert entered and left his impress on the field of bacteriology, and his services to neurology are of similar character. In fact, throughout his writings we find that the chief data underlying his work were morphologic. But he was pre-eminent in his ability to handle and verify these data. They inspired him to seek the significance of the changes in structure he was so capable of detecting, and this striving led him to his conception of vital phenomena. The chemical and physical aspects of pathology are but lightly touched on, and when considered at all are discussed mainly in reviews of the work of others. That Weigert was in sympathy with these more recent aspects of pathology can not be doubted, but he was too completely engrossed in the problem on which he was best fitted to work, to make notable contributions in these directions. His publications in the field of his choice are destined to become classics.

## SOME FACTS ABOUT DIGESTIVE FERMENTS.

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### INTRODUCTION.

The Council on Pharmacy and Chemistry, in the course of its work, found occasion to examine a number of articles widely advertised as digestants. A large proportion of these failed to come up to the claims which were made for them—a failure which might have been predicted, since these claims often involve impossibilities as absurd as that of hoping for the simultaneous action of an acid and alkali by mixing the two; in other words, they are examples of well-established incompatibilities. For the reason, however, that these preparations are advertised indicates that many physicians are overlooking

these facts, relying probably on the presumed skill of the manufacturers and believing that nothing so worthless would be offered to them. In view of this misplaced confidence, the Council has thought it advisable to bring the facts to general attention.

### MIXTURES OF FERMENTS IN LIQUID FORM.

Digestion, in the human organism, is carried on largely by the action of peculiar principles, ferments, secreted by the glands connected with the alimentary canal. These ferments are very powerful, in that they can effect profound changes in the foodstuffs, changes which the chemist can only imitate by processes which would be destructive to the human organism. On the other hand—and this is very important—organic ferments are very delicate bodies, which can only exercise their actions under favorable conditions, and which are either inhibited or destroyed by very slight departures from these. They are quite as sensitive to reagents as proteids or toxins, and reagents which injure the one are very apt to injure the others. Pepsin and pancreatin are used for the very purpose of digesting proteids, and they are also destructive to toxins; it would, therefore, be rather strange if they did not act on one another, resulting in mutual destruction. Strong acids and alkalies are also most injurious to ferments. In very dilute solutions they are favorable to some, unfavorable to others. Pepsin and pancreatin are opposite in this respect, and a reaction suited to the one will destroy the other.

These facts have long been known in a general way, and they are fully confirmed in the most recent authoritative work<sup>1</sup> on the subject.

The investigators proceeded by first mixing the ferments and reagents and keeping them at body temperature, generally for six hours. After this exposure, the quantity of ferment which had escaped destruction was estimated by bringing the mixture to the reaction most favorable to this ferment and adding fibrin, egg albumin solution, starch, etc., according to the nature of the ferments.

The following brief citations illustrate the nature of the results:

#### EXPERIMENTS ON TRYPSIN (PANCREATIN).

##### (a) Effect of Hydrochloric Acid:

In these experiments the trypsin (pancreatin) was submitted to the action of hydrochloric acid of varying strengths for a period of six hours. Then the liquid was rendered alkaline, and now the time determined which was required to digest a certain amount of fibrin.

Per cent. of HCl in the preliminary digestion of six hours.	After making alkaline the digestion of fibrin is practically completed in.
0.000 .....	3 hours.
0.056 .....	5 hours.
0.112 .....	7 hours.
0.280 .....	8 hours.
0.560 .....	No digestion in 8 hours.

When it is remembered that the normal acidity of gastric juice generally corresponds to about 0.2 per cent. HCl it will be seen that an acidity of one-fourth of this figure weakens the activity of the trypsin so that it requires about double the time to effect digestion; while exposure to an acidity but little above that of the gastric juice destroys it altogether.

##### (b) Effect of Pepsin:

Composition of the mixture for the preliminary digestion of six hours.	After making alkaline, the digestion of fibrin is:
Trypsin and water .....	Practically completed in 3 hours.
Trypsin and 0.112 per cent. HCl .....	Starts in 5 hours; one-half is digested in 6 hours.
Trypsin and 0.112 per cent. HCl and pepsin .....	No digestion in 29 hours.

1. Wroblewski, Bednarski and Wojcinski: Hofmeister's Beltr., 1901, I, 289.



It is seen that the pepsin has completely destroyed the trypsin, even when the acidity was very slight.

#### EXPERIMENTS ON PEPSIN:

Composition of the mixture during the preliminary digestion of six hours.

The mixture is then brought to an acidity of 0.2 per cent. HCl and egg-albumin solution added. The quantity of the coagulable albumin remaining after digestion is:

- |                                                          |        |
|----------------------------------------------------------|--------|
| (a) Pepsin and boiled trypsin .....                      | 0.1070 |
| (b) Pepsin and boiled trypsin and 0.01 per cent NaOH..   | 0.1308 |
| (c) Pepsin and unboiled trypsin .....                    | 0.1410 |
| (d) The albumin solution, without digestion, contained.. | 0.1395 |

Comparison between (a) and (b) shows that the very low alkalinity of 0.01 per cent. NaOH has destroyed most of the pepsin; while the trypsin (c) has destroyed it completely.

#### EXPERIMENTS ON DIASTASE:

The preliminary digestion lasted 9 hours. The mixtures contained:

Starch was then added and digested for 8½ hours. The digestion is estimated by copper reduced by the solution:

- |                                                      |        |
|------------------------------------------------------|--------|
| (a) Diastase and water.....                          | 0.2854 |
| (b) Diastase and NaOH 0.03 per cent. ....            | 0.1945 |
| (c) Diastase and NaOH 0.1 per cent.....              | 0.0010 |
| (d) Diastase and HCl 0.009 per cent.....             | 0.0121 |
| (e) Diastase and HCl 0.02 per cent.....              | 0.0089 |
| (f) Diastase and trypsin and 0.03 per cent NaOH..... | 0.1511 |
| (g) Diastase and pepsin and water.....               | 0.1836 |
| (h) Diastase and pepsin and 0.009 per cent HCl.....  | 0.0074 |
| (i) Diastase and invertin and water.....             | 0.3134 |

The comparison of (a), (b) and (c) shows that 0.03 per cent sodium hydrate produces considerable destruction of the diastase; with 0.1 per cent. of sodium hydrate the destruction is practically complete; (d) and (c) show the very deleterious effect of acids; even with 0.009 per cent. (equal to 1/20 that of the gastric juice), the destruction is almost complete; (g) and (h) show the severe destructive action of pepsin; invertin (i) has no effect; comparison of (b) and (f) shows that trypsin also is not very deleterious. Of other digestive ferments, rennin is not destroyed by pepsin; invertin is not injured by pepsin, trypsin and diastase, but is weakened by acids and alkalies.

To recapitulate these results relating to the ferments which are most commonly administered for therapeutic purposes:

At a temperature of 40° C. and in six hours:

Trypsin is greatly injured by 0.056 per cent. HCl, and destroyed by 0.56 per cent. It is completely destroyed by pepsin in 0.112 per cent. HCl.

Pepsin is largely destroyed by 0.01 per cent. NaOH, and completely destroyed by trypsin.

Diastase (in nine hours) is considerably injured by 0.03 per cent. and destroyed by 0.1 per cent. NaOH. It is almost completely destroyed by 0.009 per cent. HCl; it is greatly weakened by pepsin even in neutral solution, but it resists trypsin fairly well.

#### MIXED SOLUTIONS OF FERMENTS VALUELESS.

These conclusions illustrate strikingly the absurdity of mixing these ferments in solution: If the solution is acid (as in the Elixir Digestivum Compositum of the National Formulary and most of the proprietary digestant mixtures), the trypsin and diastase will be destroyed; if it is alkaline, the pepsin and diastase will disappear, and if, as a last resort, it is made neutral, the pepsin will destroy the diastase, and the pepsin, in its turn, will be digested by the trypsin. At room temperature the process will be somewhat slower than in the thermostat, but the final result, in a very short time, will be the same.

This must be the case from the nature of the ferments, and the actual analytical results of the Council, as quoted in its report, only furnish an added proof of these firmly established facts. The busy practitioner may be excused for not having these data always in mind, but ignorance of these matters on the part of manufacturers is scarcely conceivable. Indeed, the letters received by the Council show that the manufacturers are familiar with the worthlessness of these mixtures,

and the most reputable houses only manufacture them in response to the popular demand. Reform must, therefore, come through the medical profession, whose members should refrain from prescribing these mixtures.

(To be continued.)

### Clinical Notes

#### FURTHER STUDY OF THE NEW INFECTIOUS DISEASE.

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I have already<sup>1</sup> reported 8 cases of an infectious disease hitherto undescribed in text-books or the literature. Since contributing that study, through the kindness of the authors, I have found two articles which report an analogous fever.<sup>2</sup> These reports, however, are very obscure and incomplete. They make no mention of important tests in order to exclude the various well known fevers, typhoid, etc. The cases of Dr. Sheffield occurred among children and in epidemic form. There are many points in common both in Dr. Sheffield's and Dr. Happel's cases, yet the data are so very much obscured and faulty that more complete reports must be made before these cases can be all identified as the disease reported here.

Through the kindness of many of my colleagues, I am enabled in the following study to report on eleven histories of similar cases in addition to the nine of my own.

This disease may be defined as an acute infection of sudden onset and unknown bacterial origin. It is characterized clinically by fever, constipation, absence of blood parasites, agglutination with the usual bacteria, rose spots, enlarged spleen, and tympanites. It lasts from ten to twenty days. Its pathology is unknown; there have been no deaths. The history of analogous fevers has been called to my attention by Dr. T. J. Acker of Croton-on-the-Hudson. He says that in forty years' practice he has frequently found this fever and "together with Wilson, Da Costa, John Mason Good, and other great writers" attributes "this simple continued fever to solar heat, great fatigue, excitement, surf bathing, eating crabs, etc."

This disease differs from febricula or ephemeral fever as described by Osler. He mentions this as lasting from two to four days; "in some instances it may continue for a week." Weil's disease has as its striking feature a marked catarrhal jaundice, enlarged spleen and liver. None of these features is present in my cases or their analogues. There is absolutely no similarity between these cases and miliary fever, which occurs with sweats and is very fatal.

According to the correspondence I have received on the subject the disease seems to prevail throughout the United States. Members of the American Medical Association have written to me and described similar cases from Missouri, New York, Connecticut, Virginia, California, Georgia, Kentucky, Pennsylvania and New Jersey.

#### ETIOLOGY.

Of the 20 cases of which I have notes, 8 occurred in girls and 12 in men. The ages ranged from 16 in the

1. THE JOURNAL A. M. A., 1906, Aug. 11, p. 433.

2. Sheffield, H. B.: Am. Med. Surg. Jour., Dec. 26, 1896; also Happel, T. J.: THE JOURNAL A. M. A., July, 1906.



youngest to 36 in the oldest; 18 were under 28; 12 between 16 and 25. Only three of the twenty had been out of the city on vacations. The others had not left the city within six months.

This disease seems to prevail in the same months as typhoid, malaria and hay fever. No cases have been reported to me, however, for December, January, February, March, April or May.

Cultures made from the blood of three patients yielded no growths. Agglutination tests with young cultures of typhoid and paratyphoid bacilli were negative. Cultures made from the stools have so far proved unsatisfactory.

Very little light could be obtained on the origin of the infection. Some of the patients had never drunk unboiled water or milk. None of the cases could be positively traced to any definite source. They seem to be endemic, but there is so far no evidence that any epidemics occur. No banquets, picnics, or sausage luncheons preceded them.

Although there is no morbid anatomy to describe, the mode of infection seems evidently to arise by way of the intestinal tract. The thick white, slightly moist fur on the tongue, the bad odor to the breath, the rigid constipation, all indicate this. The spleen and liver were at no time palpable in any of the cases. This is important in excluding paratyphoid and typhoid.

#### SYMPTOMS.

There was no way to ascertain the incubation period from the histories. The onset is markedly acute in all cases. From twelve hours in the shortest to three days in the longest; most of them were twenty-four hours. Epistaxis was not present in any of this series. Constipation was a conspicuous symptom in every case. There are no records of chills or sweating. Six of the twenty patients complained of headaches; none of them had abdominal tenderness at any time. Three of the nine walked into my office with temperatures of 104. They felt perfectly well the day before.

The pulse exhibits a striking peculiarity. It is, if anything, even slower than that of typhoid. The rate varies from 60 to 90; in seven of my cases it never rose above 80. The volume is full, rate regular, quality strong, and tension usually fair. Three exhibited dicrotism.

The tongue is covered with a rough, white fur, in most cases moist. A fetid odor was noticeable in several patients. The fever is a rapidly ascending one and may reach 105.4 without delirium or nervous symptoms. No characteristic eruption whatever appears in the course of the trouble. Herpes was present in two patients.

Even in the second and third weeks of the disease no change occurs in the pulse, character or rate. The temperature works gradually downward, and the morning remissions finally become permanent. Tympanites and abdominal tenderness are never present. In this series, cough and expectoration occurred only once. It disappeared a week before the afebrile period began.

In Case 6 Dr. T. R., after a long struggle with the infective agent, finally some three weeks afterwards passed through a typical typhoid attack. Whether the preceding illness was something else or only a battle between his native immune bodies and the typhoid bacilli is impossible to determine.

Meningeal or nervous symptoms were entirely absent. The only pulmonary signs were those of bronchitis in one case.

One case began with an acute attack of vomiting. This lasted three days, after which the course was just

like the others. Throughout the attack the eyes remain bright and the face flushed. There were no relapses, recrudescences, or chills. Erythema appeared in two patients. Perspiration was absent. Desquamation in fairly large flakes attracted notice in one, and occurred in small amounts in another.

The blood showed no marked changes in 9 cases. The hemoglobin was not reduced and the red count remained materially unchanged. The lowest count was 4,300,000. There was no leucopenia or leucocytosis. The count ranged from 4,500 to 8,500.

The Riva-Rocci systolic pressure was never below 125. Jaundice, hemorrhage, perforation or neuritis were never met with. Renal complications are also rare. Ehrlich's diazo test appeared in 3 of the 7 cases so examined. Pyuria may be present as in one of the series. Albuminuria occurred without casts in 4 cases.

#### DIAGNOSIS.

From typhoid and paratyphoid fevers the diagnosis should be simple after the tenth day; failure of agglutination tests, entire absence of spleen, characteristic eruption, want of a lengthy incubation period, tympanites and cultures of the bacilli from the blood.

Malaria should give no trouble. The parasites are now so readily recognized by even a second-year medical student that even the hidden parasites of the estivo-autumnal form can no longer escape observation for more than a few days. Ulcerative endocarditis and other forms of pyemia will only confuse for a few days.

There really is no chance to confuse this fever with acute miliary tuberculosis, appendicitis, or the diseases mentioned under history, such as febricula or Weil's disease.

There is really no chance to confuse this fever with acute miliary tuberculosis, appendicitis, or the diseases mentioned under history, such as febricula or Weil's disease.

The condition can thus be considered a distinct clinical entity. It seems really to enter a well-recognized place from the numerous letters received.

#### PROGNOSIS.

The patients all recovered with no apparent sequelæ except the patient who, some weeks afterward, ran a typical typhoid course with a Widal reaction present. Twenty cases, however, are not enough on which to generalize, and prognosis, as well as the other data, must be left necessarily incomplete until additional cases are studied.

The general management of these patients must be left to the hands of skilled nurses just as in the case of typhoid. In my series nothing unforeseen developed to require much interference with Nature. The constipation is very stubborn and must be closely watched.

A typhoid diet of albumin, milk and water, as well as hydrotherapy, seems to be the *sine qua non*.<sup>3</sup>

3. For another article on this disease the reader is referred to Mellette, U. N.: Med. World, July, 1906.

Acetanilid in Solution of Hydrogen Dioxid.—According to C. H. Wall, in the *American Journal of Pharmacy*, several samples of hydrogen peroxid solution were found to contain itrobenzol, which results from the addition to the solution of small quantities of acetanilid for the purpose of preserving it. The preservation is effectually secured, and it is probable that the small amount of acetanilid added is not objectionable, but its presence and amount must be declared according to the new law.



AN OCULAR METHOD FOR THE DIAGNOSIS  
OF HEART BLOCKAND FOR THE COMPARATIVE STUDY OF AURICULAR AND  
VENTRICULAR IMPULSES.

G. W. McCASKEY, M.D.

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pital.

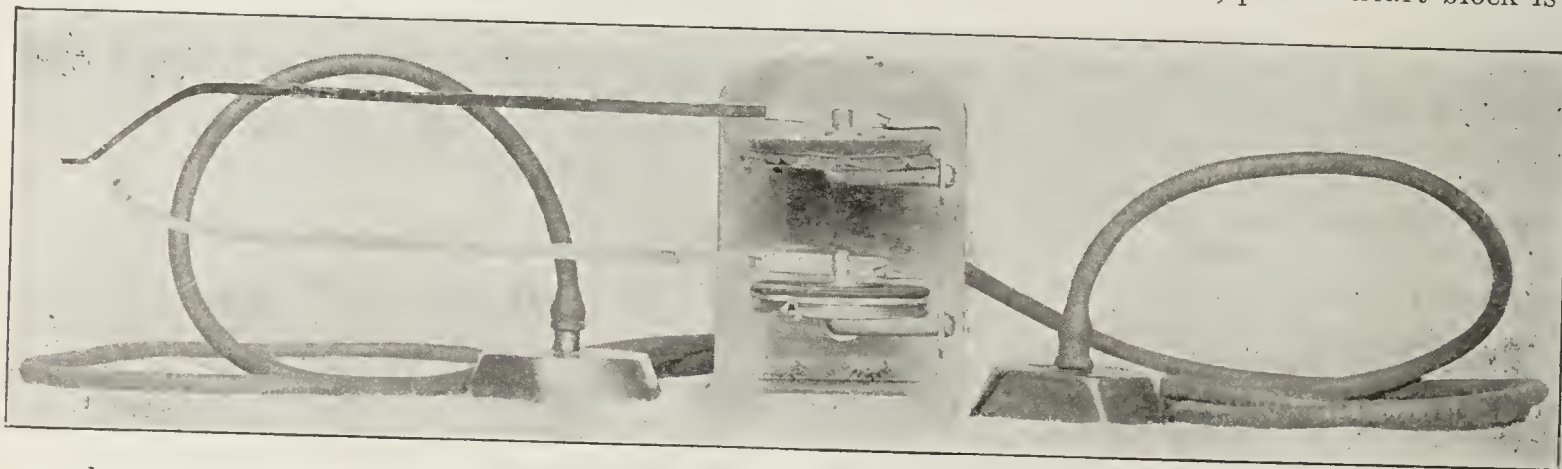
FORT WAYNE, IND.

Owing to the clinical and experimental investigations of Krehl, Engelmann, Hering, Erlanger, MacKenzie, Aschoff, Tawara and others, the more exact diagnosis of cardiac disease has become both possible and imperative. Among the questions of vital importance in certain forms of cardiac disease is the synchronicity or time relations between the movements of the auricle and ventricle. Under normal conditions the cardiac cycle begins with the auricular contraction, the impulse from which is transmitted through the bundle of His to the ventricle which should contract in a certain average time after the auricle. While there are those still who believe that the ventricle contracts from other causes, such, for instance, as distension with blood, the evidence seems to me to be entirely conclusive that its normal excitation is received through the conducting fibers above referred to, although an inherent rhythmicity of the ventricular wall is certainly a reserve mechanism, while it is possible that distension of the ventricular

ness of this work may be doubted, although its great value in permitting prolonged study of the heart movements by means of graphic tracings is perfectly obvious. It is not yet, however, on the market.

It occurred to me that the mere question of the physiologic association of the auricular and ventricular impulses might be determined by an ocular method, easy and rapid in its application, and for this purpose I have devised and had made for me by Truax, Greene & Co., Chicago, the apparatus shown in the accompanying illustration. It consists of two tambours placed one above another with long aluminum levers, the long arm bearing to the short, the ratio of about 12 to 1, and both the levers being bent at their distal ends so as to either approximate each other or be on exactly the same level as preferred by the operator. Connecting with the tambours on the back of the frame supporting them are conducting tubes attached to bells similar to those used in the MacKenzie polygraph.

One of these is placed over a pulsating jugular vein, and the other over the apex if a sufficiently strong impulse can be obtained here; if not, over the carotid of the opposite side, and the two impulses, greatly exaggerated by the long levers, are seen side by side and their regularity and approximate interval can be readily determined. If a ventricular impulse fails now and then and the auricular does not, partial heart block is at once



eavity may be another. A failure of the auricular impulse to produce an effective ventricular contraction constitutes what is known as heart block. This, perhaps, is produced usually through a lesion of the bundle of His, but sometimes probably because of conditions of the ventricular muscle which make it impossible for it to respond to a normal stimulus. If no effective impulses pass from the auricle to the ventricle the heart block is complete; if a part only are effective it is partial. The recognition of this condition, which is of the highest importance from a therapeutic point of view, is only possible by determining the relation between auricular and ventricular contractions.

The method of MacKenzie, to whom we are chiefly indebted for working out these problems on the clinical side, is the only one that will permit of an accurate scientific study of the various elements of the cardiac cycle. The practical application of this method is technically difficult owing to the time required to adjust the radial sphygmograph, a fact which is recognized and referred to by those who are skilled and experienced in this sort of work. I find, for instance, that the weight of the MacKenzie tambour attachment pulls the sphygmograph out of adjustment, making it difficult to hold it accurately with the wristband. Whether the new instrument of MacKenzie, by means of which multiple tracings ten or fifteen or more feet long can be made, as shown at the Toronto meeting, will lessen the tedious-

demonstrated. If the interval between the external jugular and ventricular impulse is too long, impairment of the conductivity of the bundle of His is demonstrated. It is not supposed for a moment that this can replace the graphic method, but as it requires less time and less technical skill, it will be more widely applicable under many conditions. It has the further advantage that the movements can be watched for an indefinite period of time without reference to the length of the slip of paper to be used or the precise and accurate adjustment of the graphic apparatus. It is, therefore, offered to the profession in the hope that it may be of some little assistance in the study of cardiac diseases.

**Influence of Weather on Incidence of Eclampsia.**—W. Ruth of Riga, urges greater care of pregnant women in regard to functioning of the skin. During damp weather pregnant women should refrain from exposing themselves to the damp air as it is liable to check the functions of the skin and impose a heavier task on the kidneys. He reviews the opinions of others in regard to the influence of the weather on the occurrence of eclampsia, adding his own experience which confirms the connection between chilling the surface of the body and the development of eclampsia. His article is published in the *St. Petersburg. med. Wochsehr.* for Dec. 15, with several tables showing the marked influence of damp weather on the number of cases of eclampsia, especially long protracted damp weather, irrespective of the temperature.



THE FENESTRATED BROAD LIGAMENT-  
CLAMP.

WITH SOME REASONS FOR DEVISING IT.

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CHICAGO.

The idea of devising a new clamp occurred to me in consequence of the force necessary and trauma often caused while clamping infiltrated, inextensible and stiffened broad ligaments during salpingectomy or oöphoro-salpingectomy, especially in cases where the abdominal walls were markedly thick, even though exposure were made by a longer median incision than usual.

To ligate before removing the tube in cases of sactosalpinx purulenta also has the disadvantage of manipulating an infectious pus sac, with the possibility of rupture, as well as occupying more time than clamping, excision and ligation.

Observations of cases of pus tubes in various stages

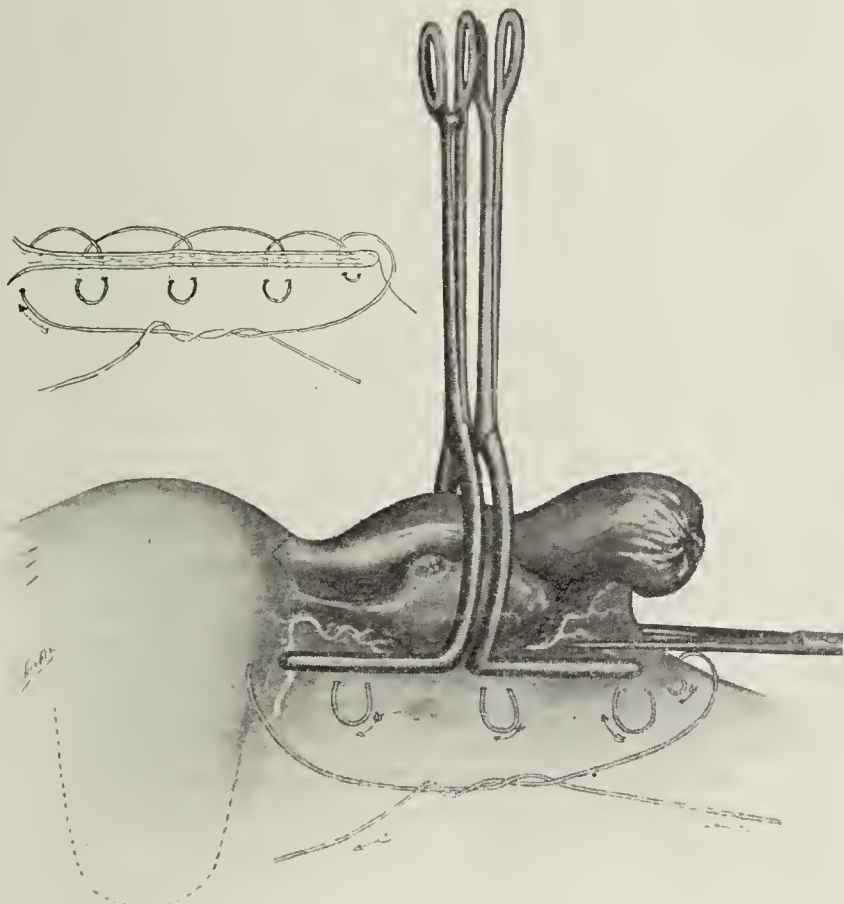


Fig. 1.—Fenestrated clamp applied; excision of adnexæ through fenestra; then application of ligature.

has demonstrated that we may almost speak of the mechanism of the formation of the pus tube even if the findings differ widely in different cases.

The normally situated tube under conditions of purulent inflammation undergoes increase in size, length and weight, especially at the distal or fimbriated extremity, tending to descend posteriorly and medianly toward the uterus, often enveloping the ovary.

One frequently finds evidence that this *descensus tubæ* occurred before the inflammatory process had penetrated entirely through the tube wall to the serosa, so that the ovary is often found unimplicated at the time of the operation. This cornucopia-like rolling up of the tube often continues till the closed fimbriated extremity lies at the bottom of the cul-de-sac. The detachment of the tubes from their adherent positions can be naturally most easily accomplished by the observation of the rule to deliver by the inverse manner of the production of the malposition.

After delivery at the abdominal opening, the method of clamping, excision and ligation, in turn, and covering of the stump to best avoid infection and operative sequelæ, especially adhesions of stump edges and surrounding viscera, is of the utmost importance.

The oblique method of applying the clamps is not devoid of objections; the outer, or infundibulo-pelvic, clamp is not always capable of being applied without serious danger of the necessary manipulation causing rupture of the sactosalpinx; while that of the uterine end often markedly increases the intratubal pressure, also adding to the liability of the same accident, besides perhaps causing increased shock due to the crushing of so important a structure as the tube. Also in excising the adnexæ obliquely downward from either end, the parametrium is opened at its base, a very great objection in any case, but especially where there is an escape of pus (perhaps not yet sterile) probably accounting for some of the cases of secondary parametric abscesses.

Another objection is the extent of broad ligament excised, unduly weakening it through its whole height,



Fig. 2.—Cornua and ligated broad ligament puckered at lateral border of uterus; covered by peritoneum by suturing round ligament to the posterior uterine surface and broad ligament.

often with consequent change in the position of the cervix and probable malversion and, despite the most careful suturing, the leaving behind of raw edges, with resultant adhesions.

With the fenestrated forceps the excision is entirely horizontal, the infected adnexa can be excised at once, the stump of the broad ligament is capable of being puckered at the lateral border of the uterus by being drawn toward the most fixed point, i. e., the uterus, through the lateral edge of which the suture is first passed. The round ligament is now drawn over the sutured cornua and broad ligament stump and is sutured to the uterus and broad ligament as in the accompanying picture, thereby effectually and easily covering them as well as maintaining the uterus in anteversion.

While I feel that an apology is due for adding one more instrument to an already overcrowded armamen-



tarium, I still feel that any effort toward simplifying an operation that, despite its commonness, has not yet reached the uniformity it deserves, should be presented for consideration.

## INFILTRATING AND METASTASISING SARCOMA OF THE RAT.\*

SIMON FLEXNER, M.D., AND J. W. JOBLING, M.D.  
NEW YORK CITY.

A forthcoming number of the *Journal of Experimental Medicine* will contain a detailed description of a mixed-cell sarcoma of the rat which presents many points of similarity with sarcoma of man. The original tumor sprang from the seminal vesicle of a white rat and it has since been transplanted successfully to several hundred rats, both white and mixed gray and white. At first the number of successful transplantations was variable and sank as low as 20 to 30 per cent., but in the last months the successful results have in certain series reached 100 per cent. and averaged about 95 per cent. This increase was achieved by selecting the more rapidly growing tumors, in a young state, for the inoculations.

The inoculations have been made under the skin into the muscles, and into the peritoneal cavity. The subcutaneous nodules tend to invade the skin and to cause ulceration; the intramuscular nodules penetrate deeply into the surrounding tissue and substitute themselves for muscle, connective tissue, cartilage and bone. The tumor is especially characterized by its infiltrative growth. It is not surrounded by a capsule except in the early stages, but it grows freely at its periphery into the surrounding tissues. The early growths in the subcutaneous tissues are freely movable, but later on they attach themselves either to the skin or to the muscles, sometimes, indeed, to both skin and muscles, and gradually supplant the normal structures. A bit of the tumor planted deeply in the muscles of the back will gradually, as it grows, push itself outward toward the superficial fascia and inward toward the spinal column and ribs. The unyielding bony and cartilaginous structures are caused to be absorbed by pressure, or by the ingrowths of strands of tumor cells into their substance.

The intraperitoneal inoculations give rise frequently to multiple tumors. The original tumor developing from the transplanted fragment of tissue is the largest nodule; but other nodules of relatively large size are commonly present in the omentum, the mesentery of the duodenum and between the liver and the diaphragm. Smaller miliary foci of tumor growth occur elsewhere in the peritoneum. A frequent localization of the tumor in the peritoneal cavity is between the cardiac end of the stomach and the diaphragm, through which the stomach is attached firmly to the diaphragm, and the tumor grows through the wall of the stomach into its lumen, where it becomes subject to the digestive action of the gastric juice. Typical cup-shaped ulcers with firm elevated edges have been produced in this way.

The intramuscular inoculations, if made in the abdominal muscles, can give rise to intraperitoneal growths. In this case the tumors penetrate the muscular walls and become intraperitoneal. They then conduct themselves as if they had been originally produced by intraperitoneal inoculation. If the growth from

without is through the posterior abdominal wall, the kidney may be displaced forward and it may also be nearly or completely destroyed by the tumor invasion. Ascites occur, with which may be associated a diffusion of microscopic masses of tumor cells throughout the peritoneal cavity, from which general miliary sarcomatosis of the peritoneum may result. The diaphragm is involved, probably by direct lymphatic infection.

A striking feature of the tumor is its tendency to produce large metastases. These occur, in order of frequency, in the lungs, the peribronchial lymphatic glands, the intercostal muscles and the ribs, the kidneys, regional lymphatic glands, and the heart. The metastases may reach a very large size, especially in the lungs and kidneys. A large segment of a lung or a kidney may be involved.

Rats which have primary tumors may be inoculated a second time successfully. The second growths are as rapid as the first, although the percentage of successful second implantations is below that of the controls. The secondary inoculation succeeds in animals in which no visible metastasis has occurred and in which the original growth is the only nodule in the body, and it succeeds equally in animals in which metastasis has already taken place. No marked difference in susceptibility of the rat as yet been made out as respects these two conditions.

Rats which have successfully withstood one inoculation are less subject to another inoculation with the tumor than control rat or rats in which a tumor is already present. In other words, it appears that rats which have withstood inoculation originally with the less active tumors have been rendered, in some degree, refractory in inoculation with the more active tumors.

A certain but small percentage of spontaneous recoveries takes place in rats which have originally developed inoculation tumors. By treatment with salt solution and photodynamic anilines the living tumor cells can be so modified as to influence the number, or percentage, of the rats making spontaneous recoveries. There are indications that the rats which have recovered from a growing tumor are more refractory to a subsequent inoculation than normal rats.

The histologic appearance of the tumor places it probably among the mixed-cell sarcomata. The cells are spindle shaped and polyhedral, and not a few giant cells are also present. There is moderate development of fibrillated basement substance. In parts of certain tumors, tubular or irregular alveolar structures can be discerned. Taken all together, however, it seems advisable, for the present at least, to consider the tumor as a mixed-cell sarcoma.

### Syringe for Injecting Solid Paraffin Into the Tissues in Ozena.

—R. Botey of Barcelona describes in the *Arch. Internat. de Laryng.* 1906, xxii, 855, a syringe of his own devising that forces cold, solid paraffin in a fine jet out of the needle. Great pressure is exerted on the piston by a spring in the nutcracker handles, acting on a click and ratchet mounted on a screw thread on the stem of the piston. The paraffin issues more gradually and with greater force than with any of the other syringes yet made. In paraffin treatment of 360 patients with ozena during the last four years, he has made about 7,200 injections in all. In about a third of the cases the paraffin was expelled later, but in the others the patients were cured or immeasurably improved. His experience indicates that about 10 per cent. of patients with ozena are beyond relief, 25 per cent. can be very much improved, 45 per cent. can be practically and 20 per cent. can be completely cured by treatment including injection of cold hard paraffin.

\* From the Rockefeller Institute for Medical Research, New York.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 329.)

(A list of all accepted articles is published on one of the advertising pages of *The Journal* in the first issue of each month.)

### ALYPIN.

Alypin,  $(\text{CH}_3)_2\text{N} \cdot \text{CH}_2 \cdot \text{C}(\text{C}_2\text{H}_5)(\text{C}_6\text{H}_5\text{COO}) \cdot \text{CH}_2 \cdot \text{N}(\text{CH}_3)_2\text{HCl}$ , is the hydrochloride of benzoyl-2-ethyl-1,3-tetramethyldiaminopropan-2-ol.

By the action of dichloroacetone,  $\text{CH}_2\text{Cl} \cdot \text{CO} \cdot \text{CH}_2\text{Cl}$ , on ethylmagnesium bromide dissolved in ether and decomposition by water of the magnesium compound formed, ethyl-dichlorhydrin,  $\text{CH}_2\text{Cl} \cdot \text{C}(\text{C}_2\text{H}_5)(\text{OH}) \cdot \text{CH}_2\text{Cl}$ , is obtained. From this, by the action of dimethylamine, ethyl-tetramethyl-diamino-propanol is produced. This product is treated with benzoyl chloride and the benzoyl-ethyl-tetramethyl-diamino-propanol neutralized with hydrochloric acid to form the chloride.

Alypin is a white, crystalline powder, melting at  $169^\circ \text{C}$ . ( $336.2^\circ \text{F}$ .), hygroscopic and extremely soluble in water. Its solutions are neutral and are not rendered turbid on addition of sodium bicarbonate in moderate quantities, and may be sterilized by boiling for a period not exceeding five minutes, without decomposition. It is easily soluble in alcohol. It has a markedly bitter taste.

It should be protected from the air in well stoppered containers. Two and four per cent. solutions are quite stable, but weaker solutions are likely to become mouldy.

Addition of potassium iodide T. S. to the aqueous solution (1-100) produces a white precipitate; potassium dichromate T. S. produces a yellow crystalline precipitate soluble in hydrochloric acid; potassium permanganate T. S. produces a violet crystalline precipitate, which turns brown on standing. If 0.1 Gm. Alypin be mixed with 1 Cc. sulphuric acid and warmed to  $100^\circ \text{C}$ . ( $212^\circ \text{F}$ .) for five minutes and then 2 Cc. water carefully added the odor of benzoic-ethyl-ester is developed; on cooling crystals separate out, which are dissolved on adding 2 Cc. alcohol. If Alypin is dried at  $100^\circ \text{C}$ . ( $212^\circ \text{F}$ .) the loss should not exceed 1.5 per cent.

**Actions and Uses.**—It is a local anesthetic, claimed to be equal to cocaine, but not a mydriatic; it is said not to produce disturbance of accommodation and to be less toxic than cocaine.

**Dosage.**—Externally in the form of a 10 per cent. solution; hypodermically in 1 to 4 per cent. solutions. As much as 5 Cc. of a 3 per cent. solution was well tolerated in one case.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 808,748. U. S. trademark No. 44,608.

### ANTHRASOL.

COLORLESS COAL TAR.

Coal tar, freed from pitch, pyridin bases and coloring matter, and mixed with juniper tar.

Coal tar is freed from bases, such as pyridin and chnollin by treatment with acids and from pitch by distillation. The distillate containing the hydrocarbons and phenols of tar is purified to remove constituents causing discolorization. To prevent separation of solid constituents juniper tar is added, and oil of peppermint to correct the odor. It is a thin, mobile, light-yellow oil, which does not stain either skin or linen.

**Actions and Uses.**—Anthrasol is antiseptic, parasiticide, keroplastic, anti-pruriginous; like ordinary tar, it allays irritation of the skin, but is claimed not to obstruct the follicles nor to favor the development of acne.

It is recommended in chronic or subacute skin diseases, various forms of eczema, especially for after treatment, and for all pruriginous affections; in diseases of the hair, as a restorative and for the removal of dandruff.

**Dosage.**—Locally in the form of a 5 to 10 per cent. petrolatum ointment in eczema; 10 per cent. ointment with glycerite of starch and 10 per cent. of wool fat (adepts lanæ) in pruritus; 20 to 30 per cent. ointment or paste, in lichen; in combination with sulphur and soft soap, in parasitic skin affections.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. U. S. trademark No. 40,634.

### CHLORALAMID.

A name applied to Chloralformamidum, U. S. P.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). German patent No. 50,536; U. S. patents Nos. 429,039 and 429,040.

### COLLARGOL.

COLLARGOLUM; COLLOIDAL SILVER; ARGENTUM COLLOIDALE; ARGENTUM SOLUBLE; SOLUBLE METALLIC SILVER; ARGENTUM CREDE.

Collargol is a water-soluble, allotropic form of metallic silver, said to contain 85-87 per cent. of silver, and a small percentage of albumin with products of its oxidation.

Collargol occurs as small, hard, brittle, bluish-black, scale-like pieces. It is soluble in 20 parts of distilled water, producing a dark olive-brown solution which remains stable for months. No separate silver particles can be distinguished in the solution even when magnified to the highest degree under the microscope, and it has all the other characteristics of a solution, except that it does not conduct electricity. The addition of albumin to collargol prevents or delays its precipitation by acids and salts. A sufficient amount of albumin to prevent its precipitation under ordinary conditions is therefore added to collargol during its manufacture. Hence collargol, even when dissolved in spring or well water containing salts, undergoes no change, and it remains unaffected by boiling, whereas colloidal silver, containing no albumin, precipitates on being boiled.

When a solution of collargol is warmed with nitric acid a white cloudiness is produced, which clears completely on standing. The silver can then be demonstrated in the usual manner. On heating a fragment of collargol on a platinum scoop, shining white metallic silver of the ordinary kind, insoluble in water, is at once formed.

Its solution should not be exposed to light or air; it is incompatible with the usual silver reagents.

**Actions and Uses.**—Collargol is a general antiseptic and germicide which can be introduced into the system without causing either local reaction or general poisonous effects.

**Dosage.**—In most cases it is best employed locally in the form of a 15 per cent. ointment (see Collargol ointment), 2 to 4 Gm. (30 to 60 grains) being very thoroughly rubbed into the skin; otherwise, in carefully filtered solutions, varying in strength according to the intended use; 2 per cent. to 5 per cent. for intravenous injections, 1/50 per cent. to 1 per cent. solutions for washes; 5 per cent. dusting powder, prepared with finest clay; in the form of bougies containing 0.2 Gm. (3 grains) and vaginal suppositories and tampons each containing 0.05 Gm. (3/4 grain), for parenchymatous injections in 0.5 per cent. to 1 per cent. glycerin solutions. Internally a solution of 1:500 to 1:100 is given freely in teaspoonful doses added to the food, in infectious gastric and intestinal diseases. It is also given in tablets containing 0.06 Gm. (1 grain).

Manufactured by The Heyden Chemical Works, Radebeul, Germany, and Garfield, N. J. (Schering & Glatz, New York), U. S. trademark No. 32,452.

(To be continued.)

**Naming of Carbon Compounds.**—Ol is a suffix indicating hydroxyl, the (OH) group, thus  $\text{CH}_3\text{OH}$  is methanol. Exceptions: benzol, toluol, xylol.—*Pharm. Rev.*, August, 1906.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, FEBRUARY 2, 1907.

## A LAYMAN'S APPEAL FOR THE SUPPRESSION OF QUACKERY.

The far-sighted men in our profession have always insisted that no lasting nor effective reform of the evils of quackery could come about until the public was aroused to the necessity of abolishing the bloodsuckers and vampires that prey on the sick. To the average man and woman the argument that "the doctors are mad because their business is being hurt" is so in line with every-day ethics as to constitute an adequate explanation of the profession's opposition to this form of deception and dishonesty.

Such events as the adoption of the Food and Drugs Act by Congress, the well-known and effective campaign carried on by *Collier's Weekly* and the *Ladies' Home Journal*, and other similar efforts on the part of laymen are, in truth, signs of better things to come. One of the publications which has been waging a telling and relentless war against fakers and frauds is the *Kansas City Independent*. In a vigorous editorial, January 19, Mr. George Creel, the editor, makes a strong argument in favor of legislation against quackery, both on the part of the state legislatures and the national congress. Coming from a layman, who through actual experience has gained an insight into the horrors of quackery, this is deserving of commendation and of wide publicity. He says: "This paper, in the beginning, commenced its crusade against quacks and quackery in a very light-hearted manner. The advertisements were so very laughable, so screamingly funny with their testimonials and pictures of bewhiskered gentlemen, that they appealed to ridicule with irresistible force. But after a few weeks of 'josh' the matter ceased to be amusing. By letter and in person there came recitals of cold-blooded scoundrelism that seemed impossible of belief had it not been for absolute verification. Then the fight was commenced in earnest."

Mr. Creel thus argues: "The pure food law will protect the public health beyond calculation, but there is still the necessity of safeguarding the sick from unskilled and unscrupulous ministrations. Congress should pass a law leveled directly at the quacks and frauds who make rich livings by preying on ignorance, credulity, sickness and suffering, but the state legislature can get quicker action. Why should not a bill be introduced at once that will do away with the

amazingly large number of fakes that coil in all of the large cities of Missouri (and, he might have added, in other states also) sending tentacles into every village and farm house? The present provisions for the revocation of licenses to practice medicine are not adequate. The State Board of Health has no funds at its disposal and so is absolutely barred from making any fight against the quacks who are, for the most part, wealthy, able to hire the best lawyers and, by reason of huge advertising expenditures, can purchase immunity from the daily papers. The passage of laws which will make the securing of a license more difficult and the revoking of a license, for sufficient reasons, much easier is absolutely imperative. The legislature should appropriate sufficient money for the use of the Board of Health to enable it to protect the people of the state against quackery."

With a clear-sightedness and frankness that is most gratifying, Mr. Creel says: "The root of the evil lies with the newspapers. Ninety-five per cent. of the earning power of these fakes and frauds lies in newspaper advertising. Ninety-nine out of every hundred 'patent medicines' and advertising doctors are lies and cheats. A newspaper proprietor is just as responsible for the advertisements that go into his paper as he is for any article in the news columns. A law that would make the newspaper owner civilly and criminally responsible for advertisements in his paper would come close to solving the fake doctor problem. The majority of testimonials used by 'patent medicine' companies and advertising quacks are bought or else written by some clever writer in the employ of the faker."

This strikes directly at the root of the entire matter. The whole problem of "patent medicines," dishonest, fake proprietary remedies and quack doctors is one of the developments of the American craze for advertising. Legitimate advertising is simply the announcement of the quality and price of desirable goods and a statement of where and how they can be obtained. Illegitimate advertising, of the kind on which these fraudulent businesses are based, consists in using any means or device that may be necessary to create an artificial demand for the goods of the vendor, or in so misrepresenting the value or merit of the product as to lead the public to purchase it under the impression that the articles advertised are what they are claimed to be. There is no sadder spectacle to be found in our large cities than the great daily newspapers advocating municipal righteousness, pure politics and unselfish citizenship in the editorial pages and displaying advertisements of fortune tellers, quack doctors, "patent medicines," fakes and abortionists in their advertising columns.

The second important point in Mr. Creel's argument is the demand that the Board of Health be provided with sufficient funds to enable it to protect, adequately, the lives and health of the people of the state. Most of our state boards are restricted in their expenditures to the fees which they receive for examinations. A state



legislature will unhesitatingly appropriate hundreds of thousands of dollars to protect the property of its citizens and yet deny the state board of health any aid whatever in protecting the lives of the people. Most state boards are absolutely dependent on fees collected for examinations. In other words, the doctors pay the health bills of the state. A state board of health should be as much a part of the state government as is the supreme court. As soon as it is given power and means commensurate with its importance, results will be achieved which have hitherto been undreamed of.

A state board which possesses real power and a public press which feels itself responsible for its advertising pages, as well as its editorial and news pages, would relieve the country of quackery and fraud without delay. On the whole, the most hopeful feature of the present movement is that it has originated and been carried on very largely by the public.

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#### GROCCO'S SIGN.

In these days of laboratory methods it is refreshing to find that there is still room for pure clinical observation and that, from time to time, new signs of old conditions are brought forward. One often feels that in powers of clinical observation the old masters of medicine were far ahead of us, but possibly this is a mistaken idea due to the halo of glory with which we often surround remote occurrences. It is to be hoped that the occasional discovery of new signs will stimulate all practitioners to develop the powers of their unaided senses to the highest possible degree and to depend, to a lesser extent than is now usual, on extraneous instrumental aids.

About five years ago Grocco of Florence described a sign of pleural effusion which has attracted little attention in this country, but which seems worthy of serious consideration. The sign consists in the presence of a paravertebral triangle of dulness on the side *opposite* to that on which the effusion is present. The triangle of dulness has its base at the base of the lung, almost at right angles to the spinous processes, and corresponding to the lower margin of normal pulmonary resonance. Its apex is usually at about the level of the dulness from fluid above. Its area is determined mainly by the width of the base, which varies from two to seven centimeters. The vertical side of the triangle is represented by the line of the spinous processes, the other side by a line drawn from the outer end of the base line to the apex. The manner of eliciting the sign is well described by Thayer and Fabian<sup>1</sup> in a recent paper. After delimiting the effusion, the lower limit of pulmonary resonance on the opposite side is determined, and the observer then percusses from above downward directly over the spine, marking the point at which relative dulness begins. This usually corresponds to the beginning of

relative dulness on the side of the effusion. The observer then percusses from above downward along lines parallel to the spine, and from without inward along lines parallel to the lower limit of pulmonary resonance. There is not only present over the area relative dulness, but also changes in the auscultatory phenomena. Distant tubular breathing may be heard, the voice sounds may be nasal, and a metallic coin sound may be present. An important point in connection with the sign is its variation with change in the patient's position. With the patient lying on the affected side the triangle of dulness may nearly or entirely disappear. The sign is best elicited with the patient in the sitting position.

A number of experiments on cadavers, having in view the elucidation of the sign, have shown that in pleural effusion the fluid not only pushes aside the lung on the affected side, but also displaces the pleura before it, forcing it to the front of the vertebræ, and, in the case of right-sided effusions especially, displacing the contents of the posterior mediastinum toward the opposite side. This has the result of removing the lungs from the vertebral column which normally gets its resonant percussion note from their contiguity, and it also inhibits the vibratory power of the vertebræ, and compresses an area of lung on the side opposite the effusion.

The sign is apparently a valuable one, because it is rarely absent when there is a pleural effusion of any amount. It may be present with as little as 250 cubic centimeters of fluid. In ordinary cases of pleural effusion there is usually little difficulty in making a diagnosis, but in obscure cases, as those having encapsulated effusions, there may be a great deal of doubt as to the nature of the lesion, and, as the sign is present in such cases, it is likely to prove of distinct value. It is certainly deserving of wider recognition than it has yet received.

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#### MONSTROSITIES IN COMBINATIONS OF DIGESTIVE FERMENTS.

Medicinal preparations are on the market that are said to contain the digestive ferments pepsin and pancreatin. A combination containing these two digestives, at least in liquid form, is, as some one has expressed it, "a therapeutic absurdity and a chemical monstrosity." The subcommittee of the Council on Pharmacy and Chemistry, to which some of the proprietaries, or "specialties," were referred, has for nearly a year labored with the problem as to what should be done with them. The committee appreciated that some of these preparations were being used by a large number of physicians, and to refuse to recognize any of them might subject the Council to the charge of being too narrow, too particular, or too something or other—at least unless the reason for such refusal was explained in a convincing manner.

In the Pharmacology Department this week<sup>1</sup> will be

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1. Amer. Jour. Med. Sci., January, 1907.

1. See page 434.



found the report of the committee as adopted by the Council relative to this class of preparations. In so many words, the Council refuses to approve—and gives reasons for its action—any liquid preparation said to contain both pancreatin and pepsin. The fact that so many of this class of combinations have been used for so long with scarcely a protest is remarkable. It can only be explained on the assumption that many physicians believe the literature sent them by the manufacturers rather than scientific works and recognized textbooks. Those who use these preparations have at least forgotten the fundamental physiologic facts relating to digestion and to the digestive ferments. Certainly every medical student knows that pepsin acts only in an acid medium, and the pancreatic juices only in an alkaline medium; and every physician, if he will stop to think, knows that pepsin and pancreatin can not possibly remain in the same solution without one destroying the other, much less be effective as therapeutic agents.

That there are such preparations on the market is a reflection on those who make them as well as on those who use them. In some instances it must be charged to present-day commercialism, in others to indifference, and in still others to ignorance. The manufacturers who know better blame physicians. The chief chemist of one of the largest manufacturing pharmaceutical houses, which puts out two or three of these monstrosities, said to us recently that physicians call for these preparations, that the company simply supplies the demand. A representative of another large house openly declared that the firm considers it its business to supply whatever is demanded, and that it is in the business for money, and not to try to curtail a demand, the supplying of which is found profitable. It is a pleasure to record the fact that one firm has already withdrawn its preparation from the market.

Undoubtedly, the real facts are that the desire for a universal digestant always has predisposed to a belief in its possibility, that this belief has been fostered by certain unscrupulous manufacturers, and that other more or less honest pharmaceutical houses, threatened by loss of prestige and tempted by the profits on such preparations, have felt obliged to follow suit. Even the National Formulary includes a formula for such a preparation!

While this condition of affairs is a serious reflection on scientific pharmacy, it must not be forgotten that the medical profession is very seriously to blame. Professor Sollmann has agreed to contribute two or three short articles on the subject, and the first one<sup>2</sup> appears this week. Aside from presenting an exposition of the scientific evidence as to the absurdity of these mongrel compositions, he will also point out some other facts about these ferments that seem to be overlooked by many physicians.

#### DR. McCORMACK'S WORK.

As with other matters connected with the activities of the American Medical Association, it is not necessary to offer an apology for the splendid work that Dr. McCormack is doing. He may be a "walking delegate," as he is sneeringly designated by some of the gentlemen who love to criticise and belittle anything the Association does, provided that by the term is meant that he is delegated to meet the profession and the public all over the country in the interest of better conditions for both.

There is a misconception of what he is doing, however, even by those who are in sympathy with the Association and its work. As the *Ohio State Medical Journal* says, the majority of their officers "were laboring under the mistaken idea that the meetings were for the purpose of organizing the medical profession; in other words, had the end in view of forming medical societies." The idea seems to prevail in many quarters that he is organizing county societies, or creating a sentiment for organization, or trying to build up the American Medical Association. But he is doing nothing of the kind, except incidentally. Every state, except Maine and Virginia, has long since been organized on the plan recommended by the American Medical Association. While there are counties in many states in which there is no society, on the whole, every state, except the two mentioned, is fairly well organized and society membership is now within the reach of nearly every physician in the country. Dr. McCormack's work is purely altruistic.

Looking back after even so short an experience it is easy to see that this whole organization movement has been a great epoch-making evolution which has carried along in its growth and current those who were commonly supposed to be its sponsors and leaders. This seems to have been particularly true of the popular phases of Dr. McCormack's work. First in his own state, Kentucky, and later in Pennsylvania, California and elsewhere, he found laymen in attendance at what he supposed were to be strictly medical meetings, and it was necessary, on the spur of the moment, so to modify and simplify his talk as to adapt it to their comprehension. Later it began to dawn on him that physicians come so closely into the daily life of all the people that all classes can be easily interested and brought into active sympathy with everything that concerns the scientific, social and material welfare of the profession, if these matters be presented in plain, simple language.

At first a common meeting for the profession and the public was held in each locality, but the scope of the work broadened rapidly and it soon became a fixed procedure to hold a meeting for the profession in the afternoon and for both the public and the profession in the evening. In common with his colleagues, Dr. McCormack considers the county society the head, center and foundation of everything. He believes that each society should be made not only a postgraduate school for the mutual instruction and benefit of its members

2. See page 415.



in scientific, social and material affairs, but that it should also be a most potent factor in the every-day life of the community. These points are all brought out and fully discussed and illustrated in the heart-to-heart talks at the afternoon meetings.

At the evening meetings the curious, intimate, complex relations to the people of the individual physician and of the profession as a whole are freely discussed. The causes for the popular distrust of physicians, the defective and imperfectly enforced health and medical laws resulting, and the disastrous consequences to the people in the form of domestic pestilence, increasing the sick and death rate in many communities, are made impressive by illustrations drawn from a large personal and official experience. What the profession stands for, its high, unselfish aims and purposes, what it has accomplished under great difficulties, what it could accomplish if it could have that confidence and support of the people to which it is entitled, are vividly brought out. The danger to the people from poverty in the profession, and their part in practical measures for relief from this evil, are frankly discussed and fully appreciated. In a word, Dr. McCormack takes the public into his confidence and shows its deep concern in every interest of the profession. He shows up fraud and quackery in their true light, and the "patent-medicine" evil is painted as it deserves. At the conclusion of his talk there is always free discussion by laymen representing the leaders of public opinion, who are ever found in sympathetic accord and ready to pledge cordial assistance in the great reform work which has been proposed.

As was noted in the Alabama news two weeks ago, Dr. McCormack received an ovation at the state capital, addressing a joint session of the General Assembly by special request. \* He also spoke before the classes of the University of Alabama and at the Y. M. C. A. while in Mobile. Last week he spoke before the General Assembly of Tennessee, and this week before the Commercial Club of Louisville. It is certainly encouraging when legislative bodies and business organizations are ready to open their doors and ears to medical men in this appreciative way.

And there can be no question of the need for far more work of this kind than any one man can do. The work is only begun if the profession and people are to reap the full fruits of organization. The people want accurate information, want to understand us, want to help us. This is demonstrated at every meeting. The quacks have misled them largely for lack of real leadership. Dr. McCormack's difficulty has been to get the profession, even the leaders and officers, to understand in advance the importance of securing full audiences of both physicians and laymen, and especially of educated, thoughtful people, at each appointment. After the meetings, when it is too late, a common exclamation is, "Why was not the community advised beforehand of the character of this address, and of the purpose of the meetings, so that every-

body could have been here?" The fact is that the work opens up an entirely new field of appreciation, honor and usefulness to the profession and to the public in every community. Above all, it brings the public and the profession together, to the decided benefit of both.

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#### GRADUATE WORK IN EUROPE FOR THE AVERAGE AMERICAN PHYSICIAN.

There is a tendency for American medical practitioners to go abroad for advanced work immediately after graduation. In some cases this step is taken purely with the view of acquiring that elusive something which we call prestige; the majority of those who go, however, really do so with the idea of deriving material benefit from thus "rounding off" their education. A contemporary<sup>1</sup> makes a timely protest against this custom, pointing out that the average American-born physician—for example, one who chooses to go to Germany—is so "steeped in American thought and American social conditions" that in the short period abroad he is unable to derive benefit from the contact with German medical science. The recent medical graduate, no matter how strongly convinced to the contrary, is seldom in a condition to know what he wants in the way of graduate instruction. To this uncertainty add foreign methods and a strange environment and it is not surprising that his brief sojourn is unprofitable. To the young physician the item of expense is invariably a large one. Most of the men who make the trip abroad do so at no small sacrifice of time and money, and it is more the pity that they get such poor returns for their investment. It is perhaps not necessary to refer to the strong temptation in the way of foreign attractions to which the neophyte is exposed. For most young men with normally developed inquisitiveness it is probably not an inconsiderable one. In fact, for the American medical graduate who feels that advanced work is necessary, the large medical centers of this country are of infinitely greater value. Medical and surgical science has reached such an advanced state in the United States that it is both unwise and unnecessary for the recent graduate to make an educational Mecca of foreign clinics. The time and money could both be expended to greater advantage by special work at one of the several high-grade medical colleges in this country or in hospital work. After a year or two of practice is the time to go abroad, if at all.

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#### ONE EFFECT OF THE FOOD AND DRUGS ACT.

The pure food law has already begun to have an effect on the illegitimate nostrum concerns. One establishment, the Lightning Medicine Company, is announced as having gone out of business with \$81,000 liabilities and practically no assets because it could not legally sell its products under the labels employed. The natural inference is that the debts must have been incurred mainly, if not altogether, for labels and advertising, the other stock in trade being worthless under its true name. A number of other "patent-medicine"

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1. Interstate Med. Jour., December, 1906, xiii, 957.



concerns have also gone out of business, according to commercial reports. There will be others, and no one need regret it except those who directly lose thereby. There is no profit to the country in establishments that are nothing but wind and advertising.

#### GOOD OUTLOOK IN NEW YORK.

During this week the annual meeting of the Medical Society of the State of New York has been in session at Albany. This is the first state meeting to be held in 1907, and the first meeting of the Medical Society of the State of New York since its reorganization. Reports received from the secretary show that the present membership numbers over 6,500, and a large increase is anticipated during this year. The secretary says in his report: "The experience of the past year has demonstrated very clearly that a large majority of the county societies are thoroughly organized, are doing excellent scientific work, and that their affairs are conducted in a business-like way." The county societies have taken up the work of investigating the county records and enforcing the registration of physicians in accordance with the state law, which makes the county society responsible for the enforcement of the law regarding registration. With a united and thoroughly purged profession, this year should bring great things to the physicians of the State of New York.

### Medical News

#### ALABAMA.

**Society Elections.**—At the annual meeting of the Etowah County Medical Society, held in Gadsden, January 3, the following officers were elected: Dr. Erasmus T. Camp, Gadsden, president; Dr. John P. Stewart, Attalla, vice-president, and Dr. Charles T. Acker, Gadsden, secretary. Dr. Eli S. Jones, Gadsden, was unanimously re-elected county health officer and censor. —At the annual meeting of the Jackson County Medical Society, held in Scottsboro, January 1, Dr. Thomas J. Bouldin, Hollywood, was elected president; Dr. Edward Boyd, Scottsboro, vice-president; Dr. Hugh Boyd, Scottsboro, health officer, and Dr. William C. Mapes, Scottsboro, censor. —The Madison County Medical Society held its annual meeting in Huntsville, January 8, and elected Dr. Benjamin E. Graham, Gurley, president; Dr. John J. Horton, Huntsville, vice-president; Dr. Edgar Rand, Huntsville, secretary; and Dr. William C. Wheeler, Huntsville, county health officer. —The annual meeting and banquet of the Mobile Medical Society was held January 5. Dr. J. Buckner Killebrew was elected president; Dr. M. Toulmin Gaines, vice-president; Dr. Neal E. Sellers, secretary; Dr. Tucker H. Frazer, president of the board of censors, and Dr. William H. Sanders, librarian.

#### ARIZONA.

**To Protect Public Health.**—The Common Council of Mesa City has passed an ordinance providing that every physician in the city who shall have a patient with typhoid fever, shall report the same to the mayor, giving the name and address of the patient, together with the source of food and water supply; that every physician shall report the name and address of each tuberculosis patient under his care; that all rooms occupied by tuberculosis patients shall be disinfected and fumigated; that it shall be unlawful for any person to spit on the sidewalk, or ground, in the town; that persons dealing in second-hand furniture shall keep a register of the purchase of such goods, and that in case they have been obtained from the room of a person ill with consumption, they shall not sell or dispose of the goods until they have obtained a certificate that the said goods have been properly disinfected and fumigated. The penalty for infraction of this ordinance are fines of from \$5 to \$50.

#### ARKANSAS.

**Health of Little Rock.**—During the 11 months ending December 1, 192 cases of contagious diseases were reported in the city, as compared with 204 cases for the previous year. The total deaths for the period were 788, or 5 less than for the corresponding period of 1905. There was a marked decrease in the cases of smallpox during the year.

**Personal.**—Drs. B. H. Galligher, Pine Bluff; O. C. Hankinson, Pine Bluff, and R. P. Wood, Altheimer, compose the health board appointed for Jefferson County. —Dr. Tyler Kennedy, Paragould, was recently kicked by a horse, sustaining a fracture of the skull.

#### DISTRICT OF COLUMBIA.

**Society Elects Officers.**—At a meeting of the Therapeutic Society of the District of Columbia, held January 12, the following officers were elected: President, Dr. Henry A. Robinson; vice-presidents, Drs. Frank Leech and Charles M. Beall; secretary, Dr. Arthur J. Hall; treasurer, Dr. John S. McLain.

**Memorial to the Late Dr. E. Oliver Belt.**—At a meeting of friends of the late Dr. E. Oliver Belt it was decided to raise a fund to provide a suitable memorial to him in the form of a free ward or bed in the Episcopal Eye, Ear and Throat Hospital, of which he was the founder.

**More Money for Hospital.**—Secretary Hitchcock has requested Congress to increase the limit of cost of construction of the new Freedmen's Hospital from \$300,000 to \$446,817. He asks an immediate appropriation of \$18,494.50 for a heating and ventilating plant, and suggests that the balance of \$160,149.50 be provided in the sundry civil appropriation bill.

**Personal.**—Dr. J. Thomas Kelley, Jr., has been appointed clinical professor of gynecology and associate professor of gynecology and abdominal surgery in Georgetown University Hospital. —Dr. Anita Newcomb McGee has received a medal from the Japanese government in recognition of the services she and her corps of American nurses rendered in the Russo-Japanese war.

#### FLORIDA.

**Plea for Coöperation.**—An address, which was characterized by the local daily press as being most interesting and instructive was given recently by Dr. J. N. McCormack at Pensacola. The need of coöperation among physicians in preventing the spread of disease and the necessity for legislative reforms in safeguarding the public health, were points brought out and strongly dwelt on. The meeting, which was held under the auspices of the Escambia County Medical Society, was well attended and much enthusiasm was manifested.

#### GEORGIA.

**Contagious Diseases.**—Smallpox is reported prevalent at Waverly Hall. —An examination of 30 cases of "fever" at Thomasville showed that 19 cases were typhoid, 10 suspected typhoid, and 11 diagnoses undecided. Eighteen cases of malaria were also found.

**Board of Health Prohibits Distribution of Medicine Samples.**—The Board of Health of Atlanta has prohibited the distribution of samples of "patent medicines" in that city. A local medicine firm presented a petition asking that it be permitted to distribute small samples to adults. A motion was made to act unfavorably on the petition, and this was amended to include all "patent medicines." The amended motion was passed unanimously.

**Societies Elect Officers.**—At the annual meeting of the Medical Association of Georgia, held in Savannah, January 8, the following officers were elected: President, Dr. M. F. Dunn, Savannah; vice-president, Dr. Jabez Jones, Savannah; recording secretary, Dr. John K. Train, Savannah; corresponding secretary, Dr. Thomas S. Clay, Savannah; librarian, Dr. J. A. Crowther, Savannah; treasurer, Dr. W. W. Owens, Savannah. —The annual banquet of the Floyd County Medical Society was held at the Cherokee Hotel, Rome, December 21. The officers for 1907 are as follows: President, Dr. W. J. Shaw, Rome; vice-president, Dr. H. H. Battey, Rome; secretary-treasurer, Dr. W. L. Funkhouser, Rome; delegate, Dr. J. W. Curry, Rome; censors, Drs. J. C. Watts, R. P. Cox, L. P. Hammond, Rome. —At a meeting of the Bibb County Medical Society, held during the first week in January, the following officers were elected: President, Dr. James T. Ross, Macon; vice-president, Dr. G. P. Gostin, Macon; secretary, Dr. J. C. McAfee, Macon.

#### ILLINOIS.

**Sanatorium for Consumptives.**—Mr. Glackin, Cook County, has introduced a bill recommended by Governor Deneen, asking for an appropriation of \$150,000 for the establishment of a state sanatorium for tuberculosis.



**Insane Hospital Condemned.**—As a result of the complaint of the president of the State Board of Charities, regarding state institutions, the State Asylum for Insane Criminals at Chester has been condemned and will be abandoned.

**Executive Officer for Charity Board.**—At a meeting of the State Board of Charities, January 18, the board adopted resolutions creating the position of executive officer and secretary of the board, to be placed in authority over all employes and agents of the board, and to whom the board delegated all executive and administrative functions not requiring the use of its discretionary powers. On the motion of Dr. McNally, Mr. William C. Graves was unanimously chosen as executive officer and secretary.

**Contagious Diseases.**—Scarlet fever is still epidemic in Evanston, Oak Park, Wilmette and Kenilworth. Six cases were reported in Elgin during the week, and seven cases have occurred in Aurora.——Influenza, scarlet fever and diphtheria are reported prevalent in Vermilion County.——Scarlet fever is alarmingly prevalent in Rock Island County. Moline has 100 cases and an unusual amount of diphtheria.——Peoria and Canton have been added to the list of towns in which smallpox exists.

**Do Not Want Names Mentioned.**—The Tazewell County Medical Society, at its meeting, January 8, adopted resolutions requesting the editors of local and Peoria papers to refrain from mentioning names of physicians in connection with cases of illness or accident.——The East St. Louis Medical Society, at a recent meeting, decided to keep a scrap book of the items from papers relating to the members of the society, and that members whose names appear in the lay publications should be notified to appear before the society and to show cause why their names have so appeared.

**Bill to Prohibit Poisonous Embalming Fluids.**—Senator Breit has introduced bills designed to prohibit the use of arsenic or strychnin in embalming fluids. One reads:

If any undertaker or other person embalms with, injects, or places on any dead human body any fluid or preparation of any kind which contains strychnin or arsenic he shall be fined not exceeding \$50 for each offense.

Another provides that:

No undertaker or other person shall embalm or inject in the dead body of any person any fluid or preparation of any kind before obtaining permission from the coroner when such body is the subject of a coroner's inquest. A violation of the foregoing section shall be punished by a fine not exceeding \$50.

**Arrangements for State Meeting.**—The arrangements for the annual meeting of the Illinois Medical Society at Rockford, May 22, are in the hands of Dr. T. H. Culhane, Rockford, chairman of the general committee on arrangements; Dr. S. R. Catlin, Rockford, treasurer, and Dr. J. E. Allaben, Rockford, secretary. Dr. Daniel Lichty, Rockford, is chairman of the committee on entertainment; Dr. W. R. Fringer, Rockford, chairman of the committee on entertainment for ladies; Dr. W. B. Helm, Rockford, chairman of the committee on transportation; Dr. C. S. Winn, Rockford, chairman of the committee on exhibits, and Dr. Paul L. Markley, Rockford, of the committee on buildings.

**Hygienic Reform Needed.**—Dr. Frank Billings, president of the State Board of Charities, in an address to the members of the legislature January 17, called attention to the necessity of provision for the care of epileptics and others afflicted with tuberculosis. He declared that criminals sent to Joliet are thereby virtually condemned to death, and that nearly all the convicts sent to Joliet, who serve their sentences, are discharged with tuberculosis. He stated that an appropriation of \$265,000 should be made for the purchase of land and construction of buildings for a colony for epileptics. He also declared that every insane asylum in the state should install appliances for hydrotherapeutic treatment. He said that \$730,000 would be necessary to rehabilitate the state penal and charitable institutions.

#### Chicago.

**Conviction in Cocain Cases.**—The first of nine suits brought against Paul and Frank Zito, druggists, for the illegal sale of cocain, was decided against the defendants, who are reported to have been fined \$500, January 15.

**Chicago Medical Examiners' Association Elects Officers.**—At a meeting held January 21 this association endorsed the action of the Committee on Medical Legislation of the American Medical Association, in advocating the establishment of a national department of health. The following officers were elected: President, Dr. J. M. Patton; secretary, Dr. E. Eisenstadt; treasurer, Dr. Ulysses Grim.

**Hospital Notes.**—On January 16, in an injunction suit by the Chicago Union Hospital against the city, the right of the city to regulate the location of private hospitals was upheld.——During 1906 2,955 ill and injured persons were given care at the Alexian Brothers' Hospital. In addition treatment was given to 3,050 patients in the sanitarium adjoining the hospital. It is reported that work will begin in April on the front wing of the hospital.

**Scarlet Fever and Diphtheria Epidemic.**—During the week ended January 26, 295 cases of scarlet fever and 1,005 cases of diphtheria were reported to the department of health. The contagious ward in the Cook County Hospital is crowded to the limit of its capacity. The health department states that it has found the scarlet fever to be in part due to unclean returned milk bottles and to the handling of milk by infected individuals. As a result of inspection many dairies have been closed. Many schools have been fumigated and the street railway companies have been induced to agree to fumigate the street cars.——Tonsillitis and other forms of sore throat are exceedingly prevalent.——Physicians all over the city and suburbs are reported very much overworked because of the unusual amount of sickness.——Several cases of measles are reported from Maywood.——Sixteen deaths from pneumonia were reported to the health department January 21.

#### INDIAN TERRITORY.

**Society Meeting.**—At the meeting of the Tenth Recording District Medical Society, held in Muskogee, December 10, Dr. I. B. Oldham was elected president; Dr. A. B. Montgomery, Checotah, vice-president; Dr. P. P. Nesbit, secretary; Dr. J. H. White, treasurer; Drs. C. W. Heitzman and S. Hoss, delegates to the Oklahoma State Association, and Dr. C. E. DeGroot, censor.

**Hospital Notes.**—Articles of incorporation have been issued to the Tulsa Hospital Association, with a capital stock of \$40,000. The following are the officers of the association: President, Dr. Fred S. Clinton, Tulsa; vice-president, Dr. J. A. McAlester, Sapulpa; secretary, Dr. C. L. Reeder, Tulsa.——Steps are being taken in Ardmore to form a stock company, with a capital stock of from \$10,000 to \$15,000, to erect a three-story building for a hospital.

#### KENTUCKY.

**Typhoid Epidemic.**—A typhoid epidemic is reported in the extreme southern part of Bath County.

**City Hospital Staff.**—The staff of the Louisville City Hospital met January 15, and formally organized. Dr. Irvin Abell was elected president, Dr. J. K. Freeman, vice-president, and Dr. H. Clendenin, secretary. An effort will be made to obtain a modern morgue for the hospital.

**Society Elections.**—The forty-fourth annual meeting of the Kentucky Midland Medical Society was held at Lexington, January 10-11. The following officers were elected: President, Dr. C. W. Kavanaugh, Lawrenceburg; vice-president, Dr. N. M. Garrett, Frankfort; secretary and treasurer, Dr. George P. Sprague, Lexington.

#### MARYLAND.

**Subscriptions to University Endowment Fund.**—At a mass-meeting of alumni of the University of Maryland, held January 22, \$7,000 was subscribed to the endowment fund. About 500 alumni were present.

**Smallpox Epidemic.**—Smallpox is said to be prevalent in the lower part of Kent County, Eastern Shore. Nine cases were reported January 19, six patients being white and three colored. For a time the diagnosis was chicken-pox. There is another case of smallpox at Lansdowne, Baltimore County.

**College Merger.**—The contract of agreement between the board of regents of the University of Maryland and the board of visitors and governors of St. John's College, Annapolis, has been signed and the two institutions merged. It provides for a council, which is to have charge of the curriculum and general policy and management of the merged schools.

#### Baltimore.

**Hebrew Hospital News.**—At the Hebrew Hospital Dispensary, Baltimore, 6,645 patients were treated during the year; 1,396 visits were paid to patients' homes; \$3,400 were received during the year in legacies and donations.

**Society Disbanded.**—The Baltimore Medical and Surgical Association, the oldest local medical society in the city, suspended its career with the annual meeting held on January 14. Lack of interest in the meetings and work of the association prompted the members to disband. The failure was attributed



to the great number of medical associations. It was organized shortly after the Civil War.

**Vital Statistics.**—During the week ended January 26 there were 239 deaths in Baltimore, an unusually large number. There were 39 from pneumonia, 33 from tuberculosis and 8 from influenza. The annual death rate per 1,000 was 20.89; white, 17.52; colored, 38.71.

**Personal.**—Dr. J. C. Bloodgood has bought a residence on North Charles Street for \$20,000.—Dr. Charles P. Emerson, resident physician of the Johns Hopkins Hospital, delivered an address at the Catonsville Presbyterian church, January 27, on "Christ for the Student and Scholar."

**Hospital Report.**—The annual report of the South Baltimore Eye, Ear, Nose and Throat Hospital states that the number of patients treated was 1,878, of whom 1,797 were white and 81 colored. There were 7,370 visits to the dispensary. Five hundred operations were performed. The number of house patients was 86.

### MASSACHUSETTS.

**Personal.**—Dr. Daniel R. Brown, Salem, is recovering from serious injuries recently received in an accident.

**Boston Death Rate.**—Boston's reported deaths in 1906 were 11,412, or 405 more than in 1905, and an average rate of 18.94. Scarlet fever and typhoid decreased, while measles and diphtheria slightly increased. Diphtheria caused 149 deaths, scarlet fever 39, measles 72 and typhoid 116.

**New Hospital for Soldiers' Home.**—The Soldiers' Home, Chelsea, is to have a new hospital to cost \$175,000. It will be 232 x 101 feet, will consist of three stories and a basement, and is to be built of brick and stone. Six wards of 22 beds each have as special features spacious sun rooms and sun piazzas. All the other details of a modern hospital will make this one of the finest of its kind in the United States.

**Investigation of Barber Shops.**—The State Board of Health reports to the Senate that on its investigation of barber shops, 1,300 shops studied, 68.7 per cent. were in fair condition, 23 per cent. better, and 1 per cent. ideal. No evidence of the direct transference of disease was found in any case, but numerous opportunities were detected. These may all be removed by strict personal cleanliness of the barbers, supplemented by scalding of shaving utensils immediately before using.

**Petitions Introduced in the Legislature.**—Many matters of medical interest have been made the subjects of petitions introduced in the present session of the Massachusetts legislature. Among them is one to provide that milk which on analysis is found to contain less than 12 per cent. of milk solids, or less than 9 per cent. of milk solids exclusive of fats, or less than 3 per cent. of fat, shall not be considered milk of good standard. Another from the special commission on tuberculosis, of which Dr. Henry P. Walcott is chairman, provides that tuberculosis be made a reportable disease and that the state shall erect three hospitals for the treatment of tuberculosis, especially of patients in advanced stages of the disease. Another bill in regard to vaccination is presented because "registered" physicians have openly advertised in the newspapers and otherwise that no person is a fit subject for vaccination, and that they will give certificates to that effect to all applicants. In some towns hundreds of persons have availed themselves of this opportunity to evade the law and at the same time to comply with it. It is the intention of the bill to correct this fraud. A fourth bill seeks to eliminate Christian science by defining a practitioner of medicine.

**Springfield Academy Formed.**—For the past two months a committee, consisting of Drs. W. A. Smith, A. O. Squier and V. J. Irwin of Springfield, O. W. Cobb of Easthampton and J. W. Hannum of Ludlow, has been perfecting plans for the organization of the Springfield Academy of Medicine. Thirty-eight physicians from Springfield, Holyoke, Chicopee, Northampton, Easthampton, Palmer, Monson and Pittsfield met in Springfield, January 24, and ratified the work of the committee by adopting the constitution and by-laws as prepared, and elected the following officers: Temporary chairman, V. J. Irwin; temporary clerk, G. H. Finch; president, J. A. Houston of Northampton; first vice-president, R. H. Seelye; second vice-president, A. O. Squier; secretary, W. R. Weiser; treasurer, W. H. Van Allen; directors, O. W. Cobb of Easthampton, J. W. Hannum of Ludlow, V. J. Irwin, W. A. Smith, F. W. Chapin, E. H. Guild, C. H. Calkins; censors, J. B. Comins, T. S. Bacon, F. B. Sweet, J. E. Marsh, F. S. Ward, J. B. Atwater of Westfield, R. A. Dickson of Holyoke. The capital stock will be \$50,000, at \$10 per share, and not more than 10 shares will be issued to any one physician. Membership is limited to

graduate and resident physicians of reputable schools. Associate members, not stockholders, will be allowed to the number of 50. Five or more members may form a section for special work in any branch of medicine. The directors are preparing to secure a charter and funds for a building. Already \$10,000 has been promised.

### MICHIGAN.

**Bequest.**—By the will of the late Frederick Stearns of Detroit the Children's Free Hospital of that city receives \$1,000.

**Death of Frederick Stearns.**—Frederick Stearns, Sr., founder of the firm of Frederick Stearns & Co., manufacturing pharmacists, Detroit, died in Savannah, Ga., January 13, of pneumonia, aged 75.

**Medical Examination of School Children.**—At a recent meeting, the Michigan State Board of Health adopted a resolution passed by the General Conference of Health Officers, in June, 1905, approving the examination of the eyes and ears of children in the public schools.

**Contagious Diseases.**—It is reported that influenza is so prevalent in the vicinity of Detroit that a number of the large companies have been considerably crippled.—In Kalamazoo there are more cases of influenza and pneumonia than usual at this season; there are also many cases of measles and chicken-pox.—An epidemic of scarlet fever is reported from Houghton and Calumet.—The epidemic of measles at Lansing is dying out.

**Personal.**—Dr. Carl S. Oakman, Detroit, has resigned his position as associate editor of the *Detroit Medical Journal* to take a corresponding position on the staff of the *Journal of the Michigan State Medical Society*.—Dr. A. L. McPhee has returned from Texas and Mexico.—Dr. Henry F. Thomas, Allegan, has been appointed surgeon at the Soldiers' Home, Grand Rapids, to succeed the late Dr. H. W. Mills.—The following medical men were elected by the board of directors of the light infantry: President, Lieut.-Col. Julius F. Henkel, brigade surgeon; vice-president, Major Vernon J. Hooper, surgeon; treasurer, Lieut. George H. Palmerlee, assistant surgeon.—Dr. Julius P. Jaeger, who formerly practiced in Detroit, is reported to be insane at a hospital at El Paso, Texas, as a result of an injury to his head received while at Juarez, Mexico. The American consul at Juarez was notified of the case and secured Dr. Jaeger's transfer to El Paso, where he was given care.—Dr. T. A. McGraw and Dr. T. A. McGraw, Jr., Detroit, have gone to St. Augustine, Fla., for convalescence.

### NEBRASKA.

**Gandy Case Reversed.**—The Supreme Court has recently reversed the order of the District Court which convicted Dr. J. L. Gandy on the charge of corrupting a witness. The evidence on which the lower court based its decision is said to have been given by a blackmailer.

### NEW JERSEY.

**Society Elections.**—At the annual meeting of the Atlantic County Medical Society the following officers were elected: President, Dr. E. C. Chew, Atlantic City; vice-president, Dr. Clyde M. Fish, Pleasantville; secretary and treasurer, Dr. W. F. Ridgway, Atlantic City; censor (for three years), Dr. Edward A. Reiley, Atlantic City; reporter, Dr. A. B. Shimer, Atlantic City.—The Atlantic City Academy of Medicine has elected the following officers: President, Dr. E. H. Harvey; vice-president, Dr. Walt Ponder Conaway; treasurer, Dr. Thomas G. Dunlap; secretary, Dr. W. A. Hickman.

### NEW YORK.

**Hospital Dedicated.**—The Ossining Hospital was dedicated January 23. The building, which cost \$100,000, was erected in memory of Helen Ward Potter by her husband, Frederick Potter, and his two sisters.

**College Alumni Dine.**—The twelfth annual dinner of the Albany Medical College Alumni Association was held at the Hotel Marlborough, New York City, January 24. Among the speakers were Dr. Raymond, president of Union College; Dr. Joseph D. Bryant, President of the American Medical Association; Dr. A. Vander Veer, regent of the University of the State of New York, and Dr. George Franklin Shiels.

**Bills Before the Legislature.**—A bill providing that no apprentice or employé of a drug store shall be allowed to prepare or to dispense prescriptions except in the presence of and under the personal supervision of a licensed pharmacist or druggist. They are not to sell medicines or poisons unless these have been prepared for sale. The attorney general is to institute all actions for the recovery of penalties.—A board of midwifery is provided for by a bill introduced by Assemblyman Gluck. The New York City health commissioner is



to appoint the board, which is to license all who wish to practice as midwives, after examining the applicants as to their fitness.—A bill regulating the practice of osteopathy, which is in the form of an amendment to the public health law and drawn to meet the objections made against a similar bill introduced last year, has been presented to the legislature. It provides "that no person shall practice osteopathy or advertise himself to hold out as practicing osteopathy after July 1, 1908, unless previously duly licensed by the regents and registered. Osteopaths, when duly authorized and registered in accordance with this bill, shall not be authorized to prescribe drugs or to perform surgery, but the practice of osteopathy as defined shall not be considered the practice of surgery."

**Ruling on Defective Death Certificates.**—Dr. Eugene H. Porter, state commissioner of health, has sent out notices to physicians, coroners and undertakers, that registrars of vital statistics, justices of the peace or other officers designated to receive death certificates and to issue burial permits are instructed by the department of health to refuse to accept, after Jan. 1, 1907, or to issue a burial certificate, or a death certificate that is defective in any one or more, of the following details:

1. If there is omission of any information asked for on the certificate.
2. If not written throughout in black ink. The use of rubber name stamps, black lead or indelible pencils is unsatisfactory on a public document.
3. If mutilated, illegible and inaccurate.
4. If there is erasure, interlining, correction or alteration of anything printed or written on the certificate. If a mistake is made another form should be filled out correctly.
5. If the stated cause of death is unsatisfactory or calls for additional information.

**The New York State Laboratories.**—New York State Department of Health conducts four departments for laboratory work: The State Hygienic Laboratory, Albany, in charge of Dr. H. D. Pease and subsidiary to the sewage experimental station at Saratoga; the Cancer Laboratory, Buffalo, in charge of Dr. H. R. Gaylord, and the Bender Laboratory, Albany in charge of Dr. R. M. Pearce. At the State Hygienic Laboratory are prepared the diphtheria and tetanus antitoxins supplied to health officers by the department for use in cases in which these otherwise could not be obtained; here also are made the examinations of suspected sputa for tubercle bacilli, and of nose and throat discharges for diphtheria bacilli; here, too, are conducted the examinations into the purity of specimens of water, food, etc. The cancer laboratory is devoted exclusively to investigations into the etiology of malignant growths. The Bender Laboratory is used in connection with the Sanitary Institute for didactic lectures and laboratory work in the various courses of instruction for health officers and for special investigations.

**The New York State Meeting.**—Telegraphic reports received from the annual meeting of the Medical Society of the State of New York, held at Albany, January 29 and 30, indicate that the meeting was one of the most successful ever held. The house of delegates discussed the insurance question and instructed the president to appoint a committee to consider the matter. The report of the publication committee, which was unanimously adopted, included recommendations, that the publication of the *New York State Journal of Medicine* and of the Medical Directory be continued and that the protection to members against malpractice and damage suits be also continued, and that the council of the society be instructed to accept no business advertisements of a medical character which do not conform with the rules and requirements adopted by the committee on publication. The report of the secretary showed 5,897 members on Dec. 31, 1906. New members received since January 1 have increased the membership to 5,957. The following officers were elected: President, Dr. F. C. Curtis, Albany; vice-presidents, Drs. Julius Bierwirth, Brooklyn; Edward Torrey, Alleghany, and N. G. Richmond, Fredonia; secretary, Dr. Wisner R. Townsend, New York City; treasurer, Dr. Alexander Lambert, New York City; delegates to the American Medical Association, Drs. D. C. Moriarta, Saratoga Springs; E. H. Bartley, Brooklyn; W. S. Ely, Rochester; A. T. Bristow, Brooklyn, Roswell Park, Buffalo; H. L. Elsner, Syracuse; H. D. Wey, Elmira.

#### Buffalo.

**Measles.**—Measles are at present very prevalent in Buffalo.

**Personal.**—Dr. Charles G. Stockton has sailed for Europe. —Dr. Charles Van Bergen is in New York.

**City Physicians Can Not Charge Fee.**—According to a decision of the corporation counsel, no city physician can make

a charge when called to treat patients in the various police stations of the city.

**Dinner to Dr. Wende.**—The Æsculapian club, composed of medical practitioners, is to tender a complimentary dinner to Dr. Ernest Wende, the efficient health commissioner, who has just been appointed to his fourth term in office.

**Medical Inspection of Schools.**—Under the direction of the health commissioner, Dr. Ernest Wende, and the superintendent of education, Henry P. Emerson, the charity organizations of Buffalo will undertake the medical inspection of public school children, as it is now carried out in New York City. An opinion has been asked by Secretary Almy of the corporation counsel, to ascertain what protection the physicians who are to examine the school children will have in case actions are brought against them by parents who may object to treatment of their children by the physicians in question. In New York City, when this system of inspection was attempted some months ago, there were race riots on the east side of the city, particularly in the Jewish sections.

**Abortionist Sentenced.**—Dr. William W. Turver, who is reported to have conducted "maternity" institutions in Buffalo for many years, has been adjudged guilty of performing a criminal operation, and sentenced to Auburn State Prison for from fifteen to twenty-seven months. The trial disclosed the fact that the operation was performed on a Philadelphia woman, who saw the advertisement in a paper in Atlantic City. The first trial resulted in a disagreement after the jury was out for many hours, and the jury deliberated ten and one-half hours in this case. The profession should be grateful to the board of censors of the Erie County Medical Society, of which Dr. Henry R. Hopkins is chairman, for their successful crusade on fakers and abortionists. Through their efforts the city has been made too hot for the nefarious business.

#### New York City.

**Public Lecture Series.**—At the second meeting of the public lecture series, held at the Academy of Medicine, January 31, addresses were delivered on the following subjects: "The Risks and Safeguards of Public Milk Supplies," Dr. Rowland G. Freeman; "The Milk Work of the Department of Health," Dr. Thomas Darlington; "How Can the Layman Coöperate?" William H. Allen.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended January 19, 450 cases of tuberculosis, with 181 deaths; 313 cases of diphtheria, with 37 deaths; 239 cases of scarlet fever, with 9 deaths; 186 cases of measles, with 6 deaths; 68 cases of whooping-cough, with 9 deaths; 34 cases of typhoid fever, with 12 deaths; 16 cases of cerebrospinal meningitis, with 9 deaths, and 125 cases of varicella, a total of 1,431 cases and 263 deaths.

**Report of Mount Sinai Hospital.**—At the annual meeting of the directors of this institution President Isaac Wallach, who has served for 30 years, refused to be re-elected and Isaac Stern was elected in his place. The report showed that while the work of the hospital had largely increased during 1906 there was a deficit at the end of the year. The total receipts of the year from all sources were \$347,859 and the disbursements \$356,720, which left a deficit of \$8,860.

**Work of Diet Kitchens.**—At the annual meeting of the New York Diet Kitchen Association, which furnishes free milk and eggs to the sick poor, it was reported that the association maintains seven kitchens in different parts of the city. During the last 10 months more than 216,000 quarts of milk and 84,000 eggs have been dispensed on requisitions signed by dispensary and other physicians. Dr. Darlington addressed the association on some phases of the city's milk supply problem.

**Public Lectures on Problems of Insanity.**—The second lecture of this series arranged by the Psychiatric Society is by Dr. August Hoch of Bloomingdale Hospital, at the Academy of Medicine, Feb. 2, 1907, at 8:30 p. m., on "The Manageable Causes of Insanity," concerning which Dr. Hoch will present the modern facts and views. The aim of these lectures is to arouse in the public a sound interest in questions of mental hygiene, and all who are interested in sociologic work are invited to be present.

**For Charity.**—Commander Robert Edwin Peary lectured at the Hudson Theater on January 25 for the benefit of the Darrach Home for Crippled Children. The purpose of this lecture will be the support of one child in the home.—Edward T. Devine, secretary of the Charity Organization Society, lectured before the Central Federated Union on the subject of tuberculosis and its prevention. He gave the rules of the soci-



ety and of the board of health.—Dr. James J. Walsh will give a series of six lectures an "Some Women Who Did," for the benefit of the cancerous poor in the Homes of the Servants of Relief.—At the seventeenth annual German charity ball \$12,000 was raised, which will go to the German Hospital and Dispensary, St. Mark's Hospital, the German Polyklinik and several other charities.

### OHIO.

**Jewish Hospital Addition Opened.**—The Jewish Hospital of Cincinnati has opened its new addition and is now ready for increased business.

**Personal.**—Dr. H. A. Rodebaugh has resigned as superintendent of Park View Sanatorium, Columbus, so as to devote his time to the treatment of nervous cases, not insane.—Dr. George M. Waters, dean of Ohio Medical University, Columbus, has returned from a six months' sojourn in Vienna.

**Semicentennial of Society.**—The Cincinnati Academy of Medicine on March 18 will celebrate the semi-centennial anniversary of its existence. Dr. Byron Stanton, a charter member, will deliver an address, as will also Drs. A. G. Drury and N. P. Dandridge. The academy is the largest and most influential medical society in Cincinnati. About 30 years ago there was dissension and the Cincinnati Medical Society was formed. The differences, however, were happily adjusted about 15 years ago and the two societies were brought together.

### PENNSYLVANIA.

**Smallpox.**—Dr. S. P. Hakes, health officer of Tioga, has established quarantine regulations for smallpox in Wells township, near the Bradford County line. There are said to be 23 cases in the vicinity. The schools have been closed and it is believed that the disease has been running so long that the worst is over.

**Coroner's Report.**—The report of the coroner of Allegheny County for 1906 shows that 2,660 deaths were reported, an increase of 559 cases as compared with 1905. During the year 74 murders were reported and 151 suicides. Automobile accidents were responsible for 6 fatalities; 75 persons were killed by street cars; 162 by falls; 110 died from accidents in mines; 220 were killed in mills, and 371 by railway accidents.

**Principles of a New Pure Food and Drug Law.**—Representatives of the retail and wholesale drug trade from all over the state as well as many members of the medical profession at a recent conference at the College of Pharmacy adopted resolutions as to the principles which should be contained in a new pure drug law for Pennsylvania. In many respects the proposed law will be modeled after the national law which has just gone into effect, but it will go further than that in its efforts to guard more effectually the public health and to discriminate against unscrupulous dealers and manufacturers and their methods.

The resolutions were as follows:

WHEREAS, The manufacture or the sale of impure or adulterated drugs, medicines and liquors is fraught with harm to the community and is inimical to the public health, and

WHEREAS, The Senate and House of Representatives of the United States of America in Congress assembled have enacted a law "for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein; and

WHEREAS, To obviate unnecessary complications and to facilitate the enforcement of the federal law officially designated "The Food and Drugs Act, June 30, 1906," it is desirable that the fundamental principles that are involved be adopted and indorsed by the individual states; Now, therefore be it

*Resolved*, That we, representatives and members of medical and pharmaceutical associations in the state of Pennsylvania in meeting assembled, recognize the value and importance of rational laws to govern the sale of foods and drugs, and to prevent their adulteration and harmful sophistication; be it further

*Resolved*, That we endorse the fundamental principles of the federal Food and Drugs Act, and that we recommend the enactment of a measure by the legislature of Pennsylvania similar to that law with the exception named in the next resolution; be it further

*Resolved*, That we recommend that such a state law be devoid of all unnecessary and vexatious restrictions, and that the preparations of the United States Pharmacopoeia and of the National Formulary when sold for medicinal use, and the prescriptions of duly licensed physicians when dispensed and kept on file by a regular licensed pharmacist, be exempt from the provisions of the clause requiring specific labels.

### Philadelphia.

**Stetson Hospital.**—During December 1,711 clinic patients were treated at this hospital. The associate board of women connected with the hospital is perfecting plans for a bazar to be given in February in aid of the hospital work.

**Vital Statistics.**—A light falling off in typhoid fever is shown by the records of the week published by the bureau of health. Seventy-one new cases have been reported, making the

aggregate for the week 374 cases. During the previous week there were 381 cases. The bulk of the new cases are in the northeastern and northwestern sections of the city.

**Report of German Hospital.**—According to the report of the treasurer of the German Hospital the close of the year shows a deficit of \$11,000. It was shown, however, that this was more than covered by state appropriations. Among the most important undertakings of the year was the building of the Nurses' Home, which is practically completed; the cost was \$35,000.

**Tablet in Honor of Dr. Wood.**—The new neighborhood house erected by the University of Pennsylvania Christian Association was formally opened last week. A feature of the program was the unveiling of the brass tablet in honor of Dr. Horatio C. Wood, which was presented by several of his admirers among the medical men of Philadelphia in recognition of his services to the institution.

**Hydrotherapeutic Apparatus for Insane Hospital.**—Apparatus for administering hydrotherapeutic treatment to the inmates of the Philadelphia Hospital for the Insane is being installed, and it is hoped that it will soon be ready for use. Director Coplin has given the water-cure treatment much study, and several months ago the council made provision for the installation of the necessary apparatus.

**Bequests.**—Anna C. Griffith has bequeathed \$2,000 to the children's medical ward of the Medico-Chirurgical Hospital; \$1,000 to St. Clement's Seashore Home, and \$2,000 to the Children's Aid Society.—Louis Vanuxem has bequeathed \$25,000 to the Jefferson Hospital.—In accordance with the will of Miss Harriett Richards, who died 10 years ago, her executor donated \$5,000 for a free bed in St. Joseph's Hospital; a like sum was recently given to St. Mary's Hospital.

**University News.**—At its January meeting the board of trustees of the University of Pennsylvania approved the recommendation of the medical counsel to increase the requirements for admission to the medical school. According to the plan finally adopted, the requirements will be increased gradually, beginning in 1908 and reaching the maximum in 1910, when two years of collegiate training plus a certain knowledge of biology, chemistry and physics will be required.—The new wing which was recently added to the Maternity Hospital of the University of Pennsylvania has enabled the board of directors to add sun parlors to the nursery and also to the maternity ward, besides giving considerable more space to each of those departments. The new wing is the gift of Mrs. Benjamin F. Clyde of Bryn Mawr, Pa. It is constructed of brick and consists of two stories and basement, and in design it conforms to the original building, which is a simple form of the renaissance. The basement under the new wing contains a heating and ventilating plant and a complete system by which all heated air is filtered and purified before being delivered into the rooms. The nursery and the maternity wards have been equipped with new and modern appliances and furniture.

**Society Elections.**—At a recent meeting of the Obstetrical Society of Philadelphia the following officers were elected for 1907: President, Dr. Wilmer Krusen; vice-presidents, Drs. F. Maier, G. M. Boyd; secretary, Dr. Frank Hammond; treasurer, Dr. J. W. West; curator, Dr. B. M. Anspach; counsel, Drs. Stricker Coles, L. J. Hammond, M. M. Franklin, John C. Da Costa; publication committee, Drs. William E. Parke, Theodore A. Erck, Stricker Coles, John G. Clark; library committee, Drs. Daniel Longaker and William R. Nicholson.—The Pathological Society of Philadelphia has elected the following officers for 1907: President, Dr. William L. M. Coplin; vice-presidents, Drs. Joseph McFarland, Allan J. Smith, M. P. Ravenel and H. M. Fussel; secretary, Dr. Albert C. Francine; treasurer, Dr. C. Y. White; recorder, Dr. David L. Edsall; curator, Dr. Frank A. Craig; committee on membership, Drs. W. T. Cummins, A. G. Ellis, W. E. Robertson; committee on publication, Drs. David Riesman, A. O. J. Kelly and Joseph McFarland; committee of morbid growths, Drs. M. L. Rosenberger, J. P. Muller, A. A. Eshner, J. Dutton Steele; business committee, Drs. David Riesman, David L. Edsall, W. T. Longcope, Joseph McFarland and J. Dutton Steele.—At the last regular meeting of the Northern Medical Association of Philadelphia the following officers were elected: President, Dr. Samuel H. Brown; vice-president, Dr. Herman A. Brav; corresponding secretary, Dr. Thomas R. Currie; recording secretary, Dr. R. E. Schrom; treasurer, Dr. John W. Millick; librarian, Dr. Robert J. Hess; censor, Dr. H. B. Nightingale.

### Pittsburg.

**Hospital Opened After Seven Years' Delay.**—St. Margaret's Hospital, erected seven years ago by John H. Shoenberger as a memorial to his wife, is about to be opened. The trustees have at last realized a sufficient sum from the real estate in



their care to pay for maintenance of the institution. The hospital will have about 150 beds, 20 of which will be reserved for people suffering with incurable disease.

**Asks Appropriation for Inspector and Nurses.**—Dr. J. F. Edwards, superintendent of the Pittsburg Bureau of Health, has asked an appropriation of \$15,000 to pay the salary of thirty medical inspectors; \$3,600 to pay the salaries of four nurses and \$1,000 to pay the salary of one head nurse.

**Druggists Ask Coöperation of Physicians.**—The Western Pennsylvania Retail Druggists' Association has sent a circular letter to the physicians of this city and Allegheny, asking them to unite with the association restricting, so far as possible, unethical prescription writing. To this end they have issued a list giving the Pharmacopeial and National Formulary preparations, which may be substituted, by the physicians, for proprietary preparations of secret formula.

**Typhoid Epidemic Every Year.**—Statements are widely current in the press that this city is at present in the throes of an epidemic of typhoid fever. Dr. E. G. Matson, city bacteriologist, is reported as saying that this is only true in the sense in which it has been true for at least 34 years. About the middle of July, 1906, he declares, the Bureau of Health began to warn the people against the public water supply, and under a new management has also done a great deal to urge the prompt report by physicians of epidemic diseases. As a result of this change, the physicians who reported 9.2 cases for each death during the first half of this year now report 18.4 for each death. This has involved a considerable increase in number of cases reported, which gives the city the appearance of suffering from a temporary epidemic of typhoid fever. In reality, reported cases are slightly more numerous the last half of the year, while deaths were almost twice as numerous in the first half of the year. The tendency to report cases more fully than hitherto began abruptly with the third week in July and has been maintained ever since.

#### TENNESSEE.

**Society Elections.**—The Rutherford County Medical Society met at Murfreesboro, December 5, and elected Dr. William C. Bilbro, Murfreesboro, president; Dr. Harry C. Rees, Murfreesboro, vice-president; Dr. Rufus Pitts, Murfreesboro, secretary-treasurer; Dr. James B. Murfree, Sr., Murfreesboro, delegate to the state medical association; Dr. Enoch H. Jones, Murfreesboro, alternate, and Dr. George W. Crosssthaite, Florence, censor. At the meeting of the society, December 19, the committee appointed for the purpose, made a report requesting that each practitioner of medicine in the county make a schedule of prices for his services in each community or district of the county, and pledge himself to abide by this schedule, and deprecating any cutting of prices.—The Dyer County Medical Society held a meeting at Newbern, December 6, and elected the following officers: Dr. Robert A. Burke, Dyersburg, president; Drs. C. B. A. Turner and Edward T. Haskins, Tatumville, vice-presidents; Dr. A. F. Cooper, Dyersburg, secretary, and Dr. William P. Watson, Dyersburg, treasurer.—At the meeting of the Humphreys County Medical Society, held in Waverly, December 17, Dr. William W. Slayden, Waverly, was elected president; Dr. James T. Cooley, Plant, vice-president, and Dr. James J. Teas, Bakerville, secretary-treasurer.—The Chattanooga Medical Society held its annual meeting January 4 and elected the following officers: Dr. George R. West, president; Dr. Hiller P. Larimore, vice-president; Dr. James H. Atlee, secretary, and Dr. Samuel Yarnell, treasurer.

#### TEXAS.

**Society Elections.**—The Hunt County Medical Society held its annual meeting at Greenville, December 18, and elected the following officers: President, Dr. A. B. Moore, Neyland; vice-president, Dr. A. S. McBride, Lone Oak, and secretary-treasurer, Dr. D. Richard Waddle, Greenville.—At the annual meeting of the Navarro County Medical Society, held in Corsicana, December 18, Dr. William T. Shell, Corsicana, was elected president; Dr. David B. Currie, Kerens, vice-president; Dr. Thomas V. Fryar, Corsicana, secretary; Dr. Homer B. Jester, Corsicana, treasurer, and Drs. Thomas A. Miller and Leslie E. Kelton, Corsicana, and Dr. Jere. P. Worsham, King Willow, censors.—The Colorado County Medical Society held its annual election at Columbus, December 26, with the following result: Dr. R. H. Harrison, Jr., Columbus, president; Dr. Charles A. Williamson, Columbus, vice-president, and Dr. G. A. Foote, Rock Island, secretary-treasurer.—At the annual meeting of the Jefferson County Medical Society, held in Beaumont, December 18, Dr. Henry A. Barr was elected president; Dr. Abner A. Bailey, vice-president; Dr. Robert R. Sullivan, secretary-treasurer and delegate to the state association; Dr.

Henry A. Barr, alternate, and Dr. William T. Williams, censor, all of Beaumont.—The officers of the Webb County Medical Society met at Laredo, December 22, and elected the following officers: Dr. A. W. Wilcox, president; Dr. William W. MacGregor, vice-president; Dr. Edmond H. Souvignet, secretary-treasurer; Dr. Henry J. Hamilton, censor; Dr. John T. Halsell, delegate to the state association, and Dr. Willis E. Lowry, alternate, all of Laredo.—The Limestone County Medical Society held its annual meeting at Mexia, January 3, and elected Dr. Blalock, Thornton, president; Dr. Thomas F. Oates, Mexia, vice-president; Dr. Stone, secretary and treasurer, and Dr. Reuben B. Jackson, Mexia, delegate to the state association.

#### UTAH.

**Society Elects Officers.**—The annual meeting of the Ogden Medical Association was held January 16, and the following officers were elected: President Dr. Ezra Rich; vice-president, Dr. J. S. Gordon; secretary, Dr. E. H. Smith; treasurer, Dr. W. J. Browning.

**Smallpox Epidemic.**—It is reported that smallpox is alarmingly prevalent in Emery County, and that many of the schools have been closed indefinitely pending the outcome of the situation. There are also many cases of scarlet fever and measles in the same locality.

**State Medical Society Asks for Legislation.**—The Utah State Medical Society, at a meeting held in Salt Lake City, January 16, decided to recommend to the legislature that laws should be enacted prohibiting the marriage of first cousins, persons having infectious diseases, imbeciles, epileptics and other defectives; granting to the State Board of Health power to revoke the license of any physician found guilty of performing criminal operations; and an act allowing the University medical school to secure the bodies of criminals and paupers for anatomical purposes. The bill in regard to marriage, proposed by Dr. Beatty, secretary of the State Board of Health, is to be framed after the Indiana law.

**Prevention of Infectious Diseases Among Children.**—Dr. T. B. Beatty, secretary of the State Board of Health, in an address to the principals of the Salt Lake City public schools, dealt with the need of legislative measures for the prevention of disease in the schools. He called attention to the fact that many pupils who appear dull and listless in school are, in reality, bright children; the apparent mental deficiency being due to defects in sight and hearing. He also spoke of adenoids, which may affect both eyes and ears. He emphasized the necessity for inculcating into the minds of the children of to-day the fundamental facts regarding the cause and prevention of disease in order that they may in time become able to cope successfully with the insanitary conditions which breed disease. Dr. Beatty spoke also of the need for a school for the feeble-minded in Utah, and said that teachers should take a census of such pupils attending the public schools.

**Proposed Medical Practice Act.**—A new medical practice act is before the Utah legislature which differs in several material points from the one at present on the statute books. The proposed bill defines a medical college in "good standing" as one in which the requirements are in no particular less than those prescribed by the Association of American Medical Colleges. Reciprocity is provided for, it being a prerequisite that the applicant's license was obtained in a state where the requirements were equal to those of Utah at the time such license was granted. In the section defining the practice of medicine, the bill exempt those "who heal only by spiritual means without pretending to have a knowledge of the science of medicine." This concession has been granted by the framers of the new bill because previous opposition on the part of the Mormon church and the Eddyites have made the passage of an up-to-date medical practice act an impossibility. Healing the sick by spiritual means is one of the tenets of the Mormon faith, whose adherents are said to comprise fully two-thirds of the inhabitants of the state, and it was feared that any bill which ran counter to the teachings of that church would be killed.

**County Medical Society Meeting.**—At the annual meeting of the Utah County Medical Society, held in Provo, December 26, the following officers, who had held over from last May, were re-elected under the provisions of the new constitution and by-laws: Dr. Robert E. Steele, Lehi, president; Dr. George E. Robison, Provo, vice-president; Dr. Frederic Clift, Provo, secretary and treasurer; Drs. David Westwood, John W. Aird and Fred W. Taylor, all of Provo, were re-elected as censors. Drs. George E. Robison, Provo; Fred W. Taylor, Provo; J. Franklin Noyes, American Fork; and Frederick D. Dunn, Springville, were elected as delegates to the state



association, with Drs. John W. Aird, Provo; James M. Henry, Payson; Robert E. Steele, Lehi; and Heber E. Robinson, American Fork, as alternates. The committee on medical legislation endorsed the pure food law; the enactment of a law similar to that now in force in North Dakota, regulating the sale of medicines, food, etc.; the action of the State Board of Health in starting a movement for the establishment of hospitals for epileptics and the feeble minded; the enactment of a law that a receiving hospital be established for the admission of all patients in whom insanity is charged, that such patients should be detained there for at least thirty days, unless an order for their removal to the State Mental Hospital to Provo, is issued by the State Board of insanity on application of the officers in charge of the receiving hospital. The question of fees for insurance examination was also discussed and the following resolution was adopted: "This society desires to be placed on record as favoring the adoption by the state medical association, at the forthcoming special meeting, of a resolution asking all members of the profession in the state to unite in resisting the reduction in insurance examination fees and pledging its members to make no medical examination for insurance companies in the respective districts covered by county societies, except on the basis of fees determined on by the local society."

#### GENERAL.

**Professor Schott Visits the United States.**—Prof. Theodore Schott of Nauheim, Germany, is visiting this country and has lectured in Cincinnati, Boston, Chicago and elsewhere on the Schott method of treating heart diseases.

**Anglo-American Medical Association Election.**—At the annual meeting of this association, held in Vienna, the following officers were elected: President, Dr. R. P. Scholz, St. Louis, Mo.; vice-president, Dr. C. L. Simpson, Chicago; secretary and treasurer, Dr. H. H. Staeh, Berlin, Germany.

**Little Cholera in Manila.**—Dr. V. G. Heiser, chief quarantine officer, reports that a peculiarity of the few scattering cases of cholera that have occurred in Manila recently is the fact that they were found only among Japanese fishermen. There has also been a decided improvement in the cholera situation in the province of Iloilo. The rumor of the presence of the disease in Catubig, Samar, was confirmed.

**Offer Prize for Essay.**—A prize of \$100 is being offered by the Mississippi Valley Medical Association for the best essay on some medical or surgical subject. Only those are eligible who at the time of entering the competition are members in good standing of that association. All essays must be typewritten, and are to be sent to Dr. Henry Enos Tuley, 111 West Kentucky Street, Louisville, Ky., by Aug. 1, 1907.

**Laryngological, Rhinological and Otological Society.**—A meeting of the southern section of the Laryngological, Rhinological and Otological Society will be held in Louisville, at the Seelbach Hotel, February 25, under the chairmanship of Dr. J. M. Ray. A number of representative men from different parts of the country have promised papers. All nose and throat men throughout the South, whether members of the association or not, may attend the meeting.

**Missouri Valley Excursion to A. M. A. Next June.**—The Medical Society of the Missouri Valley, through its secretary, Dr. Charles Wood Fassett, St. Joseph, Mo., has already arranged for its annual excursion to the session of the American Medical Association. The attending members will go by special train over the Big Four and Chesapeake & Ohio, stopping at White Sulphur Springs, Va., and visiting the Jamestown exposition; thence by boat to Baltimore, and from there to Philadelphia and Atlantic City.

**Women Food Inspectors.**—Women may take the civil service examination as food and drug inspection chemists, to qualify for appointment in the bureau of chemistry of the Department of Agriculture, under the new national pure food law. The original announcement limited the examination both for chief inspector, at \$3,000, and for ordinary inspectors, at \$2,000, to men, leaving scientifically educated women out in the cold. The examination is scheduled for February 5 at regular examination points. The candidates will be examined in general and analytical chemistry, including the examination of foods or of drugs and translation of chemical French or German into English, and will be rated on education and experience.

**Walter Reed Army General Hospital.**—On Dec. 28, 1906, ground was broken for the new Army General Hospital to be erected in Washington, D. C. The site comprises an area of about 43 acres very advantageously located in the northern part of the city, and admirably adapted for the purpose in

view. The new hospital is to replace the old one now located at Washington Barracks, D. C. The large area of ground which has been acquired will afford suitable sites for the erection of an academic building for the Army Medical School, for barracks for the hospital corps company of instruction, and for such other buildings as may from time to time become necessary. In time of war space will also be available for a large temporary expansion to serve the purposes of a base hospital. The hospital is to be on the pavilion plan and in the colonial style of architecture. With the present appropriation of \$200,000 it is planned to erect only the central building, which, together with the administrative offices, kitchens, dining room, operating room, etc., will have a capacity for seventy-five patients. It is hoped to have here ultimately in one group a complete educational institution for the medical department of the Army including the general hospital, Army Medical School, hospital corps company of instruction, and library and museum of the surgeon general's office.

#### CANADA.

**A New Medical Journal.**—The first issue of the *Western Canada Medical Journal*, which has just been received, must commend itself to all those interested in clean medical journalism. The magazine, edited and published in Winnipeg, has been founded to fill a need long felt of a means of communication between the members of the profession in Western Canada. The advertising pages are few, but are free from objectionable matter, and in the editorial foreword the statement is made that the management is "resolved to give space to no advertisement that would not be in keeping with a high-class medical journal." The mechanical work of the publication is excellent and the reading pages are a credit to those connected with the journal.

#### FOREIGN.

**Institute for History of Medicine.**—It is reported that the Vienna university is to found an institute for the history of medicine, to be in charge of Professors Neuburger and von Töply.

**Fined for Slandering a Physician.**—A midwife at Magdeburg, Germany, was recently fined \$75 by the local court for asserting that a certain physician undertook obstetric maneuvers without disinfecting his hands sufficiently.

**Penalties for Insurance of Young Children in Belgium.**—The Belgian parliament has recently passed a law declaring annulled all contracts for the payment of a certain sum in case of death of children less than 5 years old, or in case of still-born infants. Every agent, inspector, director or solicitor of a contract of this kind shall be fined from \$5 to \$100.

**Typhoid in Ireland.**—A serious outbreak of typhoid is reported at Jordanstown, on the west side of Belfast Lough, due, it is said, to contagion by milk, while at Holywood, on the east side of the same lough, there is also a typhoid epidemic, which has been shown to be caused by permeation of the surface soil in the affected areas from sewage matter, due to defective joints in the sewers.

**Inspection of School Children in Tasmania.**—The Tasmanian government has approved of the scheme submitted by the director of education for complete medical examination of all children attending state schools. Local physicians will be appointed at Hobart and Launceston, to inspect the children and to advise the teachers, and a woman physician will be engaged as a permanent member of the education staff, to visit all schools where the services of local physicians are not available.

**To Reduce Infant Mortality.**—The city of Glasgow, Scotland, is in one respect following the example set by the mayor of Huddersfield, Eng. In one of the most densely populated parts of the city bills have been posted stating that with a view to assist in the reduction of infant mortality, the committee of the Anderston and District Health Association offers a gift of \$5 to the mother of each child born between January 1 and June 30, 1907, provided that the child survives the first year after birth.

**Medical Attendance on Physicians' Families.**—The physicians in Saxony during the last three years have made a practice of sending to the fund for the relief of aged physicians or to the widows' and orphans' fund the sum that they would have to pay for medical treatment if the attending physician charged them for his services to themselves or their families. It is sent as coming from the attending physician as a "kollegialisches Honorar-Geschenk," and the relief funds benefit annually by the practice to the amount of several hundred dollars. The practice has been found very acceptable to all parties, according to a notice in the *Cor.-Bl.* for December 15.



**School Hygiene in Turkey.**—The minister of public instruction in Turkey, according to the Constantinople correspondent of the *Lancet*, has taken energetic measures to improve the hygienic and sanitary conditions of the public schools of that city. Many schools were found to be unheated in winter, the children thus being exposed to cold and frequently suffering bitterly in consequence. Some schools also were found to be overcrowded, damp, and without proper lavatories. The inspectors and medical men whose duty it was to visit the schools and to report such conditions had neglected to do so, and they are to be dismissed and their places filled with more conscientious men.

**Festschrift for von Schrötter of Vienna.**—On February 5 a *Festschrift* is to be presented to Prof. L. von Schrötter of Vienna, the eminent internist and laryngologist, on his seventieth birthday. His principal works have been devoted to affections of the throat and chest, and to him is credited the first idea of special systematic sanatorium treatment of tuberculosis, as set forth in his work entitled "The Diseased Hospital," 1883. He is the son of the chemist who discovered amorphous phosphorus, and he was one of the first to recognize and teach the importance of laryngoscopy. He is a member of the prominent laryngologic associations of the world, and has always taken a prominent part in tuberculosis congresses, etc.

**"Biologically Thinking Physicians."**—Several years ago an association was organized in Germany for the purpose of "counteracting the present tendency of scientific medicine toward too exclusive consideration of bacteriology." The great problems of general biology are said to have been neglected owing to this one-sided tendency of late years, and the association was formed to direct attention more to pathology from a general biologic standpoint. The association does not maintain a separate organ, but physicians who are interested in the subject will receive the bibliography of the literature of this department of research if application is made to Dr. Esch of Bendorf, a. Rh., Germany, according to a notice in the *Allg. med. Ct.-Ztg.*

**International Course for Medicolegal Psychology and Psychiatry.**—A special course for jurists and physicians interested in medicolegal questions in psychiatry is to be held at Giessen, Germany, April 15-20, 1907. It is also designed for officials connected with penitentiaries, reformatories and similar institutions and also the police, who often have to deal with the mentally unbalanced. Sixteen lectures are included in the course, which is in charge of Sommer at the clinic for nervous and mental diseases. Among the subjects proposed to be treated will be the "Born Criminal," "Epilepsy as a Factor in Criminality," "Medicolegal Examination from the Psychologic Standpoint," "Psychology and Psychopathology and the Police System," etc.

**Grants by a Scottish Corporation for Medical Objects.**—The special subcommittee of the Glasgow corporation, which was appointed to deal with the various applications for grants from the "Common Good Fund," has decided to recommend the following grants: \$5,000 yearly for three years to the Royal Hospital for Sick Children, toward the cost of the proposed new hospital, on the understanding that the directors choose a site satisfactory to the finance committee of the corporation; \$2,500 yearly for three years to the Glasgow Cancer Hospital, toward the cost of the proposed extension of the hospital and research department; \$1,500 yearly for three years to Anderson's College Medical School; \$250 to the National Society for the Prevention of Cruelty to Children.

**Two-Hundredth Anniversary of the Senckenberg Endowment at Frankfurt.**—February 29 will be the two-hundredth anniversary of the birthday of Dr. J. C. Senckenberg who presented the city of Frankfurt a. M. with a large endowment for scientific and hospital purposes. Libraries, hospitals, assembly halls, prizes, etc., have been provided by the endowment, and several of the buildings have been recently replaced by modern ones. The library building is adorned with portraits of all the local medical celebrities during and since his day, a collection unique in its way and of great local interest, a historical portrait gallery extending back to 1638. The committee in charge of the celebration of the bicentennial is making an effort to supplement the collection of portraits with a historical collection of everything pertaining to local medicine and the biography of local members of the profession.

**Number of Physicians in Germany.**—An article in the *Deutsche med. Wochsch.* cites recent statistics to show that the number of physicians in the German empire has decreased in proportion to the population during the last two years. The total number is now 31,346, or 5.1 per 10,000 inhabitants. The number of specialists shows a great increase during the last

few years, which is regarded as an evil in some ways. The medical societies are cautioned against allowing their members to assume the title of specialist without just foundation, and young physicians are warned against the notion that a specialty is an easy road to success. This idea has no basis now-a-days, as the specialties are being overcrowded, and those physicians only can count on success who have had years of all-around, thorough and careful preparation for the specialty, with a distinct aptitude for it. In some of the German cities the specialists form from a third to a half of the total number of physicians.

**Surgery as a Vaudeville Show.**—Torkel of Breslau writes to the *Deutsche med. Wochsch.* to protest against what he saw at a kinetoscope show at Freiburg, which included the moving picture representation of several major operations as performed by a well-known surgeon. The operations were resection of the knee, puncture of the brain after wide opening of the skull, and a vaginal total hysterectomy, "done on a naked woman," as the barker at the door proclaimed, naming the surgeon. The vaginal operation was accompanied by extensive hemorrhage, and several persons left the theater in horror. He adds that such representations are no aid in medical instruction owing to the rapidity and haste of the movements, and that their presentation in public is not only demoralizing to the young, but gives a completely distorted picture of the work of the surgeon, picturing it as a barbarous rushing through the task. He urges the authorities to interfere and forbid the presentation of pictures of this kind. He does not condemn the surgeon by name, but it will be recalled that Doyen of Paris has presented before scientific societies moving pictures of some of his operations, and that he recently brought suit against the photographers for reproducing the views without his permission, obtaining damages and an injunction against their further use in France.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Jan. 2, 1907.

#### Strike of Medical Students in Calcutta.

The great bulk of the Bengali students in the Campbell Medical School, Calcutta, numbering about 160, went out on strike at the end of October. The alleged grievances were so flimsy that it is thought that the action was inspired by political agitators. A large hospital is attached to the school and it was thought that the patients would suffer from the absence of the students, but this has not occurred, owing to the existence of a large supernumerary staff and to the devoted labors of nurses, teachers and others. The strikers seem to have thought that they would be admitted to the other medical colleges of the city, but they were refused at the Calcutta Medical School and at the College of Physicians and Surgeons. The few students who remained at the school have been subjected to great pressure to join the strikers, and some of them have been in such bodily fear that they have not ventured away from the hospital grounds. After the strike had lasted nearly a fortnight, Major J. C. Vaughan, I.M.S., the superintendent, issued a notification that the time fixed for returning to work having expired, he had decided, with the approval of the government, to close further negotiations with the students. He had already dismissed from the school thirteen ringleaders of the strike. Students desiring readmission must make application and each case will be considered on its merits. No one will be admitted during the current year unless the circumstances seem to warrant the exercise of clemency on his behalf and unless there is reasonable chance of his completing the studies apportioned for the year.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Jan. 9, 1907.

#### The New Tables of Expectancy for Life-Insurance Companies.

The results of a very interesting and important investigation, conducted by the united Austrian life-insurance companies, have just been published, and form the basis for new tables of life expectancy for the married, the single and the abstainers. Between 1875 and 1901 the death of every insured person was recorded, a total of 618,455 persons. Of this number, only 88,213 were women. The figures show that the life expectancy of total abstainers is by 8½ per cent. better than for non-abstainers. The scientific value of the investigations is great, because they prove that in spite of the sanitary improvements effected within the last quarter century, and in spite of the reduced death rate in the larger modern towns, the number of persons still alive, if compared with the "Baumann Süßmilch" tables compiled sixty years ago, does not differ materially. The explanation is not easy, but the



fact remains, and the difficulty of accounting for it rests with the statisticians.

#### Massage by Unqualified Persons.

The last meeting of the Vienna "Aerztekammer" (medical council) dealt with the question of regulating the practice of massage by other than medical men. Several cases of dangerous injuries, caused by such had been before the courts lately, and the moment was well chosen to bring the question up for discussion. The abuse of the title "masseur" is very frequent here, as all sorts of quacks, who profess to do "bloodless surgery" and the like, are apt to use the title of "masseur" in order to escape prosecution, and as it can be assumed without asking anybody, it forms a very good protection against unwelcome inquiries by the police. Therefore, the Vienna "Aerztekammer" resolved to present to the government a petition, stating the facts of the case, with suggestions how to better the present state of things. The following is the idea: Only such persons as have passed the ordinary training schools for nurses are to be allowed to apply massage and only under supervision of a medical man. The schools are to be conducted in such a way as to ensure a proper knowledge of the chief chapters of anatomy and physiology, the elements and principles of massage, the taking of temperature and all other things pertaining to the nursing of patients. The title of "masseur" is to be abolished and only the denomination, "qualified nurse," to be allowed. In all hospitals, baths, health resorts, etc., where massage is employed on a large scale, a doctor must be present at least at the first sitting, to control the advisability or otherwise of the procedure. The resolution was adopted after a lengthy discussion, but it is difficult to see how such academic resolutions can counteract the effect of the misunderstanding on the part of the public.

### Correspondence

#### The Medical Society of the County of New York.

NEW YORK, Jan. 23, 1907.

*To the Editor:*—On page 236 of THE JOURNAL for Jan. 19, 1907, among items grouped under the head of New York City is one which states as follows:

The by-laws of the Medical Society of the State of New York, just published, show that the membership in the year 1806 was 371, while in the year 1906 it was 2,303.

This, I presume, is a misprint as it is not in accordance with fact. The by-laws issued and above referred to were those of the Medical Society of the County of New York, which had its origin in New York City, Nov. 14, 1794. It was then called the Medical Society of the State of New York, which name it retained until 1806, when it was incorporated under the laws of New York State, but the name was changed by the vote of the society to the Medical Society of the County of New York, and its first meeting after incorporation was held on the first Tuesday of July, 1806, with a membership then of 371. The membership at the end of 1906 was 2,303.

The Medical Society of the State of New York was incorporated in 1806 at Albany, and no member of the Medical Society of the County of New York was present at its organization. Its membership to-day is 5,911.

The organization which had its origin in New York County Nov. 14, 1794, has a consecutive history until to-day, although the name was changed as stated above; but as its plan of organization did not change and as the same officers held over, and as the change of name was made by unanimous vote of the society at the meeting last preceding the Medical Practice Act of 1806, it is beyond question that this is the Medical Society of the County of New York as at present existing.

The Medical Society of the State of New York, which had its origin in Albany in 1806, and whose plan of organization was entirely different from the New York County organization, and at the origin of which no member of the Medical Society of the County of New York—in fact, no representative from the city or county of New York was present—is the Medical Society of the State of New York as it exists to-day.

JOHN VAN DOREN YOUNG,  
Secretary, Medical Society of the County of New York.

### Pharmacology

#### LIQUID COMBINATIONS CONTAINING PEPSIN AND PANCREATIN.

Report of the Council on Pharmacy and Chemistry of the American Medical Association.

The following report was submitted to the Council by a sub-committee:

*To the Council on Pharmacy and Chemistry:* The U. S. Pharmacopeia, 8th revision, page 334-5, states: "Pepsin and pancreatin in solution are incompatible with one another. If the solution be neutral or alkaline the pancreatin gradually destroys the pepsin, and if acid the pepsin destroys the pancreatin." The correctness of this statement has been amply demonstrated by the reports which have been submitted to the Council from time to time on liquid preparations claimed to contain these two ferments.

Thus an elixir was investigated which was by the manufacturers claimed to contain "the five active agents of digestion, pepsin, veg. ptyalin, pancreatin, lactic and hydrochloric acids," and to be "superior to all other remedies in dyspepsia and diseases arising from imperfect digestion," and the committee which investigated the article in question reported that "it was impossible to establish the presence of either the proteolytic or the amylolytic ferment."

Similarly, on another liquid preparation, which was said to contain "pancreatin, pepsin, lactic and muriatic acids, etc." . . . "the combined principles of digestion to aid in digesting animal and vegetable cooked food, fatty and amylaceous substances," the committee reported "this product possessed only very slight proteolytic action and failed to digest 2 per cent. of its own weight of starch."

Again, the report on still another preparation stated: "But while it was said to contain pancreatin, the U. S. P. test for the valuation of pancreatin failed to indicate this ferment."

The report on yet another elixir, claimed to be "the only true digestant, because it contains the enzymes of all the glands which are necessary for digestion," showed that this article did not contain "any appreciable enzyme activity, either amylolytic or proteolytic."

The correctness of these findings of the committee of the Council was generally acknowledged by the manufacturers when their attention was called to the matter. Thus, one manufacturer of digestive ferments writes: "We will ask you to hold this matter up until you hear from us further on the subject. The reason for this request is that we have been going over our liquid preparations very carefully in order to be sure that after ageing they would contain the ferments that we put into them. The pancreatic ferments in alcoholic liquids seem to lose their strength."

The chemist for a large manufacturing house writes: "There are now on the market a number of preparations in which pepsin and pancreatin are combined in liquid form, and the result is that we have had numberless requisitions from our representatives that we also market such a liquid preparation. As the result of this we have carried out a series of experiments no less than four or five times in order to determine whether pepsin, diastase, and pancreatin would retain their activity in the form of a syrup, wine or elixir. We have proven incontrovertibly that this can not be done. While any two of these substances, or even all three of them, can be dispensed in the form of a liquid by the retail druggist and will retain their normal activity for as long a period as three to six weeks, yet if allowed to stand sufficiently long, they mutually destroy each other; so that in a combination of pancreatin and pepsin the pancreatic enzyme is lost and the pepsin greatly injured, and where diastase is present, both diastase and pepsin (or diastase and pancreatin) mutually destroy each other."

Since it has been demonstrated that pepsin and pancreatin can not exist in one and the same solution for any reasonable length of time, it becomes apparent that liquid preparations said to contain these two ferments are sold under impossible claims. It is therefore recommended:



1. THAT THE COUNCIL ON PHARMACY AND CHEMISTRY REFUSE TO APPROVE LIQUID PREPARATIONS THAT ARE CLAIMED TO CONTAIN BOTH PEPSIN AND PANCREATIN.

2. THAT THE MEDICAL PROFESSION THROUGH THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, BE ADVISED OF THE FALLACY OF EMPLOYING SUCH COMBINATIONS.

3. THAT THE ATTENTION OF MANUFACTURERS BE CALLED TO THE WORTHLESSNESS OF SUCH INCOMPATIBLE LIQUID PREPARATIONS OF PEPSIN AND PANCREATIN, AND THAT THEY BE URGED TO CEASE OFFERING SUCH PRODUCTS TO THE PROFESSION.

4. THAT, SINCE THE NATIONAL FORMULARY HAS RECOGNIZED A PREPARATION OF THIS KIND UNDER THE TITLE "ELIXIR DIGESTIVUM COMPOSITUS," THE AMERICAN PHARMACEUTICAL ASSOCIATION BE REQUESTED TO INSTRUCT ITS COMMITTEE ON THE NATIONAL FORMULARY TO OMIT THIS PREPARATION FROM THE NEXT EDITION.

The recommendations of the subcommittee were adopted by the Council and publication of the report directed.

W. A. PUCKNER, Secretary.

### Nostrum Advertisements in Religious Papers.

That the fight against nostrum advertisements was begun by lay periodicals is not creditable to medical journalism, and that some of the tardiest papers to come into line, in the fight for decency and honesty, are the official organs of some of the churches is a sad commentary on our Christian civilization. This attitude of the various religious and semi-religious publications is interesting.

#### THE ALABAMA BAPTIST.

Some, among them the *Alabama Baptist*, have discontinued advertisements known to be fraudulent and will get rid of others as soon as the contracts expire. The editors, as a rule, are not competent to judge of the merit of an article of a medicinal nature, or of appliances for the cure or alleviation of disease, even if they were consulted concerning them, and the responsibility for the insertion of these advertisements lies with the advertising manager.

In the journal mentioned above there appears<sup>1</sup> a letter from Dr. H. E. Mitchell, in which he refers to an editorial in that publication praising *Collier's Weekly* and says, that as he knows the composition of many "patent medicines" he feels it his duty to emphasize the statements made by Mr. Adams in *Collier's*. Dr. Mitchell calls attention to the fact that some of the most "harmless" remedies contain such a large percentage of alcohol that if taken regularly they will create not only a habit for the remedy but will finally lead the individual taking them to a stronger and more powerful stimulant—whisky. The letter goes on to state: "No man should be guilty of taking or giving to a member of his family any drug or nostrum unless he knows its contents, or unless it has been prescribed by a competent physician."

This letter called forth an editorial in the same issue, from which we quote:

Ever since our attention was called to some advertisements which we were carrying, by a member of the Jefferson County Medical Association, we have quietly been letting them drop as the contracts expired, and from week to week we have turned down many that would have paid us handsomely. We are still carrying some which will not appear again in the columns of the paper as soon as the contracts expire. . . . We do not mean that we expect to exclude all "patent medicine" advertisements, for we hold that some are perfectly legitimate, but we do mean to try to keep out any and all that have been or will be exposed as dangerous or fraudulent. . . . To adhere to our policy will mean a loss of several thousand dollars a year, which means much hard work and sacrifice on our part, but no amount of money will cause us to swerve from what we believe to be right. . . . We believe that up to date only four people have written or spoken to us about the matter. We do it of our own motion, for we do not care to be a party to anything which is hurtful to the health of our readers. We believe that the "drug habit" is a vicious one and we counsel all who feel the need of being dosed to call in a reputable physician. This editorial would have been put off indefinitely but for the fact of a letter from Dr. Mitchell, which we publish elsewhere.

#### THE COLUMBIAD.

Another journal which has fallen into line in the fight for decency is the *Columbiad*, the official organ of the Knights of

Columbus—a Roman Catholic fraternal order. This magazine had its attention drawn to a "patent-medicine" advertisement it was carrying, which, while not one of the most objectionable, still made claims that were clearly exaggerated and false. As soon as the magazine was notified, the medicine company was asked to release the publishers from their contract. This they consented to do.

As distinguished from the evident desire to place the editorial and business departments on the same ethical basis as is shown above, the case of the *Cumberland Presbyterian* is to the point.

#### THE CUMBERLAND PRESBYTERIAN AND "PATENT MEDICINES."

Some months ago we published<sup>2</sup> resolutions adopted by the Miami Presbytery and addressed to the General Assembly of the Cumberland Presbyterian Church, condemning the publication of "patent medicine" advertisements in church papers and directing that the board of publication of the *Cumberland Presbyterian* refuse all advertisements of a medical character, unless they are first approved by a board composed of three physicians selected for their high standing, eminent qualifications, experience and integrity.

These resolutions were introduced by the moderator of the presbytery at Lebanon, Ohio. Under date of Oct. 12, 1906, Dr. B. H. Blair of Lebanon, Ohio, wrote to the Rev. James E. Clarke, editor of the *Cumberland Presbyterian*, calling his attention to the fact that the time for renewing contracts was approaching and asking if it was not possible to reject all medical and other advertisements of a fraudulent nature. The Rev. Floyd Poe, pastor of the church which Dr. Blair attends, also wrote to Mr. Clarke. He said in part:

I am very much dissatisfied with the tardiness which the management of our paper is showing in the matter of cleaning up her advertising. Please do not think me too presumptuous when I say that I have reached the point in my moral and nervous development where the advertising carried in our religious papers gives me a shock every time that I open them. I do not claim to have a degree of moral sensitiveness that you have not, but I do not understand how it is that you with your ideas of right and wrong can stand for the line of medical advertisements that our paper carries, in the light of the revelations of to-day. It may be that I am unduly wrought up because I know from close scrutiny of the frauds that are perpetrated by these sharks, but I am deliberately forced to the conclusion that the whole scheme is wrong, and any one who lends aid to them is in the wrong.

Now, every honest preacher is placed in the position of an agent or representative of his own publishing house. I stand in that position willingly to-day. But the position is growing embarrassing. I have an officer in my church who is president of one of the biggest fair associations in this state. At my request he positively forbade all "bunco and skin games" the use of his grounds during the last fair, and it was thus advertised, and proved the biggest success ever. The people will endorse the right. Now what shall I say to that man when he asks me this question: "Pastor, why does not our religious weekly, the official organ of our church, which is supposed to stand for all that is right and honorable, clean up its advertisements and forbid all the medical 'bunco and skin games' the use of its columns?" Or this other case: Two of my boys, sons of one of my elders, had the privileges of publishing the fair program this fall, and by securing advertisements make a nice sum of money out of it. There were applications by saloons and breweries for about \$50 worth of space, but those boys had read enough to see the wrong, and had courage enough to say "No." And for the first time in its history the fair programs had no saloon or brewery advertisements. Now those boys are reading *Collier's*, *Ladies' Home Journal*, *Success*, *Pure Food Laws*, etc., and what shall I say to them when they put this at me: "Pastor, we believed in a clean fair program and admitted no questionable advertisements, now what is the matter with our church paper, that it will not omit questionable advertisements from its pages?" Truly people are making this a reading and thinking age. Place yourself in the position of a pastor and then tell me what you would say to such questioners.

But probably the question at this moment in your mind is this: "Why do you not show me what are the questionable advertisements we are carrying?"

In answering this question let me kindly suggest that it is not the ethics for the profession of the law for a *reputable and safe lawyer to advertise*. He may put his card in the paper, but he does not advertise "Divorces granted without fail"; or, "Indemnity from the effects of your crime guaranteed." No reputable lawyer will do this, and no one knows this better than the lawyers themselves.

Again, *no reputable and safe minister of the gospel will advertise*. He may invite you to services, but he will not say that he is the best preacher in the town or state; that he can marry to stay married, that he has the only true plan of salvation. It is contrary to the ethics of the profession, and no one knows this better than the ministry, of which high class you are one.

The same rule and law of ethics holds true in the medical profession. *No reputable and safe physician advertises*. A member of the profession in good standing does not say to the world, "I have the only cure for catarrh" or "I have the only knifeless remedy for cancer," or "I alone have solved the great consumption mystery." The very fact that some men are thus speaking through

1. Alabama Baptist, Oct. 10, 1906.

2. THE JOURNAL, April 21, 1906, p. 1221.



In reply Mr. Clarke wrote that it was hardly the function of such a paper as the *Cumberland Presbyterian* to decide questions in accordance with any professional code of ethics, and that the underlying principle of practically all modern-advertising is that the goods advertised should be represented as superior to other goods of the same class.

The advertisement which was so carefully investigated was:

CANCER.

Dr. Chas. Weber, of Cincinnati, Ohio., has made the treatment of Cancer a specialty for many years without the knife. As an evi-

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## REPORT OF BROTHERHOOD CONVENTION.

dence of his success he refers to Mrs. E. M. Swift, 743 Fifth St., Louisville, Ky., who was cured of a large cancerous growth affecting her left arm, for which amputation of the arm had been advised.

Hon. A. A. Oden, County Treasurer, Hartsville, Ala., cured of face cancer five years ago.

Mrs. J. C. Eby, 74 W. 11th St., Covington, Ky., cured of cancer of the breast eleven years ago.

Mrs. R. Y. Moses, Brownsville, Tenn., cured of face cancer.

Dr. Weber is personally known to some of those connected with "The Cumberland Presbyterian" and we have every reason to believe that he is a reliable man and competent physician.

Address Dr. Charles Weber, 17 Garfield Place, Cincinnati, Ohio, for book of information.



## Queries and Minor Notes

### DIFFERENTIATION OF SMEGMA AND TUBERCULOSIS BACILLI.

FORTUNA, CAL., Jan. 11, 1907.

*To the Editor:*—Can you tell me the best method of differentiating the tubercle bacillus from the smegma bacillus in sediment from urine?  
J. A. LANE.

ANSWER.—By far the most reliable and ready way to distinguish between tubercle bacilli and smegma bacilli in the urine is to avoid contamination of the urine by the smegma bacilli. This can be readily done by securing the urine by catheterization, after careful cleansing of the orifice of the urethra. The most conclusive method in doubtful cases is animal inoculation, the smegma bacillus being non-pathogenic. Various authorities seem to be altogether in disagreement as to the best method of differentiating these two organisms by staining. The whole subject of the occurrence and properties of the smegma bacillus will be found carefully reviewed in an article by Oscar Dahms, in *THE JOURNAL*, April 28, 1900. He subjected the proposed differential staining methods to a careful test, and found that the method of Bunge and Trantenroth gave absolutely reliable results. This is described as follows: The cover glass preparations, without having been previously fixed in the flame, are immersed in absolute alcohol or in a mixture of alcohol and ether for a period of time varying from several to twenty-four hours. After this treatment the organisms so lose their resistance to decolorizing agents that, after having been stained with carbol fuchsin, and having remained for one or two minutes in dilute sulphurous acid, an aqueous solution of methylene blue will then stain the bacilli blue. Under the same treatment tubercle bacilli remain red. Dahms found the stain absolutely reliable in differentiating the two forms when applied in the following way: 1. Place cover glass, without previous heating, into absolute alcohol for three hours. 2. Treat with a 3 per cent. chromic acid solution for fifteen minutes. 3. Stain with carbol fuchsin. 4. Treat with dilute sulphurous acid for two to three minutes. 5. Treat with concentrated alcoholic solution of methylene blue for five minutes, which will stain the smegma bacilli blue, leaving *Bacillus tuberculosis* red. Dahms also notes that smegma bacilli never show the curved forms so common among tubercle bacilli.

### THE STATUS OF PHYSICIANS' PRESCRIPTIONS IN THE TERRITORIES.

LAS CRUCES, N. M.

*To the Editor:*—The question has been raised in the Grant County Medical Society as to whether Section 7 of the Food and Drugs Act applies to the labeling of physicians' prescriptions. Can you give me any information on this subject that might aid in satisfying the members of the county society?  
R. E. MCBRIDE,  
Secretary N. M. M. A.

ANSWER.—According to the Bureau of Chemistry of the United States Department of Agriculture, the question raised has not yet been settled; it is at present in the hands of the Department of Justice. If the prescriptions enter in any way into interstate commerce, however, the Food and Drugs Act undoubtedly applies.

### THE FOOD VALUE OF ANIMAL GELATIN.

—, N. M., Jan. 16, 1907.

*To the Editor:*—Referring to the editorial in *THE JOURNAL*, January 12, on "The Food Value of Vegetable Gelatins," I wish to ask if the animal gelatins have any food value? I have an opinion regarding the matter but can not confirm it definitely or disprove it by such authorities as are available for reference.  
D. I.

ANSWER.—Vegetable gelatins, so-called, must be distinguished from true gelatins of animal origin, for these substances are in no way related chemically, however much they may resemble one another in physical properties. Vegetable gelatins are polymeric forms of simple carbohydrates, and when hydrolyzed with acids or by other means yield simple hexose and pentose sugars. They are without nutritive value for the animal economy, however, because the animal body possesses no enzymes or other agencies which have the power of decomposing the vegetable "gelatins" into absorbable and utilizable sugars. The animal gelatins, on the other hand, are a variety of the true proteids, and are readily split by the digestive fluids into the amino-acids of which they are composed. These amino-acids are absorbed and utilized by the animal economy just as they would be if they were derived from egg albumin, or from muscle globulin, or from any other food proteid. The animal gelatins differ from the typical proteids, however, in possessing but an extremely small proportion of amino-acids which contain an aromatic radical, namely, tyrosin, tryptophan and phenyl-alanin. Of these three, gelatin contains no tryptophan and little or no tyrosin, consequently it can not furnish these groups for the body to use in repairing tissue waste. On this account, presumably, gelatin

A fact overlooked by both the Rev. Mr. Clarke and the managers of the paper is, that in buying most things—clothing, utensils, apparatus—the purchaser is more or less familiar with the goods and generally has an opportunity of judging for himself the value he is getting for his money. The average layman, however, even of the educated class, has a deep and abiding ignorance of all things medical and is totally unable to judge of the value of the thing advertised. The fact that it is advertised in his church paper gives him confidence in it. He has no opportunity to examine it and to see if it is what it is claimed to be. Even in the rare instances in which the composition is given on the label, the names of the drugs convey no meaning to the layman who knows nothing of their action, either alone or in combination, and the manufacturers of "patent medicines" take advantage of this.

But aside from this there is a fundamental difference between offering for sale some article of merchandise, even granting that such an article is grossly misrepresented, and offering for sale a "cure" for an incurable disease or a nostrum containing powerful or habit-forming drugs. In the one case, should the article and its advertised description be too palpably at variance, the purchaser has a simple remedy: the law. But what recourse has the poor victim of cancer or tuberculosis who wastes precious time—to say nothing of money—in a fruitless endeavor to "cure" himself and finally reaches a stage where no skill, however great, can avail him; or what recompense has the alcoholic or the morphin habitué who has been dragged to the depths by innocently prescribing for himself a "tonic" or a "catarrh cure." It is curious to what casuistry men descend in defending their business relations. Members of a church place confidence in their church paper as they do not in lay newspapers. They read the latter with a certain amount of doubt, the newspapers are not posing as teachers, but as disseminators of news. The religious journals are teachers of religion, of morals, of ethics, of truth and justice, and their readers naturally place dependence on what is contained not only in their reading, but in their advertising pages. For this reason the religious press is the favorite medium for quack medicine advertising. It is cruel, if not criminal, for such papers to enter into alliance with "patent-medicine" men and thus help to delude and swindle the sick and suffering.

One other thought: Physicians who take religious journals that carry obnoxious advertisements should take the trouble to write in protest to their editors. This they should do, not sporadically but persistently, and get others to do the same, and in time these journals will grant to business pressure what they refuse to concede to common decency.

### Fortunes from Quack Medicines.

The *Medical Press*, London, says of the quack medicine business: "Of the most glaring and most successful enterprises the proprietors are generally Americans or colonials. Although it may be comforting to reflect that home quackery is of comparatively small proportions when looked at in the light of American quackery, it is not reassuring to find that any dealer in 'patent medicines' from abroad or the colonies can command the advertisement columns of the British press if he comes with his money in his hand. Such, unfortunately, is the case. No deal is too glaring for most newspapers. During the last few weeks the wills of several large 'patent-medicine' directors have been published, and they bear eloquent testimony to the profits derivable from the trade. Thus, Senator G. T. Fulford, proprietor of 'Dr. Williams' Pink Pills for Pale People,' left a fortune amounting to no less than £1,311,000, derived chiefly from that concern; Mr. Charles E. Fulford, of the 'Bile Beans' Company, a comparatively new affair, left £67,187; and his colleague, Mr. E. A. Gilbert, £31,252. Mr. Lyman Brown of New York, managing director of A. J. White, Ltd., the firm which trade in 'Mother Seigel's Syrup,' died at the Hotel Cecil last October, and his will shows property in the United Kingdom alone of £31,782; as to how much he had in America we have no information. Medical men who toil day in and day out among the poor may be inclined to look enviously on these sums, but the consciousness of having tried to alleviate sickness and pain will amply compensate."



can not be used to entirely replace the proteids of the foods, although it can replace them to a large extent. Numerous experiments have been made to ascertain the food value of gelatin, and it has been found that it can replace as much as five-sixths of the proteid required to maintain nitrogenous equilibrium; but the remaining sixth of proteid is absolutely necessary. Consequently, although gelatin can not alone support life, yet it has a very large food value, and can take the place of the greater part of the necessary proteids of the human dietary.

#### STATISTICS AND HISTORY OF TUBERCULOSIS.

HANOVER, PA., Jan. 18, 1907.

*To the Editor:*—What book or article gives an account of tuberculosis from a historical standpoint, and also from a statistical view?

C. STICK.

ANSWER.—The historical aspect of tuberculosis is briefly treated by A. J. Lartigau in volume 20 of the Twentieth Century Practice; by Spina in "A History of Tuberculosis" (Translation) Cincinnati, 1883, by Evans in "Handbook of Historical and Geographical Phthisiology, N. Y., 1888, and by Alfred Hillier in "Tuberculosis," Cassel & Co., N. Y. The first annual report (1905) of the Henry Phipps Institute, 238 Pine St., Philadelphia, contains statistics regarding this disease that are comprehensive and authoritative.

## The Public Service

### Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Jan. 26, 1907:

Murtagh, John A., asst.-surg., granted leave of absence for one month, with permission to apply to the Military Secretary of the Army for an extension of one month.

Lewis, William F., asst.-surgeon, will, in addition to his other duties at the Army General Hospital, Presidio of San Francisco, attend the medical needs of Fort Mason, Cal., and act as attending surgeon, headquarters, Department of California.

Hess, Louis T., asst.-surgeon, ordered to proceed to Fort Ethan Allen, Vermont, to accompany the 23d Battery Field Artillery to San Francisco, and on completion of this duty will return to place of receipt of order and revert to his leave status.

Cox, Walter, asst.-surgeon, relieved from duty at Fort Sill, Oklahoma, and will proceed to Fort Robinson, Nebr., and report in person not later than Feb. 20, 1907, to the commanding officer, 10th Cavalry, for duty with that regiment to the Philippine Islands. On arrival at Manila he will report in person to the commanding general, Philippines Division for assignment to duty.

Bispham, William N., asst.-surgeon, relieved from duty at Fort Logan, Colo., and will proceed to Fort D. A. Russell, Wyo., and report in person not later than Feb. 20, 1907, to the commanding officer, 10th Cavalry, for duty with that regiment to the Philippine Islands. On arrival at Manila he will report in person to the commanding general, Philippines Division, for assignment to duty.

Wolfe, Edwin P., asst.-surgeon, relieved from duty at Fort Hancock, N. J., and will proceed to New York City and report in person to the officer in charge of the Medical Supply Depot in that city for duty in that depot.

Cook, William H., contract surgeon, ordered from San Francisco, to New York, for annulment of contract.

Felts, Robert L., contract surgeon, returned to Fort Sam Houston, Texas, from leave of absence.

Pinquard, Joseph, contract surgeon, left Fort Leavenworth, Kans., on leave of absence for one month, fifteen days.

Parkman, Wallace E., contract surgeon, left Fort Assiniboine, Mont., and arrived at Fort Keogh, Mont., for duty.

Dillon, G. Parker, contract surgeon, ordered from Fort Bliss, Texas, to Fort Apache, Ariz., for temporary duty.

McPheeters, Samuel B., contract surgeon, left Fort Robinson, Nebr., and arrived at Fort Leavenworth, Kans., for duty.

McAlister, John A., dental surgeon, granted an extension of one month to his leave of absence.

Casaday, George H., dental surgeon, ordered from Army General Hospital, Presidio of San Francisco, to Presidio of Monterey, Cal., for temporary duty.

Wing, Franklin F., dental surgeon, returned to Fort D. A. Russell, Wyoming, from leave of absence and left station for temporary duty at Fort Washakie, Wyoming.

Boak, S. Davis, dental surgeon, left Columbus, Barracks, Ohio, en route to Havana, Cuba, with ten days' leave of absence en route.

Mason, George L., dental surgeon, ordered from Fort McPherson, Ga., to Jackson Barracks, Louisiana, for one month, Fort Saint Philip, Louisiana, for ten days, and Fort Barrancas, Florida, for one month.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 26, 1907:

Pickrell, G., surgeon, detached Bureau of Medicine and Surgery, Navy Department, ordered to Naval Academy.

Stibbens, F. H., asst.-surgeon, appointed asst.-surgeon with rank of lieutenant (junior grade), from Jan. 4, 1907.

Scott, T. W., Ruge, O. G., appointed pharmacists from Jan. 15, 1907.

Grow, E. J., surgeon, ordered to Marine Recruiting Station, New York, and additional duty in attendance on officers and men of the Navy and Marine Corps of New York City not otherwise provided with medical aid.

Odell, H. E., P. A. surgeon, ordered to the Naval Hospital, Newport, R. I.

Strine, H. F. P. A. surgeon, detached New York Hospital, ordered to Naval Hospital, Naval Academy.

Gill, J. E., asst.-surgeon, detached *Dubuque*, ordered Naval Recruiting Station, Kansas City, Mo.

Duhigg, J. T., asst.-surgeon, ordered to Naval Hospital, New York.

Michels, R. H., asst.-surgeon, orders of Jan. 4 modified; detached Naval Recruiting Station, Kansas City, Mo., and ordered to *Dubuque*.

Thompson, E., surgeon, detached Naval Station, Charleston, S. C., and ordered to Naval Station, Guantanamo, Cuba.

Curl, H. C., surgeon, detached duty with Department of Government and Sanitation, Canal Zone, to report to Surgeon-General, U. S. N., for special duty.

Evans, S. G., surgeon, ordered to Naval Station, Charleston, S. C.

Reeves, I. S. K., P. A. surgeon, detached *Scorpion*, ordered to Naval Medical School Hospital, Washington, D. C., for treatment.

Wright, B. L., surgeon, when discharged from treatment at Naval Hospital, New Fort Lyon, Colo., to duty in that Hospital.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 23, 1907:

Blue, Rupert, passed asst.-surgeon, granted leave of absence for two days from January 22.

Lloyd, B. J., passed asst.-surgeon, ten days' leave of absence granted from December 24, amended to read twelve days.

Warren, B. S., passed asst.-surgeon, granted leave of absence for five days from January 16.

Simpson, Friench, asst.-surgeon, relieved from duty at Baltimore, Md., and directed to proceed to Fort Stanton, N. M., reporting to medical officer in command for duty and assignment to quarters.

Mason, M. R., pharmacist, granted leave of absence for seven days from Jan. 15, 1907, under Paragraph 210 of the Service Regulations.

#### PROMOTION.

Assistant Surgeon J. S. Boggess commissioned as passed assistant surgeon, to rank as such from Dec. 5, 1906.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Jan. 25, 1907:

#### SMALLPOX—UNITED STATES.

Georgia: Augusta, Jan. 8-15, 11 cases.  
Illinois: Chicago, Jan. 12-19, 2 cases; Galesburg, 11 cases.  
Indiana: Indianapolis, Jan. 6-13, 2 cases; Lafayette, Jan. 14-21, 3 cases; South Bend, Jan. 12-19, 5 cases.  
Louisiana: New Orleans, Jan. 13-20, 3 cases (2 imported).  
Michigan: Ann Arbor, Jan. 12-19, 1 case; Detroit, 7 cases.  
Missouri: St. Joseph, Jan. 5-12, 10 cases; St. Louis, Jan. 12-19, 2 cases.  
Montana: Chouteau County, Dec. 1-30, 5 cases; Dawson County, 2 deaths.  
North Carolina: Greensboro, Jan. 12-19, 1 case.  
Ohio: Cincinnati, Jan. 11-18, 1 case.  
Texas: Houston, Jan. 5-12, 3 cases.  
Washington: Spokane, Dec. 29-Jan. 12, 16 cases (7 imported).  
Wisconsin: Appleton, Jan. 12-19, 1 case; La Crosse, 2 cases; Milwaukee, Jan. 5-19, 8 cases.

#### SMALLPOX—FOREIGN.

Africa: Cape Town, Dec. 8-15, 1 case.  
Brazil: Bahia, Dec. 8-15, 2 cases; Pernambuco, Nov. 15-30, 26 deaths; Rio de Janeiro, Dec. 8-22, 10 cases.  
Canada: Cape Breton—Sydney, Jan. 12, present.  
Chile: Antofagasta, Dec. 24, 3 cases; Coquimbo, 19 cases, 2 deaths; Iquique, present.  
China: Chefoo, Nov. 13, 1 case (on U. S. S. *Raleigh*); Shanghai, Nov. 26-Dec. 2, 1 case.  
Ecuador: Guayaquil, Dec. 1-15, 10 deaths.  
Great Britain: Hull, Dec. 22-29, 1 death; Sheffield, Dec. 31-Jan. 7, 1 case.  
India: Bombay, Dec. 18-25, 1 death; Calcutta, Dec. 8-15, 6 deaths.  
Italy: General, Dec. 20-27, 1 case.  
Persia: Nov. 30, in 9 localities (present).  
Russia: Odessa, Dec. 29-Jan. 5, 5 cases, 1 death; St. Petersburg, Dec. 15-29, 14 cases, 2 deaths.  
Spain: Barcelona, Dec. 23-30, 7 deaths; San Felleu de Guixols, Dec. 29-Jan. 5, 1 death.

#### YELLOW FEVER.

Ecuador: Quayaquil, Dec. 1-15, 9 deaths.

#### CHOLERA—INSULAR.

Philippine Islands: Manila, Nov. 25-Dec. 1, 1 case, 1 death; Provinces, Nov. 25-Dec. 1, 115 cases, 77 deaths, Dec. 1-8, 34 cases, 28 deaths.

#### CHOLERA—FOREIGN.

India: Bombay, Dec. 18-25, 3 deaths; Calcutta, Dec. 8-15, 109 deaths; Rangoon, Nov. 17-24, 15 deaths, Dec. 8-15, 43 deaths.

#### PLAGUE.

Australia: Brisbane, Nov. 17-24, 2 cases, 2 deaths.  
Brazil: Rio de Janeiro, Dec. 8-22, 23 cases, 9 deaths.  
Chile: Antofagasta, Dec. 24, 2 cases.  
Egypt: Alexandria, Dec. 9-31, 2 cases, 2 deaths; Kenh Province, Dec. 30, 1 death; Menoufeih, Dec. 31-Jan. 1, 1 case, 1 death.  
India: Bombay, Dec. 18-25, 10 deaths; Calcutta, Dec. 8-15, 14 deaths; Rangoon, Nov. 17-24, 22 deaths, Dec. 8-15, 18 deaths.  
Mauritius: Nov. 22-Dec. 6, 83 cases, 53 deaths.  
Peru: Chicama Valley, Dec. 22, present; Mollendo, Dec. 4-18, 9 cases, 3 deaths.



## Marriages

SAMUEL D. RISLEY, M.D., Philadelphia, Pa., to Miss Louise Robinson, January 15.

JAMES FLOYD BOWMAN, M.D., to Miss Zenobia Smith, both of New York, January 1.

EDWARD F. MAGINN, M.D., to Miss Estella McCarthy, both of Butte, Mont., January 15.

JAMES CULLEN ZAN, M.D., to Miss Elsie Meline Smith, both of Portland, Ore., January 1.

AUBREY HARPER, M.D., Wray, Ga., to Miss Mary Lec Brown of Carrollton, Ga., January 1.

HERBERT H. DARNALL, M.D., to Miss Lorine Stewart, both of Columbus, Ark., January 9.

OLIVER W. GORDON, M.D., Council Bluffs, Iowa, to Mrs. Sarah Beach, Wheaton, Ill., January 10.

ALPIONSE WREN, M.D., New York, N. Y., to Miss Genevieve Kempt, at Springfield, Ohio, January 9.

BERTHA TAYLOR PATTON, M.D., and Charles William Baum-  
baugh, both of Portland, Ore., January 9.

FRANK GAINES GRACE, M.D., Birmingham, Ala., to Miss Katherine Buchanan, Greensboro, Ala., January 9.

## Deaths

Benjamin F. Crummer, M.D. University of Michigan, Ann Arbor, 1869, and University of the City of New York, 1875; a member of the Douglas County Medical Society and American Medical Association; a former practitioner of Elizabeth and of Warren, Ill.; at one time professor of medicine in Creighton University, Omaha, and a member of the State Board of Health; visiting physician of St. Joseph's and Douglas County hospitals, Omaha; and some-time president of the Douglas County Medical Society, the Nebraska State Medical Association and the Medical Society of the Missouri Valley, died at his home in Omaha, January 24, from endocarditis, aged 58.

Elliott H. Woolsey, M.D. Medical Department of Buffalo, 1868; a member of the American Medical Association, the Medical Society of the State of California, the Society of Physicians and Surgeons of Alameda County, and for many years an active member of the San Francisco Microscopic Society; for several years chief surgeon of the Southern Pacific Railroad, died at his home in Oakland, Cal., of pneumonia, January 21, aged about 65.

Augustus von L. Brokaw, M.D. Missouri Medical College, St. Louis, 1885; a member of the American Medical Association, International Surgical Society, Southern Surgical Association, Missouri State Medical Association and St. Louis Medical Association, died at his home in St. Louis from stomach and intestinal derangements following an attack of influenza, January 25, aged 43.

Franz T. F. Kuckein, M.D. University of Munich, Germany, 1881; formerly president of the German-American League of California; a member of the state and county medical societies, and of the Society of German Physicians and Surgeons, San Francisco; consulting physician to the German Hospital, died in that institution, January 10, three days after an operation for appendicitis, aged 53.

Adam Shirk, M.D. University of Pennsylvania, Philadelphia, 1862; assistant surgeon in the Navy during the Civil War; formerly superintendent of the State Insane Asylum, Austin, Tex., and for five years superintendent of the Alameda County Infirmary, died at his home in Oakland, after an illness of a few weeks, aged 66.

James Henry McNeel, M.D., Rush Medical College, Chicago, 1863; a member of the American Medical Association; member of the legislature from Sheboygan County, Wis., in 1870, was found unconscious in his buggy from cerebral hemorrhage on the evening of January 22, and died at his home in Fond du Lac the next morning, aged 68.

Edward B. Marsh, M.D. Jefferson Medical College, Philadelphia, 1892; a member of the American Medical Association; surgeon to the Westmoreland Hospital and Children's Home; surgeon to the Pennsylvania Railroad; examiner for several insurance companies, died of diabetes, January 16, aged 67.

John Manning, M.D. Western Reserve University, 1847; Cleveland Medical College, 1850; a pioneer resident and former mayor of Youngstown, Ohio, died at his home in that city, from nephritis, December 15, after an illness of three weeks, aged 82.

William F. Hovey, M.D. University of Michigan, Ann Arbor, 1853; a charter member of the Saginaw Valley Medical Society, died suddenly at his home in Bay City, January 17, aged 72.

Robert Bell, M.D. Geneva Medical College, Geneva, N. Y., 1845; the oldest member of the Steuben County Medical Society; a member of the Medical Society of New York, died at his home in Monterey, N. Y., aged 90.

Theodore A. Johnson, M.D. Northwestern University, Chicago, 1884; examining physician for the United States pension bureau, died at his home in Xenia, Ill., January 14, after an illness of a few days' duration, aged 48.

Emmet Le R. Wemple, M.D. Cooper Medical College, San Francisco, 1873; a member of the American Medical Association, dropped dead, supposedly from heart disease, in San Francisco, aged 57.

Fred W. Kolthoff, M.D. Kentucky School of Medicine, Louisville, 1898; died at his home in Covington, Ky., January 14, from injuries inflicted last October by a patient who was mentally deranged.

Elbert E. Barnum, M.D. University of Michigan, Ann Arbor, 1876; a member of the American Medical Association, died at his home in Pine City, Minn., from pneumonia, January 13.

Charles M. Wagar, M.D. Queen's University, Kingston, Ont., 1905; an interne at the Hahnemann Hospital, Rochester, died at that institution from cerebrospinal meningitis, aged 25.

Walter A. LeCompte, M.D. Harvard University, Cambridge, Mass., 1897; a member of the American Medical Association, died in Boston after an operation for appendicitis, aged 36.

Thomas F. Mayham, M.D. Northwestern University Medical School, Chicago, 1869; eight times mayor of Fond du Lac, Wis., died suddenly at his office in that city, January 22, aged 77.

Jay E. Johnstone, M.D. University of Michigan, Ann Arbor, 1891; of Tomahawk, Wis., died at the Sacred Heart Hospital, Tomahawk, of acute pneumonia, aged 42.

Elias T. Fogel, M.D. Eclectic Medical Institute, Cincinnati, 1871; died at Elwood, December 21, as a result of injuries caused by being struck by a street car.

Charles P. Newton, M.D. University of Vermont, Medical Department, Burlington, 1881; died at his home in Underhill, Vt., from nephritis, January 7, aged 56.

Joseph H. Wolfe, M.D. University of Maryland School of Medicine, Baltimore, 1868; died of heart disease at his home in Elkton, December 18, aged about 60.

Oliver Stewart, M.D. Detroit College of Medicine, Detroit, 1887; formerly of Port Huron, Mich., died at Pontiac, from brain disease, January 15, aged 45.

Millard F. Sowash, M.D. Jefferson Medical College, Philadelphia, 1874; a pioneer physician of Irwin, Pa., died at his home in that city, January 15, aged 59.

Carl Proegler, M.D. University of Berlin, Germany, 1859; a veteran of the Civil War, died at his home in Fort Wayne, of apoplexy, January 16, aged 70.

Hiram Seymoure Browne, M.D. Casselton Medical College, Casselton, Vt., 1852; died at the City Hospital, Rochester, N. Y., December 28, aged 79.

John F. Shrouts, M.D. Rush Medical College, Chicago, 1868; died at his home in Momence, Ill., after a stroke of paralysis, January 15, aged 59.

Theodore H. Booton, M.D. College of Physicians and Surgeons, Baltimore, 1886; of Flint Hill, Va., died at Luray, Va., January 15, aged 50.

Norman F. Edwards, M.D. Hahnemann Medical College, Philadelphia, 1902; died January 13, at Welsh, W. Va., of uremia, aged 28.

A. W. Gause, M.D. University of Tennessee, 1888; died at his home in Centralia, Ill., after an illness of three days, January 13, aged 58.

Elmer E. Wiles, M.D. Jefferson Medical College, Philadelphia, 1884; died suddenly in his office in Rimersburg, Pa., aged 50.

D. A. Watts, M.D. Jefferson Medical College, Philadelphia, 1860; died at his home in Lake City, Fla., aged 73.

Fleetwood Sale, M.D. Medical College of Ohio, 1889; died at his home in Dillsboro, Ind., January 16, aged 81.

Robert L. Annan, M.D. New York University, 1856; died suddenly at his home in Emmitsburg, Md., aged 76.

Henry Kost, M.D. University of Wurzburg, 1853; died at his home in New York City, January 17, aged 76.



## Medical Organization

### A Plea for Unity in New York City.

Not only in state journals, but in the medical periodical literature of the country generally, is the matter of medical organization receiving more and more attention. Since the beginning of the reorganization movement it has been recognized that the crucial points in the efficient organization of the medical profession were our large cities. How to make medical societies in New York, Chicago, Philadelphia, Boston and other large medical centers truly representative and at the same time worthy of the profession was one of the problems which presented itself to the Committee on Reorganization. Very wisely, they attempted no definite settlement of the problem but laid their organization plans on broad lines, capable of general application, and left to each city the task of working out its own peculiar local problems.

In New York it has seemed advisable to the local profession to defer the work of systematizing and unifying their medical organizations. The leaven is working, however, and agitation for more compact and effective organization has begun. In the *New York Medical Journal* for Dec. 1, 1906, appeared the annual address of Dr. Floyd M. Crandall, President of the Medical Society of the County of New York. It is a significant indication of the spirit of the times that he chose for his subject "The Medical Societies of New York County, with Special Reference to the Need of Better Organization of the Medical Profession." His address is a most interesting one, and should be read by officers and organization workers in all of our large cities. Dr. Crandall lays down as his first proposition the statement that there has been, in recent years, an injudicious multiplying of medical societies. According to Dr. Crandall, there are now in Greater New York nearly ninety medical organizations. Eliminating the County Societies of Kings, Queens and Richmond Counties, and the Homeopathic and Eclectic Societies, as well as the nine sections of the Academy of Medicine, there are, to-day, sixty-seven non-sectarian medical societies in the Boroughs of Manhattan and the Bronx, which territory constituted the old City of New York. Dr. Crandall classifies these societies under three main heads:

1. Those whose work in varying proportions is scientific and social. Under this general head he makes these special divisions: (a) Medical Clubs, (b) Alumni Organizations, (c) Clinical Societies of Colleges, (d) Societies based on nationality of members, (f) Local Societies.

The second general class is composed of societies organized for benevolent and charitable purposes, whose sole object is to furnish pecuniary aid to their members and to their members' families. The third general class consists of public societies possessing important functions in addition to their scientific and social activities. Under this class he recognizes two societies, the New York Academy of Medicine and the Medical Society of the County of New York. It is worthy of note, in this connection, that the county societies in the state of New York possess certain legal powers, which were conferred on them by the state. Their principal duty to the state is to enforce certain provisions of the criminal law which relate to the practice of medicine.

Dr. Crandall devotes considerable space to a discussion of the New York Academy of Medicine, and outlines briefly its many activities and its beneficial influence on medical matters in New York. He summarizes its functions under three heads: 1. It serves as a training school for its members. 2. It owns and maintains its own building and thus provides a medical center and home for the profession. 3. It maintains a medical library and reading rooms.

After considering the entire subject, the local medical societies, Dr. Crandall concludes that none of the societies is performing certain functions necessary for the profession as a whole, looking out for the financial and temporal interests of medical men, or acting as a unifying force in the profession. He recognizes the desirability of greater union, and affirms that this could be brought about through harmonizing and coördinating the existing societies, without in the slightest degree impairing their autonomy and independence, or changing their present character. He feels that a strong central organization is not now and would not in the future injure the local societies, but, on the contrary, would be an active stimulus to their growth and prosperity, since it would remove rivalry and would increase the importance of the local bodies. The fear of the evils which might arise in organized bodies does not deter him; on the contrary, he feels that open nominations and elections by secret ballot

would prevent any individual or clique from controlling the organization.

Dr. Crandall cites the experience of the profession in Chicago, where membership in the last five years has been more than doubled and the possibilities and activities of the organized profession vastly increased simply by adopting a systematic plan of organization, which includes specialists, general practitioners, suburban physicians, and, in fact, all classes. He concludes that organization of the profession in New York into one central body, divided into districts, is perfectly feasible, and would be a most powerful influence for good. Among the advantages of such a plan, he emphasizes the increased power which a well-organized central body would have in dealing with perplexing problems; the economy of strength and effort which would be made possible by such plan; the increased opportunity for scientific work and communications, as well as the increased possibilities along practical and business lines. One most important function is that of medical defense, which the reorganized State Society in New York has assumed. The experience of the society in New York has been the same as that obtained elsewhere, viz., that 97 per cent. of so-called malpractice suits are instituted as a means of blackmail and, if stoutly defended, they are abandoned when the case is called. No one factor has such a marked influence in reducing malpractice and damage cases as the knowledge on the part of the public and the local profession, that suits instituted against members of the organized profession will be defended by the profession as a whole. Dr. Crandall concludes by saying that the situation in New York is analogous to that throughout the colonies before the Articles of Confederation were adopted. He says: "Some of the reasons for seeking a more perfect political union in 1787 might well be enumerated as potent for desiring a most perfect medical union in 1906, 'to establish justice, insure tranquillity, provide for the common defense and promotion of the general welfare.'"

### Dr. McCormack's Itinerary.

Dr. J. N. McCormack, Bowling Green, Ky., chairman of the Committee on Organization, has been devoting the month of January to work in Tennessee, delivering addresses before audiences composed of physicians and laymen, in all parts of the state. On January 25 he spoke before the General Assembly for Tennessee, at Nashville, both houses adjourning to meet in joint session, in order to hear his address. On Monday, January 28, he spoke before the Commercial Club in Louisville, Ky., and on Wednesday, January 30, he met with the Ohio State Board of Medical Examiners of Cincinnati for a conference on the extermination of quackery in Ohio. The month of February is to be devoted to work in New Jersey, and March to work in Arkansas. In this issue we call attention editorially to the character of Dr. McCormack's work and to the great opportunity offered the profession of securing the attendance of the public at the meetings for the sake of the mutual benefit that is sure to result.

### Organization Notes.

Dr. C. T. Botkin, secretary of the Randolph County (Indiana) Medical Society sends us a set of circular letters gotten up by the society, for distribution to the members and desirable non-members of the county. For the information of county secretaries, presidents and chairmen of committees, it might be well to say that the programs, circulars, form letters, etc., sent to the office of the General Secretary by county secretaries are kept on file. If at any time any society officer or member engaged in organization work wishes to get any suggestion or ideas along these lines, we shall be pleased to send him a selection of various programs, letters, etc. Secretaries and chairmen of committees are requested to send to this office copies of all such matter, as well as committee reports, on any subjects.

Dr. A. B. Butte, secretary of the Barbour-Randolph-Tucker County Medical Society (West Virginia) has sent out to all members a circular announcement of the meetings of the society, together with a personal letter, in which he says, among other things: "If you are one of the absentees, may I ask your reasons for not being with us oftener? Do not say you are too busy. I have noticed that the busiest men are often the most regular in attendance. Perhaps the papers do not suit you? This you can easily remedy by writing one yourself. Perhaps the officers do not suit you. If so, come out and help elect others. Perhaps the meeting place doesn't suit you? If it don't, say so. Can we not count on you for the next meeting?"



## Society Proceedings

### COMING MEETINGS.

Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.

#### AMERICAN SOCIETY OF TROPICAL MEDICINE.

*Regular Meeting, held Dec. 7, 1906.*

The President, DR. ROLAND G. CURTIN, in the Chair.

##### General Economic Importance of Mosquitoes.

PROF. JOHN B. SMITH of Rutgers College, New Brunswick, N. J., regards mosquitoes of great economic importance and as serious drawbacks to any community from three points of view: 1. Their influence, direct and indirect, on the health and well-being of the inhabitants. 2. Their influence on the development of agricultural resources, preventing or limiting the profitable use of infested territory for certain purposes. 3. Their influence on land values due to the drawbacks mentioned.

He claims that the elimination of the mosquito would add \$10,000,000 to the taxable value of real estate in two years. Instances were quoted in which sections of the salt marshes were drained in the manner advocated by him and of the results of unparalleled prosperity. Two industrial enterprises had decided to locate on the marsh area who were expected to employ 4,000 and 6,000 men. In determining whether, in any stage, any species of mosquito is of any value to man, directly or indirectly, it seemed to the author that the answer must be against the insects, leaving absolutely no evidence that they are of any use or benefit whatever to the human race, directly or indirectly, as larva or adult. It was stated that the legislature and governor of New Jersey are sufficiently convinced of the injurious effects of the mosquito on the development of the state to venture an investment of \$350,000 in the effort to secure the practical elimination of the pest.

##### Mosquitoes of Pennsylvania.

MR. H. L. VIERECK of the Pennsylvania Department of Health found that mosquitoes breed only in slow running or stagnant water that is devoid of the natural enemies of the mosquito; for example, no breeding was detected in reservoirs adequately stocked with fishes, or in waters tintured with sulphur water from the coal mines, or in water covered with a film of oil from oil wells. In one instance a standing body of water polluted with waste from a glue factory produced *Culex* (the non-malaria bearing mosquito) in myriads, but no *Anopheles*, or the malaria-bearing mosquito. In Braddock and McKeesport, where there were no depressed areas, there was no mosquito breeding. In the investigation all the principal cities and other communities had their mosquito problem inspected by the officers of the State Department of Health.

##### Life History of the Malarial Parasite.

DR. JOSEPH MCFARLAND gave a brief description of the life history of the malarial parasite. He showed that when the anopheles mosquito sucks blood containing malarial parasites it becomes infected by the parasites, which pass through regular developmental stages in its body before being transmissible to other men, the duration of the cycle varying from eight to twelve days, according to the temperature, and probably taking place only during summer. The adult parasites known as gametocytes appear in the blood as rounded bodies the size of red corpuscles in the benign forms, as crescentic or falciform bodies in the malignant forms of malaria. The smaller of these, the microgametocyte (male), breaks up into long filiform bodies or spermatozooids which fertilize the larger (female) parasites or macrogametoeytes in the stomach of the mosquito. The fertilized parasite is then known as a zygocyte. It elongates, bores its way through the stomach and takes up its position on the outer surface of the insect's stomach, grows into a large rounded body known as a blastomere, which later breaks up into an immense number of small falciform or filiform bodies known as sporozoids, which are embryo parasites. These migrate to the salivary glands of the mosquito, to be discharged from its body by the saliva. There are so many of

these sporozoids that the probability is that they are not all discharged before the insect dies, which, during the period of hibernation, may be several months. During all the time between their formation and the death of the mosquito the insect is infective, as each time it bites the sporozoids pass into the proboscis wound in the saliva. Only the female mosquitoes bite, therefore only the females transmit the disease. In order that the mosquito may transmit the disease it is necessary that she bite a human being at a time when there are gametocytes in the blood, that she subsequently lives at least eight to ten days, and that she then bite some other human being.

All the evidence goes to show that the human cycle takes place only in human beings, not in any other warm-blooded animal, and that the mosquito cycle takes place only in the mosquito, not in other insects. As the malarial parasite is only one of many parasites affecting man, so it is only one of many affecting mosquitoes.

#### BOSTON MEDICAL LIBRARY MEETING.

*Regular Meeting, held Dec. 19, 1906.*

DR. GEORGE W. GAY in the Chair.

##### Control of Syphilis and Venereal Diseases.

DR. PRINCE A. MORROW of New York City said that these diseases are a source of danger to the public health, to the family and to the race. Rarely are they fatal directly as is tuberculosis, but they weaken and undermine the system of the victim. The late lesions are the worst. Ninety per cent. of cases of locomotor ataxia, 75 per cent. of ocular paralyses, 80 per cent. of general paralyses of the insane are of specific origin. This is specially true of syphilis, and gonorrhea is almost as bad. Eighty per cent. of the deaths resulting from women's diseases are the result of gonorrheal infection. Besides these, very many persons are invalidated, and worse yet are the infants rendered blind. Forty-two per cent. of all abortions are due to syphilis. Sixty to 80 per cent. of all syphilitic children die *in utero*. Gonorrhea is even worse; 50 per cent. of women affected by it are rendered sterile, and many more abort. Ten to 20 per cent. of all blindness is due to gonorrhea. Hence the prophylaxis of these diseases is the most important problem of modern preventive medicine.

The first step in the control of these diseases is to educate the public, even though this same public is averse to being instructed. The difference in the attitude of an enlightened public toward disease is well illustrated in its progressively improving views as to tuberculosis as contrasted with the absolutely barbaric treatment of leprosy. Education must include information as to the extent and dangers of these diseases. The laws of sex and life must also be taught and early, before the sexual passions appear. Children must know about the physiology and hygiene of sex. They must learn to control these passions and be told the grave dangers of excesses. Young men must be taught how to live according to the laws of health. The surest prophylactic measure is to teach and promote continence. It is not true that sexual intercourse is necessary to the health of a man, nor that man has any natural right to gratify these appetites. Continence is compatible with the best health of mind and body. No woman has any reasonable right to believe that the marriage ceremony will transform a polygamous man into a monogamous partner. Thousands of virtuous women suffer untold tortures because of this differing standard between men and women.

Physicians should instruct their patients along these lines and not simply prescribe and let them go. In the United States there is but one hospital devoted exclusively to the care of these diseases. Nor is the dispensary care of these patients any better organized. The problem is a complex one. Therefore, there has been organized in New York a society, including physicians, ministers, lawyers, educators, social settlement workers and public-spirited citizens, the American Society of Sanitary and Moral Prophylaxis. For eighteen months it has been working, under many difficulties, chiefly along educational lines. Physicians generally recognize the necessity of doing something, but are incredulous as to its practicability. Many support and help. A few are hostile.



The public generally is indifferent. The public press is opposed to any publicity in these matters. Detroit, Milwaukee, Chicago and Philadelphia have organized similar societies, and many district societies have taken up the work. There has been much demand for literature and for talks. There is a lecture fund established, and men especially fitted for this work chosen. In general, the lines adopted by the Brussels Congress and later by the American Society are followed. The work is practical, available and efficient. It substitutes interest for apathy, action for inaction, hope for despair.

### The Prevalence of Syphilis.

DR. ABNER POST, Boston presented many statistics, laying special emphasis on those cases innocently acquired. Records are inaccurate, for death certificates rarely show these diseases as direct or even as constituting causes. In 1905 there were reported in the U. S. Army records 4,704 cases of gonorrhea and 1,251 of syphilis, a total of 163 venereal cases per 1,000. In the Navy, gonorrhea, with 1,514 cases, stood third as a cause of disability, and syphilis next, with 880 cases. The greatest loss of time, however, is attributed to syphilis, over 23,000 days. In the 1905 U. S. P. H. and M.-H. Service report there are recorded 4,100 cases of syphilis, or four times as many as of tuberculosis. Tabulated reports from many cities show that 10 per cent. of the skin diseases reported are syphilodermata, or 2,600 cases, being only surpassed by eczema, with 5,000 reported cases. Of the cases admitted to the Tewksbury state almshouses in a year, 551, or 62 per cent., were syphilitic, and these are largely immigrants.

Of 965 admitted to the Boston clinic hospitals in Long Island, about 70 per cent. are syphilitic. The Massachusetts General Hospital cared for 16 syphilitics in the wards last year and 347 in its out-patient department. Besides these in its nervous department, of 2,962 cases, there were 56 of general paralysis of the insane, 160 of tabes and 64 of syphilis of the central nervous system, a total of 280, or about 10 per cent., which agrees with figures obtained in other places.

Of the 150 cases under treatment at the McLean Hospital for Insane, 14 were regarded as of syphilitic origin, or again about 10 per cent.

The Boston City Hospital does not admit cases of syphilis, yet in a year's record are found 30 medical cases where it forms part of the diagnosis, and also 17 surgical cases. In its out-patient departments there were noted of syphilitic cases, 73 medical, 29 surgical, 91 throat cases and 150 skin cases. In the Boston Dispensary at the skin department alone there were in two years noted 704 cases. Therefore, the disease is not rare, but frequent, and is present all about us.

Of primary lesions noted at the Boston Dispensary, 7 out of 63 were extragenital. The proportion of men to women was 7 to 11.

Of the last 100 female cases seen by Dr. Post, 13 were accidental infections, 3 being lesions of the hip, 35 were living irregular lives, 20 were married, of whom 5 contracted the disease from their husbands.

### DISCUSSION.

DR. CLARENCE J. BLAKE said that people do not willingly expose themselves to other infectious diseases as they do to these. Prostitution is a business, and hence one difficulty in meeting it. In Boston the Watch and Ward Society is studying and working in this line, including in its membership doctors, ministers, lawyers, business men and settlement workers. It will make a report early in 1907. The business is a large one in all our cities. It demands 15 per cent. of fresh material each year. In Boston this mostly comes from within the city, while in other cities it is found outside the city limits. There are in Boston 13 organizations, part of whose work is to care for these women.

PRESIDENT CHARLES G. ELIOT, Harvard University, said the proportion of those suffering with these diseases among the educated is very much less than among the ignorant class. But the penalties for these victims are terribly severe. People should be warned as to the severity of these inevitable penalties. They must know the effects. That continence is not healthy is a teaching which is a discredit to morals and the

science of medicine. Teachers must take up this subject frankly. Harvard has such lectures which are accessible to all newcomers at the beginning of each year, where the students are told the nature of gonorrhea and syphilis, sources and consequences. All young men should have such instruction.

### NEW YORK ACADEMY OF MEDICINE.

*Regular Meeting, held Jan. 3, 1907.*

The President, DR. JOHN A. WYETH, in the Chair.

### Address by Retiring President.

DR. CHARLES L. DANA said he would use this opportunity to tell what his experience as an executive officer had suggested for guidance and inspiration. It is his most enthusiastic conviction that the Academy of Medicine does most important work for the profession and for the community. The work has expanded until few can realize how far reaching and effective the organization has become. The management of so complex a body comprising 13 societies, a vast library, and the buildings, involves no small amount of responsibility, yet there are no politics and no quarrels. There is no undercurrent of small ambitions or of petty strifes. He is imbued with the academy idea and thinks all communities large enough to form a nucleus of physicians, would be better off if the physicians organized on basic academy principles. He did not mean to belittle the state and county organizations. These are a necessity, but medical organization should not stop there. These societies supply chiefly the material and industrial needs, while the academy or its equivalent humanizes and elevates the medical profession more than books, papers or preaching, and the New York Academy of Medicine stands for a kind of object lesson and thereby fulfills one of its highest functions.

The change of conditions which affect medical societies and their work is a matter that must seriously interest those who are responsible for their success. The great number of societies, the demands made on the doctor's time, make it necessary that a medical meeting shall mean something to him. This means a careful organization and preparation of meetings. For this purpose the council of the academy meets twice a year and formulates lines of work and subjects likely to be most interesting and important. Another fact to be considered is that clinical medicine and gross pathology are to a large extent finished stories. The modern clinician must work with the laboratory at his elbow and he has also the field of prevention and of therapeutics. We must also learn to determine accurately what the patient says he feels. There is nothing so haphazard as the diagnoses made on the subjective complaints of the patient. It is because we have neglected this field that quackery and false forms of cure prevail.

The annual reports show the prosperous condition of the academy. The limit of membership has been increased, yet it has been nearly reached and there will soon be a waiting list. Three new sections have been organized. It costs about \$30,000 a year to run the academy, yet the income pays its expenses, has allowed some for a sinking fund, and \$5,000 for the library. Fresh interest has been shown in the museum and historical department of the library, and important and valuable contributions have been made. His wish that the academy should not be the forum for learned or lengthy addresses or elaborate monographic reports, but should be the place where the results of medical and surgical work should be first and formally presented has been carried out, as records of the past two years will show. There has been a certain renaissance of scientific medicine in New York as shown by this fact and by the large attendance at the Harvey lectures. The sum of \$200,000 is needed with which to enlarge the academy and give more room for the library, and another \$200,000 is needed as an endowment fund with which to publish a monthly bulletin of the work done.

### Value of Organization in Medicine.

DR. JOHN A. WYETH, the incoming president, said that scarcely a page of history fails to convey the lesson of the value of organization, but it was left to modern times to apply the lesson to the amelioration of suffering and the sav-



ing of life. It was not until the middle of the nineteenth century that the attention of the medical profession was strongly directed to the subject of medical education and the need of higher standards of qualification, both preliminary and medical. The Medical Society of the State of New York in 1844 invited a convention to co-operate with them in this proposition, and in 1846 the proposed organization of a national body took shape, which resulted in the formation of the American Medical Association in 1847. In 1846 the New York Academy of Medicine was founded, and the influence of these two bodies has made itself felt throughout the profession. He thought the most important event in the history of the medical profession in the United States was the reorganization of the American Medical Association in 1900. One of the most difficult problems of this undertaking was the adjustment of differences which divided some of the state societies, and these had been successfully overcome. All the work of this organization was cited as an illustration of what could be accomplished by intelligent co-operation.

With all that has been accomplished there still remains much to be done. Nearly one-half of the profession are as yet "without the walls." These as well as the public should be taught by precept and example that our material advancement is secondary to our obligations to mankind. There are many practitioners in the United States who are so deficient morally and professionally that they are a menace to the communities they infest. There are medical colleges not up to the standard of requirements, and there is scarcely a community which does not violate the ordinary laws of health. It is in the solution of these problems that organization in medicine can make itself felt by co-operation and the sacrifice of material interests to the public good. Organized medicine should take more note of politics than it has hitherto done. It should take as its model the great physician, great politician, great scientist and great philanthropist, the immortal Virchow.

#### Surgery as a Science and an Art in New York in the Middle of the Last Century.

DR. STEPHEN SMITH, who has been a fellow of the Academy of Medicine since 1855, said that his subject could be best illustrated by a judicious estimate of representative surgeons of that period, the character of the teaching in the medical colleges, and the surgical literature. The representative surgeons of 1850 were, in the order of their ages, Valentine Mott, J. Kearney Rodgers, Willard Parker, Alfred C. Post, John Watson, Guerdon Buck, James R. Wood, John M. Carnochan and William H. Van Buren. Dr. Valentine Mott owed his remarkable success to aptitude, training and opportunity. The first was seen in his extraordinary attention to detail, order and cleanliness. When in 1809 he returned to this country, after studying under Astley Cooper, the field of operative surgery was occupied only by his friend and preceptor, Wright Post, who was about to retire from active duties. Mott's pioneer work began with the ligation of the innominate in 1818. This was not only his greatest achievement, but the most brilliant operation ever undertaken up to that time. This operation was the fruit of years of study and preparation. His wounds rarely suppurated, a result never completely secured by the school of Hunter. We now discover that his habits of personal cleanliness and attention to details secured asepsis in a large measure. Standing on the vantage ground of half a century after Dr. Mott's death, when criticisms and prejudices of rival surgeons are forgotten, the speaker said the achievements of Mott form the most luminous page in the annals of American surgery, while his great qualities of mind and heart, combined with his august personality, make him the most conspicuous figure in the memory of the surgeons of 1850.

Rodgers' reputation rested on the single operation of ligation of the left subclavian artery within the scalene muscle, in 1845. Astley Cooper had attempted this operation and failed. In operating Rodgers was very dextrous and expeditious. Parker was seen to best advantage in the clinics held at the college lecture room, and few students were graduated from the College of Physicians and Surgeons while Parker occupied

the professorship of surgery who were not well instructed in its practice. The next three surgeons, Post, Buck and Watson, were connected with the New York Hospital, but none of them took so great an interest in surgery as their predecessors, Mott and Rodgers. The last three, Wood, Carnochan and Van Buren, became surgeons to the newly created Bellevue. Wood's great service to the profession was the conversion of Bellevue from an almshouse to a modern well-equipped hospital, and then in making it a clinical school. The opening of a new hospital was a great benefit to aspiring young surgeons, as up to that time the New York Hospital was the only one offering advantages in this direction. No surgeon in the list combined so many qualities making for success as Van Buren, whether as teacher, author or practitioner. As to the didactic teaching of surgery in the medical schools of New York, we find Dr. Willard Parker in the College of Physicians and Surgeons, whose lectures were devoted to practical subjects, as fractures and dislocations, injuries of different regions, concussion and compression of the brain, the classification and treatment of ulcers, the diagnosis and treatment of tumors, etc. Scrofula was dwelt on as a dangerous complication of surgical diseases, but syphilis received only passing notice. While the theory and principles of surgery were too briefly considered in Parker's lectures, the compensation came in the discussion and illustration of practical subjects. Gross, who lectured at the University Medical College, was a student and investigator, and discussed broadly the principles of surgery, giving less time to the details of practice.

A most accurate status of the surgery can be obtained from the viewpoint of the wards of hospitals. In 1850 Bellevue and the New York Hospitals represented the best ideals in this country. In the New York Hospital the greatest interest was manifested in fractures. The most frequent public operation was amputation. Ligation of arteries, trephining, excision of bones, were capital operations and drew together all the surgeons of the city. At Bellevue the service was confined to chronic diseases, a legacy of the former almshouse. Abscesses, caries, syphilis and similar pus-generating affections filled the wards. There was scarcely a clean, healthy wound among a thousand patients. As a result, amputations and excisions were the favorite operations of the period. Looking backward the surgeons of 1850 appeared to be men of heroic mold, and their achievements under conditions almost prohibitive of success seemed even more marvellous than the remarkable deeds of the surgeons of to-day.

#### Reminiscences of Medical Practice in New York During the Early History of the Academy.

DR. ABRAHAM JACOBI said that a study of the transactions of the academy during its early history showed that such men as Alonzo Clark, Fordyce Barker, I. Marion Sims, Guerdon Buck, James M. Minor, John Griscom and many others were impressed with their responsibilities and were always present at the meetings of the academy and gave their best, and much that was said might be read with profit to-day. He spoke of the work of Valentine Mott and John Tetman Batchelder, who was widely known because of his operations on tumors, stone in the bladder, ligation of the carotid, sarcoma of the maxilla and removal of the superior maxilla. He was one of the first to remove the head of the femur. John Griscom, who was made city inspector in 1842, and as such head of the health department, was successful in securing the first health laws. Through his efforts the health department ruled that no burial could take place without a permit, depending on a medical certificate. He exposed the hardships of emigration and of emigrants due to lack of food, overcrowding, absence of medical care, cruelty, bestiality of sailors, etc., which opened the eyes of the public. Many laws ameliorating the conditions of prisoners were due to his efforts. He gave reminiscences of William Currie Roberts, who founded the first infirmary for diseases of women and children, and of John W. Francis, who was a consultant of wide repute, an obstetrician, a teacher of medicine, of materia medica, of medical jurisprudence, of forensic medicine in Rutgers College and in the College of Physicians and Surgeons, of which he was the first graduate.



## Book Notices

ELEMENTS OF THE SCIENCE OF NUTRITION. By G. Lusk, Ph.D., M.A., F.R.S. Illustrated. Cloth. Pp. 326. Price, \$2.50 net. Philadelphia: W. B. Saunders Company, 1906.

In a historical introduction the progress of the science of metabolism is traced from its beginnings in the observations of Sanctorius through its establishment on scientific principles by the labors of Lavoisier, Liebig, Voit, Rubner and others to the present time. The seat of metabolism or the production of body energy was gradually pushed back from the lungs, where oxidation was first supposed to take place, to the tissues, and was shown to be due to the action of the tissues and not to the supply of oxygen nor the abundance of oxidizable material. The law of the conservation of energy has been fully established in regard to the metabolism of food, but the food is utilized according to the needs of the organism, and the extent of this utilization varies in response to certain conditions, but these conditions are to be conceived as the occasion and not the direct cause of the metabolic changes.

Chapter second deals with the feces and brings out the little appreciated fact that, so far as their nitrogen content is concerned, the feces form a genuine excretion comparable with the urine. Only when the carbohydrate food is excessive, or presented in an indigestible form, do the feces contain appreciable amounts of carbohydrate residue. The course of metabolism in starvation is described in chapter three, and the conclusion shown that the starving organism lives primarily on its stores of fat and circulating proteid, and only under the final necessity produced by the exhaustion of fat do the cells yield their constituent proteid. Muscular work is performed at the expense of fat, the proteid metabolism remaining very constant. The starving organism dies, most commonly, from the failure of some vital organ before the supply of nutriment is completely exhausted. The regulation of temperature forms the subject of chapter four, while the influence of proteid food and some of the anomalies of metabolism, such as cystinuria and alcaptonuria, are described in chapter five. The fact is made plain that creatinin arises from the breakdown of cells or from the creatin ingested in the food without reference to the amount of the general proteid metabolism, and that creatin can not be a precursor of urea, as was formerly supposed. The uselessness of extract of beef for nutrition is emphasized. Its value lies in its flavor, which promotes the proper flow of the digestive juice. The author further says: "It may be incidentally remarked that the principal value of 'patent' foods lies in their flavor. If agreeable to the taste of the individual they usually afford a harmless indulgence. That beef, milk, cream, butter and rice are equally suitable for all the purposes of proper living is a fact not sufficiently advertised. The old-time fraud of 'patent' foods being 'brain restorers' is as foolish a lie as can be written."

The stimulation of metabolism by the ingestion of proteid food in spite of less need of the organism when the external temperature is increased shows the unsuitability of much meat in hot weather or in tropical climates. The specific dynamic actions of foodstuffs, the influence of fat and carbohydrates, and of mechanical work complete the scientific foundation for the more practical part of the work as it is related to the needs of the physician. The subject of a normal diet is first taken up, and a tendency to approve the lower proteid standard of Chittenden is evident, although the propriety of a larger allowance in cold weather is indicated. The total calorific value of Chittenden's allowance for soldiers and men at labor is criticised as being too low.

The succeeding chapters deal with metabolism in various pathologic conditions, and the general theory is summed up in a final chapter. Metabolism is regarded as dependent on some molecular motion in the cells which causes the breakdown of the nutritive material, with slight but similar changes in their own substance. The latter changes necessitate a certain amount of constructive metabolism, which is greater during the period of growth or in convalescence. According to Folin, the amount of destruction of cell material is measured by the output of creatin and uric acid on a diet free

from these substances, and is independent of the amount of proteid food. The striking fact about metabolism is its constancy under varying conditions. This indicates that it depends on the needs of the cells at the time. Excess of nutritive material does not increase it, nor is it governed by the action of enzymes. The latter are under the control of the organism, but are necessary at certain stages. Thus a ferment to effect hydrolysis of sugar is necessary before oxidation can take place. Oxygen and the oxidases may be present in ample quantity, but the sugar is not burned unless it be broken by its specific ferment.

"However clearly formulated the laws of metabolism may be, and many of them are fixed and definite as are any laws of physics and chemistry, still the primary cause of metabolism remains a hidden secret of the living bioplasm."

While the book contains comparatively little of the practical details found in ordinary works on dietetics a careful study of the facts and principles laid down can not fail to make it easier to carry out those details in a rational manner. The methods and experimental results are described with clearness so that the reader can understand the reasoning on which the conclusions are based. The author expresses the hope that the work may lead to more frequent observations on metabolism in patients in American hospitals, a phase of scientific work in which Germany has led the way. It is to be hoped that steps will be taken in this country to promote studies in metabolism in disease to compare with the work done by Atwater, Folin and the author in the physiologic field.

RATIONAL ORGANOTHERAPY, with Reference to Urosemiology. By A. v. Poehl, J. v. Tarchanoff, Alf. v. Poehl and others. Translated from the Russian Text. Vol. I. Cloth. Pp. 239. Price, \$3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

Professor von Poehl has devoted many years to the study and preparation of pure substances from organs and appears deeply impressed with the wide range of applicability of organotherapy. Some years ago he began the study of spermin, a crystalline substance which may be obtained from the testicular and prostatic secretions, and which exists also in various organs and in the blood. After obtaining spermin in a very pure form, his attention was turned to other substances which may be extracted from organs and which might have therapeutic effects. As a consequence of this work, the market now knows, or is likely to know, *Spermin-Poehl*, *adrenalinchlorid-Poehl*, *cerebrinum-Poehl*, etc. For it is gathered from the volume that these substances are the products of Poehl's own laboratory, and that a "Russian Journal for Medical Chemistry and Organotherapy" stands ready to "supply any who wish it with all possible information about the question of the therapeutic use of the different organo preparations." The subject of organotherapy appears to be treated in a rather pretentious fashion. The field is classified, the specific characters of the substances obtained from organs are described and certain principles in regard to their methods of action are proposed. In its linguistic dress the book is imposingly scientific. The names of many of Europe's famous physicians and experimenters are found on its pages and a bibliography of 569 references is added.

*Spermin* and *adrenal* are general catalysators, the former hastening processes of oxidation, the latter those of reduction. *Cerebrin*, *thyroidin*, *hypophysin*, *ovarin*, etc., are specific catalysators. Of these *cerebrinum-Poehl* has been studied extensively, and it is supposed to hasten the excretion of certain products of metabolism, in such conditions as neurasthenia, epilepsy, alcoholism, etc.

The volume purports to show the importance of spermin for the oxidation processes of the body. When these processes are low it is supposed that spermin has decreased in amount or that its activity has been inhibited by toxic or autotoxic substances. In this way a system of spermin therapeutics is built up, which is made applicable to a wide range of clinical manifestations. The indication for the use of spermin, or rather for the recommendation of its use, in the group of infectious diseases is found in this expression: "In 1887 by urinalysis he (Poehl) convinced himself that most of the infectious diseases go hand in hand with decreased intraorganic oxidation and he recognized that the predisposition to different



infectious diseases is to be looked for in the autointoxications from decreased textural respiration." The probable value of spermin as a prophylactic against infectious diseases is subtly injected in the preceding quotation, and spermin is made largely responsible for natural resistance to infections in a further elaboration of the topic. In order to learn the condition of the textural respiration, of oxidation and elimination in the body, an elaborate system of urine analysis is made use of, and a number of coefficients are utilized to express the findings. It is chiefly in this way that the indications for the use of spermin are recognized, and in the same way the progress of a patient under treatment with spermin is determined.

It is the manifest object of this volume (Vol. I) to exploit spermin. When one has finished perusing its 239 pages he feels that quite an extensive system of spermin-therapeutics has been constructed, and the far-sighted may perhaps divine that those morbid conditions which do not yield readily to *Sperminum-Poehl*, may be found amenable to *Adrenal-Poehl*, *Cerebrinum-Poehl*, or *some-other-organo preparation-Poehl*. For assurance one must wait for the appearance of Volume II.

That the authors strain many points in order to fasten on spermin the responsibility of our general well-being, is to be regretted, and it is furthermore unfortunate that in quoting some of our greatest workers in infectious diseases, whose beliefs are well-known, partial truths are told in such connection that misrepresentation is accomplished.

**DIAGNOSIS OF NERVOUS DISEASES.** By P. Stewart, M.A., M.D., F.R.C.P., Physician to Out-Patients at the Westminster Hospital, etc. Cloth. Pp. 380. Price, \$4.20 net. New York: Longman's Green & Co., 1906.

This work is much after the fashion of the *Sémiologie du Système Nerveux* of Dejerine. The only disease discussed as such is hysteria. Of 23 chapters 18 are devoted to what may be called symptoms or special manifestations of disease: namely, coma, fits and other convulsive phenomena, involuntary movements, aphasia, disorders of articulation, cranial nerves, pain and other abnormal subjective sensations, abnormalities of sensation, organic motor paralysis of the upper neuron type, organic motor paralysis of the lower neuron type, recurrent and transient palsies, incoördination, postures and gaits, thropho-neuroses, reflexes, affections of the sympathetic and angio-neuroses. Consequently, the book is of little aid in giving one information of a given affection, as apoplexy, brain tumor or tabes, but given a case showing peculiar movements, pain or palsy, the reader may learn much of such symptom and its various etiology. With 360 none-too-large pages one can not expect to find all of the symptomatology and differential diagnosis of nervous diseases, and, in fact, some of the chapters of this book seem decidedly sketchy compared with the treatment of the same subjects in more complete works. For instance, the four pages on headache are almost ludicrously inadequate; notably so the single paragraph on migraine.

Still, the work is full of valuable information and hints, and it seems to the reviewer that it may fulfill a most useful purpose as a sort of pathfinder or indicator in connection with larger and more systematic treatises. What we mean is this: Suppose a physician not very familiar with nervous diseases has a case involving cranial nerves. In this book of Stewart's he will find mentioned in some way or other the various disturbances of the cranial nerves, their causes and the diseases in which they occur. This information will easily guide him. It will show him what the case might be, and by looking up in other books the various diseases indicated he will be able to come to a definite conclusion. In other words, Stewart does not make the diagnosis for him, but enables him to make it for himself—if he really wishes to do so.

In symptomatology and diagnostic aids the work is quite up to date. It is the first text-book in which we have noticed Quinquaud's sign of alcoholism. In the text are 192 figures and two very good colored plates. The cuts, which are largely half-tones, are well selected and well executed, and the different diagrams are most satisfactory. The book has what our European colleagues so often neglect—a good index.

In short, we heartily recommend this work, not as a text-book on nervous diseases (which it does not aspire to be), but as a handy and reliable aid to the busy practitioner in the rather difficult field of clinical neurology.

**TABES DORSALIS.** The Lumleian Lectures, Delivered before the Royal College of Physicians, London, March, 1906. By D. Ferrier, M.D., LL.D., F.R.S. Cloth. Pp. 122. Price, \$1.50 net. New York: William Wood & Company.

This little memoir treats only of certain features in tabes, and lacks any lengthy consideration of the practical matter of treatment so that it can hardly be called monographic. As far as it attempts to go however, it is one of the clearest and best statements of what we know of this much written about, but still far from completely understood, disorder. In the opening lecture a sketch of the history and changing views of its pathology is given; in the second its etiology is thoroughly discussed, and in the third the more striking symptoms, the ataxia and the pupillary manifestations which have been the subjects of recent research, are taken up. Dr. Ferrier is unqualifiedly an advocate of the specific origin of tabes, or we might perhaps better state, of the necessary antecedents of syphilis in this disorder. He admits, of course, certain difficulties in the hypothesis, for that is what it must be admitted to be, but sees no other possessing equal probability of truth. He sees in this admission of an active late elaborated toxin, possibly some internal secretion perverted by the specific disease, the best hope of future therapeutic possibilities.

**A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE.** For Use in Training Schools for Attendants and Nurses and in Medical Classes, and as a Ready Reference for the Practitioner. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases, etc. Third edition, thoroughly revised. Cloth. Pp. 183. Price, \$1.25 net. Philadelphia: F. A. Davis & Co., 1906.

This book fairly meets the demand for what it claims to be, a primer or elementary work on insanity and its management, suitable for hospital attendants. These are, or should be, something more than mere trained nurses, though this fact is not always duly appreciated, and we see no disadvantage in their having rudimentary instruction in psychology and such psychiatric data as will serve to educate their faculties of observation in the often difficult duties they have to perform. There is little danger of their presuming to pose as psychiatric specialists, if rightly trained, and there is a need, if not an actual demand, for trained mental nurses, not only in the hospitals but also for caring for the mentally afflicted outside—a work for which the ordinary trained nurse often shows a conspicuous unfitness.

**STUDIES IN THE PSYCHOLOGY OF SEX.** Erotic Symbolism, the Mechanism of Detumescence, The Psychic State in Pregnancy. By H. Ellis. Cloth. Pp. 285. Price, \$2.00 net. Philadelphia: F. A. Davis & Co., 1906.

This volume is not altogether psychologic, there is considerable overstepping to at least what might perhaps be called the ultra-physiologic side of psychology, if it is psychology at all. There are also in its contents what seem superfluous portions not really essential to the truly scientific treatment of the subject matter. It is, of course, readily understood that the subject is one that is difficult to handle in a manner altogether beyond criticism. The title page gives a fairly adequate idea of the general nature of the contents of the work.

**A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS,** with Especial Reference to the Clinical Application of Drugs. By J. V. Shoemaker, M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine, etc. Sixth edition, thoroughly revised. Cloth. Pp. 1255. Price, \$5.00 net. Philadelphia: F. A. Davis Company, 1906.

This sixth edition has been revised to conform to the new Pharmacopeia and contains an alphabetical list of medicinal agents, giving their preparations, pharmacology and therapeutic use. Considerable space has been given to unofficial preparations and these, unfortunately, are described under their proprietary or trade names, regardless of the fact that some of them have been admitted to the Pharmacopeia under other names.



**NATURE AND TREATMENT OF CANCER** (Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer). By J. A. Shaw-Mackenzie, M.D., Lond. Third edition, revised and enlarged. Cloth. Pp. 99. Price, \$1.25 net. New York: William Wood & Company.

This edition differs from the previous one only in that attention is directed to the ferments of the intestinal glands and preparations of the same in the treatment of carcinomatous growths. Several new cases are added in which the author states that trypsin treatment proved successful. He states that the natural and comparative immunity enjoyed by the duodenum and small intestine from cancer, and the slower rate of growth in the large intestine appear to give support to the medicinal treatment of such growths by means of preparations of the pancreas, intestinal glands, and bile salts, alone or in combination. Dr. Shaw-Mackenzie's methods are being tried by a number of investigators but as yet the reports are too conflicting to allow of forming any opinion as to the real value of the trypsin treatment of this disease.

**A TEXT-BOOK OF PATHOLOGY.** B. A. Stengel, M.D. Fifth edition. Cloth. Pp. 979. Price, \$5.00 net. Philadelphia: W. B. Saunders Company, 1906.

In the notice of this book, Jan. 19, 1907, page 256, the price of this book was given as \$6.00 instead of \$5.00, the correct price for the cloth binding.

## Miscellany

**A Single Medical Examining Board for the State of New York.**—"The present medical laws of the State of New York," says the *New York State Journal of Medicine*, "are the best that could be secured at the time of their enactment. They have served an excellent purpose in protecting the people from the worst types of incompetence. Their value has been well appreciated; and they have been in operation long enough for their weaknesses to have been made manifest. The one weakness to which we call attention is, that the State of New York is keeping alive the so-called 'schools of medicine,' which are not entitled to be regarded as separate schools and which in reality do not exist. The homeopath and the eclectic are not peculiar in the essentials of medicine, and, so far as therapeutics is concerned, they differ no more in their actual practice from the regular practitioner than do the regular practitioners among themselves. Homeopathic and eclectic medicine have practically disappeared; still the laws of New York keep alive the delusion that they exist. Now we are confronted by the harm of the law which created three separate medical examining boards. Other 'schools' of peculiar therapeutics are demanding the same special privileges which already have been accorded to the two 'schools' now recognized by the state. The same laws, it is insisted, which apply to homeopathy, should apply to osteopathy, provided each complies with the same requirements; and the state can not much longer be made to see it in any other light. When the state recognized one peculiar sect it opened the way to recognize all. Before this absurdity has gone any further it should be stopped. There should be a single examining board, to examine into the qualifications of candidates applying for license. This board should determine particularly the candidate's knowledge of the human body and its diseases, their causes, their effects on the body, their prevention and their treatment. Of treatment, the most that we can demand is that it shall be either reasonable or authoritatively sanctioned; and the advances of medical science will constantly make this a variable subject. What was authoritatively sanctioned treatment twenty years ago would not satisfy the demands of a present-day examining board; and we may draw the same odious comparison between some of our modern therapeutics and that of twenty years hence. This board should determine that a candidate has complied with certain educational requirements, at least as high as are now insisted on; and, having a satisfactory knowledge of the science of medicine, he should be licensed and allowed much latitude in his choice of treatment. A doctor whom the state recognizes should be simply a doctor. The state should know no eclectics, osteopaths or hydropaths. Therapeutics is

but a small part of the science of medicine. It should be the privilege of the licensed doctor to use small doses or large doses, massage or hydrotherapy or whatever he pleases, provided he be well grounded in the fundamentals of medicine. One of two things is going to happen: Other sects are going to demand to secure the same special privileges of an examining board which are already accorded to two sects, until the system of licensure becomes so complicated that it will be unwieldy and absurd to the degree that it will destroy itself or the people will destroy it; or now, and before it is too late, the medical profession must earnestly take hold of the matter, and of its own initiative demand the abolition of the present three-examining-boards system and its replacement by a single board of impartial judges of the qualifications to practice the healing art."

**Must the Surgeon Warn the Patient of the Danger of Sudden Death Under Chloroform.**—The heirs of a man who had died suddenly in the course of an operation under chloroform sued the surgeon for \$10,000 damages for neglect to warn the patient of the danger of sudden death under chloroform. The local court awarded \$1,600 damages, claiming that there was no vital necessity for the operation, and that the patient was addicted somewhat to alcohol which rendered the chloroform particularly dangerous for him, and that he had not been warned of its dangers. The court of final appeal, however, reversed this decision. The *Semaine Méd.* for November 28 gives the full text of the final verdict. Referring to the patient's alcoholism and tendency to syncope, the judge said: "All physicians are unanimous in declaring that alcoholism is not a contraindication to the use of chloroform; injured workmen are frequently put under the influence of chloroform in the hospitals in Paris, even when they are drunk at the time, in order to undertake without delay some necessary operation. The two syncopes observed under the influence of the pain when the patient's arm was moved are no evidence that he was peculiarly predisposed to syncope when the pain should be abolished by the anesthetic." Referring to the second plea—that the operation was not a vital necessity—the judge said: "It is absurd to assert that anesthetics should be used only when the life of the patient is in danger. Such a limitation would deprive the wounded and persons suffering from serious affections, requiring surgical intervention, of the relief offered by anesthesia. Chloroformization reduces rather than augments the dangers resulting from operations; the frequently intolerable sufferings occasioned by an operation would certainly entail fatal syncope oftener than the anesthesia does." The third plea—the necessity for the surgeon's warning the patient of the immediate or contingent dangers to which anesthesia would expose him—was answered by the judge as follows: "Considering that the chances of death from chloroform are very slight (1 to 2,000), and that the danger of sudden death under chloroform seems to lie more in the personal impressionability of the patient, and that this impressionability, and hence the danger itself, would be increased if he were informed beforehand of all the immediate and contingent perils to which the anesthesia might hypothetically expose him; considering that it is the duty of the physician, on the contrary, to reassure the patient, to inspire confidence and to seek to dispel from his mind the apprehensions which can only be ominous for him; considering further, that if Dr. Y did not formally warn the patient in this case, of the dangers which the chloroformization presented, the latter was certainly aware of them since he remarked to the assistant at the operation: 'You will come to my funeral, won't you?'; considering that the patient did not fear death, as otherwise he would not have consented to the anesthesia, but that he had a general idea, as every one has, that the use of chloroform is not exempt from peril, and considering, in short, that Dr. Y was in nowise responsible for the death of X, the plea for damages is denied and the costs of the suit imposed on the plaintiff."

**The Nursing Profession and Proprietary Medicine Testimonials.**—If the standards of the medical profession are not sufficiently high and noble it may be of benefit for its members to measure up to the standards of some other profession. We are fond of extolling our profession and in declaring that



we yield the palm to no other calling in loftiness of ideals. Let us pause a moment, therefore, and listen to what is said to the nurse, the handmaid of medicine, by the *American Journal of Nursing*: "The first flagrant abuse of the R.N. (registered nurse) has come to our knowledge, and we want to be understood as absolutely condemning the practice of nurses in lending their names to the endorsement of proprietary medicines of any kind. We have in our possession a letter of such endorsement signed by a graduate of one of the Brooklyn hospitals, who is the chairman of a membership committee of a state having registration. We think her alumnae association and the state society of which she is a member should take this matter in hand, and that in all cases of this kind the offense should be considered sufficient ground for depriving a nurse of her registration certificate. A woman who lends herself to such practices brings disgrace on the whole nursing body." We have a faint recollection of having seen, somewhere, some time, a testimonial published by the manufacturers of a proprietary medicine, which purported to have been given by a reputable practitioner. We do not remember that this prominent member of the profession was disciplined for this or that it awakened any stir. Our memory may be faulty, however.

**Continuous Sleeping After Head Injury.**—Eulenburg reports in the *Med. Klinik* for October 21, the case of a lawyer, about 45 years old, who slipped in alighting from a trolley car and fell on the back of his head. The fifth day an uncontrollable tendency to sleep was observed, and he has been sleeping continuously during the twenty-seven months since. He lies in bed, his forehead corrugated as if in deep thought, the superficial reflexes attenuated and the deep ones intensified. During all these months he has never opened his eyes nor spoken a syllable and droops forward, fast asleep, when lifted into a chair. He is fed at regular intervals and chews slowly and swallows without strangling. The family history shows a certain tendency to nervous affections, and for a year or so before the accident the patient had displayed considerable forgetfulness and apathy. At the time of the accident he was facing criminal proceedings for failure to report the receipt of a sum of money paid to him. Eulenburg reviews the few similar cases in men on record. In Holzinger's case the patient, a man of 60, had resided in the tropics and there was a suspicion of true "sleeping sickness." Tiling, Schultze and others have described spells of profound slumber lasting for a few minutes to several hours, in epileptics.

**Food Value of Indian Corn.**—Experiments conducted at the Maine Agricultural Experiment Station by L. H. Merrill, and published in the October, 1906, bulletin, indicate a high nutritive value for this cereal. Digestion experiments were carried on to determine the absolute and relative digestibility of cornmeal and the other principal corn products, both when used as a simple diet and when forming part of the mixed diet. The degree of utilization of the proteins and the carbohydrates were separately determined, as well as the proportion of available energy as heat of combustion. The carbohydrates are almost completely utilized, while the proportion of protein undigested varied from 5 to 10 per cent. The experiments indicate that these foods become more digestible when eaten with other foods. In general it may be said that the corn products are more digestible than is commonly supposed. Not only their digestibility, but their cheapness and the readiness with which they may be converted into palatable foods suggest a more extended use and entitle them to a much higher place in popular estimation. Similar experiments with chestnuts are reported in the same bulletin. The composition of the dry meat of chestnuts closely resembles that of Indian corn, with, however, a larger percentage of fat. Digestion experiments showed that the nuts were quite digestible, in one experiment 98.1 per cent. of the nutritive constituents being absorbed. The chestnuts were eaten in the form of flour.

**The Responsibility of Accoucheurs.**—A British physician has lost his fees under the following circumstances: A woman, whom he was engaged to attend in labor, was delivered before his arrival. He asked the nurse to examine the placenta. On the following days he asked the nurse if she was douching the

patient, and when told that she was, asked if she had boiled the tube. He was told that she had not. On the fifth day there was a rise of temperature and again on the ninth. On the fifteenth day there was a rigor; a consultation was held, and an offensive portion of the placenta was removed. Death from septicemia followed. When the physician sent in his bill for \$65 the husband refused to pay and claimed \$250 for neglect. The case was taken to court. In her evidence the nurse stated that she told the physician that the lochial discharge was offensive, but that he having a cold did not notice the smell and so made no examination until alarm was caused by the rigor. The jury found that in not making an examination at this time he had committed an error of judgment and was therefore not entitled to his fees. They also found damages against him for the nominal amount of 24 cents.

**Hysteria as Pithiatism.**—J. Babinski of Paris defines hysteria as the neurosis constituted by all the disturbances which are susceptible of being cured by persuasion, direct or indirect. Suggestion engenders the neurosis, but it can be cured by persuasion alone. To emphasize this conception he proposes to call it pithiatism, from the Greek words *peitho*, persuasion, and *iatos*, curable. This descriptive term would differentiate once for all the phenomena of hysteria, curable by persuasion, from allied phenomena on which persuasion has little if any action. The persuasion may be from an emotion, from the confidence inspired by the physician, the belief in some mysterious power, in the curative virtue of some remedy or the occult influence of some new cult—whatever the source of the persuasion, the mental process which terminates in a return to normal is not opposed to common sense. The benefit of psychotherapy is not confined to hysteria, but the latter is the only affection susceptible of being cured by it alone without other measures. Babinski recently presented his views on the subject at a meeting of the Paris internes, and his address is reproduced in the *Tribune Médicale* for Sept. 22-29.

**Lacerda's "Zoospore" as Microbe of Yellow Fever.**—J. B. de Lacerda announced a few years ago that yellow fever was the result of the action of a germ found in the blood of yellow fever patients, to which he gave the name of "zoosporo." His communications on the subject to the Brazilian Academia Nacional de Medicina stated that the germ is found in the blood and also in the liver in yellow fever. It secretes a very virulent toxin which is responsible for the clinical picture observed. The zoospore is inoculated by the mosquito but completes its life cycle in man. Inoculation of animals not only reproduces the disease but causes the development of the lesions characteristic of yellow fever, especially those in the liver. He has recently published an answer to the American Commission and to the French Commission, both of which found the zoospore as he described it but denied it etiologic importance. In his reply he reports additional experiences and tests which he believes establish beyond question the etiologic rôle of the zoospore. The *Brazil Medico* for October 22 reviews his work and speaks in appreciative terms of the highly scientific character of his painstaking research.

**Etiologic Treatment of Syphilis.**—L. Spitzer reported at the recent German Dermatologic Congress at Berne that he has now a record of 20 syphilitic patients treated according to Kraus' technic with 2 c.c. of a suspension of the initial sclerosis, increasing the strength from .5 per cent. to 2 per cent., injected subcutaneously. Seven of the patients have shown no signs of secondary phenomena during the twenty-four months since. The rapid subsidal of the enlarged glands in the vicinity is a special feature of the treatment. Since the discovery of the spirochete in syphilitic lesions it is possible to differentiate them and commence treatment much earlier. The material injected was derived from the initial sclerosis of various patients at various stages of the process, which explains the lack of constancy in the results observed. While these 20 patients were being treated with the suspension, 60 others were receiving ordinary treatment, and secondary phenomena were observed in all of the latter group, while only 13 out of the 20 receiving the specific treatment presented them. His communications on the subject have been published in the *Wiener klin. Wochschr.*, the last in No. 38.



**Grafting a Kidney.**—The *Semaine Médicale* for October 3 contains an account of the implantation of a kidney from a pig and from a goat in 2 women whose kidneys had been destroyed by irreparable lesions. Jaboulay of Lyons transplanted the kidney into the bend of the elbow, inserting the stump of the renal vein in the severed median cephalic vein, and the renal artery in the brachial artery, the ureter pointing toward the inner side of the elbow. As soon as the tourniquet above was released, the implanted kidney could be seen distended with the arterial blood. One patient was in an advanced stage of Bright's disease, and voided only 500 c.c. of urine during the day. After this operation she voided 1,500 c.c., but it was found the third day that clots had obstructed the lumen of the anastomosed vessels, and the graft had to be removed. The ureter contained a fluid which responded to the tests for urine—the graft had thus "taken," which fact was confirmed by histologic examination, but the thrombosis compromised its success. The same occurred also in the second case. The wounds in both healed smoothly.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, February 4. Secretary, Dr. S. L. Leg, Carson City.

KANSAS State Board of Medical Registration and Examination, Topeka, February 12. Secretary, Dr. F. P. Hatfield, Grenola.

NEBRASKA State Board of Health, State House, Lincoln, February 13-14. Secretary, Dr. George H. Brash, Beatrice.

**Rules Governing Examinations in Indiana.**—Dr. W. T. Gott, secretary of the State Board of Medical Registration and Examination of Indiana, sends us the following rules governing examinations for license to practice medicine in that state:

1. An examination is required of applicants who desire to practice medicine in Indiana. The law making this requirement went into effect March 11, 1901.

2. Applicants who have been licensed by other state examining boards may be admitted by reciprocity provided rules of the Indiana board governing reciprocity are strictly complied with. (These rules may be obtained on application).

3. All applicants are required to fill completely and correctly an application blank furnished by the board. The statement contained in the application must be sworn to before an officer authorized to administer oaths.

4. All applicants for examination must submit diploma, fee and recent photograph of self. Diploma must have been issued by a recognized medical college. Applicants for license on basis of reciprocity must appear in person before the secretary or chief clerk of the board, for identification.

5. Non-resident applicants are under no circumstances issued permanent certificates until they have become bona fide citizens of Indiana by living in the state six months.

6. Examinations are conducted by the secretary and one or more members of the board assisted by the clerk and two monitors. Questions are prepared by the members of the board according to subjects assigned. A meeting is held a few days preceding the examination and question lists are revised and adopted; they are then mimeographed in the office of the board and sealed in separate packages and put under lock and key. The seals are not broken until the hour assigned for each subject has arrived, but one list of questions being distributed at a time.

7. Each applicant is provided with chair, table and blank book with name of subject printed on the cover of each. The set of questions for that subject are distributed with book to each applicant.

8. Chairs and tables are placed in position the evening before the examination. Each table is numbered, cards are numbered corresponding to the numbers on tables. These cards are placed in unsealed envelopes and put into a box and candidates required to draw an envelope. The candidate will be required to sit at the table corresponding to the number drawn. He is required to sign his name on the card and himself replace the card in the envelope and seal it. Each manuscript is signed by the number drawn by candidate. Under no circumstances will the candidate's name be allowed to appear on the examination paper. Candidates are not allowed to leave the room unless accompanied by a monitor.

9. Applicants are not permitted to communicate with each other, nor to have in their possession help of any kind; if detected violating these rules, the candidate is excused from the examination and his papers destroyed.

10. At the close of each examination, manuscripts are collected and sent by express to the member of the board having charge of that subject. Each member examines and marks each candidate by placing the marking opposite the candidate's number. These markings are sent to the clerk who tabulates them and presents the same at a meeting of the board which is held as soon as the tabulation is completed. The sealed envelopes containing the names are then opened and names placed opposite the corresponding numbers.

11. The following are the subjects of the Indiana examination: Anatomy, pathology and bacteriology, etiology and hygiene, physical diagnosis, physiology, materia medica and therapeutics, medicine, ophthalmology and otology, gynecology, surgery, chemistry, obstetrics, medical jurisprudence, rhinology and laryngology, neurology and pediatrics.

12. The same set of questions are submitted to the applicants of the various schools, except materia medica and practice, which are arranged for the school of practice to which applicant belongs. Manuscripts on these subjects are sent to the representatives of each school.

13. All applicants having been graduated subsequent to February, 1903, are required to submit with medical diploma, preliminary credentials which admitted entrance to medical college. The said credentials must set forth exact basis on which credentials were obtained, bearing the seal of the institution or examining board issuing same.

**Rules Governing Examinations in Michigan.**—Dr. B. D. Harrison, secretary of the Board of Medical Registration and Examination, has sent us a statement showing the number of questions asked in the various branches and the rules governing the licensing examination. These are as follows:

### QUESTIONS.

In the examination a total of 100 questions are asked, divided among the various subjects as follows: Anatomy, 10; histology and embryology, 5; physiology, 10; chemistry and toxicology, 10; bacteriology, 5; pathology, 10; medical jurisprudence, 5; eye, ear, nose and throat, 5; obstetrics, 5; surgery, 10; medicine (including neurology and pediatrics), 10; hygiene, 5; gynecology, 5; materia medica and therapeutics, 5.

### RULES FOR EXAMINATION.

1. Help of every kind must be removed from the reach and sight of the candidate. Any candidate detected in trying to give or obtain aid will be instantly dismissed from the room and his or her papers for the entire examination canceled.

2. Questions will be given out and answers collected punctually at the time specified for that subject. Under no circumstances will papers be accepted unless the examination be actually held at the appointed time.

3. If any candidate withdraw himself or herself without permission from the sight of the examiner, his or her examination shall be closed. The rule permits a candidate, temporarily ill, to withdraw from the room and return only by consent of the examiner.

4. No candidate shall, under any circumstances, enter the examination more than thirty minutes late, unless excused by the examiner; and no candidate shall leave the room within thirty minutes after the distribution of question papers.

5. Unseemly and disrespectful conduct on the part of a candidate or a violation of these rules or the order of an examiner, will subject such candidate to instant dismissal from the examination room. Candidates under the influence of liquor in any degree will in like manner also be dismissed. In the event of such dismissal the candidate's papers for the entire examination will be canceled.

6. The examination shall continue three days; the sessions of the day beginning at 8:30 a. m. The results of the examination will be announced on receiving the several reports from the examiners.

**Illinois October Report.**—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Oct. 17-19, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 76, of whom 59 passed, 10 failed and 7 did not complete the examination. The following colleges were represented:



College.	PASSED.	Year Grad.	Per Cent.
American Med. Miss. Coll.....	(1906)	86, 88, 89	
Bennett Coll. of Ecl. Med. & Surg.....	(1906)		76
Dearborn Med. Coll.....	(1906)		75
Hahnemann Med. Coll., Chicago.....	(1906)		76
Hering Med. Coll.....	(1906)		75
Illinois Med. Coll.....	(1906)	75, 77, 81, 82, 85	
College of Medicine and Surgery, Chicago.....	(1906)		75, 76
National Medical University, Chicago...	(1905) 86; (1906)		76, 85
Northwestern University .....	(1900) 85; (1906)		84, 88
College of P. & S., Chicago.....	(1905) 84; (1906)	76, 77, 77, 83, 84, 84	
Rush Med. Coll. (1896) 76; (1901) 80; (1905) 86; (1906) 80, 84, 85, 85, 85, 85, 85, 86, 87, 88, 89, 89, 89.			
Kentucky School of Med.....	(1905)		85
Boston University .....	(1903)		85
Barnes Med. Coll.....	(1904) 80; (1906)		75, 78
Marion-Sims-Beaumont Med. Coll.....	(1897) 83; (1906)		75, 81
College of P. & S., St. Louis.....	(1906)		75
Creighton Med. Coll.....	(1906)		81
Medical College of Ohio.....	(1906)		87
Miami Med. Coll., Cincinnati.....	(1905)		83
Jefferson Med. Coll.....	(1906)		83
Western Med. Coll., London, Ontario.....	(1904) 86; (1905)		83

FAILED.			
Dearborn Med. Coll.	(1906)*		
Hahnemann Med. Coll.	(1906)*		
Harvey Med. Coll.	(1899)*		
Jenner Med. Coll.	(1906)*		
Keokuk Med. Coll., Coll. of P. & S.	(1905)*		
College of P. & S., Chicago	(1902)*		
University of Louisville	(1906)*		
Barnes Med. Coll.	(1905*)	(1906)*	
College of P. & S., St. Louis	(1906)*		
* Percentage not given.			

**Ohio December Report.**—Dr. George H. Matson, secretary of the Ohio State Board of Medical Registration and Examination, reports the written examination held at Columbus, Dec. 11-13, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 34, of whom 23 passed and 11 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Columbian University, Washington.....	(1904)	84,	85
Howard University .....	(1906)		79
Rush Med. Coll. ....	(1906)	84,	86, 95
American Med. Miss. Coll., Chicago.....	(1906)		86
Kentucky University .....	(1901) 75;	(1906)	79
Johns Hopkins Med. School .....	(1904)		84
College of P. and S., New York.....	(1905)		87
Long Island Coll. Hosp. ....	(1898)		86
Med. Coll. of Ohio.....	(1887) 91; (1905) 87;	(1906)	79
Western Reserve University .....	(1904)		86
Jefferson Med. Coll. ....	(1904) 83;	(1906)	86
University of Pennsylvania .....	(1905)		92
Hahnemann Med. Coll. and Hospital, Philadelphia..	(1906)	80,	88
University of Toronto, Ont. ....	(1905)		76
Western University, London, Ont. ....	(1906)		76

FAILED.			
Illinois Med. Coll.	(1906)		67
University of Maryland	(1906)		66
New York Homeo. Med. Coll.	(1906)		69
Eclectic Med. Institute, Cincinnati	(1906)		63
Starling Med. Coll.	(1906)		62, 66
Ohio Med. University	(1906)		63
Miami Med. Coll.	(1900)		69
Toledo Med. Coll.	(1904)		56
Western University of Pennsylvania	(1905)		73
University of Naples, Italy	(1905)*		
* Candidate was dismissed.			

**Ohio Reciprocity Report.**—Dr. George H. Matson, secretary of the Ohio State Board of Medical Registration and Examination, sends us a report of physicians licensed through reciprocity, Jan. 8, 1907. The following colleges were represented:

College.	Year. Grad.	Reciprocity with.
Coll. of P. and S., Chicago	(1904)	Illinois
Northwestern University	(1905)	Illinois
Rush Med. Coll.	(1906)	Illinois
Bennett Col. of Ecl. Med. and Surg.	(1906)	Illinois
Hering Med. Coll.	(1905)	Illinois
Hahnemann Med. Coll., Chicago	(1905)	Illinois
Medical School of Maine	(1901)	Maine
University of Maryland	(1900)	Maryland
Michigan Coll. of Med. and Surg.	(1906)	Michigan
University of Michigan, (1902) Maine; (1903)		
(2, 1904) (3, 1905)		Michigan
Toledo Med. Coll.	(2, 1906)	Illinois

**Texas October Report.**—Dr. T. T. Jackson, secretary of the Board of Medical Examiners for the State of Texas, reports the written examination held at Houston, Oct. 16-18, 1906. The number of subjects examined in was 12; percentage required to pass, 75. The total number of candidates examined was 37, of whom 30 passed and 7 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Columbian University, Washington		(1892)	88
Rush Med. Coll.	(1903) 79;	(1906)	88.4
College of P. and S., Chicago		(1906)	79.6
Dearborn Med. Coll.		(1904)	82.5
Jenner Med. Coll.		(1904)	76.1
Louisville Med. Coll.	(1904) 75; (1905) 80.4; (1906) 75,	75.7,	83.1
Kentucky School of Med.		(1906)	75.7
Tulane University		(1906)	81
Baltimore Med. Coll.		(1906)	82
University of Maryland		(1906)	85.4
University of New York		(1899)	85
Jefferson Med. Coll.		(1906)	82.6
Southwestern University, Dallas	(1906)	77.2, 77.3,	82.4
Baylor University		(1906) 77.5,	78
Mcharry Med. Coll.		(1906)	82.8
Vanderbilt University		(1904)	80
University of Texas	(1905) 77.5; (1906) 76.5,	86.8	87.7
Undergraduates		82.5,	85.6

FAILED.			
Atlanta Coll. of P. and S.	(1906)		70.4
Illinois Med. Coll.	(1903)		65.2
Dearborn Med. Coll.	(1905)		74
Louisville Med. Coll.	(1906)		71.2
Hospital Coll. of Med., Louisville	(1903)		71.5
Southwestern University, Dallas	(1905)		71.9
Undergraduate			58.2

**Texas Reciprocity Report.**—Dr. T. T. Jackson, secretary of the Board of Medical Examiners for the State of Texas, sends us a report of physicians licensed through reciprocity during the year 1906. The following colleges were represented:

College.	Year. Grad.	Reciprocity with.
Kentucky School of Med.	(1894)	Virginia
Memphis Hosp. Med. Coll.	(1904)	Virginia
University of Pennsylvania	(1906)	Virginia
University of the South	(1901)	Virginia
University of Nashville	(1906)	Virginia
University Coll. of Med., Richmond	(1899)	Virginia
University of Virginia	(1899)	Virginia
Med. Coll. of Virginia	(1906)	Virginia

**University of Minnesota Endorses Higher Preliminary Requirements.**—The following resolution was unanimously adopted by the faculty of the College of Medicine and Surgery, Oct. 2, 1906:

WHEREAS, The Council on Medical Education of the American Medical Association and the National Confederation of State Licensing and Examining Boards, at a joint meeting held in Boston, adopted as the minimum requirement for beginning the study of medicine, a four-year high school education plus one year of chemistry, physics, biology and languages, this requirement to apply to all students beginning the study of medicine after Jan. 1, 1910, be it

*Resolved*, That the College of Medicine and Surgery, University of Minnesota, regard this requirement as an important step in the right direction, and sincerely hope that by that date all the medical colleges in the United States will be operated under this or a higher entrance requirement. The entrance requirements of many of the leading medical schools are considerably in advance of this requirement at the present time, and we regret that the requirement could not be made operative at an earlier date than 1910.

## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

### Typhoid Fever.

W. S. Thayer, in the *Maryland Med. Jour.*, discusses the prophylaxis of typhoid fever. It is recognized in all medical treatment to-day that preventive medicine holds a position of almost equal importance as the actual treatment of disease. The practitioner is confronted constantly with the problem of how to prevent the spread of all forms of infectious diseases. Thayer discusses the means of control of the spread of typhoid fever. In order successfully to combat the dissemination of infectious diseases the physician must acquaint himself with the means by which the disease is spread. The author first discusses the sources of infection and, second, the habitat. He states that infection takes place usually through the gastrointestinal tract, possibly at times by inhaled air.

### METHOD OF ENTRANCE OF TYPHOID BACILLI INTO THE FOOD AND DRINK.

The rôle of water has been and probably is largely overestimated by the general public, mainly owing to the fact that the common water supply, if infected, may, and not infrequently does, give rise to larger and more striking epi-



demics than can arise in any other way. An infected general water supply, however, is directly of relatively little importance in the ever-prevailing country epidemics which are responsible for so many deaths each year. Indirectly, however, in both country and city, water often plays an important part. A slightly contaminated supply, of which, perhaps, many individuals might drink without serious effect, may well serve now and then to convey the infection to some substance such as milk, which is an excellent culture medium for the organism. If one bacillus, for instance, were left in a milk can which was rinsed with infected water, there would develop in a few hours in milk enough bacilli to affect many people. Epidemics of typhoid fever due to infected milk are of common occurrence in urban as well as in rural populations. The rôle of ice has been much discussed. It is not very important, but is a possible source of infection.

There can be little doubt that in some instances green vegetables, such as lettuce and celery, which are eaten raw, may serve as conveyers of infection. Human dejecta are often used as manure for gardens in which these substances are grown. The author quotes the opinion of several eminent observers to show that dust may be a potent means of spreading this disease.

Evidence is all sufficient to show that the ordinary house fly is a carrier of typhoid bacilli from dejecta, and contamination of food by flies may probably be regarded as one of the main sources of the spread of the disease in the rural districts. When one reflects on the ordinary sanitary arrangements of the simple country house he must feel that it would be strange if this were not so.

Another source of the spread of typhoid fever has been by no means sufficiently recognized, namely, that of a direct contact either with the patient or with fomites. Typhoid bacilli are frequently present, not only in the stools and urine of the patient, but also in his sputa, and those who attend him must be constantly exposed to the danger of soiling their hands with infected material. Convalescents from typhoid may carry the bacilli in their system for considerable periods of time. Bacilli also live for months in blankets and clothing. "It can not be too much emphasized," says Thayer, "that every case of typhoid fever comes from another; that the typhoid bacillus gets into the external medium only from a case of human typhoid fever, and that it escapes from the human being by means of the feces, of the urine, of the sputa, of the bath water, of the soiled clothes."

(This subject will be continued.)

#### Acute Bronchitis.

In the mild forms of this disease Yeo recommends that the patient be put to bed in a room with a temperature between 65 and 70 degrees F. The air of the room should be kept moist by causing steam to be diffused throughout the apartment. Warm drinks should be given freely—barley water, linseed tea, thin gruel, or hot milk mixed with seltzer, Apollinaris, or soda water. These promote expectoration and relieve cough. Yeo thinks that the remedy *par excellence* to relieve the distressing dryness of the mucous membrane in the early stage of the acute bronchial catarrh is antimony, especially when combined with small doses of opium. He recommends:

R. Pulv. opii et ipecac. .... gr. v-x | 30-60  
Spts. atheris nitrosi. .... 3i 4  
Liq. ammonii acetatis. .... 3iii 12  
Aque camphoræ ..... 3iiss 45

M. Sig.: Take at one dose. Follow with a saline aperient the next morning.

When there is not much fever the following mixture may be given to adults to relieve the cough, dryness and soreness of the mucous membrane:

R. Vini antimonialis ..... 3iiss 6  
Liq. morphinæ acetatis (B. P.) ..... 3ss 2  
Aque laurocerasi ..... 3ii 8  
Syrupi ..... 3iii 12  
Aque dest. q. s. ad. .... 3vi 180

M. Sig.: Two tablespoonsful every three or four hours.

This should be given less frequently as the symptoms subside. Morphin should be avoided in old persons or in those who

do not stand the drug well. Codein may be substituted in doses of from 1/6 to 1/4 grain.

If there is much fever the following is useful:

R. Tincturæ aconiti. .... m. xii | 75  
Vini antimonialis ..... 3ii 8  
Liq. morphinæ acetatis (B. P.) ..... m. xl | 40  
Aque camphoræ q. s. ad. .... 3viii 240  
Liq. ammonii acetatis. .... 3iiss 45

M. Sig.: Two tablespoonsful every two or three hours.

For young children omit the morphin and add one-half ounce of syrup of tolu and give one or two teaspoonsful, according to the child's age. Much relief is often obtained by applying a large hot poultice over the top of the chest, in front and behind. In the milder forms, with this treatment the attack rarely lasts for more than a day or two, and the scanty, sticky expectoration is replaced by a more abundant mucopurulent secretion. It is then advisable to discontinue the antimony and morphin except at night for relief of the cough. An alkaline mildly stimulating expectorant is now useful.

R. Infusii senegæ ..... 3iii 90  
Sodii bicarbonatis ..... 3i 4  
Sodii chloridi  
Ammonii carbonatis, āā. .... gr. xxiv 1 | 44  
Syrupi tolutanus ..... 3iii 12  
Aque dest. q. s. ad. .... 3vi 180

M. Sig.: Two tablespoonsful every six hours.

A pill containing a grain and a half of quinin and a quarter or half a grain of powdered ipecac may be given two or three times a day, and will promote convalescence.

#### Acute Lumbago.

Flemming, in the *Bristol Medico-Chirurgical Journal*, states that in some cases of lumbago nothing gives so much relief as acupuncture. The more acute the pain, the more sudden the onset, and the greater the local tenderness, the more likely is this procedure to give relief. The needles should be inserted deeply, two inches or more, into the tender muscular masses at the sides of the spine, left in for two or three minutes, and followed by a fomentation. Twenty minutes or a half-hour afterward the patient must get up and walk. This should be followed by deep massage night and morning, and care should be taken that bowels, skin and kidneys act well. When a patient will not submit to this treatment then a dose of calomel should be given, large fomentations applied at once and some diaphoretic and diuretic drug given hourly.

The following has been recommended:

R. Atropinæ sulphatis. .... gr. i | 06  
Morphinæ sulphatis. .... gr. xvi 1  
Aque dest. .... 3i 30

M. Sig.: Inject 5 minims deeply into the muscles of the back.

## Medicolegal

### Life Tables and Sex—Expectancy of Plaintiff Spouse.

The Supreme Court of Iowa says, in the case of Croft vs. the Chicago, Rock Island & Pacific Railway Company, where a husband sought to recover for loss of services of his wife occasioned by her injury, that experience tables, showing the expectancy of human life, were introduced in evidence by the plaintiff, over the objection of the defendant, showing the expectancy of the wife to be about 30 years from the date of her accident. It was argued that the life table was not competent evidence because it did not purport to give the expectancy of a female. But this court does not take judicial notice of the statements contained in a life table, and in the state of the record before it, which contained no more than a statement that the life table was introduced showing the expectancy of life at certain ages, it must assume that the trial court, after examining the table, correctly held that it was admissible as bearing on the expectancy of a female. Should this court infer, however, that the table was general in the sense that it made no reference to sex, it would still be disposed to hold that it was admissible. Counsel presented no reason for making any distinction as to longevity as between



the sexes, and the barren record before the court does not warrant a holding that there is any.

Another ground of complaint was that the measure of recovery was made to depend solely on the expectancy of the wife, no heed being given in the instruction to the life expectancy of the husband. And the court says that as no attempt was made by direct evidence to show the age or expectancy of life of the plaintiff, this contention for error might under other circumstances present a question of more serious import. Thus it is probable that in a case, as supposed by counsel, of an aged husband and a youthful wife the expectancy of the husband should be taken into account in estimating his damages. But no such effect can be given here to reverse the judgment. For one thing, there was sufficient in the record to indicate that the plaintiff was a man in middle life, and hence that there was no considerable disparity between his age and that of his wife.

#### Not Required to Resort to Surgery to Construct Wife.

The Court of Appeals of Kentucky says that in the case of *Mutter vs. Mutter* the husband sought an absolute divorce on the ground of such malformation on the part of the wife as to prevent sexual intercourse. The proof showed that the wife was a woman of mature years, more than 40 years of age; that the husband was a widower, some years her senior; that they lived together but three days, when he took her home to her nephew's and left her there, alleging that she was not a natural woman, and that he had been deceived and defrauded into marrying her. It was further shown that the wife was not a naturally, or normally, formed woman, but that the opening in the hymen was abnormally small, so much so that it amounted to malformation; that in her condition it was impossible for her to have had sexual intercourse; in fact, the condition of the hymen was such that it even prevented perfect menstruation. These facts were known to her before marriage, but she did not acquaint him with them. The physicians who testified in the case said that, through the aid of medical science, she might be enabled to fill the proper place of a wife, but on this point they were not entirely certain that a perfect result could be obtained, either by dilatation or by the use of a knife. The husband declined to resort to the means suggested by the physicians, and declined to live with his wife.

The court is of the opinion that the husband was not required, or called on, to resort to surgery in order to construct a wife. He had a right to expect to find his wife of natural build and proportion, and, when such malformation existed as would, and did, prevent sexual intercourse, and this fact was concealed from him by the woman until after marriage, he was entitled to the decree granted. He was in no wise at fault, but the fault was wholly with the wife. She deceived him into marrying her by concealing from him her true physical condition. The word "fault" as used in the statute means more than a wrong—an error—a deviation from the rules of propriety; it means, also, a defect, or blemish, or impairment of excellence, and it is in this latter sense that she was in fault, and, being in fault, she was not entitled to alimony. The husband should not be made to suffer because of the wrong or fault of the wife.

#### Requisites of Affidavits of Physicians as to Imbeciles.

A Kentucky statute provides that no inquest shall be held unless the person charged to be of unsound mind or an imbecile or incompetent to manage his estate is in court and personally in the presence of the jury, and his personal presence shall not be dispensed with unless it shall appear by the oath or affidavit of two regular practicing physicians that they have personally examined him, and that they verily believe him to be an idiot or lunatic or incompetent to manage his estate, as the case may be, and that his condition is such that it would be unsafe to bring him into court. This statute, the Court of Appeals of Kentucky says, in the case of *Tipton vs. Tipton's committee*, is mandatory, and its provisions must be strictly complied with. The presence of the person charged to be of unsound mind, or affidavits in strict conformity to the letter of the statute, are indispensable to confer jurisdiction

on the court. In the absence of the person, and sufficient affidavits, the court has no jurisdiction to hear the case, and its judgment is absolutely void.

In this case the affidavit, stated to be made by two regular practicing physicians, declared that they "appeared before the undersigned judge, and state on oath that they have examined said Tipton and find him to be a feeble-minded person, and, in their opinion, is incapable of managing his estate; and, from information of his relatives and acquaintances, they believe it unsafe to bring him before the court." The court holds that this was insufficient. It says that it will be observed that the affidavit fails to state that the physicians personally examined Tipton, nor does it state when the examination was made, nor "that his condition is such that it would be unsafe to bring him into court." They express the opinion that it would be unsafe to bring him into court, but this opinion is not based on knowledge gained from a personal examination, but from information obtained from his relations and acquaintances, and may or may not be true.

It is an important and serious matter to declare a person to be of unsound mind, or an imbecile, or incompetent to manage his estate, and to take his property out of his possession and place it in the custody of a committee, and when an attempt to do this is made, the person affected has the right to be and must be in court, so that he may protect his rights, and see the judge and jury who are assembled to deprive him of this valuable privilege, and the judge and jurors have the right to see the person whose mental condition is called in question. This statutory right can not be dispensed with unless the condition of the person is such that it would be unsafe to bring him into court, and his condition must be established by the affidavits of two regular practicing physicians, or their testimony in open court, who have personally examined him immediately before, or so close to the time of the trial as to render it improbable that any material change should have taken place in his condition between the examination and the time of the trial, and the affidavits should state the date when the examination was made, and describe the conditions that render it unsafe to bring the person into court.

#### Evidence Not Conclusive of Consumption—Going to Colorado— Definition of Illness—Not Consultation.

The Supreme Court of Vermont says that in the case of *Schofield's administratrix vs. Metropolitan Life Insurance Company*, the defendant's evidence tended to prove that at the time the policy sued on was obtained by the insured he had consumption. This evidence was based on opinion formed for the discovery of tubercle bacilli in the sputum of the insured, and on personal examination. Medical authority, produced by the plaintiff, however, testified that it was not conclusive evidence that the insured had consumption because tubercle bacilli were found in his sputum, and that, his sputum having been examined on a later date, and two tests having been made, and no tubercle bacilli then being found, the conclusion naturally followed that the tubercle bacilli found on the former occasion were not the product of consumption, but were a result often obtained from the examination of the sputum of a healthy person. In addition, the defendant's examining physician testified that in his judgment the insured did not have consumption at the time of making his examination, and the testimony of several other witnesses tended to prove that he did not die of consumption. The court holds that there was no error in refusing to direct a verdict for the defendant, claimed on the ground that there was a breach of the warranty of the applicant that he had never had consumption.

Nor does the court consider that it was error to deny the request of counsel for the defendant for leave to argue to the jury that California and Colorado were places where consumptives go. A large portion of the defendant's brief was devoted to a discussion of the question of whether this court will take judicial notice of the fact that Colorado is a place to which consumptives resort. But the court thinks it unnecessary to decide that question, as it says that it was wholly immaterial. The only purpose for which the defendant could argue



that the insured was in Colorado in the winter of 1901 and 1902, and that Colorado is a resort for consumptives, would be to show that the insured had consumption at that time. Without saying more respecting the soundness of such an argument, based solely on the single fact that the brother of the insured, during that winter, received a letter from the insured mailed in Colorado, the court holds that fact had no tendency to prove that the insured had consumption, or that he resided in Colorado. That evidence was as consistent with the theory that it was mailed while passing through Colorado as it was with the theory that the insured was residing there at the time it was mailed. Besides, this court would hesitate to hold, if the evidence did in fact have a tendency to prove that the insured had gone to Colorado to reside temporarily or permanently, that it was evidence that he then had consumption.

As to what constitutes illness, within a question relative thereto, the jury was instructed: "A mere temporary indisposition, not serious in its nature, is not an illness within the meaning of this inquiry. 'Illness' as here used means a disease or ailment of such a character as to affect the general soundness and healthfulness of the system seriously, and not a mere temporary indisposition which does not tend to undermine and weaken the constitution. So that if there was an illness within the meaning of this term in this question, it must have been of the character I have indicated to you. And any illness, either under this question or under the consumption question, must be one that has become seated in the person so as to have begun its work of destruction to the health and constitution of the applicant." The court finds no error in this definition.

To show that the insured answered falsely the question, "Have you consulted any other physician?" when he answered "No," the defendant produced a physician who testified in substance, that he first saw the insured June 5, 1901; that at that time he was an examining physician for the defendant; that the insured came to him to be examined, and that, on that occasion, he did examine him superficially; that the insured said to him that he came for that examination because he had been told that he had trouble with his lungs, and he wanted another examination. No charge was made for the examination, nor did the physician advise him to do anything, until shortly before his death, long after the insurance was taken out. The physician distinctly stated that he was not consulted by the insured before the claimed answer, and that he did nothing but examine him. Merely calling into the office of a physician for some medicine to relieve a temporary indisposition, or simply for an examination to ascertain if there is any ailment or complaint about the person, and for nothing more, is not a consultation by a physician. The answer of the insured, that he had not consulted any other physician, the court holds, was not shown by this witness to be false.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

January 19.

- 1 \*Diagnosis and Surgical Treatment of Gastric and Duodenal Ulcer and Their Complications. A. A. Berg, New York.
- 2 \*\*"Rheumatism" and Its Treatment. F. J. Walter, Kramer, Ind.
- 3 Prognosis in the Consumptive. J. M. Bleyer, New York.
- 4 \*Medicolegal Study of a Morphomaniac. T. D. Crothers, Hartford, Conn.
- 5 \*Public Control of Disease Through a National Department of Health. H. W. Wright, Astoria, Long Island.

1. Gastric and Duodenal Ulcer.—From his experience Berg believes that operation is not advisable when the patient's general condition is bad, the hemoglobin very low, 19 to 20 per cent., and the pulse not very rapid. In such a condition even a slight operative shock, whether or not it is combined with the influence of a general anesthetic, is sufficient to cause the death of a patient. In such cases internal remedies and complete rest, induced by morphia, to check the bleeding, are far prefer-

able. When the patient's general condition is good, however, immediate operation is strongly indicated.

2. Rheumatism and Its Treatment.—Walter claims that the various infections will account for every form of so-called rheumatism except muscular, and that is an intoxication, which accompanies or precedes most articular, and some nerve infections. Intelligent treatment consists of prophylaxis, a better understanding between patient and physician, with attention to social conditions, dietetics, exercise or rest, as indicated, elimination by proper baths, fresh air, the right co-operative mental attitude, and in some cases climate. An examination of the urine is important in every case. Heredity has no effect, except as establishing social conditions followed by the family. A sedentary life, and also great muscular fatigue, should be avoided, the latter being a cause of muscle pains in children and workingmen. Alkaline waters and drugs, although greatly abused, are very important, he states, as antacids to the intestines.

4. Medicolegal Study of a Morphomaniac.—Crothers reviews the history of Dr. J. B. Matthews of Greensboro, who was indicted for the murder of his wife, December, 1905.

5. National Department of Health.—Wright suggests that there be established a national bureau of health, having subordinate bureaus in every community of about 10,000 inhabitants. At the head of these bureaus there should be physicians who have proved their ability to deal with public health problems and who give their best efforts to the prevention of disease. With proper regulations every case of illness would be reported to the local health bureau. Wright says that if matters were so arranged that all physicians would work together for the good of humanity and not for a fee, the competition and lack of coöperation now existing would be abolished.

#### New York Medical Journal.

January 19.

- 6 \*Immediate and Remote Consequences of Cranial Injuries. H. Cushing, Baltimore.
- 7 \*A Neurologic Critique of Recent Surgical Treatment of Cerebral Birth Palsies. C. E. Atwood, New York.
- 8 \*Endothelioma of Ovary. H. A. Bernstein, New York.
- 9 Urinary Analysis of Operative Cases and Treatment of Complications Arising from Kidney Insufficiency. S. E. Tracy, Philadelphia.
- 10 Clinical Value of Differential Blood Count in Operative Otology. J. F. McKernon.
- 11 The American Girl vs. Higher Education, Considered from Medical Point of View. R. W. Parsons, Ossining, N. Y.
- 12 \*Gastroptosis a Causative Factor of Tachycardia. H. Weinstein, New York.
- 13 \*Trauma of the Abdomen, with Report of Case of Rupture of Liver. A. E. Sellenings, New York.
- 14 Ocular Complications of Mumps. J. H. Woodward, New York.

6. Injuries to Cranium.—In the first installment of his article Cushing reports the history of one case very fully, leaving the remainder of the cases to be recorded later. The patient sustained a meridional fracture of the skull which caused a rupture of the meningeal artery to take place, with extradural hemorrhage and compression without preceding concussion. Recovery took place after a misdirected operation, but was followed by aphasia and pulsating exophthalmos. An exploratory craniotomy was done by Cushing, and he removed the clot, inserting an iodoform gauze pack in the cavity. After this operative intervention there was a continuance of local compression paralysis simulating those of original hemorrhage, aphasia, but all the intracranial symptoms subsided rapidly on removal of the pack. The patient returned after three years with pulsating exophthalmos from arteriovenous aneurism. He was free from the usual post-traumatic symptoms of un-operative cases.

7. Surgical Treatment of Cerebral Birth Palsies.—In summing up his article, Atwood says that it seems reasonable to say that immediate surgical intervention in intracranial hemorrhages of the newborn is justifiable in properly selected cases, as offering hope where no immediate hope seems otherwise to exist, and also from the standpoint of mitigating distressing sequelæ. Further, as diagnosis becomes more and more accurate, with experience and careful observation, it may be that meningeal hemorrhage will be more frequently discovered than at present, and we will thus be able to operate early and to obviate with certainty the secondary effects on the cortex



arising from pressure. Early operation is found to be well borne. The blood is found coagulated as in similar conditions in the adult, and even when the hemorrhage was basilar a decompression operation, he states, was useful. After all such operations it is advisable to assist the brain in its compensation and re-education of centers by a careful and thorough physical and mental training of the child. On the whole, however, prognosis must be tentative, on account of the participation of the brain cortex in a possibly destructive process from the trauma and asphyxiation.

**8. Endothelioma of Ovary.**—Bernstein records the case of a girl, aged 17, with a negative personal and family history, from whom he removed an endothelioma of the ovary. The symptoms began seven months previous to the time of operation and consisted mainly of pain in the abdomen and an enlargement over the right ovary. The interior of the tumor was white, irregularly lamellated and rather soft in consistency. A number of openings made in the tumor for the purpose of evacuating its supposed fluid contents failed to confirm the diagnosis of cyst or cysts. Microscopically the tumor consisted chiefly of fibrous tissue intermingled with muscle cells. No particular changes were noted in the blood vessels, but the lymph spaces were dilated and contained strands of cells that had no connection with the lymph channel.

**12. Gastropsis a Cause of Tachycardia.**—In support of his claim that gastropsis may be a cause of uncomplicated cases of tachycardia, Weinstein reports one case.

**13. Trauma of Abdomen.**—Sellenings summarizes his paper as follows: 1. Diagnosis of traumatic lesions of the abdomen is most difficult. 2. Signs and symptoms are variable in their exhibition and admit of no classification. 3. When there is an element of doubt in diagnosis laparotomy is indicated. 4. History and nature of injury may be the only indications for operation. 5. Early laparotomy will improve the percentage of recoveries. 6. Laparotomy as a means of diagnosis is without danger. 7. Tamponade is the best treatment for hemorrhage in ruptures of the liver.

#### Boston Medical and Surgical Journal.

January 17.

- 15 \*The Medical Knowledge of Shakespeare. A. C. Getchell, Worcester, Mass.
- 16 \*Aneurism of the Aorta. J. N. Hall, R. Levy and G. H. Stover.
- 17 \*Pelvic Abscess Treated by Vaginal Section. E. B. Young, Boston.
- 18 \*New Operation for Correction of the Nasal Septum. R. A. Coffin.

**15. Medical Knowledge of Shakespeare.**—Getchell brings together in groups passages from Shakespeare's plays and poems, to show his knowledge of medical matters.

**16. Aneurism of the Aorta.**—The authors report 4 cases of aneurism of the transverse portion of the aorta, which were under observation at one time.

**17. Pelvic Abscess Treated by Vaginal Section.**—An analysis of 21 cases of vaginal section for pelvic abscess made by Young shows that this operation gives what appear to be good results. One patient died, not as the result of the operation itself, but because of an effort to correct the consequences of an operation on a metastatic abscess. Two other unfavorable results are reported. One patient was finally cured of pain by removal of one tube and ovary; the other still has some pain and exudate, owing principally to lack of care. Thirteen patients are free from pain and four others claim to be well. The remainder have some pain at times, but the discomfort is apparently slight, even if some exudate, thickening or tubo-ovarian masses remain.

**18. New Operation for Correction of the Nasal Septum.**—Coffin's operation is divided into two short sittings. It is not suggested that this operation take the place of other window operations, but rather it is one to be used when the conditions are unfavorable for prolonged surgical procedures. In the case in which this operation was first employed, the cartilaginous septum was in contact with the lower left turbinate. Only a small piece of the bony septum was involved.

A more or less perpendicular incision was made in the right nostril anterior to the deviation, after first applying cocain

and adrenalin, and sterilizing the cavity with a weak solution of corrosive sublimate. The posterior elevator was then introduced through the incision beneath the periosteum and perichondrium and worked backward, upward and downward, until these structures were free from the septum as far as the edges of the deviation. The space thus made was injected with sterilized vaselin and the nose allowed to heal for one week. After one week the opposite side was prepared for operation in the same way as the first and an incision similar to the one on the right side, only somewhat more anterior, was made. The last incision was made more anterior in order that it would not come opposite the other and increase the liability to perforation in case the first was not entirely healed. In the same way as before, the perichondrium and mucous membrane were separated from the septum. The submucous spur was removed by the use of a straight, blunt knife and the author's submucous gouge. A light pledget of antiseptic cotton was then introduced into the left nostril and drawn forward in order to hold the perichondrium and mucous membrane in the median line.

When the deviation is long and narrow Coffin has obtained excellent results by treating the second part of the operation as a simple spur, removing it with a saw. This not only saves time, but the result, in most cases, is quite as satisfactory. It is his opinion that in doing this operation one is more likely to obtain true cartilage in the new septum than in the usual window operation, for the reason that both cartilage cells and perichondrium are present during the time intervening between the first and second operations.

#### Lancet-Clinic, Cincinnati.

January 19.

- 19 \*Mental Symptoms Due to Disease of Nasal Accessory Sinuses. J. A. Stucky, Lexington, Ky.
- 20 Heredity. G. B. Jenkins, Louisville, Ky.
- 21 Rachialgia. M. W. Lang, Ridgeville, Ohio.

19.—See abstract in THE JOURNAL, Nov. 24, 1906, page 1760.

#### St. Louis Medical Review.

January 12.

- 22 Medical St. Louis. President's address, St. Louis Medical Society. J. C. Morfit, St. Louis.
- 23 Pathologic and Clinical Diagnosis of Sarcoma. M. G. Seelig, St. Louis.

#### Journal Experimental Medicine, New York.

December.

- 24 \*Study of Opsonins. C. E. Simon, Lamar, R. V., and W. N. Bispham.
- 25 Influenza Bacillus in Inflammations of the Respiratory Tract in Infants. M. Wollstein.
- 26 \*Effects of Intraspinal Injection of Magnesium Salts on Tetanus. S. J. Meltzer and J. Auer.
- 27 \*Specific Immunity Principles in the Blood of Vaccinated Calves. J. W. Jobling.
- 28 \*Experimental Research into the Resuscitation of Dogs Killed by Anesthetics and Asphyxia. G. Crile and D. H. Dolley.
- 29 Thermostable Anticomplementary Constituents of Blood. H. Noguchi.

**24. Study of Opsonins.**—The authors do not find that Wright's method of determination of the average number of organisms per leucocyte gives an adequate idea of the quantity of opsonins present. They conceive that the use of concentrated serum may show what would appear to be a perfectly normal and sufficient quantity of opsonins for a given number of organisms, which amount, however, might be altogether inadequate for a larger number. They, therefore, dilute the serum with 1.2 per cent. salt solution, which rapidly exhausts the phagocytic power and shows this inadequacy. On account of their difficulty in estimating accurately the number of organisms in a given cell, they determine the number of phagocytizing cells.

With human blood they prepared a 1 to 20, a 1 to 30 and a 1 to 40 dilution, while with the blood of animals a 1 to 10 and a 1 to 20 specimen was made. These preparations are now inoculated with a small number of the organisms taken from an agar culture. If the organism does not readily yield an emulsion in this way, an emulsion must be separately prepared in normal salt solution. Each tube receives a constant volume of corpuscles which equals one-half that of the diluted serum. The authors found opsonins in all the large classes of vertebrates, the amount varying in the various animals. It seemed to be lower as we descend in the scale of animal life. They



also observed the opsonic content of the blood to vary in man and that human blood contained more opsonin than that of the lower animals. They show that by their method of obtaining the opsonic content there are greater fluctuations than when Wright's method is employed. They found in some individuals a marked influence of digestion on the opsonic content of the blood. They were unable to demonstrate opsonin in striated muscle tissue, liver, spleen, lymph glands, kidneys, intestinal mucous membrane, muscular coats, adrenal glands, brain, pancreas, testicles, ovaries, cerebrospinal fluid, seminal fluid and milk. They found its presence in exudates to be variable. The examination of bone marrow was unsatisfactory. Exudates were found to contain opsonins. Their results tend to show that opsonins are essentially components of the blood; but Lamar and Bispham do not believe that they are formed there. They found no constant parallelism existing between the number of leucocytes and the amount of opsonins.

From their experiments they conclude that opsonins are not dialysable. They consider them to be intimately associated with the globulins. They show that opsonins can be in part or entirely removed from the blood serum by various substances in a manner analogous to the various ferments. They believe that specificity of opsonins does not exist. Their experiments suggest the possibility that the opsonins may be a constant quantity and that the number of organisms which is taken up by a cell is influenced by a second factor which may be variable.

**25. Influenza Bacilli in Respiratory Diseases.**—Wollstein did not find the influenza bacillus in throats of healthy children nor in the throats of children in whom lesions of the respiratory tract did not exist. When the bacilli occurred in the throat the clinical course of the disease which they complicated was apparently influenced by them. This was especially true of pulmonary tuberculosis, which ran a more severe course when complicated by an influenza bacillus infection. The author considers that the term pseudo-influenza should be discarded on account of the similarity of cultural characteristics of all the influenza bacilli and of the agglutination reactions.

**26. Magnesium Salts and Tetanus.**—Meltzer and Auer studied the effects of intraspinal injection of magnesium salts on tetanus in 8 monkeys and 3 human subjects. A 25 per cent. solution was used. The monkeys received from 0.06 to 0.07 grams, and the patients 0.02 grams of magnesium sulphate per kilo of body weight. All the monkeys died, but those treated lived from 24 to 48 hours longer than the controls. One patient recovered. The authors conclude as follows: Intraspinal injections of magnesium sulphate, in doses which do not affect the respiratory center or other vital functions, are capable of abolishing completely all clonic convulsions and tonic contractions in cases of human tetanus, and experimental tetanus in monkeys. The relaxing effects of the injections may last 24 hours or longer. In experimental tetanus in monkeys early intraspinal injections of magnesium salts are capable of retarding the progress and development of the tetanic symptoms. These investigators believe that the therapeutic value of the injections lies in the possibility, by abolishing completely all tonic and clonic muscular contractions, of tiding over the animal until the newly formed antitoxin can overtake the balance of free toxin, and the metabolic processes of the body have mastered the toxins fixed by the nerve cells.

**27. Immunity and Vaccination.**—Jobling believes that he has demonstrated the occurrence of an immunity principle in the blood of vaccinated calves by means of the method of duration of complement by antigen antibody devised by Bordet and Gengou and Nioreschi, and extended to tuberculosis, syphilis and meningitis by Wassermann and others. Jobling is now studying smallpox with the same method.

**28. Resuscitation After Asphyxiation.**—Crile and Dolley report the results of 60 experiments on the resuscitation of dogs killed by anesthetics and asphyxia. A cannula was inserted into an artery (preferably the carotid) directed toward the heart. At varying intervals after death saline or, preferably, Ringer's solution was allowed to flow for perhaps ten seconds; then a hypodermic injection of from 1 to 2 c.c. of a 1 to 1,000

solution of adrenalin was given into the rubber tube attached to the cannula. Introducing the adrenalin solution into the arterial system, they found, was the most direct and effective way of producing an increase of pressure in the coronary arteries on which Solmann showed the inauguration of the beat was more dependent than on the quality of the fluid producing such pressure. A few seconds after the injection the blood pressure began to rise steadily. A few firm pressures on the thorax over the heart were followed, at the end of three-quarters of a minute, by vigorous heart action. Spontaneous respiration followed in a few minutes.

Animals after death from chloroform, ether or asphyxia, up to five minutes were uniformly and readily resuscitated by the above method; the proportion of successes diminished with the lapse of time; adult dogs could not be resuscitated after twenty-three minutes, nor puppies after thirty-five minutes. After death from chloroform and ether animals were more readily resuscitated than after death from asphyxia. Resuscitation, if successful, usually occurred within one minute after the administration of adrenalin. The following are some of the difficulties encountered: Antemortem clotting, the probability of the occurrence of which increased with the lapse of time after death and with cardiac trauma from massage; overdistension of the heart, failure of the heart, circulation and respiration; the apparently imperfect recovery of the brain power.

#### American Medicine, Philadelphia, Pa. December.

- 30 \*Intravenous Injections; A Therapy of the Future. B. Hahn, Seattle, Washington.
- 31 Senility. A. L. Benedict, Buffalo, N. Y.
- 32 Disadvantages of the Upright Position. A. G. Pohlman, Bloomington, Ind.
- 33 \*Comparative Danger of Scopolamin-Morphin Anesthesia. H. C. Wood, Jr., Philadelphia.
- 34 \*Danger of Traumatism to the Uterus During Dilation. C. A. Stewart, Duluth, Minn.
- 35 An Unusual Anomaly of the Palmaris Longus Muscle. H. E. Radasch, Philadelphia.

**30. Intravenous Injection.**—Hahn discusses the value of intravenous injections as a means of administering remedial agents very fully. He believes that especially fitted for intravenous treatment are dyscrasic and dystrophic affections, disorders of metabolism, blood diseases, septic infections, cardiac insufficiency and syphilis. Concluding, he says that the oral administration of drugs will always remain the standard procedure for every day.

**33. Danger of Scopolamin-Morphin Anesthesia.**—Wood selected from the literature 1,988 cases of scopolamin-morphin anesthesia. In every instance he consulted the original authorities (except one). In this series there were 23 deaths, of which, after careful reading of the descriptions of the symptoms and the author's own conclusions, Wood thinks it justifiable to attribute the death to the anesthetic in 9 instances. The mortality in this method reaches, therefore, one death in 221 anesthetics, as against one death in 1,500 from ether. The anesthesia was unsatisfactory in at least 868 cases, and ether or chloroform was administered during the operation. A considerable experience with both ether alone and morphin-ether anesthesia in dogs has convinced Wood that although far more convenient, the preceding use of morphin rather increases than diminishes the likelihood of anesthetic accidents. He says that there is no evidence as to the special indications for the preference of this method over ether, and that certainly it is not in cases of advanced renal disease, for every clinician will hesitate seriously before giving one-half of a grain of opium to a nephritic. In view of the facts that the combination of hyoscin and morphin for the production of surgical anesthesia is scientifically irrational, and has yielded a mortality of over 4 per 1,000, and that in 69 per cent. of the cases the anesthesia was unsatisfactory, Wood concludes that it must be either a very bold or a very ignorant surgeon who will persist in its use.

**34. Traumatism to Uterus During Dilatation.**—Three cases are reported by Stewart in support of his contention that many of the instances that have been noted as perforation of the uterine wall by the curette, when its use had been preceded by the dilator, were due to the latter instrument, the damage remaining undiscovered until its existence was revealed by the curette.



**36. Pericarditis.**—Hamilton analyzes 36 cases of pericarditis, 10 of which occurred as a terminal complication of nephritis, 3 occurred together with acute pneumonia or pleurisy, 20 occurred secondary to acute rheumatism, endocarditis, chorea or tonsillitis, and one case each with pulmonary tuberculosis, puerperal sepsis and cerebrospinal meningitis. There was no record of pain in 13 cases. In 16 cases the pain was felt in greatest intensity over the left precordium and beneath the sternum; in 2 cases in the left shoulder, and in 3 cases in the epigastrium. Dysphagia was marked in 4 cases and it was an early sign, observed even before definite signs of fluid were detected. Hamilton found as the result of his analysis that the young rheumatic subject is very susceptible to pericarditis; that tuberculosis is a comparatively rare cause of pericarditis; that pericarditis with lobar pneumonia is comparatively rare; that Rotch's dull angle or the cardio-hepatic angle is doubtless found dull with pericardial effusion, but it is found with marked dilatation of the heart as well, and hence loses its value as a diagnostic point between these two conditions; that dulness in the left second interspace may also be found with cardiac dilatation.

**Montreal Medical Journal.**

*January.*

- 36 Pericarditis. W. F. Hamilton, Montreal.
- 37 So-Called Infantile Paralysis. A. M. Forbes, Montreal.
- 38 Two Cases of Cesarean Section. A. L. Smith, Montreal.
- 39 Two Cases of Perforated Ulcer of Duodenum. C. A. Peters, Montreal.

**Iowa Medical Journal, Des Moines.**

*January.*

- 40 \*Deformities of the Spine. J. W. Cokenower, Des Moines.
- 41 Country Surgeons. B. N. Torrey, Creston.
- 42 \*Two Appendices Instead of One. L. Schooler, Des Moines.

**40. Deformities of the Spine.**—Cokenower summarizes his paper as follows: 1. The statistics and histories of all cases of deformities of the spine, even in children, shortens longevity, and especially so with extreme scoliosis when the average age does not exceed 30. 2. All deformities of the spine can be relieved if treatment is begun early or so soon as any deformity exists, and those without bone deviations are simple and amenable to successful correction, and those with osseous change, even in children, can be improved, but not so in adolescence and adults. 3. The law of growth and development of osseous as well as soft tissue, is fully demonstrated in the abnormalities, distortions, deformities and actual and permanent normal functional disturbances when the equilibrium of the normal axis of the body has been destroyed, no matter whether it be the result of torticollis, knock knee, bow-legs, club-foot, short leg, or any other cause, the results are the same according to severity. 4. The medicinal and mechanical treatment should be augmented with hygiene, gymnastics and all other properly guarded means that will develop the body, give tone and power to the muscles, increase vital functions and materially improve the general health.

**42. Two Appendices instead of One.**—Schooler reports a case of appendicitis in which he found two appendices instead of one. When the abdomen was opened there escaped a quantity of pus and the intestines presented with a normal appendix in front. This was clamped near the base and was found to be attached to the free base of the colon. On introducing the finger, he found another appendix about one inch below the base of the first, greatly swollen and perforated near the middle. The distal extremity was gangrenous. The diseased appendix was ligated and removed. The bowels were found completely obstructed by the exudate. The obstructed portions were released and attention given to the normal appendix. This was removed in the usual way. After removal it was carefully examined and measured four inches in length. It was normal in every respect except possibly that it may have been slightly smaller in its diameter than its fellow. On account of the swollen condition of the perforated one this could not be determined.

**Journal of the Kansas Medical Society, Lawrence.**

*January.*

- 43 Ectopic Gestation. G. M. Gray, Kansas City.
- 44 \*Present Status of Exophthalmic Goiter. F. A. Carmichael, Goodland.
- 45 \*Bilateral Cervical Sympathectomy in Exophthalmic Goiter. R. H. Meade, Great Bend, Kans.

- 46 Infected Wounds. S. Steelsmith, Abilene.
- 47 Subinvolution as an Etiologic Factor in Diseases of Women. F. A. Harper, Pittsburg.
- 48 Tuberculosis, Its Prevention and Restriction. A. A. Dickin-son, Pittsburg.

**44. Exophthalmic Goiter.**—Carmichael says that of the various methods employed from time to time in the surgical treatment of exophthalmic goiter, thyroidectomy has proved the most universally satisfactory, the choice being between this and sympathectomy. The operation of ligation of the thyroid arteries and exothyropexy have alike proven unsurgical and unsatisfactory.

**45. Bilateral Cervical Sympathectomy in Exophthalmic Goiter.**—In a typical case of exophthalmic goiter reported by Meade, bilateral extirpation of all the cervical ganglia was done at one sitting. Two hours after the operation the lagophthalmos had entirely disappeared, and the patient's eyelids completely covered the eyeball for the first time in several years. Twenty-four hours after the operation the patient had slept well and the pulse had not been over 96. The tremor was much less marked and the von Graefe and Stelwag's signs had entirely disappeared. About four months after the operation the goiter was not noticeable, the pulse never was over 94, but there was still a slight degree of exophthalmos.

**Buffalo Medical Journal.**

*January.*

- 49 Expert Medical Testimony. D. M. Totman, Syracuse, N. Y.
- 50 Medical Profession and the Simplified Spelling. B. G. Wilder, Ithaca.
- 51 \*Extensive Gangrene Following Contact with a Live Wire. N. Jacobson, Syracuse.
- 52 Plea for Education in Venereal Prophylaxis. J. A. Gardner, Buffalo.
- 52½ Air We Breathe. D. C. Greene, Buffalo.

**51. Extensive Gangrene of Arm.**—Jacobson's patient, a boy 12 years of age, while sliding down a roof, grasped a large electric wire in order to save himself from falling to the ground. The wire carried 6,600 volts and had an amperage of 90. It is assumed that as the boy seized one wire with his hand his foot came in contact with the companion wire. Fifteen days after the injury the moist gangrene of the arm and leg had extended so far that it became necessary to remove the arm close to the shoulder and the leg above the middle third. The boy's recovery was slow but complete. The curious features about the case are that the boy was not killed outright by a current of four times as many volts and from fifteen to forty-five times as many amperes of electricity as are used in judicial executions, and that the force of the current was expended on the extremities of one side of the body only, the left arm and leg. Jacobson does not regard this as an electric burn, but concludes that in some way the arterial blood supply was immediately cut off, either because the arteries contracted through vasomotor stimulation or the blood in the vessels at once coagulated.

**Ohio State Medical Journal.**

*January 15.*

- 53 Therapeutic Exercises in Lateral Curvature. H. O. Feiss, Cleveland, Ohio.
- 54 Shall Ohio Have an Up-to-Date System of Registering Vital Statistics. C. L. Wilbur, Washington, D. C.
- 55 \*Penetrating Wounds of Thorax. E. O. Smith, Cincinnati.
- 56 \*Chronic Headaches. J. A. Thompson, Cincinnati.
- 57 The Bronchoscope and Esophagoscope as Aids to Laryngologist and Surgeon. S. H. Large, Cleveland.
- 58 \*Malt Soup in Infant Feeding. J. J. Thomas, Cleveland.

**55. Wounds of Thorax.**—Smith emphasizes the fact that while a great many of the penetrating wounds of the thorax require no operative interference, there are some that do, and lives can be saved by the judicious selection of cases. No patient should be allowed to bleed to death from a lung injury without the possibility of recovery that surgical intervention might offer.

**56. Chronic Headaches.**—Thompson says that in any cases of chronic headaches in which ordinary treatment fails a careful examination of the nose for growths or minor lesions is necessary. Frequently the cure of diseased conditions in the nose will relieve the patient of his headache, as in several cases described by Thompson.

**58. Malt Soup in Infant Feeding.**—Thomas has found that not infrequently, even after all other methods prove fruitless,



malt soup will, in a surprisingly short time, bring about a return to normal, with rapid increase in weight. This food must not, however, be continued too long in certain cases because scurvy will result. He says that the particular indications for the use of malt soup are found in infantile atrophy or marasmus, and in the dietetic treatment of ileo-colitis. The malt soup is prepared as follows: Two ounces of wheat flour are gradually added to 11 ounces of milk, with constant stirring. In a second vessel three ounces of a thick malt extract, to which is added two and one-half drams of an 11 per cent. potassium carbonate solution, are dissolved in twenty ounces of water at a temperature of 120° F. Finally, the first and second mixtures are mixed and boiled for three or four minutes. This gives a food containing 1.2 per cent. fat, 2 per cent. albumin, and 12.1 per cent. of carbohydrates in the form of easily absorbable maltose.

**Fort Wayne Medical Journal-Magazine.**  
*December.*

- 59 Diphtheria Antitoxin and Its Uses. H. O. Brueggeman, Fort Wayne.
- 60 Localization of Brain Disease. G. W. McCaskey, Fort Wayne.

**Mississippi Medical Monthly, Vicksburg.**  
*December.*

- 61 Aneurism of the Thoracic Aorta. P. W. Toombs, Greenville.
- 62 The Financial Side. J. J. Ferguson, Greenville.
- 63 Croupous Pneumonia. T. F. Wickliff, Wayside.
- 64 Gastroenteritis or Summer Complaint in Children. L. D. Dickerson, McComb.

*January.*

- 65 Address of Dr. B. F. Duke at Jackson County Medical Society, Oct. 3, 1906.
- 66 Calomel. L. D. Harrison, Clarksdale.
- 67 Pneumonia. F. M. Dooley, Duncan.

**Journal Missouri State Medical Association, St. Louis.**  
*December.*

- 68 Missouri Sanatorium for Treatment of Incipient Tuberculosis and Its Legal Foundation. W. M. Bayliss, Mt. Vernon, Mo.
- 69 The White Plague. H. Jerard, Pleasant Hill, Mo.
- 70 Limitation of Surgical Procedures in Cancer. G. W. Broome, St. Louis.
- 71 Syphilis of the Nervous System. C. J. Morrow, Kansas City, Mo.
- 72 Appendicitis. C. G. Grieger, St. Joseph.
- 73 Some Less Frequent Complications of Fibroids of the Uterus. E. Jonas, St. Louis.
- 74 Multiple Fibromyomata of Uterus with Cystic Ovaries, Removal, etc. R. M. Funkhouser, St. Louis.

**Texas State Journal of Medicine, Fort Worth.**  
*December.*

- 75 Congenital Cysts of the Neck. J. E. Thompson, Galveston.
- 76 Modern Diagnostic Methods in Cancer of the Stomach. J. W. McLaughlin, Austin.
- 77 Relation of the Railway Surgeon to the Company and the Employé. C. A. Gray, Bonham.
- 78 Tuberculosis Problem in Texas. F. Paschal, San Antonio.
- 79 Duties of the Local Surgeon, 1, to the Injured Party; 2, to the Railroad Company, and 3, to the Public. F. L. Barnes, Trinity, Texas.
- 80 Treatment of Infants. C. M. Alexander, Coleman.
- 81 Empyema of Maxillary Antrum in Young Infants. J. H. Foster, New York City.
- 82 Use of Chloroform, Ether and Scopolamin. N. Klein, Texarkana.

**University of Pennsylvania Medical Bulletin, Philadelphia.**  
*December.*

- 83 Sanitation in the Japanese Navy and Army. B. K. Takaki, I. J. Navy.
- 84 Empyema in Children. J. H. Jopson, Philadelphia.
- 85 Structure of the Spirochæta Pallida (Schaudinn). H. Fox, Philadelphia.

**Brooklyn Medical Journal.**  
*December.*

- 86 Treatment of Certain Chronic Infectious Processes. L. F. Barker, Baltimore.
- 87 Diagnosis in Head Injuries. C. F. Barber, Brooklyn.
- 88 Principles of Mechanical Support. C. D. Napier, Brooklyn.
- 89 Treatment of Chronic Valvular Disease in Children. E. E. Cornwall, Brooklyn.
- 90 Pyrexia and Subnormal Temperatures in Infancy and Childhood. W. A. Northridge, Brooklyn.

**Indiana Medical Journal, Indianapolis.**  
*December.*

- 91 Union of Medical Colleges with Purdue University. W. E. Stone, Indianapolis.
- 92 Floating Kidney: Its Significance and Treatment. H. D. Beyea, Philadelphia.
- 93 Case of Cesarean Section. W. Schell, Terre Haute.

**Woman's Medical Journal, Toledo.**  
*December.*

- 94 Immaterial Remedies and Their Use in the Regular Practice of Medicine. G. A. Sherman, National, Iowa.

**American Journal of Urology, New York.**  
*December.*

- 95 Water and Air as Distending Media in Cystoscopy; New Examining and Catheterizing Cystoscope. B. Lewis, St. Louis.
- 96 Indications for Cystoscopy as a Means of Diagnosis. C. S. Stern, Hartford.
- 97 Case of Foreign Body and Vaginal Calculus. W. H. Battle, London.
- 98 Operative Cure for Hitherto Unrelieved Class of Cystitis. E. Fuller, New York City.
- 99 Operative Treatment of Gonorrhea in the Male. A. C. Stokes, Omaha.
- 100 Balsamic Treatment of Gonorrhea. L. Lillenthal, Berlin, Germany.

**Virginia Medical Semi-Monthly, Richmond.**  
*December 7.*

- 101 Home and Office Treatment of Inebriety. T. D. Crothers, Hartford, Conn.
- 102 Anesthesia in Obstetrics. D. J. Coleman, Richmond.
- 103 Present Methods of Determining Renal Incompetency, and Surgical Treatment of this Condition. G. P. Laroque, Richmond.
- 104 Practice of Medicine as a Life Avocation. R. T. Styll, Newport News, Va.
- 105 Case of Infant Menstruating from Date of Birth. W. H. Ribble, Jr., Wythville, Va.

**Journal of the Outdoor Life, Trudeau, N. Y.**  
*January.*

- 106 Fake Remedies and the Harm They Do. Chloroform and Prussic Acid Combined in One Cure. S. A. Knopf, New York.
- 107 Three Leading Institutions as Seen Through American Eyes. V. Y. Bowditch, Boston.

**Bulletin of Johns Hopkins Hospital, Baltimore.**  
*January.*

- 108 Medicine in Shakespeare. A. W. Meyer, Baltimore.
- 109 Various Types of Carcinoma of Cervix of Uterus. J. A. Sampson, Albany, N. Y.
- 110 Surgery of Blood Vessels, Etc. A. Carrel.
- 111 Blood of Normal Young Adults. C. P. Emerson, Baltimore.

**Albany Medical Annals.**  
*December.*

- 112 President's Address Before Albany Medical College Alumni Association. A. E. Abrams, Hartford, Conn.
- 113 Hyperemia in Treatment of Acute Infections. A. W. Eiting, Albany, N. Y.
- 114 Cases Treated by a Modified Bier-Klapp Method of Passive Hyperemia. J. N. Vander Veer, Albany.

**Journal of Cutaneous Diseases, New York.**  
*January.*

- 115 White Spot Disease (Morphea Guttata), and Lichen Planus Sclerosus et Atrophicus. F. H. Montgomery and O. S. Ormsby, Chicago.
- 116 Case of Pemphigus Vegetans. J. M. Winfield, New York.
- 117 Multiple Cancer of the Skin and Keratosis. J. F. Schamberg, Philadelphia.

**Louisville Monthly Journal of Medicine and Surgery.**  
*January.*

- 118 Iodin in Surgery. O. E. Bloch, Louisville.
- 119 Surgical Treatment of Trifacial Neuralgia. A. Schachner, Louisville.
- 120 Rupture of Kidney Without External Wound and Its Surgical Treatment. A. H. Barkley, Lexington.
- 121 Appendicitis; Ovarian Abscess. L. Frank, Louisville.
- 122 Tuberculosis of the Kidney, Diagnosis and Treatment. D. S. Wilson, Louisville.

**Yale Medical Journal, New Haven, Conn.**  
*January.*

- 123 Early Diagnosis and Prevention of Arteriosclerosis. O. T. Osborne, New Haven.
- 124 Prophylaxis and Treatment of Diphtheria with Antitoxin. A. Marcy, Jr., Riverton, N. J.
- 125 Shiga Bacillus in Dysentery. D. M. Lewis, New Haven, Conn.

**Journal of the Medical Society of New Jersey, Orange.**  
*January.*

- 126 The Omentum and Its Functions. G. K. Dickinson, Jersey City.
- 127 Etiology of Appendicitis. T. H. Mackenzie, Trenton.
- 128 Diagnosis of Appendicitis. E. W. Hedges, Plainfield.
- 129 Complications and Sequelæ of Appendicitis. P. M. Mecray, Camden.
- 130 Treatment of Appendicitis. F. D. Gray, Jersey City.

**FOREIGN.**

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**British Medical Journal.**  
*January 5.*

- 1 \*Treatment of Recent Fractures. W. W. Cheyne.
- 2 \*Functional Albuminuria in Athletes. W. Collier.
- 3 \*Age Incidence of Gastric Ulcer in the Male and Female. W. Calwell.
- 4 \*Preliminary Laryngotomy. J. W. Bond.
- 5 \*Preliminary Laryngotomy. H. T. Butlin.



- 5½ Frequency of Cataract in Bottle Makers. S. Snell.  
6 Achondroplasia. G. Rankin, E. C. Mackay, J. R. Lunn, and J. Cranke.  
7 Achondroplasia. J. H. Porter.  
8 \*Taxis for Hernia, and Complications that May Arise During and After Its Employment. H. B. Robinson.  
9 Fracture of the Fifth Metatarsal Bone. G. H. Graham.

1. **Treatment of Recent Fractures.**—In this paper Cheyne discusses the disabilities that occur after fracture, such as non-union; the accurate replacement of the fractured ends at the time of the injury; the chief obstacles of reduction; the difficulties in retaining fractures in position; methods of reduction and operations on recent fractures. As to massage, he says, that the sooner movements and massage can be begun the quicker will the function of the limb be restored so long as no displacement of the bones occurs during the manipulations. He believes that the fractured ends ought to be left quite still for eight or ten days after the injury, except in the case of fractures of the forearm, where the fingers can be left out and moved from the first. He does not approve of treating fractures without any splints, or of looking on massage as a panacea of primary importance and reduction and retention as of minor value.

2. **Functional Albuminuria.**—Collier believes that men between 18 and 30 whose urine is found to contain albumin after exercise, when it can be shown that no albumin is present after rest or after a meal, ought not to be rejected by life-insurance companies.

3. **Age Incidence of Gastric Ulcer in Sexes.**—Calwell associates chlorosis and gastric ulcer in determining the age incidence of this condition. He found that ulcer is most prominent in the female during the age of adolescence which corresponds with the time of life when chlorosis also is most common. This disease, being absent in the male, gastric ulcer is correspondingly rare. After the age of from 25 to 30 the onset of ulcer was found to be about equal in both males and females.

4. **Preliminary Laryngotomy.**—For the past fifteen years Bond has performed laryngotomy with plugging of the air passages above as a preliminary to larger operations about the upper air passages with the intent: (1) To make such operations less dangerous to life; (2) to increase the number of cases in which operation could be performed owing to the diminished danger; (3) to help surgically in the operation by getting rid of the respiration through the pharynx during the time of operation, and of the hindrance caused by perpetual sponging and coughing; (4) to give the anesthetist a clear field for his work away from the site of operation, so that he may do his work uninterruptedly without taking turns about with the surgeon; (5) to lessen the time needed to perform certain operations attended by bleeding difficult to control; (6) to get rid of tracheotomy as a preliminary operation in all suitable cases, and so again to assist in making the operations in question more easy, quick and efficient in saving life.

5. **Cataract in Bottle Makers.**—As the result of extensive investigations into this subject, Snell concludes that there is not sufficient evidence to show that bottle makers are liable to cataract to such an extent as has been asserted.

8. **Taxis for Hernia.**—Robinson discusses the use of taxis in case of hernia when there are signs present of strangulation. In the congenital and the funicular forms of inguinal hernia, Robinson counsels early operation, even though the signs of strangulation may be of recent onset. Speaking generally, he says, inguinal and umbilical hernias should be operated on if strangulation has existed for three days and the symptoms have been mild. If the symptoms have been severe, taxis should not be resorted to after twenty-four hours. In the case of femoral hernia, delay is inadvisable after the end of twenty-four hours.

The Lancet, London.  
January 5.

- 10 Removal of the Gall Bladder (Cholecystectomy). J. Bland-Sutton.  
11 \*The Liver in Cardiac Disease. R. N. Salaman.  
12 Intraperitoneal Bleeding from Fibroid of Uterus, with Acute Distension of Abdomen. W. B. Clarke.

- 13 \*Hyperplastic Tuberculous Pericollitis. F. S. Kidd.  
14 Localization of Potassium in Malignant Tumors. R. Cattley.  
15 Determination of Uric Acid. A. F. Dimmock and F. W. Branson.  
16 \*Bronchiectasis in Childhood. C. R. Box.  
17 \*Strontium Bromid in Epilepsy of the Insane. J. M. Bennison.  
18 Outbreak of Typhoid Due to Eating Clams from a Polluted Source. J. F. Beale.  
19 Absence of Uterus in Three Sisters and in Two Cousins. L. N. Boston.

11. **Liver in Cardiac Disease.**—While Salaman believes that the liver is a factor of the greatest importance in the formation and course of edema and ascites in cardiac disease, a study of 60 cases has convinced him that it is not the only factor. The following points are deducted: 1, Under conditions of cardiac stress the liver will draw off a large volume of blood from the right auricle; 2, after a time certain changes take place leading to fibrosis, which very materially affects the distensibility of the liver; 3, the fibrotic process, by increasing the force of the liver's recoil, prevents the use of the latter as a reservoir in which blood may accumulate; 4, in complete compensation there are no engorgement of the liver and no back pressure; and 5, while the liver may be looked on as a sponge-like safety valve to the heart, continued use of this safety-valve action leads to its own abolition.

13. **Hyperplastic Tuberculous Pericollitis.**—Kidd reports three cases illustrating a peculiar form of localized chronic hyperplastic inflammation in the submucous, muscular and subserous coats of the intestine which may lead to intestinal obstruction and its consequences. He believes that the condition is due to infection with an attenuated form of the tubercle bacillus. The condition may be mistaken for carcinoma or sarcoma, but with care such a mistake in diagnosis will not be made.

16. **Treatment of Bronchiectasis.**—According to Box, the routine procedure should consist in regularly emptying the cavities in the lung, so far as possible, and the administration of such drugs as are excreted by the lungs and presumably exert an antiseptic influence on the bronchial tubes and their contents. The best method of emptying the cavities is by the process of inversion. The best times to practice inversion are on rising in the morning and on retiring at night. An alternative method of getting rid of the secretions is by the use of emetics, preferably wine of ipecac. The drugs mentioned by Robinson as yielding the best results in practice are garlic, creosote, turpentine and cod-liver oil. Robinson prescribes one dram of the syrup of garlic [B. P. and N. F., but not U. S. P.—Ed.] and one dram of cod-liver oil emulsion, three times a day, to a child of 4 or 5 years.

17. **Strontium Bromid in Epilepsy in Insane.**—Bennison finds that strontium bromid, as a rule, acts better in controlling the number and severity of the attacks than the mixed bromids of sodium and potassium. It rarely causes depression, it does not produce any rash, and the mental condition of the female patients appears to improve under its use.

Indian Medical Gazette, Calcutta.  
December.

- 20 Development of Piroplasma Canis in the Tick. S. B. Christophers.  
21 Epidemiology of Plague. J. A. Thompson.  
22 Operations for Cataract. R. H. Elliot.  
23 Extraction of Cataract in Capsule. H. Herbert.  
24 \*Visual Results in 40 Consecutive Extractions of the Lens by Smith's Method. J. C. S. Oxley.  
25 Surgical Shock. J. F. Barnado.  
26 Krönlein's Operation for Orbital Sarcoma. G. T. Birdwood.

24. **Visual Results Following Lens Extraction.**—A study of forty cases of extraction of the lens by Smith's method showed Oxley that 72.4 per cent. of the patients had first-class vision, and that 22.5 per cent. had second-class vision. He is confident that many of the latter patients will improve considerably in the course of a few months.

The Clinical Journal, London.  
December 19.

- 27 \*Lactated Milk in Infantile Diarrhea. F. E. Batten.  
28 Etiology and Treatment of Psoriasis. J. M. H. Macleod.  
December 26.  
29 Cirrhosis of the Liver. N. Moore.  
30 Cancer of the Breast. C. Stoneham.  
31 Menaggio, Lake Como, Italy. E. F. Elliot.



January 2.

- 32 Cystitis. P. J. Meyer.  
33 Acute Affections of the Respiratory Organs. G. R. Murray.  
34 Dechloridation Treatment in Cardiac and Renal Disease, Obesity. A. S. Gubb.

January 9.

- 35 Vasomotor Symptoms and Their Bearing on the Diagnosis and Treatment of Disease. T. D. Savill, London.  
36 Diagnosis of Common Swellings of the Long Bones. W. Trotter.

27. Lactated Milk in Infantile Diarrhea.—Batten is convinced of the efficacy of lactated milk in improving the condition of the stools in certain forms of diarrhea. He says that it is not a remedy which has any effect in the most acute stage of acute infective diarrhea of infants, but it is of use in the treatment of the catarrhal conditions which so frequently follow these acute attacks. In the more chronic forms of diarrhea and in cases of colitis, he deems it a remedy of considerable value. (Lactated milk is milk in which lactic-acid fermentation has been produced artificially.)

## Liverpool School of Tropical Medicine.

September.

- 37 Experimental Study of Parasite of African Tick Fever. A. Breinl and A. Kinghorn.  
38 New Spirochete Found in a Mouse. A. Breinl and A. Kinghorn.  
39 Comparison Between the Trypanosomes Present by Day and by Night in the Peripheral Blood in Human Trypanosomiasis. J. E. Dutton, J. L. Todd and E. N. Tobey.  
40 Lesions in the Lymphatic Glands in Human Trypanosomiasis. R. H. Mole.  
41 Certain Parasitic Protozoa Observed in Africa. J. E. Dutton, J. L. Todd, and E. N. Tobey.  
42 Attempts to Cultivate Spirochæta Duttoni. L. A. Williams and R. S. Williams.  
43 Attempts to Transmit Spirochetes by the Bites of Cimex Lectularius. A. Breinl, A. Kinghorn and J. L. Todd.

## Dublin Journal of Medical Science.

December.

- 44 Cryoscopy of the Urine. L. G. Gunn.  
45 Clinical Picture of Children's Diseases. W. L. Symes.  
45½ Chemistry of Viola Odorata. H. W. Gadd.

## Bulletin de l'Académie de Médecine, Paris.

Last indexed, page 179.

- 46 (LXX, No. 41, Pp. 479-524.) Blindness Among the Arabs. Boigey and Chauvel. (Cécité dans la race arabe.)  
47 Treatment of Pneumonia with Metallic Ferments. A. Robin. (Traitement de la pneumonie.)  
48 \*Origin and Prophylaxis of Malaria. Laveran and Kermorgant. (Paludisme.)

48. Mosquito Origin of Malaria.—Laveran sustains the exclusive rôle of the anopheles in the transmission of malaria. He remarks that the statistics of malarial fevers in a place include those contracted elsewhere, but first manifesting themselves at the place in question, owing to the variable and sometimes very long period of incubation before appreciable symptoms of malaria develop. In the search for the anopheles, he adds, all the points liable to be visited by the inhabitants of a place must be examined, not merely their homes. A troop sent from France to Tunis and housed in healthy barracks at Constantine were ravaged by malarial fevers, and if no anopheles had been discovered at Constantine the fact would have been cited as an evidence against the mosquito theory. In reality, the troop landed at a distant point and had to march through a region infested with mosquitoes to reach Constantine, but the malarial infection there acquired did not manifest itself until long after their arrival at the barracks. A single anopheles, he adds, is capable of infecting a series of persons. The mosquitoes hibernate in cellars, barns, hollow trees, etc., and under the influence of a few warm days are liable to sally forth almost at any season. The malarial infection may remain latent and not manifest itself until after the individual has long left the malarial regions. Laveran has invariably found the malaria-bearing mosquitoes in specimens of mosquitoes sent from places in Africa having a reputation for malaria. Niclot has recently reported that an army surgeon, in presence of an epidemic of supposed typhoid fever, to which his predecessor had succumbed, suspected malarial infection, and examined a number of mosquitoes; 10 out of 15 mosquitoes proved to be the anopheles, most of them gorged with human blood. Coste has also recently mentioned that in a certain province where 80 per cent. of the children are affected with enlargement of the spleen, the anopheles was found in the proportion of 95 per cent. Among other facts he cited is the absence of

malaria among the workmen on the southern part of the Suez Canal until a ship brought a new lot of workmen when an epidemic of malaria broke out. It was found that some of the newly arrived workmen had been previously infected, and that numbers of anopheles lurked in the hold of the ship. It has proved possible to undertake and to complete extensive sanitary improvements requiring much turning up of the soil, without malarial sickness among the workmen, when the region had previously been cleared of anopheles. Laveran admits that it is possible for malaria to be transmitted in other ways than by mosquitoes, but, he says, that to date it has not been demonstrated. Some writers consider the soil the true home of the malarial germ, but he adds that he has had intimate relations for twenty-five years with the hematozoon of malaria, and he has never yet found it at home in the soil. He has never encountered it either in the water of marshes or in the dew from malarious places. Kermorgant states that New Caledonia is entirely free from malaria, and the anopheles has never been discovered there. Senegal is the only French colony in which systematic efforts in the line of the prophylaxis of malaria are under way. The work of the mosquito brigades during the last three years has given the most encouraging results.

## Presse Médicale, Paris.

- 49 (XIV, Nos. 96-97, Pp. 765-780.) Address at Dedication of Pavilion for Children's Surgical Clinic. E. Kirmisson.  
50 \*Iron and the Liver. J. Castaigne. (Le fole et le fer.)  
51 Protecting Rôle of Lymphatic Nodes. M. Labbé. (Le rôle protecteur des ganglions lymph.)  
52 \*Technic and Apparatus for General Anesthesia by Way of the Rectum. E. Vidal. (L'an. gén. par vole rectale.)  
53 (Nos. 98-99, Pp. 781-796.) \*Experiments in Synthetic Biology. Stéphane Leduc. (Les bases physiques de la vie et la biogenèse.)  
54 Prophylaxis of Ozena. M. Lermoyez. (Comment nous garer de l'ozène?) See abstract 88 below.  
55 Early, Perforating, Typhoid Cholecystitis. V. Vedel and L. Rimbaud. (Cholecystite perf. typh. précoce.)  
56 Thyroid Secretions. M. Garnier. (Les sécrétions thyroïdiennes.)  
57 The Syphilitic's Calendar. A. Martinet. (Le calendrier du syph.)  
58 (Nos. 100-102, Pp. 797-820.) Cancer. G. H. Roger. (Le cancer.)  
59 \*Effects of Lumbar Puncture on Certain Cutaneous Phenomena. P. Ravaut. (Effets de la ponction lombaire sur quelques phén. cut.)  
60 \*Illumination of Houses. A. A. Rey. (L'hygiène de la lumière.)  
61 \*Exanthematous Typhoid Fever in Adults and Exanthemata in Typhoid Fever. C. Lesieur. (Fièvre typhoïde exanth. chez l'adulte et exanthèmes chez les typhiques.)  
62 Aphasia and Anarthria. P. L. Ladame. (Aphasie et Anarthrie.)

50. Iron and the Liver.—Castaigne shows that in health the liver does not retain all the iron brought to it from destruction of red corpuscles or from the food. In case of over-functioning on the part of the liver, or of excessive destruction of red corpuscles, the liver cells may retain an excessive amount of iron. On the other hand, the proportion of iron in the liver may be below normal in certain pathologic conditions, especially in affections of the blood, such as chlorosis, and also in certain digestive disturbances necessitating restriction of the amount of food. The smallest proportions of iron in the liver have been observed in cases of anemia from external hemorrhage, in aplastic anemia and in certain forms of tuberculosis. In all these conditions there is an insufficiency on the part of the liver, which he ascribes to the deficiency of iron in the organ. Administration of iron to such patients improves the liver functioning before the blood shows any benefit from the medication. The liver stores up the iron and it is utilized in the production of new blood. He has also found iron effectual in treatment of certain cases of liver insufficiency, although he warns against its use when there is hyperfunctioning of the liver, as in cholemia. His experience confirms his previous assertions in regard to the stimulating action of iron on the liver and its secreting function.

52. Ether by the Rectum.—Vidal gives an illustrated description of the apparatus which he has found extremely useful for general anesthesia by way of the rectum. The anesthesia proceeds more smoothly when oxygen is injected with the ether, and his experience has been very favorable with this technic. There is no distension, a free outlet being provided for the gases. No by-effects are observed with this technic except possibly one or two watery passages during the day.



The rectum must be prepared with a purgative the day before and rinsed out with 2 liters of tepid water containing 8 grams of sodium bicarbonate.

**53. Synthetic Biology.**—Stéphane Leduc has succeeded by combining certain chemicals in producing cells which simulate living cells in every respect. Drops of a 5 per cent. solution of ferrocyanid of potassium sown in a 5 per cent. solution of gelatin form each an apparent cell with membrane envelope, protoplasm and nucleus. With other chemicals ciliated cells can be produced. These cells display the phenomena of two-way osmosis and molecular metabolism. Drying arrests the movements, but they return when the cells are moistened again. He stated that he has also succeeded in producing in electrolytic fluids the figures of karyokinesis in their regular order. That is, the forces of osmosis are able to produce all the movements of cell division in the regular order of karyokinesis. He describes the various means of producing these effects, stating as a law that the conservation of the cell is connected with the symmetry of the metabolism around the nucleus as the center. The multiplication of cells in malignant tumors is the consequence, he concludes, of the establishment in the cytoplasm of two centers of metabolism. The solid tissues of living beings result from the solidification of solutions of colloids and of crystallizable substances, the forces of crystallization intervening to influence shape and structure. The physical forces alone are able to induce the semblance of nutrition, organization and of growth, as he has witnessed again and again in his experiments. Only one function remains to be realized to complete the synthesis of simulated life in his experiments: reproduction in series. He regards this problem as of the same order as those already solved. [The *Presse Médicale* recently invited Leduc to visit Paris to deliver a lantern lecture on his researches which have attracted world-wide attention. The lecture is to be published later in pamphlet form with illustrations of his "man-made plants," etc.—Ed.]

**59. Effects of Lumbar Puncture on Certain Cutaneous Phenomena.**—Ravaut has frequently had occasion to observe the great benefit from lumbar puncture and evacuation of a small amount of cerebrospinal fluid in cases of hydrocephalus from inherited syphilis and in convulsions in the course of some acute lung or intestinal affection, and also in cutaneous affections. A number of patients suffering from pruritus were cured by lumbar puncture and withdrawal of from 6 to 8 c.c. of fluid. Patients with circumscribed lichen, eczema without effusion and prurigo found that the itching ceased after the puncture, and that their lesions healed. One patient with prurigo for six months and another who had had it for four years had suffered to such an extent that sleep was impossible, but lumbar puncture with withdrawal of 20 c.c. of cerebrospinal fluid put an end to the itching in each case, and the lesions soon healed under appropriate measures. The procedure had to be repeated a week later in the second patient. Neither has had the slightest recurrence of the trouble during the month and six months since. Great relief was also experienced by 2 patients with ano-vulvar pruritus and slight tendency to eczema. No benefit was derived from the puncture in some cases of urticaria, vulvar pruritus and pruriginous affections of the scalp, but the striking benefit in others justifies a trial of the method, he thinks, in every rebellious case. The effect of withdrawal of a few c.c. of fluid was also marked on the roseola of syphilis, on various erythemata, psoriasis and drug eruptions, but the effect was only transient. He ascribes the results observed to the modification of the blood by the withdrawal of the cerebrospinal fluid with a consequent influence on the peripheral nervous system, thus confirming the angioneurotic origin of certain dermatoses and of pruritus.

**60. Hygiene of Illumination.**—Rey continues his articles on the hygienic home with an installment dealing with the lighting of the house. He contends that the windows should be double and should extend from the ceiling to within a few inches of the floor of each room, and that the depth of the room should correspond to once and a half its height, no more, with the wall sloping in a curve into the ceiling to reflect the rays of light. Owing to the lesser resistance of chil-

dren to tuberculosis during the first six years of life, rooms for the use of children should be the sunniest and the most hygienic of the entire home, with a balcony enclosed in wire netting, and with a separate sleeping room for the children and another for the nurse. He would banish from the sleeping room every article of furniture, clothing, etc., not strictly necessary for the night.

**61. Eruptive Typhoid Fever.**—In Lesieur's experience with both children and adults the digestive disturbances were, as a rule, mild and the prognosis was eminently favorable in cases of typhoid fever in which the cutaneous manifestations were most pronounced. He reports 2 cases of an erythem suggesting scarlet fever or measles, occurring in typhoid patients. In one of his patients the exanthem suggested that of measles at first, and later became a typical scarlatiniform eruption with general symptoms and long persisting desquamation.

#### Semaine Médicale, Paris.

- 63 (XXVI, No. 52, Pp. 613-624.) \*Is Rubella Always a Mild Disease? L. Cheinisse. (La rubéole est-elle toujours bénigne?)  
64 \*How to Form New Medical Terms from Greek Roots. M. Sakorrhaphos. (Comment on doit former les néologismes médicaux du Grec.)

**63. Is Rubeola Always a Mild Affection?**—Cheinisse mentions that Aviragnet and Apert have recently published an account of an epidemic of German measles with 2 deaths in 10 cases, and others have asserted that if the temperature were taken more carefully in cases of rubeola it would be found febrile in many instances. Dournel's thesis last year reported an epidemic in a day nursery in which numerous complications were observed, including bilateral suppurative ear affections and abscess formation in some instances. Cheinisse admits that the resisting powers of the children were probably at a low ebb, but this factor in the seriousness of an infectious disease occurs as much with other diseases as with rubeola, and can not be taken into account in explaining the severe course of the disease in these epidemics.

**64. To Coin New Medical Terms from the Greek.**—Sakorrhaphos gives a number of useful points to be observed by those who wish to coin new medical terms to express new conceptions. The aim is to make the term concise, descriptive and luminous for readers of all languages, and this can easily be accomplished by observing a few simple principles of Greek construction. He also calls attention to the absurdity of such terms as "anemia," which means no blood, and "asystoly," which means no systole. The coiner of the term meant to express merely defective production or functioning, not total absence. He should have used the prefix "dys," as in dyspepsia, dyspnea, thus "dysemia," "dysystoly." The term "microbe" signifies in Greek merely a short-lived being, in contradistinction to a "macrobe," a long-lived being. Bacteria are not microbes in many instances. Everything that tends to simplicity and unity facilitates study and progress, he says, adding that if the present mania for coining new obscure terms persists, a dictionary in several volumes will have to be constantly consulted in reading scientific articles.

#### Archiv f. klinische Chirurgie, Berlin.

Last indexed, page 268.

- 65 (LXXX, No. 2, Pp. 278-566.) Experimental Study of Heteroplastic Bone Formation. E. Llek. (Exp. Beitrag zur Frage der heteropl. Knochenbildung.)  
66 Treatment of Ankylosis of Elbow. M. Hofmann. (Behandlung der knöchernen Ank. im Ellbogengelenk.)  
67 Radical Operation for Large Umbilical and Abdominal Hernias. E. Graser. (Zur Technik der Rad.-Op. grosser Nabel- und Bauchwandhernien.)  
68 Unusual Hemorrhages in Kidneys. Casper. (Zur ungew. Nierenbeckenblutungen.)  
69 Firearm Wounds of Vessels. A. Brentano. (Gefassschüsse und ihre Behandlung.)  
70 Plastic Operations on Palate. R. Bunge. (Zur Technik der Uranoplastie.)  
71 Relations Between Ossifying Myositis and the Callus in Fractures. P. Frangenhelm. (Beziehungen zw. der Myositis ossificans und dem Callus bei Fracturen.)  
72 \*Elimination of Bacteria in Sweat. L. Wrede. (Ausscheidung von Bakterien durch den Schweiß.) Id. C. Brunner.  
73 Thymic Stenosis and Thymic Death. L. Rehn. (Thymusstenose und Thymustod.)  
74 Voluntary Luxation of Hip Joint. H. Braun. (Ueber die willkür. Verrenkungen des Hüftgelenks.)  
75 Hematogenic Osteomyelitis from Actinomycosis. L. Wrede. (Hämatogene Osteomyelitis durch Aktinomykose.)  
76 (No. 3, Pp. 567-842.) Treatment of Fractures. E. Ranzi. (Zur Behandlung von Frakturen.)



- 77 \*Improved Technic for Removing High Rectal Cancer. P. Kraske. (Weiterc Entwicklung der Op. für hochsitzender Mastdarmkrebs.)
- 78 \*Aponeurotic Covering of Defects in Skull. Borchardt. (Zur aponeur. Deckung von Schädefecten nach v. Hacker-Durante.)
- 79 Infection and Absorption of Bacteria in Pleural Cavity. W. Noetzel. (Infection und Bakterienresorption der Pleurahöhle. Exp. Untersuchung.)
- 80 False Aneurism. E. Hedinger. (Zur Lehre des Aneurysma spurium.)
- 81 Medical Experiences at the Front in Manchuria. Zoega v. Mantenffel. (Aerztliche Thätigkeit auf dem Schlachtfelde und in den vorderen Linien.)
- 82 \*Transplantation of Thyroid Tissue into the Spleen. E. Payr. (Transplantation von Schilddrüsengewebe in die Milz.)
- 83 Epiphysis at Proximal End of Fifth Metatarsal Bone and the So-called Os Vesalianum of the Tarsus. D. A. Kirchner. (Die Epiphyse am prox. Ende des Os metatarsi V und das so-gen. Os. Vesalianum tarsi.)

72. Elimination of Microbes in the Sweat.—Brunner affirms the possibility and presents evidence to demonstrate in fact that microbes and cells may be eliminated in the sweat. He has repeated his experiments of 15 years ago, obtaining the same positive results. Wrede had negative results.

77. Improved Technic for Removing High Rectal Cancer.—Kraske comments on the further development of the technic for operative treatment of high rectal cancer since the growth has been attacked both from the rear and through a laparotomy. He reports 10 cases and remarks that this combined operation seems to be less dangerous for women than for men. His 3 female patients recovered, but only 5 of the 7 males, and Schlöffer had 8 male patients die out of 13, while the 10 female patients recovered. Of others operated on by the Quénu method, all but 1 of the 15 women recovered and only 1 of the 12 men. Whether this better result is due to the more favorable anatomic conditions in woman or to her greater resisting powers, it certainly suggests that—other conditions being equal—there need be less hesitancy in deciding to operate on a female than on a male patient. Kraske urges wider adoption of the abdomino-sacral or perineal route, not restricting it to the severer cases. Further perfecting of the technic will reduce the mortality, and he believes that this method has a great future. Displacement of the omentum with torsion of the transverse colon, the result of raising the pelvis, occurred in 2 of his cases, but he intends to avoid it hereafter by fastening the omentum after the laparotomy so that it can not slide down. Two other patients succumbed to collapse soon after the operation. No mishap occurred during his last 5 cases. He suggests the possibility of doing the operation under spinal anesthesia. Every means to shorten the procedure should be adopted, and he describes a number of minor points to aid in this line.

78. Subaponeurotic Covering of Skull Defects.—Borchardt gives the details of a dozen cases in which the patients were operated on by the von Hacker-Durante method of taking a pedunculated flap consisting of periosteum and a slice of the bone, after turning back the skin, and using this flap to close the defect in the skull, suturing the skin again over the whole. The flap is thus transplanted under the skin, which permits prompt primary healing. The results were excellent in all his cases, even in a case of extensive injury of the meninges and in an infant only 14 days old.

82. Transplantation of Thyroid Tissue into the Spleen.—Payr's extensive experimental and clinical research is described in full, also the technic by which he implants thyroid tissue in the spleen, and the reasons for adopting this procedure as a remedy for thyroid insufficiency. The literature and history of transplantation of organs in general is also reviewed. He announces that the spleen is peculiarly adapted for implantation of all kinds of tissues, owing to the special conditions of its circulation. The circulation in the transplanted tissue is re-established with remarkable rapidity and a much smaller part succumbs to central necrosis than when implanted anywhere else. The processes of regeneration proceed with exceptional intensity and extent. Numerous experiments on animals have shown the technical measures necessary to avoid serious hemorrhage during the operation. The piece of tissue is implanted in a pocket made for it in the spleen, and it forms a living tampon for the blood-filled pulp of the spleen. The spleen is then sutured over it, and the

sutures covered with omentum. He has succeeded by such implantations in keeping animals alive for 300 days after removal of the thyroid, even those extraordinarily sensitive to thyroidectomy. No symptoms due to loss of the thyroid were observed, which allows the assumption that the implanted organ continued a functionally active existence in its new location. A child with severe infantile myxedema given thyroid treatment for three and a half years without results has been treated by implanting in its spleen a large piece of healthy thyroid tissue taken from the mother. The results to date have been extremely satisfactory. The child has grown and developed both mentally and physically, and can scarcely be distinguished now from a normal child of her age (7 years). He remarks in conclusion that organs with a predominantly internal secretion seem better adapted to transplantation than others. Possibly they possess a greater independence in the organism, which manifests itself in case of transplantation as a more vigorous vital energy.

#### Berliner klinische Wochenschrift.

- 84 (XLIII, No. 47, Pp. 1499-1526.) Foundations of Modern Rhino-Laryngology. G. Killian. (Grundlagen der mod. Rhino-Lar.)
- 85 \*Therapeutic Value of Absolute Rest for the Voice in Institutional Treatment of Laryngeal Tuberculosis. F. Semon. (Therap. Wert. vollständiger Stimmruhe bei der Anstaltsbehandlung der Kehlkopftub.)
- 86 \*New Mode of Throwing Light into Canals and Cavities. von Schrötter. (Eine neue Beleuchtungsart von Kanälen und Höhlen.)
- 87 Two Cases of Extraction of Foreign Body from Bronchi by Means of Killian's Upper Bronchoscopy. O. Chiarl. (Zur Kasuistik der direkten oberen Bronchoskopie nach Killian behufs Extraktion von Fremdkörpern aus den Bronchien.)
- 88 \*Contagious Nature of Ozena. M. Lermoyez. (Contagion de l'ozène.)
- 89 Significance of "Anesthesia of the Upper Entrance to Larynx" in Paralysis of Recurrent Nerve. F. Massel. (Bedeutung der "Anästhesie des Kehlkopfeingangs" bei den Recurrenslähmungen.)
- 90 \*Relations Between Visual Disturbances and Affections of the Posterior Ethmoidal Cell and Sphenoidal Sinus. A. Onodi. (Zur Lehre der durch Erkrankung der hintersten Siebbeinzelle und der Kellbeinhöhle bedingten Sehstörung und Erblindung.)
- 91 (No. 48, Pp. 1527-1554.) Substitution of Thumb with Great Toe. F. Krause. (Ersatz des Daumens aus der grossen Zehe.)
- 92 Meat Poisoning and Paratyphus. L. Zupnik. (Fleischvergiftung und Paratyphus.)
- 93 Sensitizers Against Tuberculosis. Gengou. (Zur Kenntnis der antituberkulösen Sensibilisatoren.)
- 94 \*Primary Tuberculosis of the Nasal Mucosa. J. Fein. (Prim. Tuberkulose—Lupus—der Nasenschleimhaut.)
- 95 \*Protection and Suture of the Perineum. K. Apfelstedt. (Dammschutz und Dammnaht.)
- 96 Hydrotherapy in Febrile Infectious Diseases. S. Munter. (Hydrotherapie bei fieberhaften Inf.-Kr.)

85. Therapeutic Value of Rest of the Voice in Treatment of Laryngeal Tuberculosis.—Semon expatiates on the difficulty of complete silence in the home environment, and on the great benefit when it can be enforced.

86. New Method of Throwing Light into Cavities and Passages.—Schrötter gives an illustrated description of his electric instrument for illuminating the bladder, urethra, etc. It is based on the principle that a strong light at one end of an enclosed glass tube is transmitted to the other end of the tube, which thus serves as an illuminator. This occurs even when the tube is curved. He uses four incandescent lights in the outer end of the tube, arranged in a circle in the enlargement for the purpose. The whole instrument is enclosed in a light-proof case, thus focusing the light at the tip of the tube.

88. Contagion of Ozena.—Lermoyez insists that ozena is contagious and requires prophylactic measures as well as syphilis and gonorrhea. In 6 instances brothers and sisters, a mother and daughter, husband and wife or a child and its nurse presented unmistakable evidence of contagion of one by the other. In the last-mentioned case the parents of the child had consulted their physician in regard to the ozena of the nurse, and he had assured them that there was no danger of contagion. In another case a woman with ozena married a healthy man who soon developed ozena, and their infant developed it in a few months.

90. Visual Disturbances from Affections of Posterior Ethmoidal Cell.—Onodi publishes an illustrated description of different arrangements of the parts in respect to the connection and relations between the posterior ethmoidal cell and the



sphenoidal sinus on one hand and the optic canal and sulcus on the other. These various relations throw light on the etiology of canalicular retrobulbar neuritis and optic atrophy of nasal origin. He has found 35 different anatomic settings of the parts.

**94. Tuberculosis of the Nasal Mucosa.**—Fein describes a case of what was probably primary tuberculosis in one turbinate bone. The patient was a trained nurse and was under observation for two and a half years without detection of any traces of a tuberculous process elsewhere. He knows of only one case like it on record. The process was restricted to one turbinate, a condition which has never been observed with lupus, to his knowledge.

**95. Protection of Perineum and Suture of Laceration.**—Apfelstedt is in charge of a maternity at Berlin which admits only primiparae, and during the last seven years he has been using a method to protect the perineum, which is a combination of the Fritsch and Ritgen technics, and, in his opinion, offers many superior advantages. He asserts that his technic is physiologically correct, aseptic, rational and practical, while the technics advocated in the text-books do not fulfill these conditions.

The accoucheur sits on the edge of the bed, on the patient's left, leaning on his left forearm. The tips of the spread fingers of his left hand are applied to the rear of the perineum, on the right and left of the coccyx. The tips of the fingers of the right hand are applied to the groove between the protruding back of the head and the pubic arch, curving around the back of the head. Both thumbs are free. The right can be used to push back the skull from the floor of the pelvis toward the symphysis by pressing on the parietal bone. At the first indication of a new straining paroxysm the fingers of the right hand push the soft parts back under the pubic arch with strong pressure, endeavoring thus to reach the back of the child's neck without at the same time pushing the head down. The left hand, which at first was applied through the posterior perineum, somewhere between the frontal and parietal bones, works its way along striving to reach the anterior surface of the frontal bone during the strain of the labor pain. When the fingers reach this point they can aid the muscular action by pushing the head in the direction of the axis of the pelvic outlet, forward and upward. As the labor pain subsides, the head slides back a little and with it the point of vantage for the left hand, until another muscular contraction occurs, when the maneuver with both hands is repeated and again with each labor pain. When the head is ready to force its way out, the occipital portion of the head projecting from the vulva, the patient is instructed to breathe hard, to take from 150 to 170 strong inspirations and expirations each minute with open mouth and heaving chest. This has the effect of abolishing abdominal straining completely. The left fingers of the accoucheur resting on the edges of the orbit or the frontal prominences, the right fingers in the back of the child's neck, the right hand grasps the occiput but without the slightest downward pressure, the right thumb on or near the sagittal suture. The head of the child is thus balanced between the accoucheur's hands and is entirely in his power. The head is guided onward—a millimeter at a time—through the labia, while the left hand lifts the head and the right controls the direction, at the same time pushing back the soft parts of the pubic arch. The patient must be repeatedly admonished to keep up the rapid, strong breathing, as this suspends all abdominal straining during the outward passage of the head. When the perineum gradually slides back over the frontal bone, the chin can be grasped with the left hand and the head then can be rotated past the symphysis as the perineum slides over the face and chin. The head is not pressed downward, and thus further pressure on the perineum is avoided. Lifting up the head from the rear of the perineum reinforces the musculature of the pelvic floor in its physiologic function, and the head passes forward and upward in the normal direction. This reduces the inner pressure on the perineum, and enables the head to pass through the vulva more gradually and with less injury to the parts than with any other technic.

As soon as the head (not the head tumor) is visible, the patient is told that the birth is nearly complete, and the accoucheur shows her how to breathe deeply, strongly and rapidly, by illustrating it himself and having her try it during a pause in the labor pains. It would be undiplomatic to tell her to refrain from straining—she does this unconsciously as she breathes fast and vigorously. Other advantages of this technic are that the levator muscle is left free to retract the stretched parts at once, and that the entire procedure is aseptic, without direct contact with the perineum or the anus. Any fecal masses that present at the anus are noticed at once and can be wiped away by another person. In case of laceration he uses a thread with a curved needle on both ends. Each needle enters at the deepest point of the laceration, and after a semi-circular passage is brought out again 2 cm. beyond the margin of the laceration. As many tiers of these sutures are taken as the width of the laceration requires—never more than five. When the thread is drawn up it forms a heart-shaped figure, which gives exceptional strength to the suture, with other advantages which he enumerates.

## Therapie der Gegenwart, Berlin.

Last indexed, page 87.

- 97 (XLVII, No. 8, Pp. 337-384.) Experimental Tests on Healthy Persons with Caffein, Digitalis and Camphor. F. Doctorowitsch. (Exp. Untersuchungen über blutdrucksteigernde Mittel am gesunden Menschen.)
- 98 \*Pancreatic Diabetes. T. Brugsch. (Pankreasdiabetes.)
- 99 Strophanthus in Therapeutics. Focke. (Zur Strophanthus-Therapie.)
- 100 Chloroform as a Narcotic. F. Lämmerhirt. (Das Chl. in seiner symptomatischen Anwendung als Narcoticum.)
- 101 Hygiene of Childbirth. S. Gottschalk. (Zur Hyg. der Geburt.)
- 102 \*True Plethora and Polycythemia. H. Hirschfeld. (Plethora und Polycythämie.)
- 103 Latest works on Lumbar Puncture and Spinal Anesthesia. K. Kroner. (Ueber einige neuere Arbeiten zur Lumbalpunktion und Lumbalanästhesie.)
- 104 (No. 9, Pp. 385-432.) Medical Notes in Central Asia. M. Urstein. (Klinisches und Therapeutisches aus Mittelasien.)
- 105 \*Nervous Liver Colic. C. A. Ewald. (Ueber nervöse Leberkolik.)
- 106 \*Influence of Hydrochloric Acid on Experimentally Induced Uric Acid Deposits. H. Silbergleit. (Einfluss der Salzsäure auf exp. erz. Harnsäuredeposits.)
- 107 \*Treatment of Bronchial Asthma. G. Zuelzer. (Bronchial-Asthma.)
- 108 \*Coincidence of Appendicitis and Pregnancy. E. Opitz. (Zur Frage des Zusammentreffens von Wurmfortsatzentzündung mit den Fortpflanzungsvorgängen beim Weibe.)
- 109 \*Weakness of the Voice. H. Gutzmann. (Stimmschwäche-Phonasthenie.)
- 110 Herpes of Esophagus. A. Holub. (Herpes des Oesophagus.)

**98. Pancreatic Diabetes.**—Brugsch reviews the experimental evidence of the etiologic rôle of the pancreas in the production of human diabetes, and notes that excision of the pancreas produces glycosuria, but no abnormal metabolism of fats. Animals after extirpation of the pancreas never die in coma. A physiologic acidosis occurs when the carbohydrates are withdrawn from the diet, but the acidosis which occurs in diabetes is pathologic and never occurs as a result of the extirpation of the pancreas in animals. The occurrence of a severe form of diabetes with oxybutyric acid and acetone in the urine and with symptoms of coma indicates that the cause of the disease is situated elsewhere than in the pancreas. The absence of these symptoms is, however, no certain sign that the disease has its origin in the pancreas, for a severe form of diabetes may run its course for a long time under the form of a simple glycosuria. The fact that glycosuria may arise from affections of organs other than the pancreas indicates a possible participation of these organs (thyroid, adrenals, etc.) in the production of diabetes. The surest evidence that the pancreas is the organ at fault is a disturbance in the digestion and absorption of food, especially the fats and proteids. The occurrence of colicky pains in the upper part of the abdomen corroborates the view that the pancreas is affected. The differentiation of pancreatic from non-pancreatic diabetes is important from a therapeutic standpoint as it enables the diet to be suitably regulated. Pancreas tissue, fresh or in some pharmaceutic preparation, will be found useful. With the pancreas preparations, fat and proteids can be allowed. Opium is indicated to delay peristalsis and to favor absorption. In such cases the glycosuria will disappear on withdrawing carbohydrates, provided sufficient fat and proteids are given to cover the calorific need of the organism. In pancreatic diabetes, he adds, the emphasis should be laid on the pancreas rather than on the diabetes.

**102. Polycythemia.**—Hirschfeld reviews the history of this affection and discusses the treatment. Repeated venesections, which have been recommended, reduce the plethora temporarily, but have no permanent effect. Arsenic has been of little value and a food lacking in iron is without effect. The removal of the spleen was tried in one case, but without effect on the condition of the blood. This was to be expected, since it has been shown that polycythemia may exist without enlargement of the spleen. Hirschfeld believes that symptomatically at least much benefit may be expected from iodids, since Weber and Watson have shown that the viscosity of the blood is increased in polycythemia. This accounts for many of the disturbances, and it is known that the iodids have a marked influence in reducing the viscosity of the blood.

**105. Nervous Liver Colic.**—Ewald reports a case which strongly supports the contention that in nervous or hysterical individuals an affection may occur which presents all the



usual signs of gallstone colic with circumscribed tenderness of the region of the gall bladder and pain so severe as to require repeated doses of morphin and to lead to a morphin habit. In his case a woman of 30 presented these symptoms and operation was resorted to, without finding any signs of disease of the gall bladder or of the ducts. The operation brought no immediate relief of the pain, but this symptom gradually disappeared after the healing of the wound. Ewald is uncertain whether the operation acted as a means of suggestion or whether it may have relieved some tension in the neighborhood of the liver or perhaps had nothing to do with the patient's recovery.

**106. Action of HCl on Uric Acid Deposits.**—Silbergleit repeated the experiments of Van Loghem, who found that hydrochloric acid hindered the conversion of uric acid into acid sodium urate when the uric acid was injected under the skin or into the peritoneal cavity and the hydrochloric acid was given by the mouth. Silbergleit operated on fowls, destroying the kidney by injections of potassium bichromate, causing deposits in the tissues of the uric acid that would naturally be excreted in the urine. In the fowls to which hydrochloric acid was given no deposits of uric acid developed, while in those to which no acid was given abundant deposits were found. He also repeated Von Loghem's experiments on rabbits with the same results. The uric acid was more slowly dissolved than in the control animals, and the formation of acid sodium urate was prevented.

**107. Treatment of Asthma.**—Zuelzer ascribes the asthmatic paroxysm to expansion of the lung through irritation of the vagus nerve. That swelling of the mucous membrane of the bronchi and possibly bronchial spasm contribute to the clinical picture is not to be denied. That such an expansion of the lung can be produced by irritation of the vagus is easily proved by experiment. This experimental expansion of the lung can be promptly cut short by the administration of atropin. Zuelzer, therefore, advises the administration of atropin by hypodermic injection for attacks of asthma. A dose of 1 mg., he states, causes a reduction in the limits of the lung within from 10 to 15 minutes, with marked improvement in the subjective condition.

**108. Appendicitis and Pregnancy.**—Opitz concludes from his study of this subject that there is no special tendency to appendicitis in women during pregnancy, but that the pregnancy seems to confer a certain protection against this infection not only among women who have never had an attack of appendicitis, but also among those who have already experienced it. If, however, an acute attack or recurrence of appendicitis occurs during pregnancy, the danger is exceptionally great. About one-half of the fetuses perish whether operation is performed or not. Differentiation may be difficult. The treatment is in no way different from that which is proper in the absence of pregnancy, except as to the question of the propriety of emptying the uterus. This is only to be undertaken when peritonitis has attacked the uterus, or when labor pains have set in, or when it is known that the fetus is already dead. The uterus should be evacuated by vaginal Cesarean section before the operation on the appendix is begun. Under other conditions the fetus may continue its development after the operation for appendicitis.

**109. Weakness of the Voice.**—Gutzmann describes the failure of the voice in professional speakers and singers, and classifies the anomalies which entail weakness of the voice as organic, affecting the nose, throat or larynx, and functional, relating to the method of producing the voice. Functional alterations affect the method of breathing, the formation of the voice and the articulation of speech. Normal breathing should be by an inaudible inspiration, followed by a relatively long expiration. Some singers and speakers, for want of time to get sufficient air or because of obstructions in the nose, take an inspiration through the mouth which produces an audible hissing and has a bad effect on the mouth and throat. The production of the voice begins with many too abruptly, with a sort of explosion, which, if often repeated, has an unfavorable effect on the vocal organs. Other faults are due to the fact that the force of articulation is not properly adjusted

to the loudness of the voice, so that the consonants are inadequately produced. Through insufficient action of the articulating organs (tongue and throat muscles), the larynx may have to move too much, entailing congestion and ready fatigue. Raising the base of the tongue gives an undesirable guttural tone to the voice and hinders the egress of the sound, thus necessitating unusual effort to produce the desired effect. Speakers should, therefore, form the "r" in the front part of the mouth. Careful investigation should determine which of these functional defects are present, as a guide to appropriate therapy. The principal remedy is appropriate exercise directed first to correcting the individual defects and then to training the speaker to co-ordination of effort on the part of the respiration, the larynx and the articulating organs to produce the desired speech with the least effort. While such defects and failure of the voice in older speakers are generally due to affections of the nose or throat, most of these patients are young, and are good subjects for training. The period required for successful treatment is variable, but in general from four to eight weeks are required.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**SKIN AND VENEREAL DISEASES, NERVOUS AND MENTAL DISEASES.** Edited by W. L. Baum, M.D., H. T. Patrick, M.D., and W. Healy, A.B., M.D. Practical Medicine Series, Comprising Ten Volumes of the Year's Progress in Medicine and Surgery, under the general editorial charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume X. Series 1906. Cloth. Pp. 254. Price, \$1.25. Chicago: The Year-Book Publishers.

**THE IMPORTANCE OF LARVAL CHARACTERS IN THE CLASSIFICATION OF MOSQUITOES.** By Capt. S. R. Christophers, M.B., I.M.S. Scientific Memoirs, by Officers of the Medical and Sanitary Departments of the Government of India. New Series, No. 25. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Paper. Pp. 18. Price, 8 annas, or 9d. Calcutta, India, 1906.

**WOMAN—IN GIRLHOOD, WIFEHOOD, MOTHERHOOD.** A Guide in the Maintenance of Her Own Health and that of Her Children. By M. Solis-Cohen, A.B., M.D., Instructor in Physical Diagnosis, University of Pennsylvania. Illustrated with Color Plates, Scientific Drawings and Half-tone Engravings, with Manikin Chart, printed in colors, with an index. Cloth. Pp. 469. Price, \$2.00 net. Philadelphia: The John C. Winston Company.

**LEUCOCYTOZON CANIS.** By Capt. S. R. Christophers, M.B., I.M.S. Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series, No. 26. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Paper. Pp. 16. Price, 12 annas, or 2d. Calcutta, India, 1906.

**WOMAN.** A Treatise on the Normal and Pathological Emotions of Feminine Love. By B. S. Talmey, M.D., Gynecologist in the Metropolitan Hospital and Dispensary, New York. For physicians and students of medicine, with twenty-two drawings in the text. Flexible leather. Pp. 228. Price, \$3.00. New York: The Stanley Press Corporation.

**PRACTICE OF OBSTETRICS.** In Original Contributions, by American Authors. Edited by R. Peterson, A.B., M.D., Professor of Obstetrics and Gynecology in the University of Michigan, Ann Arbor. Illustrated with 523 engravings and 30 full-plate pages. Cloth. Pp. 1087. Price, \$6.00. Philadelphia: Lea Bros. & Co.

**NERVOUS DISEASES, ORGANIC AND FUNCTIONAL.** M. A. Starr, M.D., Ph.D., LL.D., Sc.D., Professor of Neurology, Medical Department of Columbia University in the City of New York. Second Edition, Thoroughly Revised. Cloth. Pp. 816, Illustrations, 308. Price, \$6.00 net. Philadelphia: Lea Bros. & Co.

**A STOMACH LESION IN GUINEA-PIGS** Caused by Diphtheria Toxin, and its Bearing on Experimental Gastric Ulcer. By M. J. Rosenau and J. F. Anderson. Hygienic Laboratory. Bulletin No. 32, October, 1906. Pp. 23. Washington, D. C., Government.

**TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION.** Edited by R. H. Harte, M.D., Recorder of the Association. Volume twenty-four. Cloth. Pp. 591. Philadelphia: William J. Dornan, 1906.

**TRANSACTIONS of the Joint Session of the Oklahoma State Medical Association with the Indian Territory Medical Association, held in Oklahoma City, May 7, 8 and 9, 1906.** Cloth. Pp. 264.

**CHARITY ORGANIZATION SOCIETY OF THE CITY OF NEW YORK.** Twenty-fourth Annual Report, from October 1, 1905, to Sept. 30, 1906, inclusive. Paper. Pp. 166. New York.

**EXPERIMENTAL ZOOLOGY.** By T. H. Morgan, Professor of Experimental Zoology, Columbia University. Cloth. Pp. 454. Price, \$2.75 net. New York: The Macmillan Company.

**OPHTHALMIC TERMS.** By J. W. Croskey, M.D., Ophthalmic Surgeon to the Philadelphia Hospital. Second Edition. Paper. Pp. 80. Price, 25c. New York: Frederick Boger Publishing Co.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII.

CHICAGO, ILLINOIS, FEBRUARY 9, 1907.

No. 6.

## Address

### THE MYELINS AND POTENTIAL FLUID CRYSTALLINE BODIES OF THE ORGANISM.\*

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MONTREAL.

The polarizing microscope, simple as it is with its Nicol's prisms—the two pieces of Iceland spar which can be turned at various angles one to the other—has not been a popular instrument in medical science. I take it that my own experience is that of other medical men. I can remember well a genial and enthusiastic colleague inviting me years ago to spend the evening with him, when he showed me slide after slide of various substances exhibiting exquisite figures under the Nicol's prisms. I know I thought the results too pretty to be useful—that the instrument was peculiarly well adapted for the use of members of microscopic societies and other amateurs of microscopy, but for the physician and pathologist it was at most a toy. I would here recant this early error and would acknowledge humbly that within certain limits the polarizing microscope shows itself a most valuable aid in the detection and recognition of the nature of a class of substances within the tissues which are difficult, nay almost impossible, to recognize by other means.

If you take a section of the fresh adrenal of man or of one of the animals of the laboratory and examine the cortex under the ordinary microscope, the parenchyma cells have, as is well known, the appearance of being in the condition of advanced fatty degeneration—the cell substance, that is, is seen to be densely packed with small fatty globules. But, as shown by Kaiserling and Orgler, examine that section between the Nicol's prisms and sundry of the globules exhibit an exquisite black cross between four illuminated sectors. Smear a little of the juice of the fresh adrenal on a slide and these can be examined more narrowly. Under the ordinary lens that juice is found filled with pure fatty globules varying in size; with the crossed Nicol's prisms a few of these now stand out as illuminated crosses. Turn the prism round and what had been crosses appear indistinguishable from the abundant surrounding fatty globules (Fig. 1†).

Here clearly we have not to do with ordinary fats. Neutral fats and fatty acids under no condition afford these characteristic doubly refractive globules. We are dealing with some other substance, a substance apparently acted on by water, for the addition of water to the juice causes the crosses to fade out; they disappear also if the preparation be desiccated, as again rapidly if it

be treated with absolute alcohol. By that apparently they are dissolved, for treat an adrenal with alcohol and now evaporate that alcohol and at a certain stage these doubly refractive globules make their appearance to disappear again as the preparation dries up; while, further, where an adrenal has been hardened in formalin minute rod-like crystals take the place of these globules.

The adrenal is far from being the only organ that affords them, although it is the organ which in the normal state affords them in the greatest abundance without previous treatment of any kind. A common morbid state that often yields them in great abundance is atheroma of the aorta—one has but to scrape off a little of the broken-down material in an atheromatous plaque to find again this association of isotropous fatty and doubly refractive anisotropous globules. Or, again, pound up the liver or the spleen or the kidney in absolute alcohol, leave for a few hours, put a drop or two of the fluid on a slide and as the alcohol evaporates these remarkable bodies make their appearance in relatively large numbers (Fig. 2†).

#### WHAT ARE THEY AND WHAT DO THEY SIGNIFY?

The answer to that question is rather a long story, and a round-about-one at that; nor is it in my power—or any one's—to tell you its conclusion. The most I can hope to do is to interest you in the story, to show you into what by-paths of science it leads and to set you guessing, and I hope some of you more than guessing, as to what is the conclusion thereof. For the matter appears to open up not a few lines of profitable investigation. I may, it is true, give you immediately an apparent answer. I can, that is, give these bodies a name. I may call them "myelin globules," and state that they are the condition assumed by myelin at a certain phase or under certain conditions. I question, though, whether this will bring much comfort. For what is myelin?

The remarkable fact about myelin is that it has been known for more than fifty years; that within a few years of its recognition by Virchow, in 1854, it had been determined that bodies of the nature of myelin could be gained from practically every organ of the body, and this often in large amounts, and that, though this is the case, though the pains of pathologists brought myelin into the world and pathologists mothered, or fathered, it, though there is quite an extensive literature on the subject, it is rarely mentioned in polite medical society. Your writers of text-books on physiology and pathology treat it much as the priest and Levite treated the man who fell among thieves and they studiously pass by on the other side without apparent recognition of its existence. This possibly because, had they recognized its existence, they could but confess their ignorance why it was there and what its function in the economy. And it has to be confessed that myelin has shown itself a most elusive substance.

\* A lecture delivered before the Harvey Society, New York, Dec. 1, 1906.

† The illustrations appear on page 480.



If one takes fresh medullated nerve or brain substance and teases it out in water, the marrowy matter forms into drops and masses of irregular rounded contour, and as one examines these they become altered in shape, throwing out blunt rounded processes with a double contour. We are clearly not dealing with ordinary fats. Early in the last century Berzelius observed that the cerebrin which he extracted from brain matter gave similar bizarre forms; so, too, Drummond, in 1852, noted a like phenomenon with the alcoholic extract of brain matter. I find, indeed, that if fresh brain matter be placed in absolute alcohol for twenty-four hours the development of these bodies and processes becomes greatly exaggerated. Place a fragment under a coverslip and surround with water and long processes are shot out from the mass, curving in a most serpentine and life-like manner, and from them double contoured droplets become detached. Virchow, in 1854, called attention to the fact that by alcoholic extraction similar bodies could be gained from other tissues: from the blood, from yolk of egg, from the ovaries of calves, from the normal spleen, goitrous thyroid and diseased lungs. And, as in their physical properties they resembled brain marrow, Virchow gave these the class name of myelin. Whether he was dealing with one or with several substances, he could not determine; he was inclined to the view that, if not a single substance, he dealt with a group which chemically were as closely allied as the various albumins, and Virchow summed up their properties as follows:

1. When brought into contact with water they swell up and in doing so exhibit a characteristic morphology, being seen under the microscope to develop processes of irregular and often bizarre form, globular, rod-like, or curved on themselves and variously distorted, exhibiting, as already noted, a double contour, undergoing changes of shape while under examination.

2. They are easily soluble in hot alcohol, becoming, in part, precipitated on cooling.

3. They dissolve rapidly in ether, chloroform and turpentine.

4. They are acted on but slowly and to a slight extent by weak acids and alkalies.

5. Under the action of strong alkalies they shrink, with eventual loss of their characteristic properties.

6. Under the action of strong acids they first swell greatly and then undergo dissolution.

Now, whether recognizable immediately in the tissues or cells or cell debris so soon as water is added, or recognizable only after an alcoholic extract has been made of the tissues and such extract treated with water, bodies conforming to these postulates have been found distributed through the organism. And as a class they possess, with the limitations already laid down, the power of double refraction.

The history of the recognition of this last property affords an interesting example of the way in which valuable observations may, for long years, wholly disappear from remembrance, and that because they have been originally given to the world in the pages of an obscure journal. In 1857, if I mistake not, a society was established in Germany for the advancement of medical science, and the official organ of that association was distributed primarily, and it would seem almost entirely, among the members of the association. That journal, like the association, had but a brief existence. In its thirty-first number, Geheimrath Dr. Mettenheimer published his observations on myelin, noting its power of

double refraction. The observations were so important that the elder Beneke, in 1862, reprinted the article in its entirety. But this happened in a monograph whose title, "The Presence, Distribution and Formation of the Constituents of Bile," did not in the least suggest that it was concerned largely with this subject of myelin. Thus it is that, reviewing the literature for the next forty-four years, I have failed to come across a single reference to Mettenheimer's work, while Beneke's, after a year or two, appears similarly to have passed into oblivion until quite recently, when, with filial piety, the younger Beneke drew renewed attention to his father's work. In the meantime workers in different branches of biologic science made, as they thought, the independent discovery of this property of myelin. Apathy, in 1889-90, working on the histology of the nervous system, G. Quincke, the physicist, in 1894, Müller of Marburg in 1898 and Kaiserling and Orgler of Berlin, later in the same year; and of these, from their writings, each seems to have been supremely ignorant that any one had been before them in making the observation that myelin is doubly refractive.

That all substances affording myelin forms can be shown to be doubly refractive I greatly doubt, or, more accurately, I would say that there are substances, such as the lecithins, capable of affording myelin forms of the simplest type with which so far I have been unable to gain doubly refractive globules.<sup>1</sup> I shall have something to say later regarding these apparent exceptions.

I have here tabulated the distribution of Virchow's myelin in the organism as it has been recorded by various observers.

TABLE A.—SHOWING THE DISTRIBUTION OF MYELIN SUBSTANCES IN THE ORGANISM.

1. INTRACELLULAR MYELIN GLOBULES:

A. *Physiologic*, or associated with normal regressive processes:  
Cells of suprarenal cortex.....Kaiserling and Orgler.  
Granular cells of corpora lutea.....Kaiserling and Orgler.  
Cells of thymus gland.....Kaiserling and Orgler.  
Cells of mucous membrane of gall bladder .....Aschoff.

B. *Pathologic*:

Aortic endothelium, fatty patches.....Aschoff.  
Atheromatous patches of aorta.....Mettenheimer.  
Lungs: Alveolar epithelium of new-born. Hochheim.  
Bronchial epithelium.....Schmidt.  
Diseased lung tissue.....Mettenheimer.  
Kidney: Epithelium in fatty degeneration .....Albrecht, Löhlein.  
Epithelium after arterial ligation ..Albrecht.  
Crystalline lens, cataract.....Mettenheimer.  
Tumors, cells of many cancers and sarcomas .....Kaiserling and Orgler.

C. *Autolytic*:

Lung, alveolar epithelium.....Albrecht, Hochheim.  
Kidney and liver cells.....Many observers.  
Skeletal and heart muscle.....Dietrich and Hegel.  
Morning sputum (?).....Müller and Schmidt.

2. DIFFUSED MYELIN: (Impure lecithin?).

Myelin gained from various tissues by digestion with alcohol; brain and nerve tissue, spleen, liver, egg yolk, blood, mesenteric chyle, pus, etc.....Virchow.

3. MYELIN IN SECRETIONS: (Also gained by alcoholic extraction.)

Bile. Virchow.  
Contents of small intestine after fatty meal .....Beneke.

WITH WHAT ORDER OF SUBSTANCE ARE WE DEALING?

My attention was forcibly directed to this class of substances through certain observations made in my laboratory by Dr. Oskar Klotz. Studying the experimental production of calcareous degeneration, he noted that if

1. Since delivering this address I have found that at least one lecithin (from egg yolk) gives with water exquisite doubly refractive figures, and that after repeated solution in chloroform and precipitation with acetone, a procedure which should remove any dissolved cholesterol. This is in opposition to Beneke's statement that egg lecithin completely purified from cholesterol gives no myelin figures. It is possible that Beneke is correct, but if so the process of separating cholesterol from lecithin must be very difficult.



permeable celloidin capsules, containing oleic acid or neutral fats, be placed in the peritoneal cavity of the rabbit, on removal after a few days the contents give a relatively considerable proportion of calcium salts—salts which had not been there previously, which now are present in definite excess over the normal calcium contents of the rabbit's blood and lymph. The only conclusion to be reached was that in the organism under certain conditions calcium salts may become fixed by fatty substances; in other words, that calcium soaps become formed. From these observations he was led to study, histologically and chemically, areas of pathologic calcification in the organism in order to determine if these afforded indications that the fats play a part in the process of pathologic calcification, and more particularly if there were indications of the presence of soaps as an intermediate stage in the process. He found that outside the body the stain Sudan iii affords a differential staining between neutral fats and soaps, globules of the latter taking on a paler, more yellowish tinge, and that in the zone immediately surrounding areas of active calcareous deposit he could recognize similarly globules taking on the deeper stain of neutral fats, together with others taking on the characteristic tint of soaps.

From these studies Klotz concluded that fats play an active part in the process of calcification: that, first, the affected area undergoes necrobiosis with fatty degeneration; that, next, calcareous soaps become formed, and, finally, that the fatty acid moiety of the compounds becomes replaced by the chemically more powerful phosphoric or carbonic acid, calcium phosphate and calcium carbonate being the end products. The indications were that he had not to deal with a simple calcium soap, but with a soapy compound containing calcium and, as he held, a proteid constituent. These stages could be well followed in that commonest seat of calcareous degeneration, namely, the aortic wall in the course of arteriosclerosis. But now, happening to visit Marburg for other purposes, there Professor Aschoff pointed out to me that Dr. Klotz's description of these fatty globules, which were not fat, but of a soapy nature seen in the atheromatous area, corresponded in many respects with that of the globules seen by him in the arteriosclerotic artery, globules which, as Mettenheimer first showed, and as Torhorst, working in Aschoff's laboratory, had independently determined, are doubly refractive. They are, in short, myelin bodies.

#### WERE KLOTZ'S SOAPS AND THESE MYELIN BODIES ONE AND THE SAME?

It was to the solution of this question that Aschoff and I directed our attention. We found, in the first place, that the globules in the atheromatous aorta, which under Nicol's prisms were doubly refractive, take on the differential stain with Sudan iii; that Torhorst's myelin and Klotz's soaps are identical. The methods for isolating fats and soaps are still so imperfect and the amount of the doubly refractive material in the atheromatous aorta relatively so small that chemical isolation and study appeared hopeless. All that was left was to study the physical properties of various soaps and lipid bodies so as to determine which of them approached most nearly in properties to the myelins. Thus it was that I undertook a long series of observations, in association with Professor Aschoff, beginning with the various simple soaps to observe whether they possessed the power of forming these characteristic doubly refractive globules.

That certain soaps under certain conditions produce myelin bodies has been known for long<sup>2</sup> and has been the subject of study, more especially by Quinke. One has but to take a drop of oleic acid on a slide and surround it with strong ammonia<sup>3</sup> to obtain immediately a brilliant development of myelin figures, and, what is more, these figures examined between crossed Nicol's prisms are doubly refractive (Fig. 3). We can produce "myelin forms" from an ammonia soap. This, however, is not quite the same thing as reproducing the characteristic doubly refractive spherules such as we have seen in the tissues of the organism. Briefly, I may state here that with certain simple soaps it is possible to gain these spherules, and that by very simple means, namely, by taking the pure soap with a small quantity of water on a slide, warming it until it dissolves, and then as it cools it may be that under the polarizing microscope a perfect rain of spherules shows itself. In some cases these persist for hours and, indeed, for days; in others, depending on the nature of the soap, they are transient appearing for a moment and immediately giving place to a brilliant white layer of formed crystalline plates.

By this means we determined that simple soaps of oleic acid give these figures—oleate of ammonia, of sodium and potassium, so also those of calcium—but here appeared to be a difference: the calcium globules would seem to be relatively solid, the others relatively liquid. But by no means was I able to gain the phenomenon with simple soaps of palmitic and stearic acids: on cooling concentrated solutions they passed immediately into the true crystalline form, and as these palmitic and stearic soaps are solid and definitely crystalline at the room temperature it seemed evident that the spherules seen in the organism at room temperature could not be of palmitin or stearin compounds, or at least could not be simple uncomplicated compounds of the same. It is possible, I would suggest, that compounds containing palmitic or stearic, along with oleic, acid may be fluid at room temperature.

Here I trust that you will not misunderstand me. I do not in the least wish to suggest that the doubly refractive bodies seen in, or gained from, the tissues are simple soaps of oleic acid. The very instability of the oleates of ammonia, sodium and potassium renders this most unlikely. All I wish to show at this stage is that we have a group of relatively simple bodies of known composition, of bodies having the curious physical properties that are likewise possessed by the myelin of the organism, and to suggest that a study of these simple cases is calculated to throw light on the more complicated. This certainly it has accomplished, and here, before referring to our studies on more elaborate compounds, it is fitting and timely that I should indicate how the study of the simple soaps afforded us what I believe to be a most important clue to the nature and properties of the myelin in general.

I have already mentioned that studying strong solutions of the simpler soaps these remarkable doubly refractive globules make their appearance as the solution undergoes cooling. Time and again the appearance is transient. At one moment the whole field of the microscope may flash out into a rich clustered constellation

2. Neubauer in the '60's seems to have been the first to make the observation.

3. The experiment is more striking as noted by Lehmann if the ammonia and oil be colored by contrasting dyes.



of bright crosses to be followed almost immediately by complete crystallization of the whole area. This fact alone, not to mention the doubly refractive nature of the globules, indicates that they are akin to crystals. Obviously they are not crystals proper; the form is not that which we associate with crystals; they are globular, not angular; they have all the appearances of being fluid bodies and not solid; in water they do not dissolve as do ordinary crystals, but swell up and gradually lose their doubly refractive qualities. This, notwithstanding they may appear as an intermediate stage in the process of crystallization of the pure oleates out of pure watery solutions.

#### WHAT IS THE MEANING OF THIS PHENOMENON?

Not one of those who had worked on the myelins had even incidentally touched on this question. Nevertheless the solution had already been given by the physicists. To one of these, Professor Schenck, working in the very next institute at Marburg, we went with our inquiries and found that he had been busied over this very problem for the past few years. Schenck himself, it is true, had not discovered the solution, that was due to Professor O. Lehmann,<sup>4</sup> of the Technical High School in Carlsruhe, who two years ago had entombed his findings in a huge quarto monograph of 250 pages, a superb example of everything that a monograph ought not to be—verbose, diffuse, wandering, abundantly polemic, wanting in anything of the nature of a table of contents, let alone an index; in short, wholly medieval save for its profuse and admirable illustrations (which nevertheless are devoid of legend or key), and for the valuable facts that can be dug out of its pages. Schenck, who had been working independently along the same lines, has given to the world a luminous description of the whole matter, giving clearly in a few pages all the important data and conclusions gained from the researches of Lehmann and himself<sup>5</sup> and his pupils.

The popular impression is that a crystal is essentially a solid unyielding body. It has indeed been known for long that metals like lead and gold, can, under pressure, be forced through apertures; the same is true of solid (or crystalline) sodium, of wax, paraffin, etc. But the general impression has been that change of shape in these cases is essentially brought about by translation, by the minute solid crystals of these substances gliding one on the other, or even—as shown by my colleague, Prof. F. D. Adams, in his remarkable observations on the alteration in shape of marble cubes submitted to great pressure—by actual rupture of the crystals, the separate parts gliding the one on the other.

Undoubtedly, this does happen with certain crystalline substances, but Lehmann, in 1889, first called attention to another order of phenomena. If solid cholesteryl benzoate, which is in the form of colorless crystalline plates, be heated to the temperature of 145.5 C., it melts into a turbid fluid having the consistence of olive oil. Heated still further, as Reinitzer first showed, at 178.5 C., it suddenly becomes a perfectly transparent fluid. Studying the intermediate stage, Lehmann found that under the polarisation microscope the turbid fluid, despite its fluidity, exhibited double refraction with the crossed Nicol's prisms—a property hitherto regarded as associated with the solid crystalline state; heated to 178.5 C., the field became dark and isotropic, like

ordinary fluids. If the opposite process were now undertaken and the heated fluid subjected to cooling, the whole field became converted into a mass of doubly refractive spherocrystals, showing here and there little dark crosses; cooled further, these gave place to plates of the solid modification, which plates grew in size until they occupied the whole field.

In fairly rapid succession other substances were determined having the same peculiarities. Other compounds of cholesterin with the fatty acid series, such as cholesteryl acetate, cholesteryl propionate and cholesteryl oleate, compounds of oleic acid: sodium, potassium and ammonium oleate, as also methyl-, dimethyl- and trimethylamin oleates—various paraderivatives of anisol and phenetol. In Table B I have transcribed the list given by Schenck last year, adding thereto certain compounds found by us to possess the same properties, acknowledging that it is not complete, and that already numerous additions have been made during the last few months.

TABLE B.—POTENTIAL FLUID CRYSTALLINE SUBSTANCES.  
(Modified from Schenck, with additions.)

Name.	Melting Point in degr. Centig.	Clearing Point in degr. Centig.	Observer.
Silver iodid .....	145	450	Lehmann.
<i>p</i> -Azoxyanisol .....	116	134	Gattermann.
<i>p</i> -Azoxyphenetol .....	137.5	168	Gattermann.
<i>p</i> -Azoxyanisolphenetol ....	93.5	149.6	Gattermann.
Azin of <i>p</i> -Oxethylbenzaldehyd .....	172	199	Gattermann.
Anisaldazin .....	160	180	Franzen.
<i>p</i> -Methoxycinnamic acid...	170	185.7	van Romburgh.
Condensation product from benzaldehyd and benzidin .....	234	260	Gattermann.
Condensation product from <i>p</i> -Toluyaldehyd and benzidin .....	231	300	Gattermann.
<i>p</i> -Azoxybenzoic acid ethylester .....	113.5	120.5	Vorlaender, Meyer and Dahlem.
<i>p</i> -Diacetoxyltoluylene chloride .....	124	138	Muench.
Hydrocarotinbenzoate ....	..	..	Reinitzer and Lehmann.
Cholesterylacetate .....	90-100	114-114.4	Reinitzer & Schonbeck.
Cholesterylpropionate. ....	98	114	Obermueller.
Cholesterylbenzoate .....	145.5	178.5	Reinitzer.
Cholesterylbutyrate .....	..	..	Adami and Aschoff.
Cholesterylstearate. ....	..	..	Adami and Aschoff.
Cholesterylpalmitate .....	..	..	Adami and Aschoff.
Cholesteryloleate. ....	..	..	Reinitzer.
Potassium oleate .....	..	..	Quincke and Lehmann.
Sodium oleate .....	..	..	Quincke and Lehmann.
Ammonium oleate .....	..	..	Quincke and Lehmann.
Dimethylammonium oleate. ....	..	..	Quincke and Lehmann.
Trimethylammonium oleate. ....	..	..	Quincke and Lehmann.
Cholin oleate .....	..	..	Adami and Aschoff.
Neurin oleate .....	..	..	Adami and Aschoff.

All these bodies become fluid on being heated, but the fluid examined between crossed Nicol's prisms has still the main optical features of crystalline substances; it is anisotropic. Some of these crystalline liquids are thick like olive oil, some (like *p*-azoxyphenetol) are more fluid than water. Poured into a vessel the surface becomes level; in tubes it assumes the characteristic concave meniscus of fluid bodies, and this although the constitution is crystalline. Heat to a further degree and the fluid becomes wholly isotropic; it gains all the physical properties of what we regard as a true fluid.

In this intermediate stage, then, we deal with crystalline fluids and the individual crystals are "fluid crystals." Though here a distinction is drawn by Lehmann and Schenck between "flowing" or ductile crystals (fließende Kristalle) and "fluid" (flüssige) crystals proper. The former we encounter in crystalline fluids of the

4. Lehmann (O.): Flüssige Kristalle sowie Plastizität von Kristallen, etc., Leipzig, etc., Leipzig, Engelmann, 1904.

5. Schenck (R.): Kristallinische Flüssigkeiten und Flüssige Kristalle, Leipzig, Engelmann, 1905.



thicker, less fluid type, the latter in the more watery fluids. The former, under the microscope, are of definitely crystalline structure, needle-shaped or prismatic, but tending to have rounded edges and angles. If the cover-glass be pressed (as I have repeatedly confirmed), they become distorted, returning to their original shape when the pressure is removed (Fig. 5). The latter under the ordinary microscope show no signs of crystalline structure, they appear as masses of spherical bodies, capable of distortion, lying in a singly refracting, isotropic, matrix. But one and the same substance may exhibit both forms; there is no absolute division into substances exhibiting purely the one or purely the other, while if any of these bodies be distributed in an inert fluid matrix the individual aggregations are peculiarly apt to take on the spherocrystalline form, appearing as doubly refracting globules—identical with those that I have described to you as encountered in the tissues.

It need scarcely be said that these observations, completely overturning the older ideas of the properties of crystals, have from many quarters been regarded as heretical and have encountered violent opposition. I am, as I have said, no physicist, and should therefore not presume to weigh the evidence that has been tendered against these conclusions. I can only say that I have seen with mine own eyes that these spherocrystals and ductile crystals are capable of distortion (vide Fig. 5)—that they are not solid. A very natural suggestion has been made that we have here to deal with substances of two orders, that, on heating, a purer more crystalline matter separates out from a more inert fluid menstruum of different constitution. G. Quinke, for example, has urged that the conditions correspond with those found in emulsions, a fluid “skin” surrounding and leading to the persistence of the separate globules. Tammann has compared this stage to what is seen in an emulsion of carbolic acid in water, which from being cloudy becomes transparent on heating, and holds that here is not a true crystallization but a depolarization phenomenon. Lehmann has brought forward proof that we have to deal with true double refraction and not a depolarization phenomenon, and he and Schenck have shown that the phenomena present themselves equally well with chemically pure substances of this order.<sup>6</sup>

Here, then, for the first time, we gain a satisfactory physical explanation for the doubly refractive globules seen in, or obtained from, the organism; they are fluid spherocrystals.

#### CAN WE PROCEED ANY FURTHER?

As I have already stated, the investigation of compounds presenting this intermediate stage is a recent study, the number found is increasing with relative rapidity, and it is well within the bounds of the possible that yet other substances, constituents of the normal organism, will be found to possess it. But what is not a little suggestive is that the physicists, without any thought of physiologic problems, have already noted its existence in two groups of bodies which are normally represented in the organism, namely, the cholesterol compounds and the oleates. And studying the list of crystalline fluids and the temperatures at which the intermediate stage manifests itself, with the exception of one group these bodies pass into what, for convenience, I

term the intermediate stage, at temperatures far above that of the room or body, thus save for that one group they can not be responsible; the only group containing members which afford doubly refractive globules at room temperature is that of the compounds of oleic acid. These compounds are so unstable—the oleic acid so readily undergoes dissociation—that it is hopeless or almost hopeless to gain them in a pure state, and as a consequence it is not possible to state with precision what are the points of melting and clearing. But certainly cholesteryl oleate is viscid and buttery at the room temperature, and at this can be demonstrated to afford the globules, and the simple oleates of ammonium, potassium and sodium may likewise continue to manifest them at the room temperature,<sup>7</sup> although in general the fields show definite crystals. Here it may be noted that the medium in which the soaps are present is capable of modifying the melting point. To this fact I shall have to return later. Cholesteryl palmitate and stearate I have found both afford these globules and so exhibit the intermediate stage, but their melting point is very definitely higher. I am led thus to exclude the simpler palmitates and stearates from the causes of the phenomenon in the organism, although the possibility must not be forgotten that bodies like certain of the lecithins which contain body oleic and palmitic or stearic acid radicals, may eventually be found to afford the reaction.

These considerations, therefore, so far as it is legitimate to carry them, distinctly favor the view that the myelin globules of the organism are probably of the nature of oleic acid compounds—are soaps of oleic acid of greater or less complexity.

It deserves pointing out that from wholly different considerations, namely, from the point of view of chemical analyses of myelin containing substances, the earlier workers have arrived at conclusions which are approximately in harmony with those of ours. Lieberich, for example, analyzing nerve matter, determined that the constituent which was the essential cause of the myelin figure formation—or otherwise the myelin proper—was the protagon which he was the first to isolate. With Apathy I may add, I have found the myelin figures from nerve matter under certain conditions doubly refractive. Now protagon dissociates into lecithin, fatty acids and neurin or cholin, and while crystalline protagon treated with water merely swells, affording no myelin figures, if a drop of oleic acid under the microscope be acted on by a solution of cholin or neurin, I gained an immediate development of exquisite doubly refractive myelin figures—as exquisite as when strong ammonia acts on oleic acid. It is not therefore the protagon as such, but dissociated cholin oleate or neurin oleate<sup>8</sup> that would seem to be the base of the myelin formation in nerve matter.

There is another body which separates out abundantly in the alcoholic extraction of nerve matter, namely, cholesterol. This in itself does not afford the intermediate state, but its compounds with the fatty acids manifest it, and it is quite possible that such compounds play a part in the myelin formation seen in fresh nerve tissues. We owe to the elder Beneke in 1862 the first recognition of the significance of cholesterol in myelin production. He showed that while olive oil treated with

7. Evidently these myelin globules of the organism are not doubly refractive at blood heat. I could not demonstrate those of the adrenal in a warm room at the Rockefeller Institute (about 75° F.) until the window had been opened and the room cooled down.

6. Had we to deal with emulsions, centrifugating should separate the two constituents, or, passing an electric current through the medium the suspended particles, if of different constitution, should gather at one or other pole. Schenck has shown that with pure substances neither of these events occurs.

8. There is still some doubt regarding the identity of cholin and neurin. I have, however, gained a compound of oleic acid with both substances.



caustic potash afforded myelin bodies, the more cholesterol he added to the oil the better was the result; that alcoholic extract of egg yolk freed from cholesterol gave no myelin figures; that ordinary soaps on the addition of cholesterol gave them. In other words, he produced experimentally impure cholesteryl oleate, palmitate and stearate. He called attention to the existence of cholesterol in tissues affording myelin and concluded that in animal and vegetable tissues "Ohne Cholesterol keine Myelinformen." Liebreich retorted with his observations on protagon, and Beneke's work became discredited. Nevertheless, Aschoff and I believe that Beneke, if too extreme in his dictum, was largely right, and that in many situations in the body the myelin globules are of the nature of cholesteryl oleate. This, it may be noted, as shown by Hürthle, is a constant constituent of the blood. In the atheromatous patches in the aorta, in old cataracts of the eye, and in other necrotic areas, it is a matter of familiar experience that we encounter fatty globules along with plates of cholesterol, and here, too, we meet with the myelin globules. An incidental observation on an aorta showing early atheroma impressed me greatly. The smear from a small area of slight softening presented numerous fatty globules and cholesterol crystals, but no doubly refractive bodies. I heated it gently over the flame, and on cooling there appeared abundant myelin globules, more particularly in the neighborhood of the cholesterol platelets, which now exhibited a somewhat corroded appearance. Nay more, we would suggest that cholesteryl oleate is the source of cholesterol calculi in the gall bladder.

Cholesteryl oleate excreted from the blood into the bile (and as Virchow showed, myelin is present in the normal bile), may in the alkaline fluid easily undergo dissociation, the oleic acid combining to form simple diffusible soaps, the cholesterol being set free. At the last meeting of the German Pathological Association at Stuttgart, Aschoff demonstrated the presence of the doubly refractive myelin globules in the cells of the mucous membrane of the gall bladder.

We thus have what I regard as strong presumptive evidence that at least two groups of oleic acid compounds give rise to the myelin globules of the organism—the cholin or neurin, and the cholesterol. There is a third group deserving consideration, namely, the lecithins. Regarding these I would speak with considerable caution, while at the same time stating my conviction that some of them give origin to myelin globules. These lecithins, I may remind you, dissociate into fatty acid, glycerophosphoric acid and cholin. According to Carbone, in dissociation they may give rise to fatty acids, neutral fats and cholesterol. Here once more we have this suggestive appearance of the two substances of widely different chemical nature, cholin and cholesterol, each of which we have found associated with the development of myelin globules.

From the tissues there have been gained a di-oleo-lecithin, a di-stearo-lecithin and a palmito-stearo-lecithin.<sup>9</sup> They also, it will be seen, are fatty acid compounds. They afford "myelin figures" of a simple type and doubly contoured myelin droplets, but thus far with the pure substances free from cholesterol I have been unable to gain doubly refractive globules. It is deserving of note that the two issues affording myelin in greatest amounts contain normally the most abundant lecithin, namely, the brain and the adrenals, and that, as

Albrecht has pointed out, the abundant "myelin" obtained from the red corpuscles is composed in the main of lecithin. More particularly is it in connection with autolysis, and the self-digestion of tissues that the association of lecithin and the appearance of "myelin bodies" has of late been commented on from various quarters. Time forbids that I should enter at length into this most interesting field. I can only very rapidly point out that if a sterile organ be kept with all aseptic precautions at the body temperature, its cells in the course of a few hours exhibit abundant small rounded irregular bodies in their cytoplasm, possessing double contour. Coincidentally, the nuclei become pale and it can be made out (Albrecht, Dietrich and Hegel) that the chromatin becomes discharged into the cytoplasm, the appearance of the myelin bodies bearing a definite relationship to the discharge of the chromatin.

Some but not all of these afford obscure double refraction. As indicated by the accompanying table from Waldvogel and Mette, while in autolysis of the liver the ethereal extract (of total fatty substances) is not greatly increased, the fatty acids and neutral fats in the cell undergo great increase at the expense of the lecithin, as does also the cholesterol.

No. of Days.	Lecithin.	Fatty acid.	Neutral fat.	Cholesterol.	Ethereal extract.
0	11.8	0.52	0.06	0.07	13.4
13	6.82	1.80	0.96	1.80	13.0
44	1.06	3.74	3.61	5.41	15.9

With Dietrich and Hegel, it is difficult not to be forced to the conclusion that the lecithins with their glycerophosphoric acid are intimately associated with and derived from nuclear material with its glycerophosphoric acid; and that the myelin-like bodies in the cytoplasm are of the nature of lecithins, which lecithins undergo subsequent dissociation. My present view—which I admit is subject to revision—is that it is not the lecithins proper that afford the doubly refractive globules, but the products of their dissociation and more particularly those of the di-oleo-lecithins—the interaction between the cholin and the cholesterol and the oleic acid. For it must be kept in mind that oleic is a singularly weak acid, that its compounds are singularly liable to hydrolysis with liberation of free oleic acid. As a matter of fact, lecithin warmed with cholesterol, affords with water or dilute glycerin exquisite doubly refractive myelin figures, as again by acting on pure lecithin (Riedel's lecithol) with alkalis, the doubly refractive globules can be gained. Schenck, indeed, lays down that the salts (soaps) of oleic acid never exist in a chemically pure state; there is always some water and alcohol mixed, free oleic acid and free alkali. This natural impurity is very possibly a feature of importance in the myelin formation by members of this group.

Let me, in conclusion, state that I have not brought up this matter of the doubly refractive myelin globules as a method by which the existence of myelin in the tissues of the body can surely be recognized. That is by no means the case. The formation of these globules is no constant reaction. What I would emphasize is that under certain conditions, not always easily obtainable, Virchow's myelin can be shown to possess this very characteristic reaction, and that so, the myelin figures and myelin globules in the organism must be regarded as of fatty nature, and more, that these belong to that remarkable class of substances possessing an intermediate state in which they are present in the form of fluid or of ductile crystals.

9. According to the recent very full studies of Thudichum every true lecithin contains at least one oleic acid radical.



This in itself, while a matter of interest, would not perhaps be of great importance were it not that associated with this property, as pointed out by Schenck, is a further one which we are led to regard as of great significance. Schenck has called attention to the fact that whereas ordinary crystalline substances permit of mixture with other substances to a very limited degree, all the members of this class, even when of widely different chemical composition, unite in all proportions, the melting point of the mixture being then determined by the relative amounts of the two substances present. If, then, we admit that more than one substance present in the organism belongs to this class, it is by no means assured that a given doubly refractive spherocrystal (in the adrenal, for example) is composed of a single substance. It may be an admixture of two or more. Nor is this everything. Their power of mixing with and absorbing other substances is very great, not to say extraordinary. With water, for example, the oleates, the lecithins, protagon and allied bodies, do not in the first place dissolve. They absorb it and swell up. Only after they have swollen up greatly does solution, or what appears to correspond to solution, show itself, for there is still debate among the physicists regarding the solubility of these bodies. What is true of water is true of a large number of other substances; oleic acid, for example, and neutral fats are absorbed, and within certain limits, despite the presence of these foreign substances, the globules continue to exhibit double refraction. Such admixture, for example, occurs in the adrenal. Studying the adrenal juice under the polarizing microscope, one of the earliest facts that strikes the observer is that the globules are of varying luster, some bright and clear, others pale, others faint, just discernible shadows. And in addition one finds aberrant globules. Figure 6 shows some of the forms I have seen.

Remembering that these lipoid myelins are widely distributed through the organism, this power of admixture and absorption appears to be most significant. To this Albrecht has already called attention in connection with the abundant myelin of the red corpuscles. It is these properties which favor the action of the erythrocytes as common carriers of the organism. It is not necessary that diffusible bodies become chemically combined with the substance of the red corpuscles; they may be merely absorbed and easily yielded up when the surroundings become altered.

Most suggestive of all seems to me the observations of Albrecht and Dietrich and Hegel on the one hand, that the myelin of the cells in autolysis makes its appearance in the cytoplasm coincidentally with the loss of the nuclear chromatin—and our own observation, that outside the body it is possible to gain union between oleic acid and nitrogenous bases, such as cholin and neurin. It is true that so far no one has been able to demonstrate the existence of protein-fatty-acid compounds. Brücke, Quincke and Klotz have all concluded that they must exist. This demonstration of ours of the existence of cholin and neurin oleate is, I would suggest, a step in this direction.

If fats can be taken into the protein molecule—if the lecithin-like bodies of the nucleus and the cytoplasm exist there normally in intimate association with the protein constituents—then we gain a valuable insight into the most perplexing matter of fatty degeneration. Fats, that is, appearing in fatty degeneration and necrobiosis, are not necessarily or entirely due to absorption from the blood and lymph, as Rosenfeld would hold, but

some at least are products of the disintegration of the complex molecules of living matter. With many workers on autolysis we have to recognize a succession of steps from the most highly organized nuclear materials through the myelins to neutral fats, fatty acids and cholesterin. There is a myelinic preceding the fatty degeneration; or, more accurately, in true cell degeneration, as distinct from infiltrative processes, the disintegration of the cell substance may well be in two stages, bodies of the myelin type being formed first, and these being followed with further dissociation by the appearance of fatty bodies of simpler type.

### *Original Articles*

#### RELATION OF ALCOHOLISM TO EPILEPSY.\*

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The relation of alcoholism to epilepsy is a subject of such magnitude, so comprehensive and varied, that I shall confine myself briefly to but one part of one aspect of it, namely, the relation it bears in the moderate drinking parent to epilepsy in the child, leaving as the subject for a future paper the grosser and more palpable development of epilepsy in the drunkard himself, as a result of his excesses.

There are illustrations, as you know; everybody knows of the extreme cases, where the victim of drink is not an epileptic and not commonly understood to be a drunkard, and yet as a result of his occasional convivial habit, or of his becoming slightly intoxicated almost every night, epilepsy or other neuroses manifest themselves in one or more of his children, just as fortunately there are cases where epilepsy in the parent as the result of drink, is not transmitted to the child, at least in the first generation.

These anomalies of apparently spontaneous development and atavism constitute some of the many etiologic perplexities of this multiplex condition, that already have had their Columbus, and only hope for the advent of some therapeutic or histologic Newton, to explain their mysterious pathology and suggest a cure, or in other words, they have already been discovered, and but await the Puritans, like our great ancestors, to perceive possibilities of prevention and elimination, and when this is not possible, to do the best with existing conditions.

The grosser specimens of this dissimilar transmission from parent to child—intoxication in the parent, epilepsy in the offspring—are so frequent that they may be read about at large in any of the standard books on the subject; and the various insane asylums and epileptic colonies of the world afford numerous examples of the old, old phylactery that ‘the sins of the father are visited on the children unto the third and fourth generation.’

If I may be permitted an aside, perhaps relevant, I would say that I have often wondered if this familiar quotation from the Decalogue did not imply on the part of the Mosaic writer a recognition of the law of atavism—reverting to the original type—so emphasized by modern scientific authors, as if it was a new physiologic discovery, or does it mean that in case of great transgression, for example, habitual drunkenness, the fourth generation would be the last; that outraged Nature resented the offense on the part of an unfit ancestor by obliterating the progeny after the fourth inheritance?

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



We know that in certain forms of degeneracy such is the ease sometimes still—physical deterioration ending in extinction—and we also know, too, as in Brown-Séquard's neuropathic guinea-pigs, that when undisturbed and properly cared for they dropped the inherited convulsions artificially induced, and returned to the normal guinea-pig state. Why can not we do this? Why can not an attempt at the production of this natural process become a recognized therapeutic agency? We get rid of other things inherited from ancestors, why may we not, like guinea-pigs, get rid of inherited epilepsy also? I think the time has come when we can.

No matter how little your faith then in heredity, no matter how much you resent the frequently extravagant claims of those who believe in the transmission of everything, not only of diseases and tastes, but even accomplishments and acquired traits, yet when it comes to the matter of the relationship of drunkenness in the parent to epilepsy and other neuroses in the child, there can be but one opinion. Here is a form of heredity that can not be denied. The testimony of experts in the matter is so overwhelming that you must be convinced, and the acceptance of this well-attested fact is of the utmost importance to every one interested personally or professionally in preventive medicine.

As far as alcoholism is concerned, my own personal experience would seem to imply that the danger to the prospective child depends not exclusively as to whether the parents, one or both, were habitual drunkards, as to whether they were intoxicated or under the influence of alcohol during the time of conception, and that a drunken parent, other things being equal, if perfectly sober and free from the irritability, remorse and exhaustion consequent on a debauch, is no more likely to produce epileptic offspring than an abstainer would, who might chance to be intoxicated for the first time.

Two epileptics now under my care, the only cases occurring in their respective families, were traced by the parents themselves to single transgressions in the use of intoxicants, and another, that of a young imbecile girl, was conceived, her father confessed, at a time when, because of business perplexity and failure, he had abandoned himself to drink, "being," he said, "in a state of continuous intoxication ending in delirium tremens, for nearly three months. Four children born before this crisis in his affairs, and two born since, are perfectly well.

Children whose geneses result from such unions, must, almost necessarily, you might think, be born with that excessive reflex susceptibility that makes them prone to epilepsy and other mental or motor disturbances, or in other words it would seem that offspring born of such abnormal consorting inherit a psychical vulnerability, not like Achilles, of the heel only, but of the whole nervous system, which but waits for the touch of the invisible hand, the special exciting cause, to develop into epilepsy or some other disorder of voluntary motion, such as chorea, vasomotor spasm and allied distempers of the nerve centers.

Dr. Spratling, of the Craig Colony for Epileptics, in his admirable book, "Epilepsy and Its Treatment," quotes Maudsley approvingly where he says that epileptics because of drink, etc., on the part of the parents, "are as much manufactured articles as are steam engines and calico printing machines," and Dr. Spratling himself, as the result of extensive observation, having a thousand epileptics under his care, firmly believes that

drunkenness in the parent is frequently transformed into epilepsy in the child.

Echeverria, who analyzed no less than 572 cases, says, "Parental intemperance solely originates the predisposition to epilepsy in 17.30 per cent. of them, and parental insanity, associated with epilepsy, 15.96 per cent., nearly 16 per cent." This is a very remarkable statement, as it shows that a greater percentage of epilepsy is produced by intemperance on the part of parents than by insanity and epilepsy combined. It is truly a most startling observation. According, also, to this writer, alcoholic epilepsy was more common among the working classes. Molli<sup>1</sup> asserts that from 30 to 40 per cent. of all persons with drunken fathers were epileptics.

The same writer quotes from M. Hippolyte Martin, who collected a number of interesting facts in regard to the influence of parental intemperance in the production of epilepsy in children. In 150 cases of insane epileptics at the Salpêtrière he found that 83 had intemperate parents, nearly 60 per cent. He divides them, according to Dr. Hare, from whose comprehensive prize essay I quote, into two classes, the first comprising 60 cases, or over two-thirds, in which alcoholism in the parent was a certainty, and second, those in whom such a history was not found. Martin also found that in 83 intemperate families with 410 children, 108, or more than one-fourth, were epileptics.

He also gives the cause of the deaths of the parents in a number of cases, to show that no hereditary tendency other than alcoholism produced epilepsy, and this, too, in that France, where we are sometimes led to believe that the favorite beverage is light wine, and that there is no intemperance.

In estimating the number of epileptics in different parts of Russia, Kovalovsky writes as follows (quoted by Dr. Spratling):

Caucasus is a country of grapes and wine. The natives quench their thirst not with water, but with wine that contains from 5 to 15 per cent. of alcohol. Wine drinking is so common in Caucasus that no one considers it inebriety. Everybody knows what a high percentage of epilepsy is caused by the abuse of alcoholic beverages. I have spent the summer during the past 15 years in Caucasus, where I have a medical practice, and in no place have I had so large a proportion of epileptics among my patients.

Bourneville, who studied 2,554 children admitted to the Bieître and Fontain Vallee, 2,072 boys and 482 girls, all of them suffering from idiocy, imbecility, epilepsy and hysteria, found that 1,053 of them were the offspring of drunken parents, 983 having drunken fathers and 80 drunken mothers.

Demaux asserts that among 36 epileptics whom he examined during 12 years, whose histories were well known to him, 5 were conceived when their fathers were intoxicated.

In conclusion allow me to cite two more examples from my own case book:

I. C., a lawyer, who hardly knew the taste of liquor until he was a prosperous man, with no hereditary taint, in the beginning of his career became the father of four healthy children. Afterward, when he had attained comparative fame and a wine cellar, and had become a good deal of a *bon vivant*, two other children were born, one of which developed uncomplicated epilepsy in his sixth year. The other had paralytic dementia, with epilepsy.

Another patient, a traveling salesman, with a good family record, who "even when on the road never drank during business hours." With the beginning of prosperity this man

1. Neurolog. Centralblatt, 1885.



began the habit of imbibing at dinner, and finally continued his potations into the night, his wife and friends frequently joining him. Three of his eight children are epileptics, and yet no one but his intimates are supposed to know of his conviviality, as he only drank in the night. Once he said to me: "Formerly I drank for pleasure; now I drink because of remorse."

Such illustrations might be repeated indefinitely, but I think I have said sufficient to convince you that there is a definite relationship between alcoholism and epilepsy.

## THE VALUE OF TEMPERANCE INSTRUCTION.\*

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The Woman's Christian Temperance Union, which I have the honor to represent here to-day, has within its ranks a large number of women who are, or have been, engaged in the profession of teaching. The combination of temperance worker and teacher naturally led to great interest in the effort to safeguard the young against alcoholism by incorporating in the school curriculum, in connection with the study of physiology and hygiene, the results of laboratory investigations of the effects of alcohol on the human body. This instruction has been greatly hampered in its influence for good by the hostility of some educators; yet its value has been recognized in many homes and certified to by many who have enjoyed its benefits.

In New York State several years ago an attempt was made by friends of moderate drinking to weaken the temperance instruction law. The State W. C. T. U. sent a circular letter to hundreds of mothers asking an opinion of the value of this instruction as seen in its effects on their own children. A large number of replies was received, all testifying that wherever the law had been faithfully observed and the instruction given without adverse comment the effect on the children was to cause them to resolve in favor of total abstinence.

Very interesting instances might be given of children from drinking families, some of them foreigners by birth, who have become total abstainers through the influence of faithful teachers of physiology and hygiene.

The value of temperance instruction has been recognized by employers of labor, also, such as railroads, street car companies, steel corporations, bonding companies and many other companies dealing with large numbers of men. They have learned through it that there is no good reason why men should drink liquors containing a dulling stupefying poison like alcohol and as clear brains are necessary in these days of rush and competition the large business corporation which does not now put restrictions on the drinking habit of its employes is an exception.

The commercial value of the temperance instruction of American schools has attracted attention in European countries; consequently men conducting large manufacturing enterprises in England, Belgium, France and Germany have been asking for like education in their public schools.

The possibilities wrapped up in this instruction for improvement in health and morals appeals to the medical profession, and some thousands of England's physicians

have united in memorializing the British Parliament for a temperance instruction law. The Emperor of Germany, after personal study of the American system, has introduced alcohol physiology into the elementary schools of his empire.

These are noteworthy indications of the estimate that men of keen business perception set on temperance education. They realize that drunken employes are a great loss to the industries of a nation.

Valuable as have been the results of the endeavor to forewarn the children of the nation against the formation of alcoholic habits, much more might have been accomplished had all educators and medical men been in active sympathy with these teachings. The errors and weaknesses complained of might have been eliminated sooner if aided by friendly criticism. The adoption of Mrs. Hunt's reply to the Committee of Fifty as a United States Government reply has done much to discourage opposition to this movement, hence greater results may be expected in the next decade than in all the troubled years of its past history.

There is pressing need, however, of an extension of temperance instruction so that the adult population may be touched more closely. We have university extension lectures on many subjects; why can not we have some systematic course of extension lectures on alcohol physiology? If a series of public lectures, covering the main points of alcohol physiology on which leading investigators agree, were arranged for in school houses through the co-operation of physicians, educators and school mothers' clubs, vast good would certainly be accomplished. In a few cities boards of health and the Woman's Christian Temperance Union have co-operated in holding meetings devoted to health topics and to discussions of the evils of "patent medicines." But if county medical societies were to arrange with school authorities for a series of lectures on alcoholic drinks it would attract widespread attention; the press, ever ready to report the new and striking, would give such matter all the necessary head lines and good audiences would be assured.

The need of some such movement is manifest everywhere. The ravages of alcoholic drink are to be seen in the remotest villages of our country, and native races on other shores coming into contact with our traders are perishing by thousands from the white man's rum. Jails, asylums for the insane and the feeble minded, hospitals, poor houses are all crowded with the victims, direct or indirect of alcoholism. A physician connected with an asylum containing over four hundred feeble-minded girls told me that she had studied the history of each inmate, and could say truthfully that about 90 per cent. were in that institution as the result of the drunkenness of one or both parents. The brothels and dives of our great cities are kept supplied with girls largely through the agency of alcoholic drinks. Girls do not seem to know that wine and beer inflame the passions, and at the same time lessen self-control and impair the judgment, and for lack of this knowledge thousands of girls are destroyed, body and soul, every year. Evil men know the effects likely to be produced by these drinks, so lure thoughtless girls to partake of the wine or the beer under pretense of friendship and having a "lark," but the end thereof is shame, disgrace and destruction. Rudyard Kipling, with the true poet's heart to feel for humanity, saw this frightful evil in Buffalo some years ago and declared that it made him a prohibitionist. Would it not make every manly man with the instincts of a savior of

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



the weaker sex feel the same way if it were brought directly before his eyes as it was with Kipling? Physicians connected with hospitals have found sad cases of young women from good homes who have been led from virtue through indulgence in wine. Only a few days ago in Chicago four girls from respectable homes were found dead drunk, or worse, in a carriage at the back door of a dive where they had been left by order of the men who a few hours before professed to be their friends and took them out for a "good time." Knowledge of the danger lurking in the ruby wine or the foamy beer might save many a thoughtless girl. Too often the instruction given in the schools had no deterrent effect because the teacher lacked sympathy with the subject and taught it with a sneer. Too often the sneer was the result of the way the subject was treated in institutes which such teachers attended. For this and other cogent reasons supplementary education on alcohol coming with strong medical authority is a necessity.

It is sorely needed by young men as well as young women. Thousands of young men, many even from christian homes, drink during the college years, thus losing much of intellectual uplift, and thereby handicapping themselves for the race of life. They seem to think it smart or daring to get drunk. If the universities provided lectures on the injurious effects of alcohol on the brain and nerves, with explanations of its seductive nature in enchaining its victims, might there not be a mitigation of the drunkenness among students which so vexes the presidents of some colleges? It would not seem so glorious an adventure to get drunk if young men were told that the eminent student of alcohol, Sir Benjamin Ward Richardson, M.D., had said that he believed a brain once stupefied by alcohol could never again be quite equal to what it was before.

In Europe the temperance movement which is now gaining such hopeful headway began with members of the medical profession. Several years ago in Paris a physician holding an important municipal office became alarmed by the prevailing misconceptions of the Atwater experiments and conceived a unique way of instituting a total abstinence propaganda. He prepared large placards setting forth the salient evils of alcoholic drinks and posted them in many public places throughout the city. This example has been copied by some of the boroughs of London and by other English and Scotch cities. A more striking way of conveying temperance instruction could scarcely be devised.

Why do people need to be told the nature and effects of alcoholic liquors in school, by lecture or by placard? Because the great majority of those who drink intoxicants believe they are useful if taken in moderation. The laboring man hears beer called liquid bread, and spends his money freely for it, not only because he likes it, but because he thinks it strengthens him and helps him to do his work. He knows that physicians have given beer and wine and whiskey to the sick "to strengthen and sustain them," and he reasons that what is food for the sick must also be beneficial to those in health. He has never heard of the large class of physicians who make little or no use of alcohol in their practice.

So, also, with mothers in the home. They know that some physicians give alcoholic liquors in consumption, in fevers, in pneumonia and other ills, and because of this these mothers keep the whiskey, or brandy, or "patent medicine" bottle on hand, and resort to it in every little weakness which may afflict the family. Glibly will women talk of how good a whiskey sling is for a cold, and rock-

and-rye and peruna are familiar "dopes" in many a household where the beverage use of the lightest liquor would not be tolerated. If a temperance worker suggests to such a woman the danger of setting up an alcoholic craving in her child the usual reward is a look of great superiority, and an assurance that she is not afraid. The superstitious belief in the medicinal and food qualities of alcoholic liquors, so commonly held, must be removed from the public mind before there can be much hope for the cessation of intemperance with all its attendant evils. This can be done only as physicians of distinguished position speak out fearlessly what the people need to know. Who can measure the good which has resulted from the clear, strong, scientific teachings against alcohol of the late Nathan S. Davis, of Chicago, and Sir Benjamin Ward Richardson, of London? May it not be that the influence of Dr. Davis has had much to do with the fact that many Chicago physicians have very little use for alcohol in their practice? For thirty years Dr. Davis had charge of the medical wards of Mercy Hospital, Chicago, and during all that time not a drop of alcoholic liquor was administered to a patient in those wards. While other hospitals were publishing death rates in typhoid fever of 16 to 25 per cent., Mercy Hospital had only a 5 per cent. death rate. In pneumonia, while other large hospitals had death rates varying from 24 to 38 per cent., Mercy Hospital had only a 12 per cent. death rate. Dr. Davis was justified by his hospital experiences in abjuring alcoholics.

The teachings of Nathan S. Davis, Richardson, Kasowitz, Woodhead, Treves, Hall, Crothers, Kellogg, Hewes, Madden and other physicians of like views have been put into leaflet and pamphlet and book form by the department of medical temperance of the National Woman's Christian Temperance Union, and are being read and studied in thousands of homes. This kind of temperance instruction is most hopeful, for when people learn that some of the most successful physicians of the world do not believe in the necessity or usefulness of alcoholic liquors in the treatment of disease they are much less likely to begin the use of these seductive drinks.

The department of medical temperance began the public agitation against "patent medicines" which the magazines have recently carried on so forcefully. The evils of "patent-medicine" using, however, will never cease while such multitudes of people believe that alcohol is a useful medicine. When told that peruna was found by analysts of the U. S. Government to be a cheap "cocktail" masquerading as a medicine, peruna lovers exclaimed, "Well, isn't alcohol a good medicine? Don't the doctors use it?"

It is evident to all close students of the drinking habits of the people that the tap-root of the nation's intemperance is the belief in the nourishing and strengthening properties of alcoholic liquors. Destroy this, and how long would an intelligent people spend \$1,000,000,000 a year on alcoholic drinks? But it never can be destroyed without large help from the medical profession. There should be published from time to time strong articles against alcohol by prominent physicians, and by many of them. The people have a right to expect that their medical advisers will warn them against whatever is injurious to physical health and strength.

A large section of the medical profession is in deep sympathy with every wise effort against intemperance; why can not something be done to focus this sentiment so that it shall bring light to the American people on a subject vital to their best interests? As superintendent



of the department of medical temperance of the National W. C. T. U., I have seen the great need, even in temperance homes, of instruction in the teachings of non-alcoholic physicians; and I wish to thank many of you present for help and encouragement in the work assigned to me of being a medium between good physicians and the people.

## THE VALUE OF INSTRUCTION REGARDING ALCOHOL.\*

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There is not to-day a more important question for educators to consider than the one here presented for discussion. I feel certain that we shall all enter on it with minds open to conviction on all points. We are all in search of that happy and safe middle ground of truth and justice which history has shown invariably lies between the positions occupied by the partisans in a controversy.

I wish first to formulate a few general principles or theses which may be discussed individually. The acceptance or rejection of each thesis in its order will bring us progressively nearer and nearer to a definitely formulated policy, acceptable to members of the teaching profession as well as to the medical profession.

### *I. Natural Objects and Natural Phenomena Should be Studied in all Public Schools.*

All leading educators accord to the study of nature a prominent place in their systems of education. These systems may differ from each other widely in detail, but they possess one feature in common; and that is a provision for the study of nature.

Whether the pupil is a kindergarten child or a high school youth he is invariably interested in the study of natural objects. The discipline afforded the pupil is most natural and profitable. In the study of the object the senses are exercised and the attention cultivated; the formation of percepts and concepts involves the activity of memory and of reason. The description of objects gives opportunity to cultivate language, both oral and written. Incident to this expression of ideas the pupils get their drill in orthography, etymology, syntax, punctuation, writing, reading, perhaps, also more or less collateral work in arithmetic, geography, history and literature. The expression of ideas through diagrams and drawings should also be emphasized.

Thus a trip to the field, the lake shore, the swamp, the pasture, the woods, or to a flowing stream may provide material for a fortnight of most profitable and inspiring work. It is understood, of course, that all the nature work done in the grades should seem to be more or less spontaneous on the part of the pupils. The season, the weather, some astronomical phenomenon of unusual interest may furnish material for a week's work. The teacher takes the material at hand and makes the most of it.

This method of presenting the natural objects which form the material of the natural sciences precludes the possibility of a systematic presentation of the facts and principles of biology, physics, chemistry, geology, or astronomy. In the grades there should be no attempt

to separate out and systematize the facts and principles. Up to the age of 14 the whole field of Nature should be carefully and minutely observed, simple experiments performed, and the results of all observations carefully noted and used as subject-matter for a large part of the school work.

In the high school the study of nature is no less important than it is in the grammar schools. A smaller proportion of time should be devoted to it, and here for the first time the facts and laws of natural phenomena should be systematically presented in the form of sciences. The high school curriculum should provide science courses in biology, physics, chemistry, geology, astronomy, and perhaps other sciences, all carefully limited in breadth and depth to the mental attainments and capacity of the average pupil of high school age.

### *II. The Study of Living Forms and of Life Phenomena Make an Important and Essential Part of Nature Study.*

Having set forth some of the pedagogic possibilities of nature study in the grammar schools and the relation of this work to the natural sciences as presented in the well-equipped high school of to-day, it now becomes necessary for me to show the relation of biology to natural science in this general system of education.

Any teacher in the grades will bear testimony to the abiding interest which pupils uniformly take in living forms and life phenomena. From the day when the pupil is allowed to bring his pet cat or dog to the kindergarten to serve for the subject of a lesson to the time when he is allowed to make a careful study of one plant from the seed which he plants in the ground, to the gathering of the next generation of seed, the teacher finds living forms and life phenomena an open sesame to the pupils' attention and interest.

In the presentation of these objects of study to children and youths, it is my observation that the interest is far more keenly awakened by the study of what an animal does than by the study of its structure. We all know how interesting to a boy or girl is a mill in operation; they like "to see the wheels go round."

So in the study of living nature the questions which the pupils ask make it evident that they are far more interested in the functions of the various parts of an animal than in the construction of the animal, i. e., they are more interested in physiology than in morphology.

### *III. The Physiology of Living Forms is the Most Interesting and Profitable Field of Biologic Study.*

The facts and principles which make up the sum of our knowledge of living forms—our science of biology—may be classified under two general heads, comprising what we know of form and structure (morphology) and what we know of function (physiology). As already set forth above, the interest of the pupil is far more easily aroused in a question of action (physiology) than in a question of structure.

The instinctive interest of the pupil should be the teacher's guide.

In the other fields of nature study the pupil's interest in the action, rather than in the structural or physical qualities of the natural objects involved, has led teachers to dwell with special emphasis on the action rather than on the structure. In the light of this experience teachers may proceed with full confidence that in emphasizing the functions (physiology) of living objects they are in

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



harmony with the highest authorities in methods of presenting natural science.

But physiology so far discussed up to the present time belongs to what is known to physiologists as general physiology. The field of general physiology—i. e., the activities, habits, etc., of plants and animals—should always be presented to pupils before they take up the consideration of any of the more specialized fields of physiology.

Incident to the study of living forms and their actions, the pupil will discover some day that his body possesses many structures similar to those possessed by the animals which he is studying. His pet dog has body, legs, head, eyes, ears, nose, mouth, tongue, teeth. The dog runs, walks, lies down; he sees, hears, smells and feels; he gets hungry and thirsty; he eats and drinks. These points of likeness appeal to very young children. They begin to ask questions. Their questions must be answered, and their interest satisfied. When this subject is launched by the question of some bright and observing pupil, then is the teacher's golden opportunity. Then she can afford to drop all other study for a week or a month and study man.

This opportunity may present itself in the third, fourth or fifth grades for the first time. In either case the teacher must be cognizant of the limitations of her pupils and not lead them beyond their depth. Legitimate subjects of study would be: What does man eat? Where and how is it produced? How is it prepared? Why does man eat? How does the body use the food? What happens to food in the mouth, the stomach, the intestines? How is the food (digested food) distributed to the parts of the body where it is needed? Why does man need to breathe? What kind of air should one breathe?

These and many other questions of this scope can be taken up with pupils of the fourth to the sixth grade, spending much or little time each year or season, according to the pedagogic indications at the time. The trained teacher will appreciate what I mean by pedagogic indications. A cramming or forcing process is never indicated pedagogically. If the pupils are not interested in a subject, no matter whether the subject is plant life, water action, wind action, digestion, sentence construction, cotton growing, word structure, cattle raising, or punctuation, when the interest flags change the subject.

We are led here to formulate a fourth proposition:

*IV. The Physiology of Man Is the Most Interesting and Important Field of Physiology.*

*V. Rules of Hygiene Form Legitimate Corollaries to Principles of Physiology and Should Be Presented in Their Logical Relations.*

When one is discussing mastication and the use of the teeth, the necessity for thorough mastication and insalivation can hardly be omitted from the discussion. The care of the teeth seems to be a most natural topic to discuss incident to the study of their use. There seems to be no tenable argument against allowing the discussion of rules of hygiene in connection with each function studied. On the other hand, a failure to discuss these rules and to emphasize their importance would be an omission of a duty. The pupil's mind is prepared for it. To formulate a rule for hygienic living based on the solid foundations of demonstrated science is to follow the instinctive inclination of both pupil and teacher. Then let hygiene be taught in the common schools.

How much hygiene should be taught? So much and only so much as is logically correlated to the physiology

given. These rules of hygiene should be the formulated conclusions, based on physiologic facts and principles.

*VI. The Physiologic Action of Things in Such Common Use as Chewing Gum, Tea, Coffee, Tobacco and Alcohol Should Be Discussed as Freely and as Fully as the Action of Rice, Eggs, Butter and Water.*

If I were asked whether I should give more time to the consideration of these deleterious substances than to the consideration of wholesome foods and beverages, I should unhesitatingly say, No! I should emphasize particularly the value of wholesome foods and beverages, and I should lead pupils to discover the folly of the use of the unwholesome ones.

Having thus demonstrated that it is pedagogically proper to instruct pupils regarding the action of alcohol and other narcotics on the body; that it is pedagogically proper to teach pupils the elementary facts of hygiene, including the dangers of indulgence in stimulants and narcotics, we come to the question at issue: "What is the value of instruction regarding alcohol?"

In the first place it is universally admitted that the use of alcohol is dangerous; further, that a knowledge regarding danger is valuable. Education is the great reforming influence. Knowledge is the safeguard of society. The present generation is protected against the ravages of cholera, of smallpox, and of yellow fever through a widely disseminated knowledge on the part of the people regarding the general causes of these diseases and the rational method of checking their spread. If the future generations are to be protected against the appalling ravages of "the white plague" and against the degenerating influences of that curse of man, alcohol, it must be similarly through a wide dissemination of knowledge regarding them. Therefore, I say educate, educate, educate. Let the children, the youths, the young men and women know the whole truth, and the value of that knowledge will make itself manifest through a rapid decrease in the ravages of tuberculosis and alcoholism.

If boys and girls are taught the dangers of the moderate use of alcohol, few of them will later suffer from the effects of its excessive use.

[THIS SYMPOSIUM ON ALCOHOL, BEGUN LAST WEEK, WILL BE CONTINUED NEXT WEEK.]

**Dark Living Rooms and Tuberculosis.**—Juillerat states that during the ten years 1894-1904 about 38 per cent. of all the cases of tuberculosis in Paris occurred in 5,000 houses. In 259 of these buildings, sheltering a population of 25,938 persons with a mortality of 7.98 per thousand, inspection disclosed 2,627 rooms with no light and no ventilation. Neighboring buildings with identical conditions in every respect except that the rooms were better lighted, had none of this excessive mortality. He urges physicians to impress on their clients the supreme importance of sunlight to health, and to persuade them to insist on having sunlight and air in their living rooms. If tenants shun dark, ill-ventilated apartments landlords will in time find it to their advantage to provide apartments with the necessary requirements. The pioneer work in the line of educating the people to the absolute necessity for sunlight and air in living rooms must be done by physicians; the enlightened demand will in time regulate the supply. Juillerat is the originator and is in charge of the "sanitary house book" system in Paris, described in these columns recently, on page 2169 of the last volume. His article is published in the *Gazette Méd. de Paris* for January 5, with the unusual notice: "Reproduction of this article is authorized."



## INFANTILE HEAD NODDING AND ROTARY SPASM.

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This condition was described by Henoch many years ago and since his time cases have been reported by Hadden, Peterson and others. In the *Lancet*, June 14, 1890, Hadden takes up the phenomenon at some length, citing five cases, typifying variations with sufficient constancy to warrant sub-classes. His general title is: "Head Nodding and Head Jerking in Children, Commonly Associated with Nystagmus."

The condition is characterized by nodding or lateral movements of the head, singly or associated with one another or with movements of rotation. The rotary spasm is the most frequent. The oscillations may be slow or rapid, and at times almost continuous. An interesting feature is the fact that these movements all cease during sleep and when the child is lying down. There may or may not be an associated nystagmus; it may affect one or both eyes; it may accompany, precede, or follow the head movements, is more rapid than the oscillations of the head, and has its own independent rhythm. Convergent strabismus may characterize a few cases.

The etiology is extremely obscure. As its occurrence is usually between the ages of 3 and 18 months, it has been ascribed to dentition. It has been confused with a form of epilepsy—*cclampsia nutans* or *salaam convulsion*—but in these cases there is disordered or transitory loss of consciousness and such cases usually develop into the ordinary form of epilepsy. Osler speaks of the nodding spasm under conditions involving the spinal accessory, as it is the muscles innervated by this nerve which are chiefly affected. It is thought by some authors to be a habit spasm. In three of Hadden's cases the condition followed head injuries, and some of the obscure cases of nystagmus, he believes, come under this category of nodding spasm. The condition lasts several months, and while recovery is the rule, it is apparently uninfluenced by drugs, except that some cases seem to improve under the bromids.

*History.*—Female, aged 6 months, breast fed, and giving no history of head injury or of sickness. There were no hereditary taints of significance. The mother was much alarmed over the sudden development of the head spasms which occurred at intervals from three to five minutes, the excursions being widely to the left and in an upward direction. The spasm consisted of a combined nodding and rotary movement. An upward rolling of the eye balls with vertical nystagmus, together with muscular twitching of the lids, ushered in and accompanied each spasm. The spasm lasted about a minute. These manifestations ceased during sleep and when the child was lying down. Aside from somewhat exaggerated restlessness, the infant presented nothing unusual; she was well nourished and in every way presented a healthy appearance.

*Treatment.*—The condition remained unchanged for two weeks under small doses of Fowler's solution. No choreic movements were noticeable. Potassium bromid was then added to the treatment and the spasms became less frequent and pronounced after the third week, and now, after two months, the mother states that they are no longer noticeable.

*The Telephone in Medicine.*—The danger of prescribing by telephone should be borne in mind by every physician. It would be better if no prescription were ever given by telephone, and advice thus given should be of a harmless character and incapable of being misunderstood.—*Central States Medical Monitor.*

## A CASE OF SECONDARY HYPERNEPHROMA OF THE IRIS AND CILIARY BODY.\*

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The man whose history is here detailed came under my observation first in the wards of the Germantown Hospital on Oct. 11, 1905. He had had hemorrhoids, and Dr. C. A. Whiting had operated recently for the removal of them. The house surgeon, Dr. Markle, called my attention to the man because of there being, as he supposed, a growth in the left eye.

At the time I made my examination the patient was in what he deemed his usual good health and suffered only from his rectal disease. In the month past he had been annoyed by obscuration of his sight, especially of the left eye, though that eye was neither painful nor tender. I discovered on his body, beneath the skin, over the region of the costochondral junctions on the thorax, several nodular enlargements. These masses were movable and reminded me of the enlargements of the cervical glands common in constitutional syphilis. In the left groin there was a large bubo.

Arising from the middle pillar of the iris of the left eye, and on the horizontal meridian, was a spherical tumor, mottled gray in color and approximately 4 mm. in diameter. No signs of inflammation were present. On the nasal side of the globe were several lashes of dilated blood vessels which were arranged triangularly with the base at the limbus. The tumor was flattened against the posterior membrane of the clear cornea.

The iris presented no other abnormality. The pupil was round, about 4 mm. in diameter and changed freely to various stimuli. By oblique illumination no defects in the lens were noticed. The anterior chamber was of the depth of that of the fellow eye; the tension being only slightly raised above that of the right. No tenderness was elicited. The right eye presented no anomaly. Vision of the right equaled 6/6, of the left 6/30, Snellen. The iris contracted when a solution of atropin was instilled, and the pupil was broken by the projection of the mass into the pupillary space.

The tumor appeared to rise from the radiating muscular fibers. There was but slight protrusion backward, the base therefore was buried in the pigment layers of the iris; the anterior surface was flattened against the endothelial membrane of the cornea. It was globular in outline though somewhat nodular in conformation and was attached to the iris by a short broad pedicle. It resembled the small granulomata frequently seen in the conjunctiva at the apex of the socket remaining after an enucleation. The tumor was highly vascular, the fine loops giving a pink stippling to the grayish-yellow color of the denser portions. The lens was clear; the vitreous had begun to disorganize, for there were large floating masses in it, while more deeply situated was the semblance of "brick dust" deposit. The optic disk was round; its upper border whole, while about the lower was a wide, sharply-cut conus.

This conus I conceived to have been formed by an axial distension rather than to have been a part of a general inflammation of the choroid that was present in other parts of the fundus, and because the refraction of the eye was measured by a minus 4 D lens. The choroiditis was of comparatively recent origin. The macular region was not affected. The retinal epithelium was markedly absorbed; the outlines of the tortuous vessels were blurred, but no hemorrhages were noted.

The patient, aged 40, stated that shortly before admission to the hospital his attention had been called to the presence of a small lump in his eye. This lump, he was cer-

\* Read before the American Ophthalmological Society, session at New York City, June 28 and 29, 1906.



tain, had increased in size rapidly though it never had been painful, neither had the eye been inflamed. In the spring of 1903, this eye had been struck with a small stone. The man said that he applied for treatment at the Wills Hospital. The injury must have been slight and the symptoms transitory, because only a simple lotion was prescribed and he was advised to report again to be fitted for glasses. His recollection of the examinations made of his eye at that time, were not strong, yet he remembered that his condition was such as to occasion comments from the surgeon in charge and his staff to several visitors present in the clinic. It may be presumed, however, that no unusual growth was perceptible then, for the man would have had the recollection of an allusion having been made to it had such a thing been noticed. I have not been able to find any record of such a case as this at the Wills Hospital; therefore the antecedent history is uncertain.

The man was a carpenter; married and had three children. His childhood had been healthy; in adolescence he had a simple attack of typhoid fever. In 1902 he became infected with syphilis. He was not treated for this disease, for, shortly after noticing the initial lesion of it, he was arrested for drunkenness and loafing and was committed to one of the penitentiaries. He declared to me that he was refused treatment by the resident medical officer of that institution. After serving his term he returned to his work, but even then he had had only the most irregular kind of treatment. No member of his rather large family had a history of consumption or of tumors.

I suspected this to be a case of sarcoma of the iris, yet in view of the general history, I did not forget to consider the probability of there being a specific element in the genesis of the tumor. Accordingly, for 5 days, the ointment of mercury was vigorously applied thrice daily. At the end of this course there was a perceptible softening of the subcutaneous tumors, but that of the iris remained unaffected.

A few days later, when the eyes were examined again, there were evidences of cyclitis in the left. The sclera was faintly injected and numerous precipitates were lodged on Descemet's membrane. In the right eye were signs of active chorioretinitis, though the blue iris was healthy. By October 20, the ciliary injection had increased considerably, while the tumor appeared to have spread out slightly, and to be less closely applied to the cornea. Also, it had become distinctly lobulated and irregular in outline. I believed that I had to deal with a very active and malignant process. The patient refused to have the eyeball removed, but on October 23, after inventing many pleas by which to escape from the hospital, he at last consented to an operation for the removal of the tumor. I removed the tumor by a wide iridectomy. The incision was made with a broad keratome in the nasal limbus. As the space between the limbus and the tumor was small, and as I feared to lacerate the tumor, I withdrew this knife and lengthened the incision by lateral strokes with a narrow angular blade. This part of the operation was prolonged by a very annoying hemorrhage. With a many-toothed capsule forceps, I caught up as much of the surrounding iris as could be grasped, and withdrew the entire mass with the tumor and excised it with spring scissors. Great and prolonged hemorrhage followed. Much of the effused blood escaped from the anterior chamber after the wound was flushed with boracic acid solution. The toilet of the wound, however, was performed satisfactorily, after which I applied a light compress over each eye and then bandaged both.

Seven hours later the patient was resting comfortably, and when the dressings were removed early the next morning only slight operative reaction was present. The wound had closed and the chamber had reformed. Atropin was instilled and the bandages were reapplied. The eye soon healed. The edges of the coloboma were adherent to the lens capsule. This synechial attachment in all probability had existed prior to the operation, for it was with difficulty that the iris could be caught into the jaws of the forceps, and doubtless this lack of resiliency occasioned the profuse hemorrhage that followed the excision of the iris. The lens was clear, though there were several clumps of pigment on the capsule. In

about two weeks the patient was discharged from the hospital.

In order to study the histology of the tumor the specimen was intrusted to Dr. C. M. Hosmer, of the Medical Laboratories of the University of Pennsylvania, who prepared for me many beautiful sections from almost the entire tumor, which he has stained by a variety of methods.

The tumor springs from the anterior surface of the iris, and the site of it occupies the middle portion of the section which was excised. The normal tissues about the base of the tumor are destroyed by the infiltration of the tumor cells. The outer portion of the iris is apparently uninvolved and the sphincter remains intact.

The tumor is without a capsule or other limiting membrane. The substance of it is composed of numerous thin-walled blood vessels and spaces which branch in many directions in the midst of cellular elements. In the iris stroma are a few vessels having normal coats, yet elsewhere, the vessels or spaces are formed by channels, with thin coats of fibrous connective tissue, lined with endothelial cells which are in the process of proliferation. (Fig. 1).

The cells are arranged in layers. They are large and present a variety of shapes, passing from the columnar, when next the blood vessels, to the polyhedral, oval or round, according to the pressure made on them as the periphery of the tumor is approached. In the iris stroma the cells are not clustered about the vessels but are more generally distributed. (Fig. 2).

The individual cell is composed of fine granular protoplasm and a large nucleus with a distinct nucleolus. The cells are evidently multiplying rapidly, for, in many of those lying nearest to the vessels there is more than one nucleus, each with its own nucleolus, though no karyokinetic figures are discerned. At a distance away from the vessels, too, the nucleolation is seen, yet here the protoplasm has become vacuolated as though degenerative processes had set in. At that time, judging from the character of the cells and of their arrangement about the vessels, the growth was regarded as a perithelial sarcoma by Prof. Allen J. Smith, of the University of Pennsylvania, to whom I showed the slides.

I saw the patient at various times subsequent to his leaving the hospital. Within the week of his discharge he was committed to the House of Correction on the charge of vagrancy. This was early in November. He was released on December 22. I visited him there. During his confinement specific remedies were administered to him and he soon gained in weight. In the week following his release from the hospital, my records show that the cornea continued clear; the sclera was without injection; the cicatrix was absorbing; the anterior chamber deep and the aqueous free from precipitates. The iris coloboma had become quadrate rather than triangular because of the adhesion of the pillars to the lens capsule. The remaining portion of the iris was healthy and responded to the action of atropin. The lens was unclouded and the state of the vitreous unaltered. The nerve head had become swollen and it was impossible to study its features in detail. The choroidal inflammation was extending in all directions. The condition of the right eye remained unchanged.

Early in January, 1906, the man's testicles had become somewhat enlarged and he complained of pain and heaviness. I referred him to Dr. Hilary M. Christian. Later, he turned up in Dr. Christian's ward at the Philadelphia General Hospital, where he was treated with anti-syphilitic remedies. While there, a number of small nodes were noticed lying beneath the skin on his thorax, like those I had discovered while he was under my care. These softened and became smaller when mercury was pushed, in the same manner as those which I have already described. Several of them were excised, and pronounced sarcomata by Dr. Rosenberger, pathologist of the hospital.

On January 26, the man was anxious for me to see his eyes, and he asked to be allowed to come to me. To all appearances the ocular conditions had not changed; but on February 1, he came again, complaining of intense pain in the left eye. There was a small foreign body on the cornea, but, in addition, the cornea was steamy and surrounded by a ring of ciliary injection, while the iris was obscured by the turbid aqueous. The tension was not elevated. I removed the foreign



body and bandaged the eye after instilling solutions of cocain, dionin and atropin. Four hours later the symptoms had not abated.

A day or two later, I was informed that he had returned to Blockley, but this time he entered the Eye Wards. On February 7, I was invited to visit the patient through the courtesy of Dr. John Welsh Croskey, the alternate of Dr. Charles A. Oliver who was unable to serve at the hospital because of an illness.

The patient's ocular symptoms had become more profound. There was greater injection, greater cyclitis, haziness of the lens, a more clouded vitreous and an indistinct fundus. The intraocular tension was elevated, and yet the tension of the right eyeball was equal to that of the left. The man lay curled up in his bed; he had lost weight, and presented signs of cachexia. In the days following, the pain increased so greatly that he begged for the removal of the eye, fearing the right eye might become similarly diseased.

On Saturday, February 17, Dr. John Welsh Croskey removed the eye, and the large inguinal gland also; he most kindly gave the specimens to me. The globe measured 25 mm. in the anteroposterior diameter, 23.5 mm. in the vertical, and 23 mm. in the transverse. It had been most cleanly dissected from the socket; the sclera being smooth, and the attached nerve, which measured 6 mm. in length, appeared healthy. No tumor was detected in the globe by transillumination, and on section of the globe no evidences of a neoplasm were apparent. The vitreous chamber contained a shrunken mass of vitreous, the retina had been detached pathologically, and the nerve was swollen. The cornea had become clouded; the anterior layers of the iris were covered with a grayish exudate and the lens had become cataractous and was dislocated toward the nasal side. Dr. Harold Goldberg, pathologist of the Wills Hospital, prepared the globe and stained several sections in the usual double stains. The globe had been divided horizontally, in order that the region of the coloboma might be included in each of the sections which were taken from the upper half of the globe. Study of these sections elicited the following details: Except at the sclerocorneal junction, where there is a moderate leucocytic infiltration, the cornea is not affected; and polymorphonuclear leucocytes occupy the angles of the anterior chamber and extend over the surface of the iris. Newly proliferated connective tissue cells have invaded the stroma of the iris. The lens is dislocated, its capsule is separated, its fibers shrunken and opaque. The ciliary body is atrophic; the inner surface is covered by a leucocytic exudation; the pigmentation is excessive and the endothelial cells have proliferated greatly.

In addition to the changes described, the processes have been destroyed by a papillary new growth, composed of small round cells with deeply stained nuclei. The growth extends into the vitreous chamber; some of the cells have escaped and have been caught in the shrunken and degenerated vitreous. There are no signs of the new cells having invaded the choroid which has become atrophic while the pigmentary elements are prolific. The fiber layer of the retina is thick. The retinal vessels are greatly enlarged and engorged with blood and leucocytes. The nerve head is swollen; the fibers atrophying from the leucocytic infiltration, and the endothelial cells are increasing. In Dr. Goldberg's opinion this ciliary neoplasm is a small round celled sarcoma in which there are signs of melanotic changes. (Fig. 3).

In the latter part of March the patient returned to the Germantown Hospital. He was emaciated and weak. The orbital socket had remained healthy. The right eye showed evidences of advancing choroiditis. On April 17, he showed violent symptoms of acute intestinal obstruction. Dr. Francis Stewart opened the abdomen and discovered a long intussusception in the ileum, which he reduced. The abdominal viscera were studded with neoplastic formations. The position of one of these tumors was such as to effect an invagination of the intestinal tube. The patient rallied from this shock. About May 10, the abdominal wound burst; a day or two after, the intestinal wall ruptured and a fecal fistula became established.

In the second week in May I took all of my preparations to

Professor Smith; he had not seen the sections of the subcutaneous nodules. These nodules have a distinct and fatty capsule. The growth is made up of large flat cells in which are large nuclei, though many contain nucleoli and some are multinucleated. The cells are divided into masses by dilated alveolar walls. These walls are almost completely made up of capillary blood vessels. Dr. Smith thought this tumor resembled the tumor found in the iris and he believed it to be an endothelioma. A day or two later, however, while studying the three different specimens, and comparing them in detail, a diagnosis of hypernephroma was made, and Dr. Smith urged that in the event of an autopsy, special care should be given to the examination of the kidneys and neighboring structures, with the expectation of finding such a primary growth. On Monday, May 21, the patient died.

Thus ends the clinical history. I believed that I had been dealing with a case of primary tumor of the eye. The diagnosis has been reversed completely by the findings just indicated, and in the examination of the tissues after death.

Death was caused by an intussusception of the ileum. This intussusceptum is a couple one, one portion being directed upward and the other downward. The apices of the two intussuscepta meet in the lower part of the mass. Each apex is formed by a tumor, the larger being 3.5 cm. by 3 cm. in size, sufficient to have caused a partial obstruction in the intestine, and thus to have facilitated the invagination of the gut. On the inner surface of the intestine are many tumors, in size varying from 1 mm. to 2 cm. In the mesentery are a number of enlarged glands and tumor nodules, ranging up to within 1 cm. in diameter. None of the abdominal organs contained these nodules except the left kidney. In the envelop of this kidney are 8 or 10 small tumors, the largest about 1 cm. in diameter. Most of these masses are nodular, reddish-gray in color, and very much resemble the appearance of the tumor found in the iris.

At the lower pole of the kidney, and protruding from it, is a rounded tumor, from 3 to 4 cm. in diameter. This tumor involves the kidney though it is surrounded by a distinct capsule; the gross appearance is like that of the other tumors already noted. At the upper end of the pelvis, in the substance of the kidney, is a smaller mass resembling the larger one, though it has not so definite a capsule. The right kidney is not involved, except in the perirenal fatty envelop where are a few small secondary nodules. The suprarenal bodies are not affected. The portions of the lungs removed from the thorax do not contain any neoplastic formations; neither were any found in the heart.

The sections from the kidney show that organ to have been changed but little. The tumor is divided into long narrow alveoli by delicate fibers and branching blood vessels. In some fields the blood vessels or spaces seem to be the only marks of division. This alveolar arrangement strongly suggests the fascicular zone of the suprarenal gland. The cells, which are epithelioid in type, vary much in size and shape; being polyhedral, oval or rounded according to the pressure made on them, and they seem to spring from the septa, forming distinct mantles about the blood vessels. The cells have much homogeneous protoplasm and a large nucleolated nucleus. Neither here, nor in any of the sections examined subsequently, were any of the coarse granules commonly met with in functioning adrenal tissues seen. The size of the nuclei is irregular; in several instances the nuclei occupy nearly the entire cell, and in others, the cells are polynucleated. In Professor Smith's opinion, the general appearance of the specimen corresponds with that of a hypernephroma. (Fig. 4.).

The intestinal growth involves the submucosa. Its histologic appearance is exactly like that of the renal tumor. The basal cells are more densely packed than those at the periphery, where also the mantles about the vessels are pronounced. A section from the mesentery displays features common to the other nodules.

The sections of the subcutaneous nodules and of the inguinal gland have been prepared with less care than the others, and they present artefacts, yet, except for minor distinctions, their characteristics correspond to those of the structures already described.



The tumor of the ciliary body is regarded by Professor Smith as identical with the others. The cells spring directly from the surface of the processes. They are not supported by an intercellular stroma, but in several places are seen delicate outgrowths of fibrous tissue in which are blood vessels about whose thin walls are grouped the tumor cells. The retina is involved near the equator, the cells being confined to the inner layers. They are closely packed about the narrow blood spaces and they are smaller and apparently younger than the cells found in the iris and the ciliary processes. In this specimen the polynucleation is marked. The iris tumor bears a strong likeness to the gross structures of the other tumors. The central, basal part is dense, while the peripheral portions are loosely arranged in indefinite and coarse branches. Under higher powers the central portion is alveolated, while the peripheral is composed of thin-walled vessels surrounded by the layers of cells.

Having these sections before us one after another, we may safely declare that we are dealing with a case of hypernephroma. The primary tumor developed from an adrenal rest in the left kidney. The secondary metastasis has been conveyed by the blood, although the deposits in the mesentery might have been carried there by the lymph stream as well as by the blood.

The term hypernephroma is applied to tumors arising from suprarenal glandular tissue. It is of recent origin and was used for the first time in 1896 by Birch-Hirschfeld.<sup>1</sup> The genesis of these tumors was not understood before 1883, and they were called by many different names, as lipoma, sarcoma, adenoma, angioma, endothelioma, etc. In that year Grawitz,<sup>2</sup> in his paper, "The So-called Lipoma of the Kidney," described their real character as arising from the suprarenal tissue, whether in the normal position in the gland or from aberrant fragments found in other organs and known as "adrenal rests." The term is not applied to growths in the suprarenal itself, but to those arising from the "rests" located elsewhere.

Notwithstanding the statement to the contrary, these tumors can not be rare; general surgeons are reporting hypernephromata with increasing frequency; indeed, since the death of my patient, I have learned of several recent cases, and in the literature of malignant tumors of the kidney they have been found to be very common. The embryologic development of the suprarenals is in close relation to that of the primitive kidney and of the sexual organs; it is not to be wondered at, therefore, that particles of this glandular tissue should be found misplaced in the kidney, or elsewhere, having been located as "rests" in new situations.

The degree of their malignancy, from the onset of the symptoms to a fatal termination, is very great and varies from 6 weeks to 3 years, although in some instances there has been no malignancy at all, and the tumors have been found only by accident in postmortem examination. The malignancy is shown by an invasion of the kidney and contiguous organs, or by more distant metastasis. The mode of metastasis is conceded to be by the venous circulation through the medium of the renal vein and the vena cava. Although the period between the death of the man and the presentation of this communication has been very brief, I have done all that I could to search through the literature on this subject. I have not been rewarded by finding the report of an instance in which the metastasis has extended to the eye. It is doubtful whether an accurate diagnosis of hypernephroma can be made before an exploratory operation. The

most important symptoms are hematuria, renal colic and the detection of a tumor. All these may occur together, any one may occur alone, or, as in the case we are studying, they all may be absent. The general symptoms, consisting of asthenia, depression and emaciation, were distinctly marked, however, in this case. I could not describe the rapid change in this man's health in other terms than by the comprehensive one of "cachectic."

It is quite impossible to guess how long the process had existed in this man. It is not unlikely that it was a hyphema that the surgeons noticed when he went to the Wills Hospital in 1903, and it is conceivable that such an effusion might have been caused by the lodgment of an embolus in an iridic vessel. Hypernephromata, in the sense of their being adrenal rests, may arise in early life, then lie dormant for years and develop rapidly with fatal effects after 40 years of age.

The microscopic characters of the tumor and of the metastatic deposits described in this paper are fairly representative of the histology of hypernephromata, and I may not here enter into any discussion of the histogenesis of this class of tumors. For those who wish to investigate the subject I will refer them to the singularly comprehensive studies of Aloysius Kelly<sup>3</sup> and to the more recent contributions of Hoche,<sup>4</sup> Albarran and Imbert.<sup>5</sup> In a report of two cases by Keen, Pfahler and Ellis,<sup>6</sup> a summary of the present status of the subject is given and a complete bibliography is appended to their paper.

It must be admitted that the opportunity to study this case is an unusual bit of good fortune. To all who have been associated with me in it I can only express my most sincere thanks for their courtesy to me and for the pains they have taken in the preparation of the data. I must express my indebtedness to Professor Smith for his kindly interest and helpfulness, without which it would have been impossible to have completed this paper.

There has now been presented a complete history of a case which at the beginning appeared to be one of a primary tumor of the eye, with a probable convection to the internal organs. Examination after the death of the subject shows that the process was the reverse, and the further study showed that it was of unusual pathogeny, with manifestations in an organ not hitherto mentioned as having been the seat of a secondary invasion by such a tumor.<sup>7</sup>

The result of this study leads me to wonder what a thorough examination of the internal organs in cases of ocular tumors with fatal metastasis might lead to if it were possible to follow the cases to necropsy. In analyzing the histories of primary tumors of the eye, the records show that it has not always been possible to do this. The relations, therefore, as to cause and effect, between the ocular tumors and the internal growths have not in all cases been defined. May it not be true, then, that many instances of so-called primary tumors of the eye which come under the observation of the ophthalmic surgeon, and in which the opportunity for a confirmation by autopsy has been lost, are, in reality, secondary to some concealed primary growth?

235 S. 13th St.

3. Phila. Med. Jour., 1898, July 30.

4. "Les Lésions Du Rein," Paris, 1904.

5. "Les Tumeurs Du Rein," Paris, 1903.

6. Trans. Coll. of Phys., Phila., 1904, p. 251.

7. Dr. Verhoeff has called my attention to the report of a case of epithelial tumor of ciliary body published by R. Schilpp of Wiesbaden, in v. Graefe's Archives, 1899, xlviii, p. 353. Schilpp presumed that he was dealing with an unusual form of endothelioma; but, studying his paper in the light of my own case, I am convinced that the tumor he described was an hypernephroma. The patient was a young girl.

1. Lehr. d. Path. Anat., V. Aufl. I. p. 262, 1896.

2. Virchow's Archiv. f. Path. Anat., 1883, xciii, p. 39.



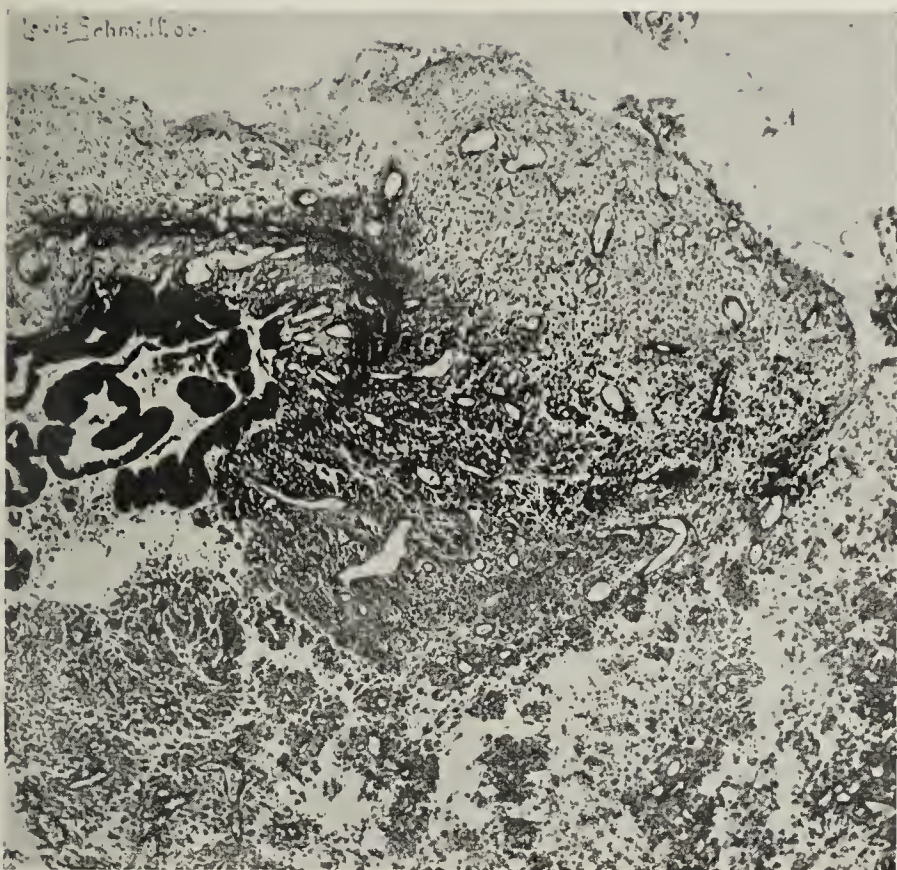


Fig. 1.—Section of iris tumor. Secondary hypernephroma.

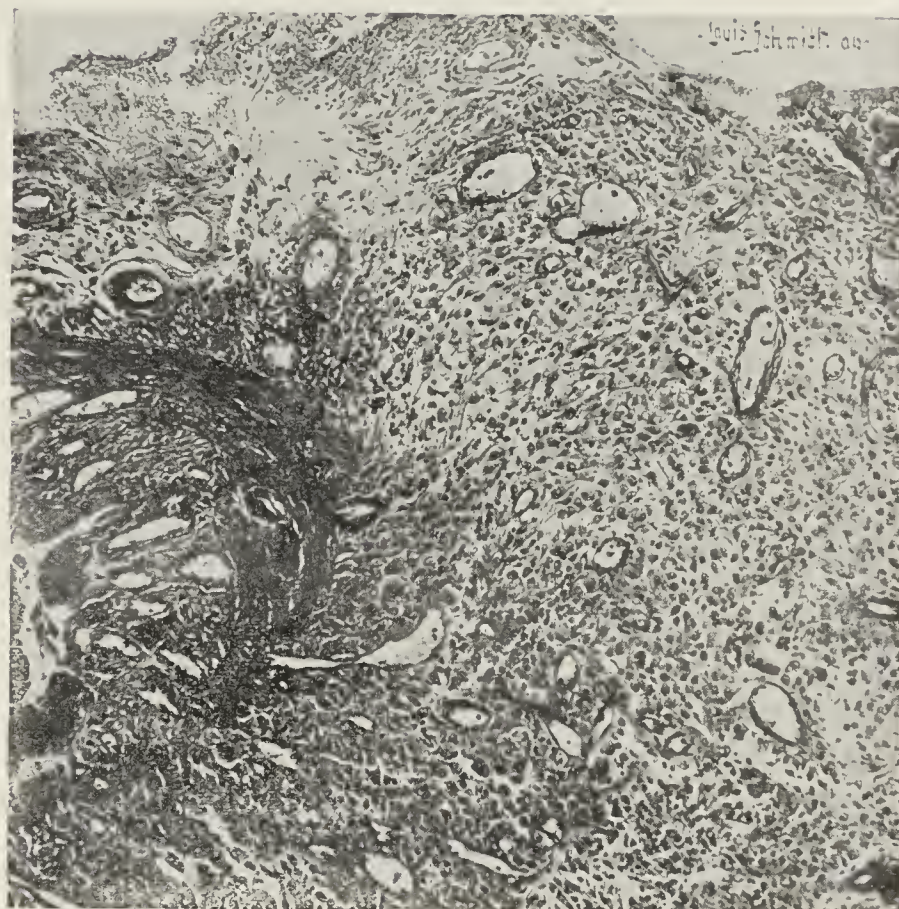


Fig. 2.—Section of iris tumor.



Fig. 3.—Involvement of ciliary processes.

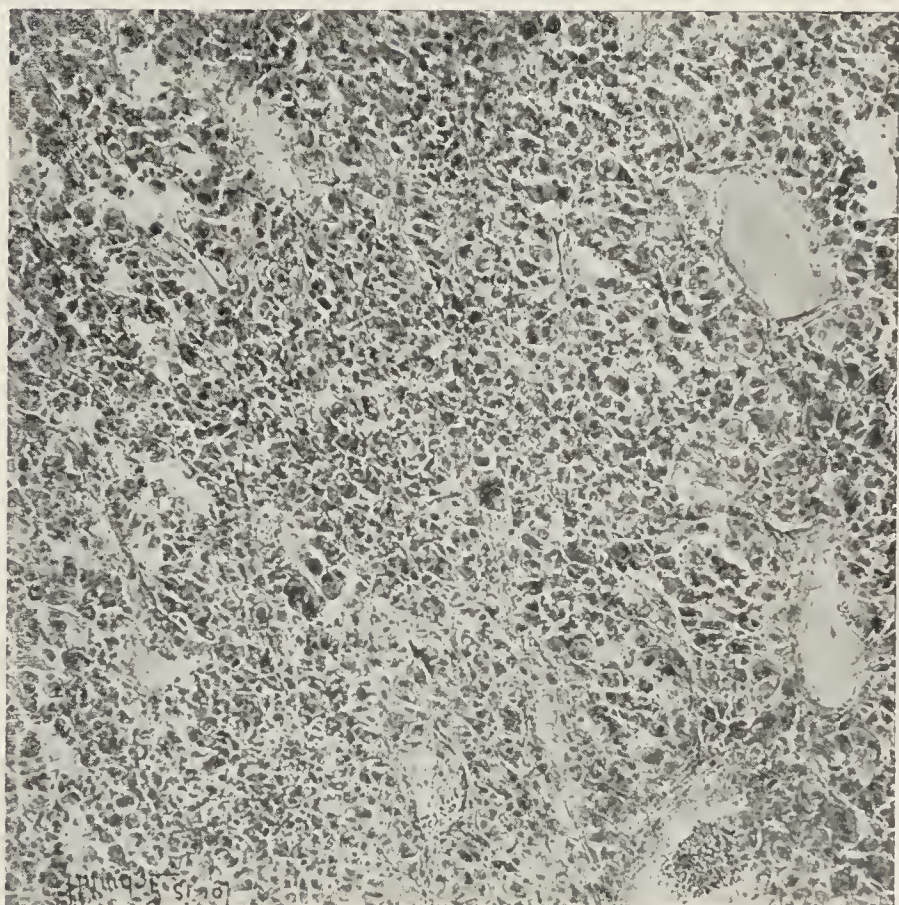


Fig. 4.—Original tumor—from kidney.



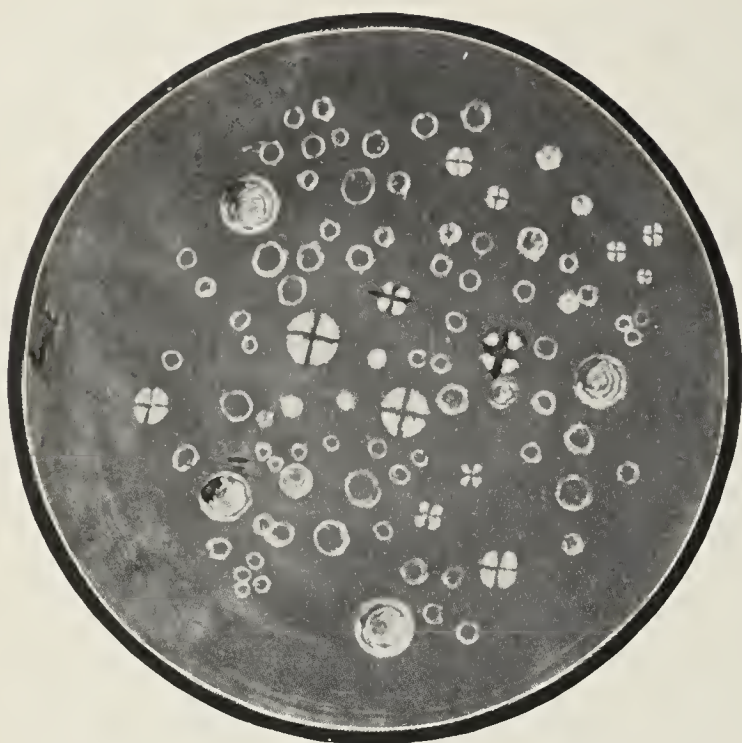


Fig. 1.—From juice of adrenal cortex of guinea-pig seen with crossed Nicol's prisms. The globules with the black crosses are the double refracting myelin globules—the rest are fatty globules (isotropic). Sketch of appearances seen with the high power (Leltz, 1/7 in.)

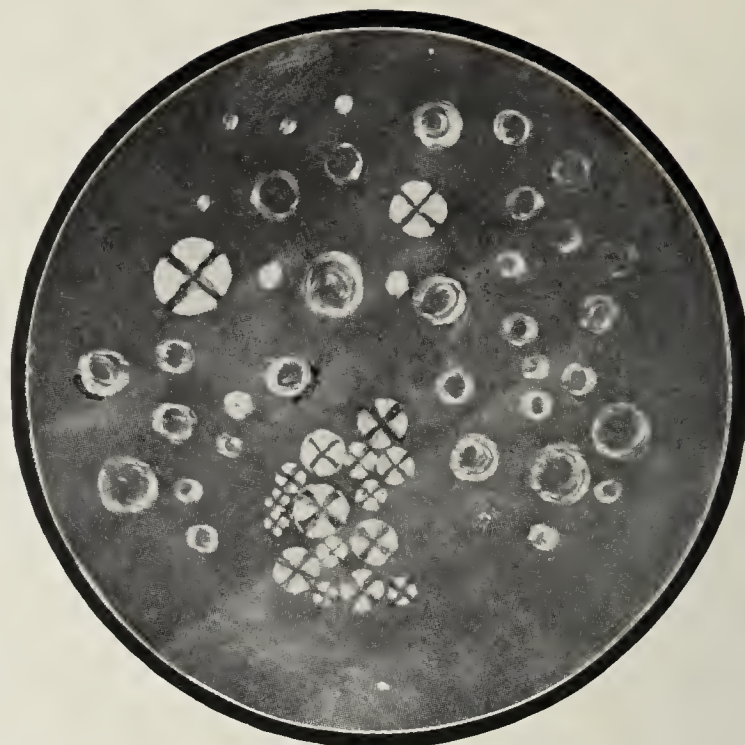


Fig. 2.—Human liver juice, expressed from piece of liver tissue acted on for 12 hours by absolute alcohol. Large double refractive globules are seen under the crossed Nicol's prisms, along with abundant fatty globules.

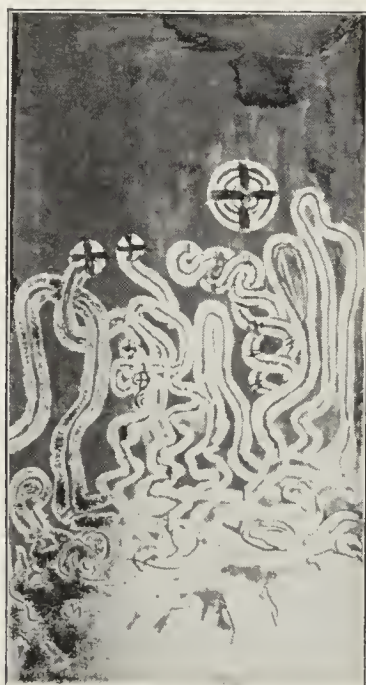


Fig. 3.—The myelin processes formed by the action of ammonia on oleic acid, seen under the polarization microscope with crossed prisms.



Fig. 5.—From the same material as Fig. 2, after five days. The myelin globules were in coherent masses (from partial evaporation of the alcohol?). They exhibit well-marked distortion.

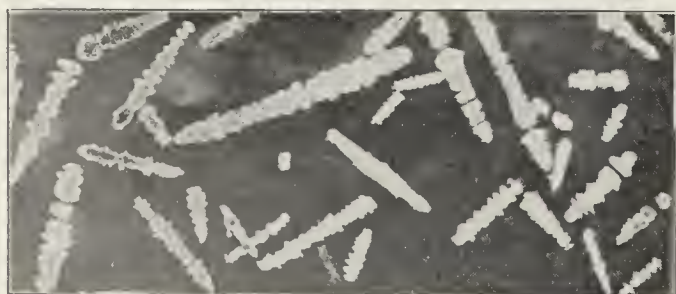


Fig. 4.—Flowing or ductile crystals of azoxybenzoic acid ethyl-ester (after Lehmann). Cholesteroln oleate is apt to exhibit very similar figures.

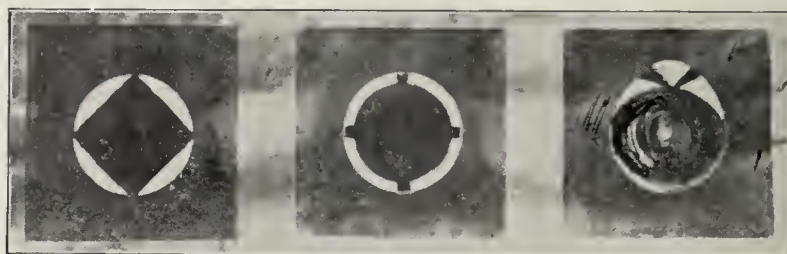


Fig. 6.—Aberrant forms of the myelin globules of human adrenal, seen under the crossed prisms of the polarization microscope.



## A REMARKABLE CASE OF CARCINOMA OF THE GALL-BLADDER IN A MAN TWENTY-TWO YEARS OLD.

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The occurrence of carcinoma in individuals between the ages of 15 and 30 years has been positively established by observations within the last two decades. I shall not speak of congenital carcinoma or that occurring in early childhood.

The statistics of Bürger founded on 15,134 autopsies, give 39 cases (25 per cent.) of carcinoma in persons between the ages of 15 and 30 years. None under 15 years are given. De la Camp, in 9,926 cases of carcinoma, found that the patients in 19 or 0.18 per cent. were under 20 years of age. Lubarsch, in 563 cases, found 4 patients between the ages of 14 and 19; 5 between 20 and 25 years and 3 between 26 and 29. Of 527 autopsies on carcinoma cases by Glaser one subject was 20 years of age and 16 were 30 years of age. Of 325 autopsies on carcinoma cases recorded by Borst one subject was between 11 and 20 years and 2 were between 21 and 30 (.92 per cent.). The percentage therefore varies within wide limits between 0.18 per cent. (De la Camp) and 3.22 per cent. (Glaser). The average in the 5 series of statistics is 0.87 per cent. Of all cases of carcinoma reported but 1 per cent. appeared before the age of 30.

The organs most frequently affected in young individuals are: The rectum between the thirteenth and the twenty-fifth years and in some cases even earlier—(Billroth, Bürger, De la Camp, Gurlt, Glaser, Czerny, Port, Schöning). The stomach is seldom affected before the thirtieth year, but De la Camp, Hofmann, Muth and Borst have recorded cases at the ages of 14, 16, 18, 20, respectively. Ovaries have been found affected at the ages of 17, 19 up to 30 years (Bürger, Malibert, De la Camp, Leopold). The uterus not infrequently between 20 and 30 and in exceptional cases (Bürger, Eckardt, Glaser, Beigel) as early as 17, 19 and 20 and up to 30 years. Further, cancer of the vagina has been found as early as the fifteenth year (Brückner, Küstner) and up to the twentieth and thirtieth year. The skin has been affected at the ages of 23 to 27 (Pierre, Andouard). The appendix at 17, 19, 24, 30 (Kelly, McBurney, Adam).

I report a case of carcinoma of the gall-bladder in a man of 22 years, to my knowledge the first case recorded at so early an age, the youngest patient previously reported (Kaufmann) being a woman, aged 35, in whom gallstones were also present. The case I now report is especially interesting for three reasons: 1. The individual was a male. In men carcinoma of the gall-bladder is much rarer than in women.<sup>1</sup> 2. From the etiologic standpoint, no gallstones, which are supposed to play an important part in the formation of carcinoma of the gall-bladder, were found. 3. From the clinical standpoint, a relatively benign course of the disease.

Many authors (Bollinger, Marchand, Klebs, Zenker, Musser, Fütterer) look on gallstones as a primary cause of carcinoma of the gall-bladder: 79.7 per cent. of 74

cases recorded by Tiedemann showed an existence of gallstones. Janowski found stones in all 40 cases which had come under his observation. Siegert found gallstones in 31 cases of 39 and Fütterer found same condition in 78 per cent. of 268 cases.

*Patient.*—A. D., Italian, laborer, aged 22, was admitted to Mercy Hospital, May 13, 1906.

*History.*—Patient had typhoid fever 10 years ago. For past 3 months patient has had indigestion and pain in epigastrium. Pain lasted three to four hours, then passed away. Bowels were constipated. Patient was jaundiced.

*Examination.*—Patient was fairly well nourished. Temperature was normal; pulse, 90, regular and good volume; respiration, 20. Tongue was coated. Sclera was slightly yellow. Heart and lungs were negative.

*Abdomen:* There was a mass in epigastrium size of orange, slightly to right of the median line. Mass moved with liver and respiration. There was tenderness over mass.

*Clinical diagnosis:* Cholecystitis.

*Operation.*—By Dr. Acheson Stewart. Incision was made in the median line. Gall-bladder the size of an orange was found, adherent to abdominal wall. The gall-bladder was very friable and its cavity filled with pus. Mass was dissected free as far as possible, ascendently fixed, partially excised and remainder packed; two pieces of gauze were used, one in the gall-bladder, the other in the abdominal cavity. Convalescence was uneventful. Patient was discharged June 7, 1906. Small granular surface at incision.

*Examination of Tissue Excised.*—Gross appearance. This consisted of a section of tissue the size of a walnut, grayish-white in color, of semi-solid consistency infiltrated by yellowish striated, isolated small round and oblong masses.

*Microscopic Examination:* Under weak power: The gall-bladder wall consisted mainly of connective tissue with some non-striated muscle fibers. Throughout the field were infiltrations of small round carcinoma cells which in some places were massed in groups, in other places diffused, the latter areas very vascular, containing leucocytes, lymphocytes, and many fibroblasts. Where the carcinomatous infiltration was great the connective tissue had undergone hyaline degeneration, some places still responding to stains, others appearing clear and transparent, with no affinity for stains.

Under high power: The carcinoma cells were more or less uniform in size with roundish or oblong, strongly chromatinized nuclei, surrounded by a narrow mass of protoplasm. The protoplasm was of absolutely homogeneous structure, in some places finely granular and weakly basic. Mitosis was shown but very little. In the center of the carcinoma cell masses are found all kinds of katabiotic changes, karyolytic degeneration of chromatin, etc. In many places the carcinoma cells had undergone colloid degeneration, the protoplasm was swollen, nucleus flat and periphery compressed. (Fig. 1.) In the beginning of colloid degeneration the protoplasm of the carcinoma cells took weak (acid) anilin dyes; with further degeneration this property was lost. The degenerated cells had run together and formed round light areas (Fig. 2), producing a honeycomb appearance, giving the impression that the cancer cells had been lost. The frame of the honeycomb consisted of a hyaline branching mass in which the flat nuclei of the degenerated cells were deposited. That the carcinoma had undergone colloid degeneration was shown by the fact that some of the alveoli were still filled with perfect carcinoma cells. Where the carcinoma cells were diffused the connective tissue also presented a homogeneous mass of colloid degeneration which was partially absorbed and partially (shown under freezing) fatty degenerated. (Fig. 3.) Whether it was fatty infiltration or degeneration could not be positively ascertained; most likely it was infiltration. Differential diagnosis lay between carcinoma, sarcoma, granulation tissue, specific (tuberculosis, syphilis) or simple. Under weak power it first appeared to be a round-celled sarcoma, in some places diffusely infiltrated, in others the alveolar variety. Under stronger power and stained according to Van Gieson as modified by Mallory an intercellular substance between the carcinoma cells could not be demonstrated. Also in the diffused places the carcinoma cells were arranged in longitudinal

1. According to Dr. Bollinger, the ratio is 80 women to 20 men. In 99 cases of primary gall-bladder cancer 85 were women and 14 men (Siegert). Tiedemann recorded 88.7 per cent. women and 11.3 per cent. men. On account of lacing, women suffer much oftener than men. Bollinger found corset livers in 33 per cent. to 40 per cent. of gallstone cases.



strata between the connective tissue. The Van Gieson stain showed the absence of intercellular substance. The absence of the finely (threadlike) or finely granular intercellular substance was the most important differential point between sarcoma and carcinoma. The morphology was also different. The spheroidal carcinoma cells on cross section were of uniform size, while the cells of sarcoma appear of various sizes and shapes on cross section. Still less could it be taken for plastic granulation tissue which is traversed by rich capillaries and contains embryonic connective tissue cells (fibroblasts), leucocytes and lymphocytes. The tumor in some places had such an appearance, but the carcinomatous areas were sharply defined from the granulation tissue. Tuberculosis and syphilis were ex-

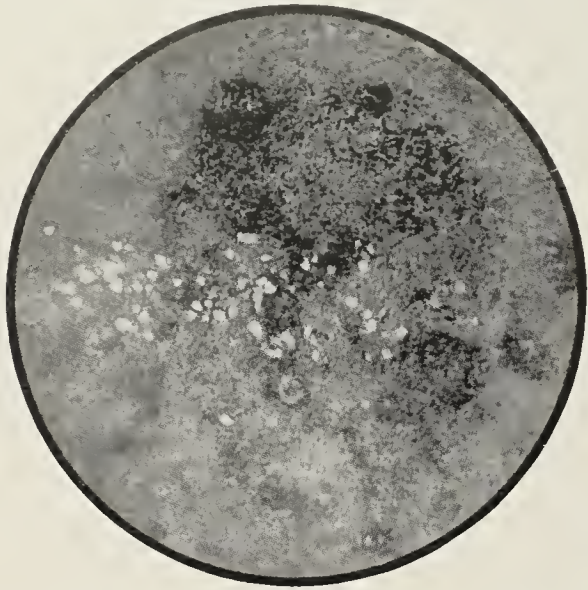


Fig. 1.—Section through the thickened gall-bladder wall (lower power, Zeiss objective 16 mm., ocular 4). Showing the infiltration with carcinoma cells and colloid degeneration.

cluded as the tubercle bacilli and spirochetes were not found. The above carcinoma may be designated carcinoma globocellulare colloides (or endothelio-carcinoma?).

Probably the carcinoma originated in the lining epithelium of the gall-bladder. This cannot be positively ascertained since the specimen excised had no mucous

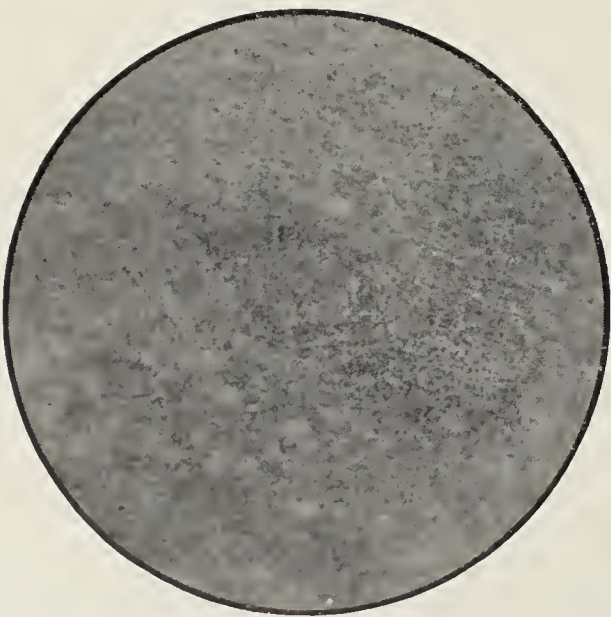


Fig. 2.—Section through the thickened gall-bladder wall (higher power, Zeiss objective 8 mm., ocular 4). Showing the middle carcinoma cell-nest in the center beginning necrobiosis of the carcinoma cells.

membrane. It is possible that the primary seat was in the endothelium of the lymph vessels. The above variety is seldom found in the gall bladder, more generally we find adenocarcinoma, then scirrhous and medullary forms. Squamous epithelioma occurs very seldom (metaplasia of mucous membrane from columnar to squamous epithelium takes place).

A remarkable feature was the small morphologically

indifferent structure of the carcinoma cells. I shall also report a case of carcinoma of the appendix in a man, aged 30. Microscopically it is identical with the specimen from the gall bladder.

It is possible that the exciting cause of the carcinoma was the cholecystitis, moreover, that pus was found in the gall-bladder. The inflammation is presumably not to be considered the direct cause of carcinomatous degeneration but it is more likely to be attributed to secondary causes.

The parasitic origin can be absolutely excluded as all most painstaking thin paraffin preparations and staining methods gave negative results. Another interesting feature was that at the operation metastasis could not be found, even the portal lymph glands were not enlarged. We deal, therefore, with a purely local carcinoma which clinically and microscopically gave no evidence of metastasis. It can be likened to skin carcinoma which affects distinct areas without tendency to metastasis.

From a pathologic standpoint the benign course of this carcinoma is very important because it shows that cancer is primarily a local affection and may remain so for some time. Why metastasis should be absent in these cases is so far a question, the answer to which may

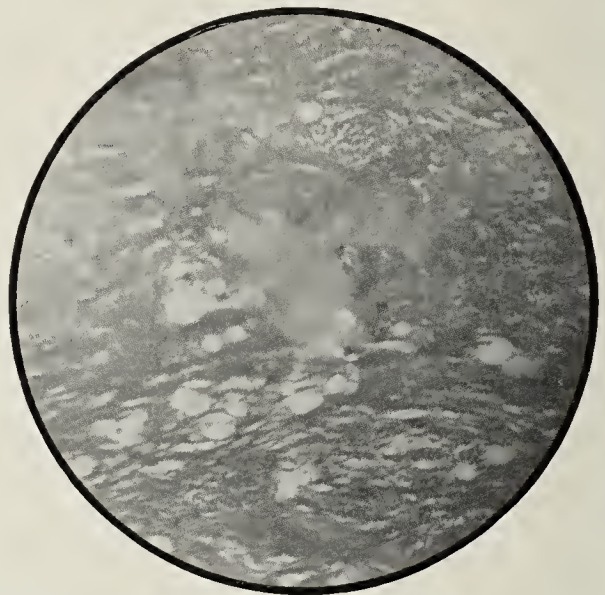


Fig. 3.—Diffuse colloid degeneration with some well-preserved carcinoma cells (higher power, Zeiss objective 8 mm., ocular 4).

aid greatly the therapy of carcinoma. Theoretically, it may be assumed that the organism becomes immune to metastasis either through histogenic or serogenic influences; if the latter, the carcinoma cells become destroyed cytolytically in the blood serum or, which is the most likely, the fixed cells and not the blood stream insure the immunity against secondary metastasis.

Postoperative observation for several weeks shows that although the greater part of the diseased gall-bladder was left in the abdomen there is no tendency to metastasis. The patient feels well physically and is gaining in weight. The periodical pains experienced prior to operation are gone.

In conclusion a question arises whether the carcinoma became stationary and is capable of healing. Theoretically, according to Virchow, the spontaneous healing of cancer is not improbable. Within the last few years cases have been reported in which positive diagnosis of carcinoma was established microscopically and in which, inspite of incomplete removal of same, recovery took place. I refer to cases of A. Senger<sup>2</sup>

2. "Ueber die spontane Heilbarkeit des Carcinoms," Chirurgen-Kongress, 1894-1903, No. 12.



and H. Mohr.<sup>3</sup> Both speak of healed carcinoma of the buccal mucous membrane. Furthermore, Alsborg, Kroenlein, Steudel, Lindner, Hahn and Baer reported cases of stomach carcinoma in which after a simple gastroenterostomy was performed the tumor subsided and in some cases completely disappeared. Nusbaum suggested that the relief of hyperemia and removal of irritation not only acts as a prophylactic agent, but may also retard the development of carcinoma. It is possible that my case may belong to this class. Through the emptying of the gall-bladder of the inflammatory products and irritation and hyperemia

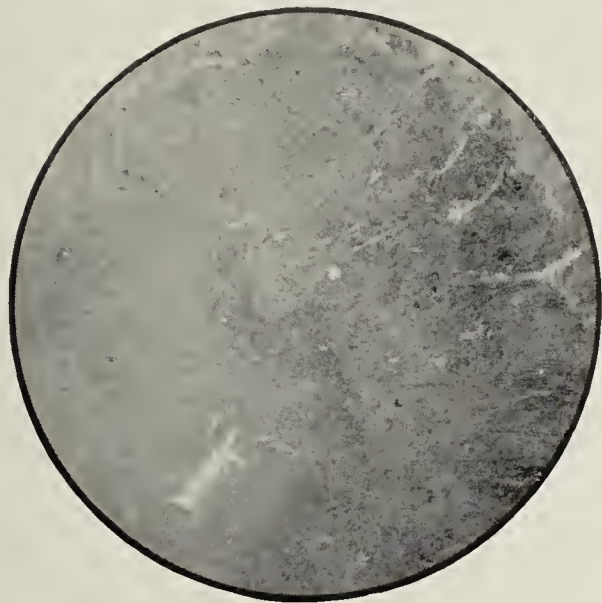


Fig. 4.—Section through the shrunken remaining gall bladder, hyaline sclerotic degeneration of the fibrous and muscular tissue (lower power, Zeiss objective 16 mm., ocular 4).

being removed, recovery is not improbable. I hope to keep the patient under observation and report again the further course of the disease.

*Additional Notes.*—Since writing the above further observations on patient have been made. On August 19, about 13 weeks after the first operation, the patient presented himself at the hospital. He had felt perfectly well during the entire

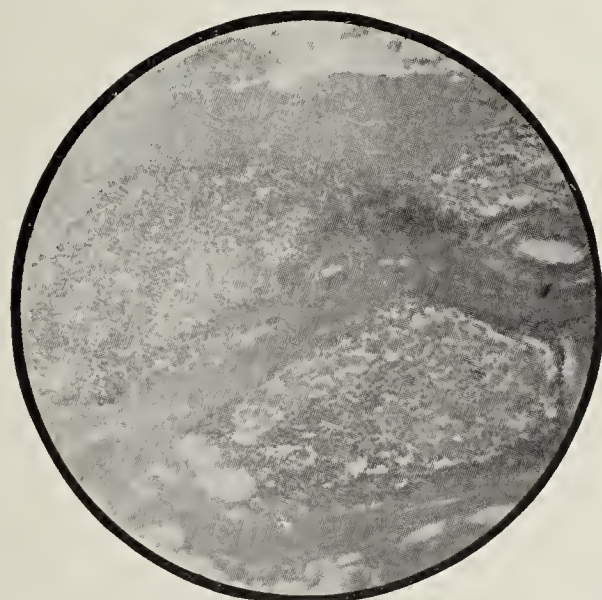


Fig. 5.—Section through the fibrous capsule of the remaining gall bladder, showing well-preserved carcinoma cell-nests with beginning necrobiotic changes of the cells (higher power, Zeiss objective 18 mm., ocular 4).

period since his discharge. A small fistula still remained at the site of incision, and through this, by means of a probe, a gall-stone could be felt. A second operation was decided on.

*Operation.*—By Dr. A. Stewart. Incision was made parallel to scar. On opening the abdominal cavity the gall-bladder was found very much shrunken, from the size of an orange to a mass 5 c.m. long and half the thickness of a finger. The distal end was adherent to the peritoneum and contained in its small

cavity a cholesterol stone about the size of a pea. The stone was very likely formed after the first operation from the incrustations of dead epithelium and cholesterol. The gall-bladder was tied off, extirpated and the abdomen closed. A careful palpation of the liver as well as of the peritoneal cavity showed no metastasis.

The remains of the gall-bladder are of fibrous consistency and the superficial covering very red. On cross section two distinct tissues are recognized; a grayish-white oval mass about one and one-half centimeters in diameter with a very small lumen in its center and surrounded by a tough fibrous capsule.

*Microscopic Appearance.*—(Eosin hematoxylin stains). The gray oval mass (Fig. 4) consists of hyaline sclerotic connective tissue, pure in nuclei, and remnants of a few smooth muscular fibers. In the center is the lumen which is lined with a flat endothelium (remnant of the gall-bladder cavity). Under high power there can be seen in the hyaline sclerotic masses multitudes of necrobiotic carcinomatous cells. In some cells a part of the nucleus is still visible; the majority lack that and present only a light blue stained mass on the diffuse red underground. In the fibrous capsule, which is very vascular, the found roundish oval nests (Fig. 5) filled with carcinoma cells; the latter are in the majority nearly normal and of a dark blue color. On the other hand, there are also found in the center as well as periphery of the nest necrobiotic carcinoma cells. The nucleus is swollen and its staining property is almost lost; the protoplasm is broadened and stained a weak reddish blue. Fibroblasts are seen in large quantities, compressing and drawing together the nests.

The supposition that the removal of the inflammatory irritation may bring about the healing of carcinoma seems very probable. As is seen microscopically the gall-bladder shrank together and the carcinomatous masses underwent (with some exception) colloid degeneration; only in the outer fibrous capsule where the vascularization was so rich, were there still some carcinomatous nests, nourished and kept living; but even there the necrobiotic changes of the carcinoma cells have begun. They perish either through poor nourishment or the invasion of the fibroblasts which compress them.

It is logical to suppose that without extirpation the carcinoma would have degenerated and disappeared. We can therefore admit the interesting fact of the spontaneous healing of a carcinoma (which was positively diagnosed microscopically). This case shows that even in advanced cancer when the organism has sufficient fighting endurance recovery is still possible. At this time, however, we are not as yet capable of understanding the fine mechanism of this process in order to utilize it and to benefit the therapy of inoperable carcinoma.

## EXPERIMENTAL CHRONIC NEPHRITIS.\*

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From the slight mention which experimental work on chronic nephritis receives in our text-books and even in more exhaustive monographs on renal diseases it would seem that the result of experimentation conducted with the object in view of reproducing chronic Bright's disease and of elucidating some of the many obscure problems connected with it has been unsatisfactory. Ziegler<sup>1</sup> states very positively:

Die Experimentaluntersuchungen über Nephritis . . . lassen sich für die Pathologie der bei dem Menschen vorkommenden Nephritis nur in sehr beschränktem Masse verwenden.

\* From the Pathological Laboratory of Cooper Medical College.  
1. Ziegler: Lehrbuch, eighth edition, 1895, p. 754.



Similar remarks may be found in other publications relating to the same subject,<sup>2</sup> and yet a careful review of the literature shows that, although experimental research so far fails to furnish a full explanation of all conditions which in man are associated with this disease, the authors seem to underestimate the importance of what really has been accomplished. The number of instances is not so very small in which experimenters have succeeded in the reproduction of the essential lesion: chronic interstitial nephritis even with marked shrinkage of the kidneys. From our experience in man we must assume that the other disturbances which usually accompany chronic nephritis would have followed in due course had the experiments been continued for a sufficient length of time. This, to my mind, is very clearly shown by Ehrlich's<sup>3</sup> and Levaditi's<sup>4</sup> experiments with vinylamin. Vinylamin does not affect the renal cortex, at least when it is used in sufficiently small doses,<sup>5</sup> but produces an extensive necrosis of the papilla. If the animals (mice were used mostly) survive the injection, extensive lesions in the cortex naturally follow which eventually cause considerable contraction. In such animals the usual sequelæ of chronic nephritis;

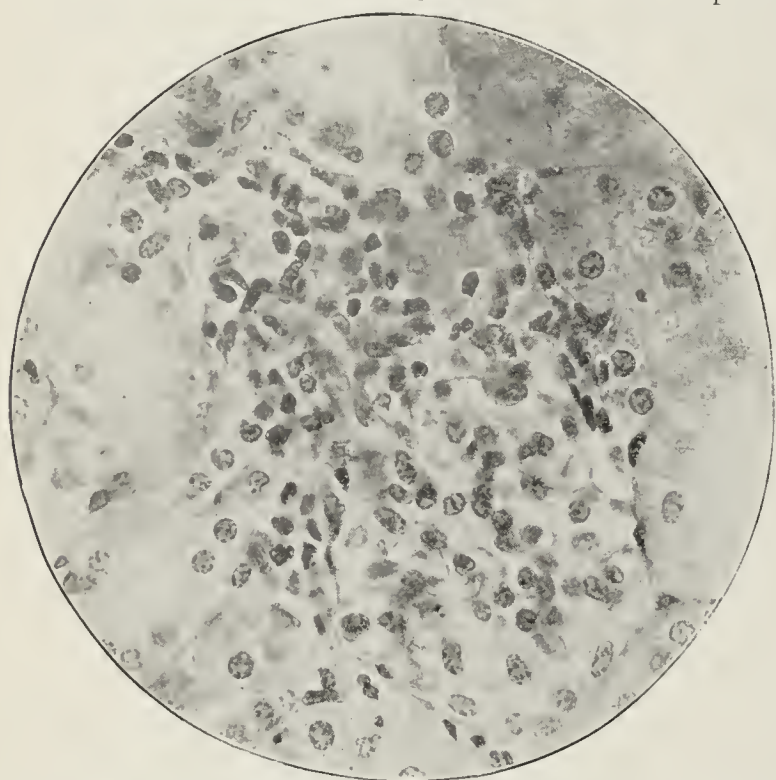


Fig. 1.—Beginning interstitial inflammation and invasion of glomerulus in guinea-pig No. 2. Flemming. Saffranin. High power.

marked edema, hypertrophy of the left ventricle and even retinitis albuminuria were observed repeatedly. This would seem to indicate very plainly that, in whatever way the lesions of the cortex are produced, the other symptoms of chronic Bright's disease follow if there is time enough for their development and if the lesions of the cortex are severe enough. The result of Pässler's and Heineke's experiments<sup>6</sup> is also interesting in this regard. They reduced the renal cortex in dogs very con-

siderably (less than one-half) by operation and prevented the occurrence of the usual compensatory hypertrophy by subsequent operative interference. They found in those animals which survived long enough and which did not develop a cachectic condition a considerable rise in blood pressure followed by hypertrophy of the left ventricle. They did not, however, observe any edema nor symptoms of uremia.

In the following I shall give a brief review of what data I have been able to collect from the literature in regard to the experimental production of chronic nephritis by poisons which directly affect the renal cortex. I shall treat only of those of which it has been reported that they produce interstitial changes.<sup>7</sup> These are aloin, boracic acid, cantharidin, potassium chlorate, chromic acid and the chromates, lead and other heavy metals, oxalic acid and oxamid, sulphuric acid and various bacterial toxins.

*Aloin.*—The effects of aloin on the kidneys were studied by Kohn<sup>8</sup> in 1882. Microscopically he found de-



Fig. 2.—Section of renal cortex of guinea-pig No. 5, showing contracted area of chronic nephritis. Low power. van Gieson.

generative processes and necroses in the epithelium, but no interstitial changes. Mürset<sup>9</sup> had very similar results, but in addition found areas of cellular infiltration; in one case even beginning atrophy of the tubules as a result of the thickening of the connective tissue.

*Borax.*—It has lately been maintained by Harrington<sup>10</sup> that by feeding cats for some time (133 days) food containing considerable doses of borax he had produced marked renal lesions not confined to the epithelium, but involving the interstitial tissue extensively. His results,

2. See Lyon: "Inflammatory Changes in the Kidney: An Experimental Study of the Action of Some Toxins and Poisons on the Kidney and also on the Spleen," Jour. Path. and Bact., 1904, ix, 400. Lyon says: In no case and by no variation of the experimental method have I been able to produce and follow the evolution of changes at all analogous to those which we find in sub-acute and chronic diffuse nephritis in man.

3. "Ueber den Zusammenhang von chemischer Constitution und Wirkung," Leyden's Festschrift, 1898, p. 647.

4. "Experimentelle Untersuchungen über die Necrose der Nierenpapillæ," Arch. int. de Pharmacodynamie, 1901, viii.

5: Levaditi explains Lindemann's observations to the contrary. Lindemann: "Sur le mode d'action de certains poisons rénaux." (Ann. de l'Inst. Past., 1900, xiv, p. 49) by assuming that he either used too large doses or employed a deteriorated preparation.

6. Verh. der Deutsch. Path. Gesell. Meran, 1905.

7. It has been repeatedly asserted from theoretical considerations that all substances which have an irritative effect on the kidneys should, if employed long enough, cause chronic renal disease with interstitial lesions. Experimentally, there is much to support such a view, still it also would appear from the experimental evidence at hand that certain substances affect the interstitial tissue more strongly than others. It is these that we treat of here.

8. "Beitrag zur Wirkung der Aloë," Berlin klin. Woch., 1882, xix, p. 68.

9. "Untersuchungen über Intoxicationsnephritis," Arch. f. Path. u. Pharm., 1885, xix, p. 310.

10. "Borated Food as a Cause of Lesions of the Kidneys," Am. Jour. Med. Sci., 1904, p. 418.



if confirmed, should have considerable influence in shaping pure-food legislation.

**Cantharidin.**—Cantharidin has been used very much more extensively<sup>11</sup> in experimental work of this kind. The principal renal lesion in this form of poisoning is a glomerulo-nephritis which has been carefully studied by Cornil,<sup>12</sup> Eliaschoff<sup>13</sup> and Welch.<sup>14</sup> In 1882 Aufrecht<sup>15</sup> observed a typical contracted kidney with marked macroscopic lesions in a rabbit (experiment No. 8) that he had given 25 subcutaneous injections of cantharidin in the course of 4 months. Of the microscopic picture he says:

Interstitialien ausserordentlich stark verbreitert, in denselben zahlreiche grosse ovale und rundliche Kerne.

Another rabbit, however (experiment No. 9), treated similarly for 3 months did not show any lesions in the interstitial tissue. Similarly varying results were obtained by Germont.<sup>16</sup> In one of his guinea-pigs he found interstitial lesions, although they were not so marked as in Aufrecht's case; in a rabbit they were absent. Lyon<sup>2</sup> also used cantharidin for part of his experimental work. He failed to produce chronic progres-



Fig. 3.—Subcortical area of chronic nephritis in dog No. 1. Low power. van Gieson.

sive lesions, still in some instances he saw areas of cellular infiltration around veins.

**Potassium Chlorate.**—The most important change observed in acute and chronic potassium chlorate poisoning, as is well known, is a marked decomposition of the blood with the production of methemoglobin and intense pigmentation of the kidneys. There is more or less degeneration of the epithelium. In a case of this form of poisoning in man with death 12 days after ingestion of

the poison Marchand<sup>17</sup> found small areas of cellular infiltration in the kidneys.

**Chromic Acid.**—Striking results were obtained from the very first with chromic acid and its salts. Soon after Gergens<sup>18</sup> had discovered that the absorption of this substance caused a very marked acute nephritis, its effects on the kidneys were very carefully studied by Kabierske,<sup>19</sup> who in chronic intoxications found cellular infiltration around the blood vessels after the sixth day and beginning proliferation of the cells of the interstitial tissue. Repeated subcutaneous injections of small doses were followed by marked thickening of the interstitial connective tissue.<sup>20</sup> Kabierske's results were confirmed by Pander,<sup>21</sup> who found that in his experiments the interstitial infiltration began in the second week and was marked after 3 to 4 weeks. In 1892 von Kahlden<sup>22</sup> made a few experiments with chromic acid on rabbits and dogs, the longest one lasting 14 days only. Naturally he was unable to demonstrate any interstitial lesions. Similarly Burmeister,<sup>23</sup> confining his researches to the more acute stages, found only a very moderate proliferation of the interstitial tissue.

**Lead.**—The literature on experimental lead poisoning

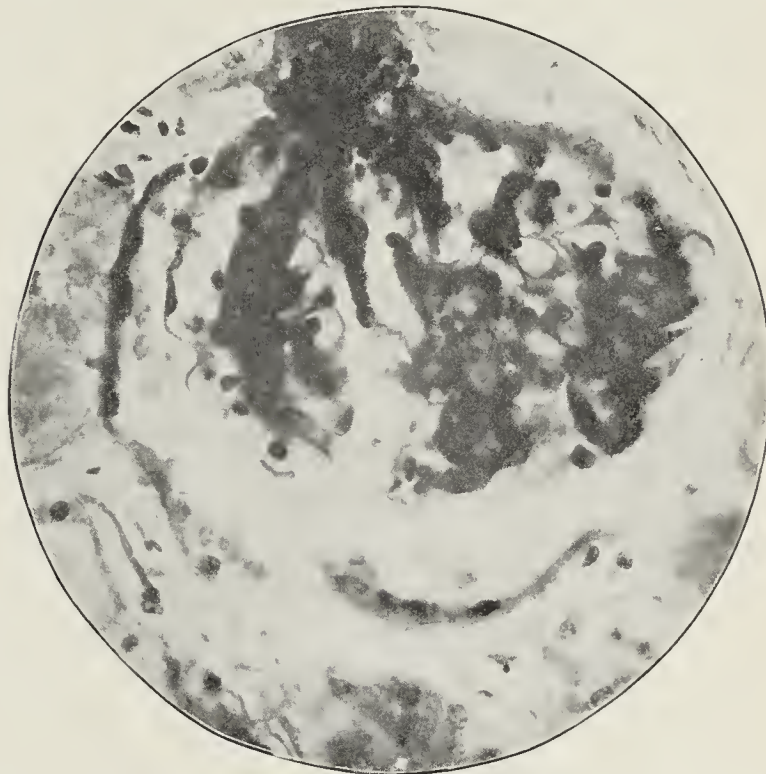


Fig. 4.—Glomerulo-nephritis in dog No. 3. van Gieson. High power.

is very large. Many papers, however, do not refer to the renal complications or if they do so only incidentally. I mention only those papers which are most important in regard to the renal lesions. That chronic nephritis is a frequent complication in chronic lead poisoning in man and also that albuminuria and renal lesions can be produced in animals by the introduction of lead in various forms has long been recognized. In experimental lead poisoning, as in other intoxicants, the occurrence of

11. Only those papers which have a direct bearing on the question under discussion are mentioned.

12. Jour. de l'Anat. de Robin, 1880; also Cornil and Brault: "Etudes sur la Pathologie du Rein," Paris, 1884.

13. "Ueber die Wirkung des Cantharidin auf die Nieren," Virch. Arch., 1883, xciv, 323.

14. "Experimental Study of Glomerulo-Nephritis," THE JOURNAL A. M. A., 1886, vii, p. 49.

15. "Die Schrumpfnieren nach Cantharidin," Centrbl. f. die med. Wiss., 1882, xx, 849; also "Die Nephritis nach Cantharidin," Path. Mitt., ii, 1883, p. 19.

16. "Contribution a l'Etude Experimentale des Nephrites," Thèse de Paris, 1883.

17. "Ueber Intoxication durch chloresäure Salze," Virch. Arch., 1879, lxxvii, p. 455.

18. "Ueber die toxische Wirkung der Chromsäure," Arch. f. exp. Path. u. Pharm., 1876, vi, p. 148.

19. "Die Chromnieren," Diss., Breslau, 1880.

20. As the lesions in acute poisoning and the initial lesions in chronic poisoning were entirely epithelial, Weigert, who studied Kabierske's specimens, regarded his work as an experimental confirmation of his views of the primary character of the epithelial lesions in chronic nephritis in man.

21. "Arbeiten des pharmak.," Instituts zur Dorpat, ii, p. 1.

22. "Die Aetiologie und Genese der akuten Nephritis," Ziegler's Beitr., 1892, xi, p. 441.

23. "Beitr. zur Histogenese der akuten Nierenentzündungen," Virch. Arch., 1894, cxxxvii, p. 405.



parenchymatous lesions in the kidneys was first observed (by Cornil, for instance, as early as 1863). In 1880 Raimondi<sup>24</sup> found in guinea-pigs that had been given lead for some time signs of beginning chronic nephritis, and soon afterward Charcot and Gombault<sup>25</sup> published their very important contribution to the subject of chronic experimental nephritis. They mixed with bran, which was part of the feed of their guinea-pigs, very small doses of carbonate of lead. From time to time they stopped the administration of lead entirely. In this way they succeeded in keeping some of their animals alive for a considerable time (3 months to 1 year), and in them observed renal lesions which certainly resemble those found in chronic nephritis in man very closely. With their paper they give very convincing plates showing the granular appearance of the kidneys on the surface and pictures of sections with marked interstitial changes in the usual distribution. Even if we do not agree entirely with the theoretical deductions which they draw from these experiments, namely, that the condition is what they term a cirrhose épithéliale, that is, that the epithelial changes are primary, we must still acknowledge the

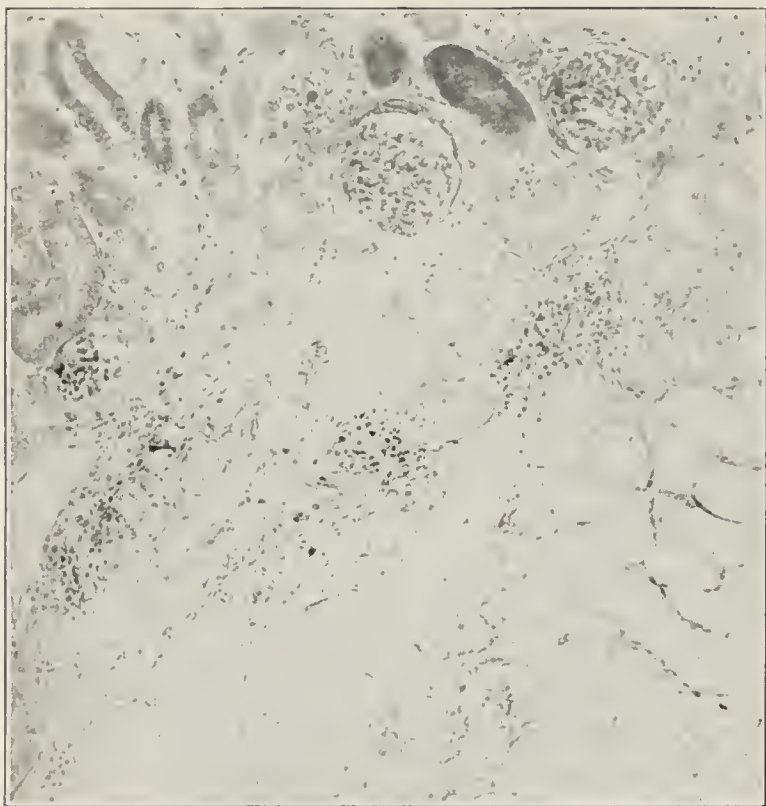


Fig. 5.—Beginning interstitial inflammation in bichromate dog. Flemming, Saffranin. Low power.

great value of their investigation in demonstrating in the first place the possibility of the experimental production of very definite chronic nephritis and also the direct relation of lead to this process. It is of some interest to note that in none of their experiments they were able to detect any albumin in the urine of the diseased guinea-pigs. Hoffa<sup>26</sup> had similar, although not so marked results, with lead acetate in rabbits. He also noted an early hyperplasia of the connective tissue. In 1883 Ellenberger and Hofmeister,<sup>27</sup> in studying the effect of lead in ruminants, found a diffuse nephritis in sheep. Cohn and d'Ajutolo's<sup>28</sup> investigations are confirmatory in so far as they observed areas of cellular in-

filtration in the kidneys of rabbits which had been under the influence of lead given in small doses for considerable time, to 155 days, but they failed to produce any typical contracted kidneys. They remark, however:

Es ist höchstwahrscheinlich, dass bei längerer Einwirkung des Giftes auch bei unseren Versuchstieren sich eine indurative Atrophie, eine echte Nierencirrhose würde herausgebildet haben.

Prévost and Binet<sup>29</sup> did not get any striking results in guinea-pigs with lead acetate, but of their series of experiments with carbonate of lead, also given to guinea-pigs, some of which survived for a little more than a year, they say:

Lésions rénales très accentuées chez la plupart d'entre eux, surtout quand l'intoxication avait duré longtemps.

Rats treated in the same way showed similar lesions. Oliver<sup>30</sup> and Stieglitz<sup>31</sup> were not so successful, probably because their animals did not survive so long; still they noticed areas of cellular infiltration in the later stages. Annino<sup>32</sup> did not observe any interstitial changes, but Hirsch<sup>33</sup> and Paviot<sup>34</sup> again called attention to the occurrence of a productive interstitial nephritis. It is remarkable that the two latest papers on this subject should be so much at variance with former observations. Oppenheim,<sup>35</sup> who experimented on rabbits with subcutaneous injections of lead acetate in small doses, did not notice any changes in the kidneys. His work, however, is largely chemical and does not contain any records of microscopic investigation. Jores,<sup>36</sup> on the contrary, made a very careful microscopic study of the kidneys in his cases. Although all his animals (rabbits) lived for over two months and one of them for 14 months and 20 days, he remarks:

Die interstitiellen Prozesse kommen beim Kaninchen erst sehr spät zur Ausbildung. Von geringen Herden abgesehen, bin ich Wucherungen des Bindegewebes nur einmal begegnet, bei dem Tier welches die längste Untersuchungsdauer hat. Auch hier lag keine der menschlichen Schrumpfnieren analogen Verbreitung des wuchernden Bindegewebes vor, sondern der Prozess beschränkte sich auf einen narbigen Herd in einer Niere.

**Heavy Metals.**—In regard to the influence of heavy metals, in general, on the kidneys, some remarks of Kobert<sup>37</sup> on what he calls "die Metallniere" are very suggestive. He showed that mangan, iron, nickel and cobalt which are very poorly absorbed from the intestines, produce a marked acute nephritis on subcutaneous injection. If the administration is discontinued the process heals promptly. In a case of chronic experimental mangan-poisoning, however, he observed a more chronic form of nephritis with new formation of connective tissue and even secondary contraction.

**Mercury.**—Although acute mercury poisoning may give rise to a very marked acute nephritis with necrosis and calcification of the epithelium in man and in the lower animals, it apparently does not lend itself very

24. "Degli avvelenamento lenti di arsenico, mercurio e piombo," etc., Ann. univ. de Med., 1880, sixty-sixth year, ccli, 52.

25. "Note relative à l'étude anatomique de la nephrite saturnine expérimentale," Arch. de Phys., 1881, second series, viii, 126.

26. Ueber Nephritis saturnina., Diss. Freiburg, 1883.

27. "Zur physiol. Wirkung und Deposition der Bleisalze bei Wiederkäuern," Ber. f. d. Veterinärwesen in Sachsen, 1883, II.

28. "Sulle alterazioni istol. dei reni . . . nell' avvelenamento cronico da piombo," Ziegler's Beitr., 1888, vii, p. 480.

29. "Recherches exp. sur l'intoxication saturnine," Rev. de la Suisse Romande, 1889, ix, pp. 606, 669.

30. "Lead Poisoning in its Acute and Chronic Manifestations," Lancet, 1898, lxi, i, pp. 530, 588, 644.

31. "Eine experimentelle Untersuchung über Bleivergiftung," etc., Arch. f. Psych. und Nervenkrank., xxiv, 1892, p. 1.

32. "Avvelenamento cronico da piombo," Arch. Ital. di Clin. Med., xxxii, Rev. in Virchow Hirsch Jahresberichte, 1894.

33. "Experimentelle Untersuchungen zur Lehre von der Bleiniere," J. D., Leipzig, 1891.

34. "Pathogénie des lésions rénales dans le saturnisme," Gaz. hebdomad., 1886, new series, i, 544.

35. "Zur Kenntniss der experimentellen Bleivergiftung," J. D., Berlin, 1898.

36. "Ueber die pathologische Anatomie der chronischen Bleivergiftung des Kaninchen," Ziegler's Beitr., xxxi, 1902, p. 183.

37. "Zur Pharmakologie des Mangans und Eisens," Arch. f. experim. Path., 1883, xvi, 361.



well to the production of any lesions resembling those found in chronic Bright's disease in man. This was at least Lyon's<sup>2</sup> experience. He reports very slight, if any, interstitial changes.

*Oxalic Acid.*—Oxalic acid, besides being deposited in the kidneys in large quantities, is known to cause considerable renal irritation, slight epithelial lesions, but apparently no effect on the interstitial tissue. It is somewhat surprising, therefore, that Ebstein and Nicolaier<sup>38</sup> announced at the Congress for Internal Medicine at Wiesbaden, in 1892, that they had succeeded in producing typical contracted kidneys in two dogs by feeding them small doses of oxalic acid and oxamide for 169 and 304 days, respectively. I have not been able to find their more extensive publication which they announce, nor have their experiments been confirmed so far as I know, which would be very desirable, as the number of them is so small and as it is well known that dogs not so infrequently suffer from spontaneous chronic nephritis.

*Sulphuric Acid.*—In regard to the effect of sulphuric acid on the kidneys, I should like to confine myself to a short reference to Fränkel and Reiche's<sup>39</sup> paper which shows that in this form of poisoning degenerative changes in the epithelium are common and slight interstitial changes may be observed occasionally.

*Bacterial Toxins.*—As acute infectious diseases are frequently followed by acute nephritis which fortunately usually heals—completely so far as we know—but which may occasionally terminate in chronic nephritis (in cases of scarlet fever, for instance) the experimental study of the effect of bacterial toxins on the kidneys has suggested itself to many authors. Pernice and Scagliosi<sup>40</sup> describe the occurrence of glomerulitis and consecutive nephritis in animals following injections of living bacterial cultures and bacterial toxins. According to their idea, the process begins in the circulatory apparatus with endarteritis, followed by disturbances in circulation and hemorrhages. Later, changes occur in the Malpighian bodies and the epithelium of the tubules. In still later stages there may be collapse of the tubules, simulating thickening of the interstitial tissue. Morse,<sup>41</sup> under Councilman's direction, made similar experiments. In only 3 out of a number of experiments he found areas of cellular infiltration. He argues:

It must be admitted that the human kidney is more or less constantly exposed to the action of chemical substances produced by bacteria. Hence it would seem justifiable to assume that a certain proportion of the cases of chronic nephritis in man may be due to the action of such substances.

Lyon,<sup>2</sup> in experimenting with diphtheria toxin, observed hemorrhages, degeneration of the epithelium, later areas of cellular infiltration around the blood vessels, but, although he continued the injections for months, he could not produce any fibrous change. Other investigators, however, describe much more marked lesions in animals which had been under the influence of this substance. It would lead us too far to attempt a complete review of the literature<sup>42</sup> of this part of our subject. Suffice it to say that, however interesting these experi-

ments may be and however plainly they may show that bacterial toxins may produce chronic renal disease, the enthusiastic belief of some that all cases of chronic Bright's disease in man or even the majority should be explained on this basis seems hardly warranted. All experimental data show plainly that in order to produce chronic nephritis the action of the poison on the kidneys must be long continued, otherwise the lesions heal, and if considerable tissue is lost it is made up for by compensatory hypertrophy. As in most infectious diseases in case of survival the infectious agent which furnishes the poison is completely destroyed after a while, the production of toxin must necessarily stop and with that the possibility of the development of a progressive chronic renal disease. All that may remain is a certain vulnerability of the kidneys, but even this occurrence has never been proved absolutely.

#### AUTHOR'S EXPERIMENTS.

For my own experiments I first selected lead because it is the only substance of which we know with any degree of certainty that it produces chronic nephritis in man. In all my experiments I gave the poison by mouth because this mode of administration came closer to what occurred under natural conditions. In an attempt at reproducing a disease of such chronicity the smallest possible doses had, of course, to be employed; not too frequently, in order not to kill the animals prematurely nor even to interfere too much with their general nutrition. In the case of lead it was easy to determine by blood examination whether the doses were large enough to produce any appreciable effect. Even after the very small doses which were employed the well-known lead anemia promptly developed. As it seemed that after a while the animals became accustomed to the metal, to a certain extent, the doses were slowly increased; still they were never very high. The severe changes which resulted from the administration of a few grams of lead in the course of a year or so are certainly a renewed proof of the extreme toxicity of this metal and a renewed strong argument in favor of very strict protective legislation with the object in view to prevent not only accidental lead poisoning, but also the introduction with the food of any substances which might have an irritating effect on the kidneys. The anemia after a while assumed the character of a pernicious anemia with marked decrease in the number of erythrocytes, with the appearance of many macrocytes and microcytes and some poikilocytes in the peripheral circulation. The nucleated red blood corpuscles were very numerous and many of them were of the megaloblastic type. At autopsy the bone marrow resembled that found in pernicious anemia macroscopically. It contained an immense number of nucleated red cells, among them many megaloblasts. The liver and especially the spleen and the kidneys also were full of hemosiderin. The changes were very much like those which can be experimentally produced by toluyldiamin. This extreme anemia was the greatest obstacle encountered in the attempt at continuing the experiments for the desired length of time.

#### RESULTS OF EXPERIMENTS ON GUINEA-PIGS.

The following is a short record of the result of these experiments. They were conducted according to the method of Charcot and Gombault. Small doses of carbonate of lead were mixed with bran. Guinea-pigs were fed on greens and the poisoned bran on alternating days. Two guinea-pigs were in one cage. In the beginning of the experiments 1 grain of carbonate of lead

38. "Ueber experimentelle Erzeugung von Schumpfnieren durch Oxalsäure-Oxamidfütterung," Verh. des Cong. f. Inn Med., Wiesbaden, 1892, xi, p. 318.

39. "Ueber Nierenveränderungen nach Schwefelsäurevergiftung," Virch. Arch., 1893, cxxxi, p. 130.

40. Beitrag zur Aetiologie der Nephritis (Experimentelle Nephritis von bakterischem Ursprung), Virch. Arch., 1894, cxxxviii, 521.

41. "Changes Produced in the Kidneys by the Toxins of the *Staphylococcus pyogenes aureus*," Jour. Exp. Med., 1896, i, p. 613.

42. In regard to this see Asch, P.: "Ueber den Einfluss der bakteriellen Stoffwechselproducte auf die Niere," Strassburg, 1904, published by L. Beust.



was put into the bran, later 2 and 3 grains. An exact dosage is, of course, impossible in this way. The experiment was started Dec. 10, 1905, with 6 guinea-pigs. Four of these guinea-pigs have so far been examined, one after 2 months, two after 3½ months and one after about 5 months, having taken approximately 1½ to 3 grams of carbonate of lead. The lesions were very similar in all four animals.

Macroscopically the kidneys were a little pale and opaque, otherwise unaltered. Sections of pieces hardened in Flemming's solution show comparatively slight changes in the epithelium of the convoluted tubules and the ascending loops of Henle. Some of the cells show granular degeneration and also slight fatty changes. There are a few cells with pyknosis of the nuclei. Some of the epithelial cells have become detached and have dropped into the lumen of the uriniferous tubules. In some of the specimens one finds collections of such cells in the large ducts in the pyramids, the epithelial covering of which is unaltered. An active regenerative process in the epithelium is indicated by the occasional occurrence of nuclear figures. In all sections there are small areas of cellular infiltration around the blood vessels at the hilum of the glomeruli. These cells are mostly large cells of epithelioid type with large vesicular nuclei. Occasionally mitoses can be seen in the nuclei of these cells. One also finds a few lymphocytes and cells resembling plasma-cells. Similar cells have accumulated in moderate number along the course of the vascular loops of the glomeruli near the hilum. The larger blood vessels are normal. In some places these collections of cells crowd on the adjoining tubules which then show more or less atrophy, but no more nor less degenerative changes in the epithelium than in other parts (Fig. 1.). The most important other organs were examined microscopically, but no lesions were present.

#### EXPERIMENTS ON DOGS.

**EXPERIMENT 1.**—Cocker, female, received every fourth or fifth day, starting from Oct. 18, 1904, a certain quantity of 1/1,000 solution of lead acetate with the drinking water. During October, November and December the dose was 5 c.cm.; in January, 1905, 10 c.cm.; in February and part of March, 20 c.cm.; the rest of March, 30 and 40 c.cm.; in April and May, 55 c.cm.; in June, at first 100, later 150 c.cm.; in July, 150; in August, September and October, 100; in November and December and January, 1906, again 50 c.cm. Dog died Jan. 5, 1906. This dog received in all, 8.65 gm. of acetate of lead in the course of fifteen months. The urine was examined at least once a week with the ordinary clinical tests, and remained normal all the time. The blood showed the usual progressive anemia.

**Autopsy.**—At autopsy the kidneys were found hard and somewhat cyanotic. In the cortex there were a considerable number of small but plainly visible retracted scars, mostly at the poles. There was no deposit in the pyramids. Joints were normal. In lower part of abdominal aorta a slight irregular fibrous thickening was present in the intima which on microscopic examination did not show any cellular infiltration or any degenerative changes. It apparently was an old accidental non-progressive lesion. So far as one can judge there was no marked enlargement of the heart,<sup>43</sup> the right ventricle was perhaps slightly dilated, but although the liver was cyanotic there was no evidence of cyanotic atrophy.

**Microscopic Examination.**—The following microscopic changes were found in the kidneys.

**Epithelium:** The functioning epithelium in the convoluted tubules and in the ascending loops of Henle showed rather dif-

fusely various stages of degeneration (granular and fatty change of a mild degree). Some of the nuclei were pyknotic, other cells did not show any nuclear staining. A certain number of epithelial cells had become detached and had dropped into the lumen. Such desquamated cells were also found in the large ducts in the pyramids which were otherwise normal. Most epithelial cells contained much brown granular pigment.

Practically all glomeruli were diseased and very similarly affected. There was a slight swelling and partial desquamation of the capsular epithelium. The capsules contained a little granular material, and a few red blood corpuscles in places. The vas afferens and the parts of the capillaries near it showed a marked thickening of the wall without much obstruction of the lumen. The thickening was partly due to an increase in the number of cells composing the wall, the new cells being rather large with vesicular nuclei, partly to the presence on the outside of the normal capillary wall of an apparently hyaline substance which stains brown with the van Gieson method. In some places the new formation in this hyaline substance of very delicate connective tissue fibrillæ which stain purple with the van Gieson method was evident. The process represented evidently a mild degree of chronic glomerulo nephritis (Fig. 4).

The interstitial tissue in every section showed several large more or less cone-shaped areas of fibrous thickening, with considerable cellular infiltration in places. These areas were situated along the course of the blood vessels, irregularly scattered in the cortex, but most numerous in the outer portion, and also near the dividing line between cortex and medulla. The tubules in these areas show a marked atrophy. Few of the atrophic tubules and also a few others contained hyaline casts, which, however, were scarce (Fig. 3).

**EXPERIMENT 2.**—Old pug dog, male, started from Oct. 19, 1904, receiving 1/1,000 lead acetate solution with his drinking water every fourth or fifth day very much in the same way as dog in Experiment 1. He took in all 8.42 gm. of lead acetate in fifteen months. The urine was examined at least once a week with the ordinary clinical tests and did not show anything abnormal at any time except on December 19, when, after a severe exertion (a fight with another dog), it contained much albumin and many hyaline and granular casts. The blood showed the usual progressive anemia. The animal died Jan. 19, 1906.

**Autopsy.**—At autopsy the kidneys were a little hard, cyanotic, but otherwise of normal appearance. No deposits in the pyramids. Aorta and joints were normal. The heart seemed to show a moderate dilatation on both sides. The liver showed a marked passive congestion, but microscopically there was no evidence of cyanotic atrophy. Microscopic examination of the kidneys revealed the same lesions as in dog in Experiment 1, except that the areas of chronic interstitial nephritis, although just as numerous, were not quite so large.

**EXPERIMENT 3.**—Small bitch. Experiment started Oct. 25, 1905. Mode of administration was the same as in Experiments 1 and 2. The dog took in all 7.28 gm. of acetate of lead in the course of twelve months. The urine was examined as usual and found normal at all times. She was examined Oct. 26, 1905.

**Autopsy.**—At autopsy the kidneys were hard, the surface smooth, the markings not so distinct as normally, and the cortex a little opaque, especially near the medulla. There were no deposits in the pyramids. Joints and aorta were normal. The heart seemed to show a moderate dilatation on both sides. There was no cyanotic atrophy of the liver. The beginning of the aorta showed a diffuse fibrous thickening of the wall to about twice the normal diameter. There was similar but not so marked thickening of the arteries of the neck. (Microscopically there was much dense hyaline fibrous tissue in adventitia and along the vasa vasorum. There was no cellular infiltration.) There was some dead degenerated fetus *in utero*. The microscopic lesions in the kidney were very much like those in dogs in Experiments 1 and 2. The areas of chronic interstitial nephritis were somewhat smaller, more cellular, situated almost exclusively at the dividing line between cortex and medulla. Some of them reached a distance into the medulla. The thickening of the walls of the vascular loops of the glomeruli near the hilum was entirely cellular (Fig. 4).

<sup>43</sup> It is very difficult to form an opinion as to what size the heart should be in a given dog as its size is evidently not directly proportionate to the size and weight of the dog and as we have no other standards to compare it with, such as the fist in man.



EXPERIMENT 4.—Experiment started Jan. 30, 1906. Mode of administration was the same as in the other dogs. This dog took in all only 0.85 gm. of acetate of lead in one and one-half months. He was killed by another dog March 4, 1906. The urine was examined as usual and found normal.

*Autopsy.*—At autopsy no macroscopic lesions were found in the kidneys. Sections showed granular and beginning fatty change in some of the epithelial cells in the convoluted tubules and the ascending loops of Henle, beginning desquamation of the epithelium in a few places. In serial sections a few small areas of cellular infiltration around the blood vessels near glomeruli were found. The cells were partly lymphocytes, partly larger cells with vesicular nuclei. They began to crowd the adjoining tubules and extend into the glomeruli along their stalks.

The kidneys of all dogs that were treated a sufficient length of time showed a marked chronic interstitial nephritis. In the dog in Experiment 1 the change was plainly visible to the naked eye. Although the condition is not entirely that of an extreme granular atrophy, the lesions are certainly definite enough to make sure of the nature of the process. It is interesting to note that, in spite of careful repeated examination neither albumin nor casts were ever found in the urine of these dogs. It is true the urine was not directly obtained from the animals, but collected in metabolism-cages. It is possible, therefore, that a few casts might have escaped observation and I am fairly certain that, under more favorable conditions, renal epithelium could have been detected in the sediment. Albumin in appreciable quantity was certainly absent, as it was also in the experiments of Charcot and others. This observation gives support to the clinical suspicion that in man also such lesions may develop with very little, if any, change in the urine. It also corresponds with our clinical experience that in dog in Experiment 2 a severe exertion was followed by the appearance of albumin and casts in the urine.

The experiments on the guinea pigs and on dog 4 reveal the initial stages of the process. The lead produces a certain amount of degeneration, some necrosis and desquamation in the epithelial cells of the convoluted tubules and ascending loops of Henle. One also observes evidence of a probably regenerative proliferation in them. Casts were present, but not very numerous.

The cellular infiltration commences around the blood vessels near the glomeruli. Part of the cells which collect in the tissues are lymphocytes, the larger part, however, probably proliferated connective tissue cells. That at least some of them are formed *in situ* is shown by the occurrence of mitoses. Considering the chronicity of the process, one would naturally not expect to see many karyokineses, even though most of the cells were the results of proliferation of the fixed cells of the tissue. On account of their scarcity, the mitoses have not been mentioned by all observers (Burmeister,<sup>23</sup> for instance, claims that none were present in his sections). In the end the formation of quite a little new fibrous tissue may be the result of this proliferation of the connective tissue cells.

Similar cells make their appearance along the vascular loops of the glomeruli at their point of attachment to the adjoining tissue and ultimately lead to the development of a chronic glomerulo-nephritis.

Most observers noting the early degenerative changes in the epithelium and the much later occurrence of the lesions in the interstitial tissue have followed Weigert's lead in contending that the epithelial changes are primary and those in the connective tissue secondary in character. I confess I can not see the force of the argu-

ment. If any irritant acts simultaneously on both the epithelium and the connective tissue, this must necessarily happen. The epithelial changes are early because the degeneration can and does occur within a short time, whereas the more slowly developing changes in the connective tissue show much later, necessarily. Moreover, as has been pointed out by former observers (Germont,<sup>16</sup> Stieglitz,<sup>31</sup> Paviot<sup>34</sup> and others), there is no direct topical relation between the degenerative changes in the epithelium and the proliferative changes in the connective tissue. The epithelial degeneration is more or less diffuse, the connective tissue changes localized and the tubules at the point of the lesion in the connective tissue do not show a particularly severe degree of degeneration. Moreover, it is plainly brought out by all experimental evidence on this question that the more chronic the process the less marked the lesions in the epithelium and the more pronounced the interstitial changes. If the interstitial changes depended directly on the epithelial destruction such could not be the case. The probability, then, would be that large doses would be followed by very severe epithelial lesions with rapid fatal termination, medium repeated doses would cause still severe but not immediately fatal epithelial lesions followed by interstitial lesions and small repeated doses would give very slight epithelial lesions not sufficiently serious to give rise to secondary changes in the interstitial tissue. This is not borne out by experiments with any of the substances which so far have been investigated. I believe, therefore, that, on the contrary, the experimental evidence furnishes almost positive proof that the changes in the epithelium and in the connective tissue are co-ordinate, not subordinate, to one another. They are the effect of the same cause acting simultaneously on different tissues, with different vulnerability and different reaction time, so far as visible changes are concerned.

On account of the difficulties encountered in keeping the animals alive for the necessary length of time and also in order to supplement the experiments made with lead, two dogs were given small doses of bichromate of potash in milk. Both were treated exactly in the same manner. One of the dogs was unfortunately lost in the confusion following the earthquake in San Francisco. In the other one, which was examined some time before, the following condition was found at autopsy:

*Experiment with Bichromate of Potash with Milk.*—Experiment started Nov. 10, 1905. The dog was given 1/50 aqueous solution of bichromate of potash in milk every fourth or fifth day. The initial dose was 5 c.cm., which was later slowly increased to 20 c.cm. He took in all nearly 11 gm. of bichromate of potash in four and one-half months. On March 22, 1906, the dog was chloroformed and examined. During the course of the experiment some anemia developed with a few normoblasts in the peripheral circulation, and very many in the bone-marrow, but the anemia was very mild compared with that observed in the animals taking lead. No megaloblasts were found. The urine was examined once a week with the ordinary clinical methods. No albumin or casts were demonstrated except perhaps a trace of albumin on January 24, and again on February 28. In a fresh sample of urine obtained directly from the dog on February 14, a few cells resembling renal epithelium were found in the sediment. The dog vomited repeatedly after having taken the bichromate and at autopsy considerable gastritis and a marked follicular enteritis were noted, especially in the duodenum and upper part of the small intestine. There were, however, no ulcers nor even any epithelial defects to be found microscopically in sections. The heart was rather large. The surface of both kidneys was slightly irregular and numerous badly defined hard grayish white areas could be discerned in the cortex. Sections of specimens hardened in Flemming's solution showed the following lesions: These were granular



and beginning fatty degeneration of many epithelial cells in the functioning tubules. Some of the cells were necrotic, but still *in situ*, others had become detached. No mitoses were found in the epithelial cells. There were no casts. Many glomeruli showed a marked thickening of the tunica propria of the capsule. The capsular spaces of many of them were dilated and filled with coagulated fluid, sometimes containing a few red blood corpuscles.

Throughout the cortex there were a large number of areas of cellular infiltration of considerable size. The larger ones showed considerable new formation of young fibrous tissue in the center. These areas were always perivascular, usually near glomeruli. In many places cells similar to those found in these areas were also present alongside the vascular loops of the glomeruli near the hilum. The cells were partly lymphocytes, frequently, however, larger cells with large vesicular nuclei which were often more or less distorted. Nuclear figures could be found in some of these cells. In all but a few very large cells with large protoplasmic bodies filled with coarsely granular materials were encountered, the granules staining dark brown or almost black with osmic acid. The larger arteries were surrounded by thick masses of old hyaline fibrous tissue, but there was no endarteritis (Fig. 5).

Sections of the liver showed much fat in the liver cells and also some in many endothelial cells of the capillaries. In a few places there was a slight cellular infiltration of the periportal connective tissue.

The experiment shows that, in spite of the fact that this dog took the poison for 4½ months only, the lesions in the kidneys were more marked than those in the lead dogs that had been under observation for a year and longer. The bichromate of potash, therefore, seems to promise for future experimentation along these lines. Although the lesions were so much more severe, the urine in these dogs nevertheless did not contain at any time any appreciable amount of albumin. Only once cells were discovered in the sediment which looked like renal epithelium.

The experiments will be continued in the hope of obtaining still more marked lesions of the kidneys, of producing more definite disturbances in circulation with consecutive hypertrophy of the heart, and of obtaining some information about the relation of renal and vascular disease in chronic nephritis. In none of the experiments so far has any definite arteriosclerosis been present in the affected kidneys or in any other part of the vascular system except some evidently old accidental lesions.

I believe these objects can be accomplished by still more cautious administration of the poison and by continuing the experiments still longer than has been done heretofore.

Publication of my observations at this early stage may seem to need some justification. I hope, however, that it may contribute to dispel erroneous conceptions in regard to the value of this work, especially in reference to human pathology and to encourage others, with perhaps better facilities at their disposal, to undertake investigations along the same lines.

#### ADDITIONAL NOTE.

Since the foregoing was written guinea-pig No. 5 died on Sept. 7, 1906. It had received the same treatment as guinea-pig No. 4. It had not taken any more lead since May 10, 1906, except a few small doses in August. Postmortem examination showed in both kidneys very many just visible retracted scars in the cortex underneath the capsule. They were placed about equal distances from another. There were no adhesions between cortex and capsule.

On microscopic investigation they proved to be areas of new formed fibrous tissue with considerable cellular

infiltration. Most of the tubules in these areas show a marked atrophy. There is little fat in the epithelium of the atrophic tubules. The epithelium in all other tubules does not show any lesions either in ordinary specimens nor in those prepared with the Flemming mixture (Fig. 2).

In concluding, I wish to acknowledge my indebtedness to the Rockefeller Institute for Medical Research for a grant of money which has enabled me to do the experimental work reported on in this paper.

### RHEUMATISM OF CHILDHOOD.\*

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In the early days of medicine, every disease was attributed to the flow of an acrid and poisonous humor to the part affected. This crude pathology has a partial survival in our modern terms, rheumatism and catarrh, both of which have their origin in the Greek *ῥέω* to flow.

It is interesting to note that almost all that is indefinite and vague of disease to-day is embraced by one or the other of these terms.

It has been comparatively recent since certain phenomena appearing in childhood came to be regarded as manifestations of rheumatism. Before this, rheumatism was not believed to affect young children. Once admitted, however, to the diseases of childhood, rheumatism comes now like all diseases newly recognized and taught to be the too quick diagnosis.

I do not agree with the statement in certain textbooks to the effect that rheumatism in young children is more likely to be overlooked than to be confused with other conditions. In an endeavor to teach a broader conception the tendency has been, and still is, to multiply the number of diseased conditions having relationship with rheumatism and to base the diagnosis of the latter on any of these so-called manifestations, provided they have past, present or future association with real or imaginary pain.

Cheadle, whom many of our text-books follow, saw in every child a probable case of disease. He asserted that it was one of the commonest diseases in the wards of a children's hospital with which he was connected. Whatever influence atmospheric condition may have in producing rheumatism, it is not unfair to assume that a considerable number of these London cases were due to "fog."

Granting that we are indebted to the English authors for giving us a broader conception of the disease as it appears in childhood, isn't it possible that this conception has even been stretched? In connection with the rheumatism of adults, the protest that there is too "much of a muchness" may now easily be hushed, since a number of writers are clearing up much of the confusion by intelligent and satisfactory classifications of both acute and chronic joint affections. As these studies progress, the trend is to limit the term "rheumatism" to certain cases of acute polyarthritis having symptoms more or less definite and constant. In the terminology of disease, chronic rheumatism is finding fewer and fewer applications. Many disorders once obscured under the latter name are being separated and placed under new or readjusted headings. This work, no matter how commendable, has for the most part left

\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



the child-types out of its consideration. Certainly it would be an equally welcomed accomplishment to determine just how many of so-called multi-manifestations of rheumatism have a positive connection with the disease. For a number of good reasons, no one is fully ready for a demonstration of this kind.

Disclaiming at once any attempt to leave the impression that this paper will settle any of these questions definitely, I still hope that the subject as presented will provoke discussion sufficient to bring about elucidation of at least some of the points to be raised.

#### ETIOLOGY.

In the study of acute rheumatism, one of the most discouraging things is the number of theories that have from time to time been advanced in explanation of its origin. It will not be necessary or profitable to discuss all of these theories. No matter how plausible some of them at one time seemed, the plausibility of any particular theory came rather from the confusion existing as to the nature of rheumatism than from the fact that the theory satisfied the etiology of the disease as we understand it to-day. From accumulating clinical observations the evidence points very strongly to the infectious origin of the disease. Pertaining to this infection, however, there are, broadly speaking, three views:

1. In England, Poynton, Paine and others feel confident that they have settled the whole question as to the infection. They have isolated from the joints, blood, and, after death, from the valves of cases regarded by them as acute articular rheumatism, certain cocci growing in pairs or chains, which, when injected into rabbits and monkeys, produced arthritis, and sometimes endocarditis, and twitching movements resembling chorea. Since these organisms are capable of producing the above results, the workers regard them as the special and the only bacteria concerned in causing rheumatism. For this class of bacteria they have created the special name *Diplococcus rheumaticus*.

2. The majority of bacteriologists and clinicians in this country, where the work of the English observers is not generally considered conclusive, do not believe that the special cause of rheumatism is yet known. The cocci isolated by the English workers are here looked on as secondary invaders in a disease, the infection of which, though probably specific, has not yet been discovered. The importance of streptococci in producing certain articular and endocardial lesions is well known, but these streptococcal lesions have not been proven to be of a truly rheumatic nature.

3. In addition there are many careful and observing men who regard the infection in rheumatism as something engrafted. They believe that autotoxic agents are primarily concerned. These toxins formed in the alimentary canal as the result of disordered digestive functions, produce disturbances in metabolism and alteration in the tissues. The body suffering these effects of autointoxication has its vital resistance lowered and is therefore subject to microbic invasion. The infection is not considered the same in every instance by these writers, and though occurring in many cases, it is regarded as accidental rather than incidental.

Whatever is ultimately proven right as to the infection, there are certain predisposing and determining factors worthy of consideration. Exposure to cold is generally admitted to act as an exciting cause. Chilling the surface of the body contracts the superficial vessels

and thereby produces a congestion of the internal organs. Thus it interferes with the elaboration of the internal secretions of the organs, and, as Shoemaker<sup>1</sup> suggests, of the muscles as well. These results are intensified if the body has been previously overheated. The conditions resulting may be considered as favorable for the entrance of infection as for the development of autotoxemia.

Heredity is persistently, and no doubt correctly, given as a predisposing cause. It is well to remember, however, that self, and too often professional, diagnosis, is entirely untrustworthy in establishing a family history of rheumatism. Almost any obscure or obstinate pain is likely to be classed under that term.

Of equal importance with heredity is environment. The disease is more frequent in localities marked by sharp changes in temperature. High and low altitudes show some exemption.

Malhygiene as to clothing, housing and food predisposes to rheumatism. One attack of the disease almost invariably means another and recurrent attacks.

#### MANIFESTATIONS IN YOUNG CHILDREN.

Eliminating scurvy, pyemic arthritis and the soreness and stiffness of joints and muscles caused by cruel clothing, coddlings and bouncings, the cases of rheumatism occurring in nurslings are reduced almost to nil. From the eighth year onward an attack of rheumatism in a child resembles more or less closely the adult type. We now find the moderate or high fever, the sweats, the migratory arthritis, and in fact almost all that goes to make up our idea of the disease. It is more especially to cover the period between early infancy and the eighth or tenth year that a number of phenomena in combination and sometimes even in isolation, have been brought forward as manifestations of rheumatism.

Of the conditions to be regarded at times as manifestations of rheumatism in the young, the following is a partial list compiled from various modern writings: "Growing pains," "wandering pains," gastric pains and pleuritic pains, torticollis, tonsillitis, chorea, tics, nose-bleed; subcutaneous fibroid nodules; erythemas, especially nodosum; cardiopathies, including endocarditis, myocarditis and pericarditis; nephritis, asthma, bronchitis, pleurisy, pneumonia, Graves' disease, meningitis, conjunctivitis, keratitis, iritis, eczema, tetany, chilblains, herpes, urticaria, purpura, psoriasis, acid dyspepsia.

Though not including all the conditions, which in one combination or another have been regarded as manifesting the disease, this list is probably complete enough to show that the coveted broadened conception of rheumatism prevails.

#### ENDOCARDITIS.

Some few of the above conditions occur so frequently associated with rheumatism that the connection can not easily be denied. The most important of these are the cardiopathies, particularly endocarditis.

Now that the connection has been fully established it seems high time that a little more stress were put on the possibilities of error resulting from a too close association of our ideas of endocarditis with rheumatism. There are a number of infective processes, such as the influenzal, tuberculous, gonorrheal, typhoidal, streptococcal, etc., widely different in nature from rheumatism and capable of producing arthritis and endocarditis.

In childhood the distinction between any one of these

1. N. Y. Med. Jour., Feb. 24, 1906.



processes and rheumatism is, at best, not always easy. With any preconceived idea that the associated conditions of arthritis and endocarditis invariably point to rheumatism, mistakes will be common.

#### CHOREA.

The relationship between chorea and rheumatism has been by many writers considered a close one. Poynton and Paine<sup>2</sup> have again raised the discussion on this question.

They believe that, while all chorea is not necessarily rheumatic, the great majority of cases are to be regarded in that light. They believe, moreover, that they have been able to prove the connection by showing that the special micro-organism of rheumatism, so regarded by them, can be isolated from choreic cases. If we are convinced that *Diplococcus rheumaticus* is the specific bacterium of rheumatism we are in a much better position to accept the conclusions of these writers in their studies of chorea. They admit, however, that the specific organism may not be found except in suitable cases of rheumatism. They say:

Suitable cases are limited to acute and severe ones in which the lining membrane of the serous cavities are greatly damaged, or in which the type is malignant. Sero-fibrinous pericarditis and malignant endocarditis are excellent examples.

No matter how much we would like to agree with these writers, in order to simplify the many problems of rheumatism, it seems to me that we must admit that Cole's<sup>3</sup> point is a good one, which raises the question of a terminal or secondary infection in these cases on which Poynton and Paine based their studies in seeking the special cause of rheumatism. Lacking a number of points in the proof that *Diplococcus rheumaticus* is the special bacterium of the disease, these men have apparently only been working in a circle in their efforts to show the rheumatic connection of the several conditions in which they were able to find it. The fatal cases of chorea discussed in their paper were very probably mixed infections. The case of meningitis reported in the same paper was almost certainly one of convalescent rheumatism infected with pneumococci.

Bacteriologically, then, the connection between chorea and rheumatism has not been proven. Clinically, the evidence is far from convincing. The majority of English and French writers maintain that the relation is a close one. But even here opinion is by no means unanimous. "Gilles de la Tourette, Charcot, and others, after many observations, were convinced that this relation did not exist." The German authors, as a rule, hold out against the view that chorea and rheumatism are related. Spiller,<sup>4</sup> among other neurologists in this country, thinks the connection has been much exaggerated. In most of his own cases of chorea he was unable to establish any rheumatic history.

There are, too, certain differences in the behavior of chorea and rheumatism, which, taking the view that the conditions are in any sense closely related, will be hard to explain. While rheumatism is of common occurrence among negroes, chorea is rarely seen in that race. In certain localities where rheumatism is endemic, chorea is not proportionately increased, and in fact may be met with but seldom. In other localities, like some parts of Texas, rheumatism is almost unknown, though chorea

is by no means infrequent. Before puberty chorea occurs more frequently in females. The same is true of rheumatism, if we regard the so-called manifestations at this period as not too shadowy for diagnostic purposes. At and after puberty the number of cases of chorea occurring in females, as compared with cases occurring in males, is even more decidedly increased. But at about this period of life, when the symptoms of rheumatism are more clearly marked than in childhood, rheumatism is more frequent in males.

These facts, coupled with our knowledge that not an inconsiderable number of cases of chorea occur during pregnancy; that an attack may follow emotional strain or fright; that accredited reports of cases following some one of the exanthemata are not infrequent; that chorea sometimes develops immediately after slight injury or surgical operation, would all seem against the opinion that there is any close connection with rheumatism.

#### TONSILLITIS.

That acute rheumatism is often preceded or accompanied by an attack of tonsillitis is an observation made by many writers. The relation, however, between the condition of the tonsils and the development of the rheumatic attack can not be fully determined until the bacteriology of the latter has been more fully worked out. Till this is done it will be well to keep in mind the possibility of a mistaken diagnosis in these cases of arthritis following tonsillar inflammation and disease. Almost every day some new evidence is brought forth emphasizing the importance of the tonsils as an inlet of infections which result in a number of pathologic conditions. We know that it is not an uncommon thing for a patient with tonsillitis to have aching limbs and pains about the joints. In the adult these aches and pains are rarely so marked as to be regarded in the light of rheumatism. On no better evidence, however, the young child, in which little is required to direct our minds rheumatic-wise, may be subjected to salicylic drugging.

The predominating bacterium in tonsillitis is almost always the streptococcus. Cole has proven experimentally that streptococci, when injected into animals, produce arthritis and endocarditis. Packard<sup>5</sup> and others have reported a number of cases of endocarditis following tonsillitis. In these cases there was no evidence of rheumatism. Morse<sup>6</sup> reported four cases of nephritis, two of them in children, due to tonsillitis. To none of these latter cases was there any history of rheumatism attached. Moreover, Morse found these cases after a brief observation, and concluded, with every reason for being right, that such cases are more common than is known.

Keeping in mind the experiments of Cole, the chief organism concerned in tonsillitis and the fact that in man arthritis, endocarditis or nephritis may occur either singly or combined, following tonsillar infection, we are ready, I think, to see how an apparently mild case of tonsillitis may be followed by a general, though perhaps moderate, streptococcus infection. But unless we believe that there is no such specific disease entity as acute rheumatism, and that all cases classed under that name are no more or less than streptococcus infections, it seems to me we must admit that a considerable number of these cases of arthritis, with their complications developing in the wake of tonsillitis, are as far from being

2. "Nervous Manifestations of Rheumatism." The Lancet, Dec. 16, 1905.

3. N. Y. Med. Jour., March 17, 1906.

4. "Symptomatology, Pathology and Treatment of Choreiform Movements," THE JOURNAL A. M. A., Feb. 11, 1905.

5. Paper read at Assoc. American Physicians, 1899.

6. Archives Pediatrics, May, 1904.



rheumatic in nature as are the cases of acute pyemic arthritis of infants.

What makes confusion still easier is the fact that tonsillar infection, with its resulting complications, is, like rheumatism, very likely to recur.

#### ERYTHEMA NODOSUM.

The rheumatic connection of erythema nodosum believed in by many of the older writers, and more recently by Cheadle, is not confirmed, according to some of the present-day writers, by closer clinical observations. In the absence of opportunity to make anything like wide observations in this disease I ought probably to withhold an opinion. But that discussion by those of you, who have had a larger experience with erythema nodosum, may be brought out, I want to suggest that this disease, too, is only another of the variable streptococcus infections of which the tonsils are the usual port of entry.

Two years ago Abt<sup>7</sup> reported three cases of erythema nodosum to this section. In none of these cases could a history of rheumatism be established. What was especially interesting to note, however, was the fact that the one case which Abt had opportunity to observe from the very onset of the present illness, was treated by him ten days before in an attack of membranous tonsillitis. Bacteriologic examination proved the latter condition to be a streptococcus infection.

The findings in a single case of any disease may prove but little. At the same time, in a condition like erythema nodosum, the nature of which is the subject of discussion and the absolute knowledge of which is meager, close observations may suggest along what lines profitable work may be done, and may, at least, be taken as so much evidence *pro* or *con* prevailing opinion.

Finger, moreover, has already found streptococci in the inflamed tissues of erythema nodosum, and the same author, after a number of observations, concluded that the disease was a septic process. A few more studies like Finger's and Abt's will almost positively separate the disease from the rheumatic class and may prove it to be no more or less than streptococcus infection usually following tonsillitis.

As to the many other conditions considered among the manifestations of child rheumatism I have at this time very little to say, except to express the opinion that one by one they will be taken away from this connection until rheumatism will come to mean not everything, but something, or nothing.

### THE CLINICAL ASPECTS OF RHEUMATIC FEVER IN CHILDHOOD,

AND THEIR SIGNIFICANCE IN THE QUESTION OF SPECIFIC  
ETIOLOGY.\*

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Knowledge of the disease, which is here termed rheumatic fever, for reasons to be set forth in the course of this paper, has been recently much advanced by certain experimental work and the criticisms on it. The advance, both from the incompleteness of the evidence and

the difficulty of judging as to its final value, is somewhat fraught with confusion. The lack of definite knowledge of the etiology of the disease was one of the motives for this paper. A second motive was the failure of many standard text-books fully to appreciate the marked peculiarities of this disease in early life as distinguished from adult life.

The clinical study of a number of cases was undertaken, in the hope that it might bring forward certain peculiarities of the disease in childhood, and that these peculiarities might throw some light on the question of etiology, or might at least form a basis for further study.

#### NOMENCLATURE.

The word rheumatism has been so much abused that some authorities advocate discarding it altogether. It has been applied to almost every condition associated with pain in the joints, muscles, fibrous tissues, and nerves of the body. In proportion to the progress of knowledge of these conditions, the terms rheumatism and rheumatic have been applied to a constantly decreasing number of conditions. Special progress has been made in the detailed study of joint pathology, with the result that many conditions, particularly of a chronic character, which were formerly included under the term rheumatism, have been relegated to their proper place in classification. Finally, this term, from the point of view of those engaged in classifying joint diseases as such, came to be limited to those conditions of arthritis which were supposedly due to infectious processes. Further objection to the use of the term rheumatism could still be made, on the ground that the condition of arthritis has been shown to occur in a variety of infections, such as scarlet fever, gonorrhea, septicemia, etc., and that for this reason the word rheumatic loses its significance. Consequently, it seemed to many authorities far preferable to discard the term rheumatic as applied to infectious joint conditions, and to substitute the term infectious arthritis as covering the entire group.

The use of this term, infectious arthritis, has its origin in the study and classification of the joint diseases as such, and it would be improper to use it to describe a disease which is not a disease of the joints as such. If there is a disease of which arthritis is only one of several co-ordinate manifestations, and if this disease has a specific etiology, we should use some other name in speaking of that disease. Again, if there is a disease of which arthritis is only one manifestation, and if this disease has a fairly constant and definite anatomic and clinical description which can be distinguished from the description of other forms of infectious arthritis, and in which the definiteness of the description suggests the probability of a specific cause, or at least of a specific reaction of the body, we should use some special term in describing that disease. The use of such a special descriptive term is only following precedent, for we classify diphtheria as a specific disease from its specific etiology, and scarlet fever as a specific disease from its definite clinical picture. Provided that rheumatic fever is such a disease as we have described, we have no more right to use the term infectious arthritis as synonymous with rheumatic fever than we have to use the term infectious angina as synonymous with scarlet fever.

The term rheumatic fever has been chosen to describe such a disease—if its exists—as being preferable to the term acute rheumatism, for the reason that it is analogous to the terms typhoid fever and scarlet fever, which have stood the test of time. The name acute articular

7. "Erythema Nodosum," THE JOURNAL A. M. A., Nov. 12, 1904.

\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



rheumatism is obviously a bad one, if the disease is neither primarily nor constantly articular.

It is necessary to determine, if there is a disease of specific anatomic and clinical description, to which the name rheumatic fever can properly be applied.

#### ETIOLOGY.

In most of the studies of the etiology, rheumatic fever was defined as a disease characterized by fever, polyarthritis, and a tendency to complications in the heart and serous membranes. Many views as to the etiology of these conditions have been successively advanced and discarded. That one of them all which has survived to the present day is the view that rheumatic fever is a manifestation of infection.

Mantle,<sup>1</sup> in 1887, advanced views of its infectious nature. Popoff,<sup>2</sup> in 1887, whose experiments attracted very little attention, cultivated a micrococcus from a rheumatic fever patient, and produced in rabbits by intravenous inoculation arthritis, pericarditis and endocarditis. Achalme,<sup>3</sup> in 1891, found a bacillus resembling anthrax in nine cases of rheumatic fever. He failed to reproduce the disease in animals. Sahli,<sup>4</sup> in 1892, obtained several varieties of bacteria from the blood, urine and joint fluids of rheumatic fever patients, but could scarcely ever produce arthritis in animals. Singer,<sup>5</sup> in 1898, obtained the same results. Goldscheider,<sup>6</sup> in 1892, reported a case of serous pleurisy complicating a case of polyarthritis, in which a streptococcus was found, not pathogenic for animals. Dana,<sup>7</sup> in 1894, obtained a diplococcus from a case of chorea following rheumatism. Widal and Bezancon,<sup>8</sup> in 1894, found a streptococcus in the mouth of a rheumatic fever patient, which caused endocarditis in rabbits. They failed to produce endocarditis in five experiments with other streptococci. Thiroloix,<sup>9</sup> in 1897, isolated a bacillus, apparently identical with Achalme's, from a rheumatic fever patient, and claimed by intravenous injection in animals to have produced the entire picture of rheumatic fever. Triboulet,<sup>10</sup> in 1898, found a diplococcus in five cases of rheumatic fever. In two of these cases it was associated with Achalme's bacillus. Triboulet and Apert,<sup>11</sup> in 1898, isolated a diplococcus from eleven cases of rheumatic fever, which produced an endocarditis in a rabbit, but which failed to produce arthritis. Westphal and Wassermann,<sup>12</sup> in 1899, isolated a diplococcus from a case of severe rheumatism and chorea, which produced regularly polyarthritis in a series of eight rabbits, and was recovered from the blood and heart valves. Meyer,<sup>13</sup> in 1901, investigated the bacteriology of the tonsils in rheumatic fever. There were many negative cases. In five cases he found streptococci. He investigated as a control many cases of sore throat without rheumatism, and could always find streptococci,

but these streptococci always produced in guinea-pigs subcutaneous abscesses, whereas the streptococci from the rheumatic patients never caused suppuration, but caused polyarthritis resembling the rheumatic, and occasionally pericarditis, non-purulent peritonitis and pleurisy. In one-fifth of the animals there was a valvulitis, and he succeeded in recovering the organism from the heart valves. Menzer,<sup>14</sup> in 1902, confirmed Meyer's work.

The most important contributions to the study of the etiology of rheumatic fever have been made by English investigators. Poynton and Paine,<sup>15</sup> in 1900, isolated a diplococcus from eighteen cases of rheumatic fever, in five cases in pure culture. This organism was obtained from the blood, joints and heart valves. Inoculated in large doses intravenously into rabbits, it produced all the clinical and anatomic characteristics of rheumatic fever, polyarthritis, valvulitis, pericarditis, and one rabbit developed a condition suggesting chorea. The organism could be recovered from the exudates, blood, urine and cerebrospinal fluid. Beaton and Ainley Walker,<sup>16</sup> in 1903, confirmed these results and made a detailed study of the organism. Poynton and Paine<sup>17</sup> repeated their experiments in 1903, with the same results, isolating a diplococcus from twenty-two cases of rheumatic fever, sometimes from blood cultures during life. In rabbits, arthritis was almost constant, while pericarditis, endocarditis and pleurisy occurred. Pus was never produced. Ainley Walker,<sup>18</sup> in 1903, obtained similar results. Beattie,<sup>19</sup> in 1904, obtained an organism from the inflamed patches on the synovial membrane of a rheumatic fever patient, and with it, in rabbits, produced typical polyarthritis, endocarditis, and also chorea, with twitching of the head and eyes. In the same year he published a detailed study of the morphologic and cultural characteristics of the micrococcus, which failed to show a means of distinguishing it from other streptococci. Lewis and Longcope,<sup>20</sup> in this country, in 1904, isolated a streptococcus before death from a case of chorea, endocarditis and rheumatism. This organism produced constantly in rabbits a multiple arthritis, which was neither purulent nor fatal. They once obtained endocarditis. Culturally, the organism resembled the *Streptococcus pyogenes*.

As a result of all these researches, among those believing that rheumatic fever is an infectious process, two views are held at present as to its etiology.

1. The bacteriologic view, that the disease is a specific infection, due to a specific micro-organism.

2. The clinical view, that the disease is not due to a specific infection, but that it is a particular reaction of the body to a wide variety of organisms.

Under the bacteriologic view, two varieties of micro-organism present claims to be considered the specific cause, a micrococcus, called by the English investigators *Micrococcus rheumaticus*, and a large anaërobic bacillus, usually called Achalme's bacillus. The claim of the latter is lacking in proper confirmation, and it has finally

1. Mantle: Brit. Med. Jour., 1887, vol. I, p. 237.

2. Popoff: Medit Prebavlena K. Morskowa Sboneskle, 1887, p. 401.

3. Achalme: Compt. Rend. Soc. de Biologie, Paris, 1891.

4. Sahli: Deut. Arch. f. klin. Med., 1892, vol. II, p. 451.

5. Singer: Aetiologie un Klinik des Akuten Gelenkrheumatismus. Leipzig, 1898; Verhandl. dts. xix, Cong. f. innere Med., 1901, p. 441; Wien. klin. Wochschr., 1901, No. xx.

6. Goldscheider: Zeitschr. f. klin. Med., 1892, vol. xxi.

7. Dana: Am. Jour. of Med. Sci., 1894, p. 195.

8. Widal and Bezancon: La Semaine Méd., 1898, p. 195.

9. Thiroloix: La Semaine Méd., 1893, p. 376, ibid. p., 420; Compt. rend. Soc. de biol., 1896, p. 268; Ibid. No. xxx, p. 882, ibid. No. xxxiv, p. 945.

10. Triboulet: Compt. Rend. Soc. de biol., vol. v, p. 214.

11. Triboulet and Apert: Compt. Rend. Soc. de biol., vol. v, p. 128.

12. Westphal and Wassermann: Berl. klin. Wochft., 1899, p. 29.

13. Meyer: Deuts. med. Wochft., vol. xxvii, No. vi, p. 81.

14. Menzer: Aetiologie des akuten Gelenkrheumatismus, Berlin, 1902.

15. Poynton and Paine: Lancet, Sept. 22 and 29, 1900, pp. 860 and 932.

16. Beaton and Walker: Brit. Med. Jour., vol. I, p. 237, vol. II, p. 659.

17. Poynton and Paine: Brit. Med. Jour., vol. II, p. 779; Med. Press and Circular, vol. cxxvi, p. 478.

18. Ainley Walker: Practitioner, 1903, vol. lxx, p. 185.

19. Beattie: Jour. of Path. and Bact., vol. ix, p. 272; Brit. Med. Jour., Dec. 3, 1904.

20. Lewis and Longcope: Am. Jour. Med. Sci., 1904, vol. cxxviii, p. 601.



been shown to be a saprophyte. The weight of evidence points toward a micrococcus as being the organism most frequently associated with the lesions of rheumatic fever.

As to the clinical view, some of its supporters regard rheumatic fever as an attenuated pyemia, the exciting cause of which may be any of the pyogenic cocci. Others maintain that simple uncomplicated arthritis is due to toxins whose nature is undetermined, while the cardiac lesions are due to secondary infection with the pyogenic cocci.

There is much experimental evidence in favor of the bacteriologic view. In England, where rheumatic fever is of a particularly severe type, the great number of cases in which the micrococcus has been isolated and the great constancy and uniformity in which the complete picture of the disease has been reproduced in animals, is a strong argument in favor of the *Micrococcus rheumaticus* being the cause of the disease. Against it is the negative evidence, and the cases in which a variety of organisms has been found associated with the rheumatic lesions.

Chvostek,<sup>21</sup> in 1895, and Kraus,<sup>22</sup> in 1896, failed to obtain any organism in cultures from rheumatic fever patients. McCrae,<sup>23</sup> in 1903, reported blood cultures during life from a large number of cases of rheumatic fever, with uniformly negative results. He advanced the suggestion that, inasmuch as the organisms described by other observers were usually found in fatal cases, they might represent merely a terminal infection. He fails to explain satisfactorily the constancy of the experimental results in animals. Philipp,<sup>24</sup> in 1903, in twenty-one cultures from the blood and six from the joints, in a great variety of media, obtained negative results. Von Leyden,<sup>25</sup> in 1894, obtained from six cases of malignant endocarditis, supposed to be rheumatic, four cultures of streptococci differing from the *Micrococcus rheumaticus* in being very pathogenic for animals.

Sahli and Singer, who obtained a variety of pyogenic cocci from cases of rheumatic fever, are strong supporters of the clinical view. But they could scarcely ever reproduce arthritis and endocarditis in animals. von Leyden's experiments are inconclusive, while the evidence of Chvostek, Kraus, McCrae and Philipp is merely negative. In fact, all this evidence is of comparatively little value when advanced against that based on the very positive results of the English observers.

The principal argument against the specificity of the *Micrococcus rheumaticus* is the fact that it can be distinguished neither morphologically nor culturally from other varieties of streptococci. Although some of the English observers have pointed out minor peculiarities in the behavior of the *Micrococcus rheumaticus* toward various methods of cultivation, yet these are too slight to establish the separate identity of the organism. They have also advanced the Marmorek test in favor of the specificity of the organism, since the *Micrococcus rheumaticus* grows freely in media exhausted by other strains of streptococci. Recent work, notably that of Meyer<sup>26</sup> and of Aronson,<sup>27</sup> has thrown great doubt on the Marmorek reaction as a test of specificity. It must be admitted that the proof that the *Micrococcus rheumaticus*

is the specific cause of rheumatic fever must rest entirely on the fact that it produces specific results in animal inoculations.

But the supporters of the clinical view maintain that this is not the case and that other varieties of micrococci can produce in animals the lesions of rheumatic fever. Menzer,<sup>14</sup> in 1902, advanced the opinion that rheumatic fever is one of the manifestations of a variety of organism, which under certain circumstances assume specific properties. Glaser,<sup>28</sup> in 1904, observed polyarthritis with other strains of streptococci. There are many reported cases of arthritis with various streptococci in which, however, the kind of arthritis is not specified. Harris,<sup>29</sup> in 1905, experimented with streptococci from various sources and succeeded in producing arthritis. He concludes that rheumatic fever is a streptococcus manifestation. The arthritis obtained by him in those rabbits which were autopsied was invariably purulent, and he failed to produce cardiac lesions. Cole,<sup>30</sup> in 1904, experimenting with streptococci from seven different sources where there was no suspicion of rheumatic fever, produced arthritis in rabbits with every strain, and twice produced endocarditis. He assumes that the claim of the *Micrococcus rheumaticus* to specificity rests on the demonstration of its ability to produce in animals arthritis and endocarditis, and that there is no essential difference in the nature of the lesions from those produced by him with other streptococci.

Beattie,<sup>31</sup> in his latest article, 1906, criticises Cole's conclusions. In Cole's first series of experiments, working with an organism which he admits might be the *Micrococcus rheumaticus*, he obtained results in marked contrast to his later ones. In no case was the exudate purulent, but resembled that obtained by Beattie and the other English observers with the *Micrococcus rheumaticus*. On the other hand, in Cole's experiments with other streptococci he obtained usually either a purulent exudate or turbid fluid in the joints. Cole's inoculations frequently resulted in the death of the animal from septicemia, another marked difference from the results of the other English investigators. Beattie concludes that Cole's experiments fail to prove that other varieties of streptococci produce the same results in animals as the *Micrococcus rheumaticus*, but merely show that purulent arthritis in rabbits is a frequent manifestation of streptococci injected intravenously, the result resembling a pyemia. Endocarditis is less frequent.

There is considerable further evidence in favor of the specificity of the *Micrococcus rheumaticus*. Poynton and Paine,<sup>32</sup> in answer to the view of Singer that rheumatic fever is an attenuated septicemia, point out that the organism is very virulent, and is found, associated with very severe forms of ulcerative endocarditis. It never produces pus nor a picture resembling that of streptococcus septicemia. Weichselbaum,<sup>33</sup> as early as 1889, working with various organisms, found it necessary to injure the heart valve before experimental endocarditis could be produced. Pasquale,<sup>34</sup> in 1893, working with streptococci, produced subcutaneous abscesses, general septicemia and a great variety of lesions, but

21. Chvostek: Wlen. klin. Wochft., 1895, No. 26, p. 469.

22. Kraus: Zelts. f. Heilkunde., 1896, vol. xvii.

23. McCrae: Amer. Med., Aug. 8, 1903.

24. Philipp: Deuts. Arch. f. klin. Med., 1903, lxxvi, p. 150.

25. Von Leyden: Deuts. med. Wochft., 1894, No. 49.

26. Meyer: Berl. klin. Wochft., 1902, No. 39, vol. xl, p. 936.

27. Aronson: Berl. klin. Wochft., 1902, No. 42, p. 979.

28. Glaser: Verhandl. des XIX. Cong. f. innere Med., 1901, p. 471.

29. Harris: Trans. Chicago Path. Soc., June 12, 1905.

30. Cole: Jour. of Infect. Dis., 1904, No. 4.

31. Beattie: Jour. of Med. Research, vol. xiv, No. 2, p. 399.

32. Poynton and Paine: Medico Chir. Trans., London, 1903, vol. lxxxv, p. 211.

33. Weichselbaum: Ziegler's Beitr., 1889, vol. iv.

34. Pasquale: Ziegler's Beitr., 1893, vol. xii, p. 433.



never mentions arthritis nor endocarditis. In the *Journal of Hygiene*, April, 1903, is an account of autopsies on rabbits used in experiments on the value of antiseptics. All died from acute infection, but none showed an abnormal endocardium.

The attempts to show that other organisms can produce the specific results claimed for the *Micrococcus rheumaticus* have not resulted in any very convincing evidence. If an organism can base its claim to specificity on specific results in animal inoculations without means of identification other than these results, the weight of evidence inclines toward the *Micrococcus rheumaticus* as the specific cause of the disease. Those who regard rheumatic fever as a specific reaction of the tissues to a variety of infections may in time prove right, but at present they need further evidence to show that a variety of organisms or the streptococcus group can produce such a specific reaction. It must be admitted that these organisms can at times produce arthritis and endocarditis, but it remains to be proved that they produce the anatomic lesions and clinical picture of rheumatic fever with a constancy and accuracy approaching that seen in experiments with organisms derived from rheumatic patients.

Nevertheless, until we have some means of recognizing the *Micrococcus rheumaticus* other than by its results in animal inoculation the possibility remains that other organisms may produce specific results, though lacking in experimental support. At present it seems advisable to accept the *Micrococcus rheumaticus* not as the absolutely proven specific cause, but as the probable specific cause of rheumatic fever.

#### CLINICAL STATISTICS OF RHEUMATIC FEVER IN CHILDHOOD.

Inasmuch as we can not regard it as absolutely proven that there is a disease of specific etiology, to which the term rheumatic fever may be properly applied, it remains to consider whether the clinical and anatomic description of certain cardiac and articular conditions is sufficiently definite and constant to warrant the use of the term. For this purpose a detailed study was undertaken of a number of consecutive cases treated in the wards of the Children's Hospital. Every case of arthritis, endocarditis and pericarditis admitted to the hospital for a considerable period, somewhat over five years, was included in the study.

In this entire course of time only five cases occurred which were obviously due to other causes than the infection provisionally defined as rheumatic; 300 cases occurred in which no other cause was found. These 300 cases were divided into the following classes: 1, With arthritis on admission, 102 cases; 2, with endocarditis only on admission, 140 cases; 3, with pericarditis on admission, 58 cases.

From another standpoint the cases were divided as follows: 1, Acute infections, 223 cases; 2, chronic endocarditis, 77 cases.

The interest in these figures lies in the fact that they show the great frequency of rheumatic fever infection, or at least of infection of a certain type, of unknown etiology, in children as compared with cardiac or articular manifestation due to other known causes. Of still greater interest is the fact that they show the much greater frequency of cardiac manifestations in children as compared with the articular. Of the 223 cases of acute infection, there were 121 cases showing at the time of admission no evidences of the localization or manifestation of infection anywhere but in the heart.

In 30 cases there was a rheumatic family history, but only in those cases with present or recent joint symptoms were the parents particularly questioned in regard to this point.

There was no case in the entire series of 300 cases under 3 years of age. The frequency of rheumatic fever apparently increased from the third to the seventh and eighth years, and then decreased from the ninth to the twelfth.

#### THE ARTICULAR CASES.

These were cases having joint symptoms at the time of admission to the hospital. The first striking point was the great comparative mildness of the joint symptoms. Whereas all these children had joint pain or pain on motion, it was in general slight as compared with adults. A certain number of cases were observed with the redness, heat, swelling and extreme pain on touch or motion, so familiar in adults. But cases of this type formed a small minority of the whole number. There was distinct relation between the age of the children and the severity of the joint symptoms, the severe cases resembling the adult type being much commoner in the later period of childhood, most of them occurring in children of from 10 to 12 years. Another striking point was the brief duration of the joint symptoms after treatment was begun, although again a small minority in the older children, resembled the adult type.

*Duration of Joint Pain.*—One day or under, 64 cases; two days, 12 cases; three days, 14 cases; from four to six days, 10 cases; one week or longer, 2 cases.

*Objective Manifestations.*—Redness, swelling, heat and tenderness to pressure were very noticeably infrequent as compared to arthritis in adults, more than half showing none: No objective signs, 52 cases; redness, 30 cases; tenderness, 52 cases; swelling, 45 cases.

The next point of interest lay in the number of joints affected, which showed the comparative infrequency of marked polyarthritis. More than one joint was usually affected, the arthritis being confined to one joint in 10 cases and to two joints in 28 cases. There were but 2 cases in which all the joints were affected. The ankles were most frequently affected, then the knees: Ankles, 73 cases; knees, 60 cases; wrists, 30 cases; hips, 15 cases; shoulders, 10 cases; elbows, 8 cases; fingers, 7 cases.

A very noticeable feature was the frequency of signs of endocarditis. Of the whole number, 85 cases showed signs of valvular endocarditis, and but 17 children left the hospital with an apparently normal heart. Seventy-two cases had signs of endocarditis on admission, and 13 developed signs during the stay in the hospital. Eighty-three per cent. is a very much larger proportion of cases of arthritis to develop signs of endocarditis than is met with in adults.

A comparatively large number of the cases showing heart signs also had symptoms referable to the heart. Here, again, is a marked contrast to the rheumatic fever of adults, where cardiac lesions are so apt to develop insiduously. Only 27 patients had no heart symptoms, whereas 45 patients had precordial pain or dyspnea. Thirty patients had dyspnea and distinct signs of failing compensation, which developed during the febrile attack. Fifteen patients had precordial pain and palpitation without marked dyspnea.

In a number of cases the cardiac symptoms preceded the articular by a variable and often considerable period of time.



The modes of onset of the attack were as follows: Fever and joint pain, 67 cases; fever only (at first), 15 cases; fever and dyspnea, 10 cases; fever and precordial pain, 5 cases; fever and sore throat, 5 cases.

It may be seen from these figures that while fever and joint pain is the commonest mode of onset, nevertheless, even in the articular cases, in 35 out of 102 cases several days elapsed before the development of articular symptoms.

The following tables show the degree and duration of the febrile reaction:

TABLE 1.

	Fever on admission.	Maximum reached.
99-99.8	0 cases.	0 cases.
100-100.8	32 cases.	17 cases.
101-101.8	20 cases.	20 cases.
102-102.8	25 cases.	20 cases.
103-103.8	15 cases.	30 cases.
104 or over.	10 cases.	15 cases.

TABLE 2.

Time.	Duration of fever. Cases with cardiac symptoms.	Cases without cardiac symptoms.
1 day.	2 cases.	10 cases.
2 days.	0 cases.	19 cases.
3 days.	5 cases.	9 cases.
4-6 days.	13 cases.	11 cases.
1-2 weeks.	8 cases.	16 cases.
Over 2 weeks.	17 cases.	3 cases.

An exceedingly interesting point in connection with the duration of this fever is the fact that in general it was much longer in cases with heart symptoms. Moreover, in every one of the 17 cases in which there was no sign of any heart lesion the temperature fell to the normal within three days. On the other hand, in cases with cardiac symptoms, the duration was often notably prolonged. In comparison with the time of disappearance of the joint symptoms, this prolongation of fever becomes especially interesting. In the majority of the cases without cardiac symptoms the temperature fell to the normal with the disappearance of the joint symptoms, and in only 15 cases did it persist longer than two days after articular symptoms subsided, and in only 4 cases longer than one week. In all the 45 cases with cardiac symptoms, the fever persisted more than two days after the disappearance of articular symptoms, and in 25 cases over one week. This suggests that after the subsiding of an active infectious process localized in the joints, there may continue to exist an active infectious process localized in the heart. It also suggests that in children in whom this infectious process affects the joints and the heart, its activity persists longer in the heart, in so far as fever is a measure of the activity of the process.

## CASES OF ENDOCARDITIS.

These 140 cases were diagnosed as endocarditis, from the fact that endocarditis was the only lesion found on their admission to the hospital. There were also numerous cases of endocarditis among the cases regarded as primarily articular or pericardial, so that in all, out of the 300 cases, 281 showed at some time signs of endocarditis and 19 none. While it can not be argued from these figures alone that endocarditis is a commoner manifestation of rheumatic fever in childhood than arthritis, it can, nevertheless, be inferred that endocarditis is an exceedingly common manifestation of rheumatic fever in early life.

As to the lesions seen in the 140 cases of endocarditis, the mitral valve was very much the most commonly affected. In fact, it was affected in every case but one.

*Lesions.*—Mitral insufficiency alone existed in 70 cases; mitral stenosis alone existed in 1 case; aortic insufficiency alone existed in 1 case; mitral insufficiency

and stenosis existed in 56 cases; aortic and mitral insufficiency existed in 7 cases; aortic and mitral insufficiency, mitral stenosis existed in 5 cases.

The cases showing endocarditis as the chief manifestation are divisible into three classes as follows: 1, Chronic endocarditis with cardiac symptoms, 47 cases; 2, chronic endocarditis without cardiac symptoms, 30 cases; 3, acute endocarditis, 63 cases.

## CHRONIC ENDOCARDITIS.

These patients were either admitted to the hospital on account of cardiac symptoms or were admitted for some other reason in which the cardiac lesions were discovered in the course of routine examination. Twelve patients of this latter type were admitted for chorea. Of the 47 cases with cardiac symptoms, the majority began with the usual symptoms of failure of cardiac compensation. In 8 cases the cardiac symptoms were immediately preceded by articular symptoms and fever, which had since subsided. In 2 cases the cardiac symptoms developed in the course of chorea.

The connection of these chronic cases with rheumatic fever is very noticeable.

*Previous History of Seventy-seven Cases of Chronic Endocarditis.*—Joint symptoms only, 32 cases; chorea only, 12 cases; joint symptoms and chorea, 14 cases; scarlet fever, 5 cases; no cause found, 14 cases.

Forty-six patients out of the 77 had had joint symptoms; in all, 28 had had chorea. In 19 cases there was no evidence of any rheumatic infection. In 5 cases the symptoms dated from an attack of scarlet fever, leaving 14 cases of chronic endocarditis in which no cause was found.

## ACUTE ENDOCARDITIS.

It is not possible to determine in how many cases of rheumatic fever there is acute endocarditis. In most of the cases of acute infection already considered, in which arthritis was the principal manifestation, there was evidence of endocardial lesions. While in those patients who had had no previous attack of rheumatic fever, such evidence points toward an acute endocarditis, nevertheless in those admitted with a heart lesion, it is impossible from the history to exclude a previous attack as the cause of the lesion. From the frequent mildness of the joint symptoms, such an attack could easily have been overlooked. On the other hand, it is certain that in the 13 cases which developed a cardiac lesion while under observation, there was acute endocarditis. The special interest in connection with this form of acute infection lies in those patients who at some time while under observation were suffering from an acute febrile disease, but who showed no symptoms nor signs at that time suggesting localization of the infection elsewhere than in the endocardium. These are the cases particularly defined as acute endocarditis. Those cases admitted for articular manifestations, in which the fever and general appearance of acute infection persisted long after the articular symptoms had completely disappeared, would come under this definition. In 29 of these cases the fever persisted longer than one week, without signs other than in the heart; also, among the cases of pericarditis, 11 showed only signs of endocarditis on admission, the pericardial lesion developing later. So that of the entire 223 cases of acute infection in the series, 134 had at some time acute endocarditis while under observation, whereas only 102 had arthritis. Therefore 60 per cent. of the cases of acute infection showed the distinct appearance of endocarditis at a time when



there were absolutely no articular manifestations, but cardiac symptoms in a large proportion.

*Onset in Sixty-three Cases of Acute Endocarditis.*—Fever only, 3 cases; fever and dyspnea, 27 cases; fever and joint pain, 18 cases; fever and precordial pain, 3 cases; fever and sore throat, 1 case; fever and chorea, 1 case; fever, joint pain and dyspnea, 10 cases.

This summary shows the various modes of onset of these cases, the commonest being with fever and dyspnea.

The range of fever and appearance of the temperature chart in these cases is strikingly similar to the articular cases.

TABLE 3.

Temperature.	On admission.	Maximum reached.
Not taken. <sup>35</sup>	2	2
99-99.8	15	0
100-100.8	14	7
101-101.8	15	17
102-102.8	14	20
103-103.8	0	10
104 and over.	3	7

On the other hand, the duration of the fever shows a difference from the articular cases in general, being more apt to be long.

*Duration of Fever.*—One day, 2 cases; from two to three days, 15 cases; from four to six days, 3 cases; from one to two weeks, 10 cases; from two to four weeks, 5 cases; from four to twelve weeks, 8 cases; terminated fatally, 20 cases.

A very common type in children is characterized by a temperature chart of one or more weeks' continued moderate fever with no symptoms other than the cardiac.

When articular symptoms were present at the onset of the attack, they usually subsided rapidly. The cardiac symptoms, dyspnea and cough usually persist one or more weeks. Edema occurs in about 25 per cent. of cases with cardiac symptoms, chiefly in the severe and fatal cases. Precordial pain is comparatively uncommon. Articular symptoms frequently develop after a considerable period of cardiac symptoms only. Sweating, headache and digestive disturbance are not marked, although these symptoms occur at times. There may be no subjective symptoms at any time throughout the disease.

On physical examination the characteristic endocardial murmurs are heard. The cardiac rhythm is often irregular, though regular in the majority of cases. The rate is usually much accelerated, there being often a curious irritability of the heart, even in those cases where cardiac symptoms are slight or absent.

What proof or evidence is there that the cases which develop without any evidence of localization of acute infection in the joints are in any way connected with rheumatic infection? There is evidence of varying character. Of the 63 cases of acute endocarditis, 56 had some history of previous arthritis and only 7 cases had nothing to connect them with rheumatic fever, except their own clinical picture. But there is a strong presumption that these 7 cases also were actually manifestations of the same infection, for their clinical descriptions were precisely similar to those of the cases which had had a previous or shortly preceding arthritis, and were widely different from 3 cases of malignant endocarditis due to the pyogenic cocci, observed during the collection of the series, but not included. The chills, irregular fever, often extremely high, and the metastatic suppurations observed in these malignant cases bore no resemblance to the fairly regular temperature chart, moderate fever and absence of symptoms other than cardiac in the 7 cases under discussion. Moreover,

there were in the series a number of cases which for many days ran a course precisely similar in every way to these 7 cases, but which suddenly, in the course of the disease, proved themselves to be rheumatic by developing joint symptoms for a brief period. It seems probable that these 7 cases were due to the same infection, but in them the articular manifestations did not happen to develop.

The most striking type in the rheumatic fever of childhood is the primary endocarditis. By this is meant those cases of acute infection in which endocarditis is the first, and for a time or throughout the only rheumatic manifestation. There were in the series of 63 cases admitted for endocarditis 35 cases of this type. Fifteen had had previous arthritic attacks, but at a period too remote to have any connection with the present infection, during the entire course of which there was no other localization. Thirteen developed articular symptoms subsequently to a varying period of fever and cardiac symptoms. The remaining 7, as we have already seen, had no other localization of infection at any time. In these cases of primary endocarditis, a child has an attack of fever, seems unwell; there are usually cardiac symptoms, frequently dyspnea and cough. After a varying period the fever subsides, while the cardiac symptoms may or may not persist. During the attack there may develop joint pain, usually of very brief duration. Occasionally an attack of chorea develops in the course of, or shortly after, the febrile attack.

It must be remembered that sometimes there are no symptoms at all, or slight precordial pain only. There is simply fever and a heart murmur. Such cases are frequently diagnosed as grip or febricula, the heart murmurs not falling under suspicion of connection with the present infectious process. After a time fever subsides and the child may be sent home without a satisfactory diagnosis having been made. There were three cases in my series of precisely this character. I have learned that every one of these patients, within a year after discharge, had an attack of arthritis and one of them had chorea. The possible rheumatic origin of cases of this kind should be recognized and the frequency of acute endocarditis as the only manifestation of rheumatic fever in childhood should be remembered. Given such a case, in the absence of any other demonstrable cause the case may be safely ascribed to rheumatic fever; and if these cases are followed the tendency to recurrent manifestations of various kinds will often prove the diagnosis correct.

#### ACUTE PERICARDITIS.

There were 58 cases of this kind of localization of the infection. In 3 the records were partly unsatisfactory.

*Mode of Onset.*—A. Cases with pericarditis on admission, 45 cases; fever, precordial pain, dyspnea and cough, 27 cases; fever, joint pain, dyspnea, precordial pain, 8 cases; fever, joint pain, precordial pain, 7 cases; unknown, 3 cases.

B. Cases with acute endocarditis only on admission, 13 cases; fever and joint pain, 3 cases; fever and dyspnea, 10 cases.

Fever and precordial pain are almost invariable accompaniments of acute pericarditis at its onset. There may be dyspnea and cough also. In some cases at the onset there is also joint pain. Other cases, in which the localization of the infection in the pericardium occurs later, may begin with fever and joint pain only, or fever and dyspnea, and show for a time only evidences of endocarditis, arthritis, or both.

35. These patients were brought in moribund.



The symptoms and signs of acute pericarditis in children show no notable difference from those in adults. Dyspnea is apparently largely independent of the presence or amount of effusion, but seems rather to a certain extent to be a measure of the severity of the infection. Of course, there is usually a notable increase in the dyspnea when effusion is sudden, or suddenly becomes marked, but very severe dyspnea occurs without signs of effusion, and on the other hand, there were in my series a number of cases with appearances of a very large effusion, in which dyspnea was comparatively slight. It is known that myocarditis is a frequent accompaniment of acute endocarditis and pericarditis. Is it not possible that the presence and severity of the dyspnea may be dependent on the presence and severity of the accompanying myocarditis, as well as of effusion?

TABLE 4.

Temperature subnormal.	Fever admission.	Maximum.
99-99.8	5 cases.	5 cases.
100-100.8	5 cases.	5 cases.
101-101.8	12 cases.	2 cases.
102-102.8	23 cases.	10 cases.
103-103.8	3 cases.	8 cases.
104-104.8	5 cases.	18 cases.
105 or over.	3 cases.	10 cases.
	0 cases.	3 cases.

TABLE 5.—DURATION OF FEVER.

Time.	Cases.	Termination.
1 day.	0 cases.	..
2-3 days.	2 cases.	..
4-6 days.	7 cases.	2 died.
1-2 weeks.	13 cases.	3 died.
2-4 weeks.	10 cases.	3 died.
4-12 weeks.	19 cases.	5 died.

Fever is about the same in degree, but persists much longer in the pericardial infections than in the endocardial infections, and at times may last five or six weeks.

On admission, 22 cases gave signs of fibrinous pericarditis only, and 36 of effusion. Of the fibrinous cases, 13 subsequently developed effusion, while 9 remained dry.

Most of the cases of pericarditis showed signs of endocarditis also; 48 showed endocardial murmurs on admission. Of the 10 showing no endocardial murmur on admission, 8 developed signs of mitral disease subsequently.

Three cases of pericarditis showed chorea on admission, with a history of its having developed subsequently to the pericarditis. Two cases developed chorea while under observation. Two patients had had chorea shortly before the pericarditis, and 3 had had previous attacks of chorea.

The evidence in favor of the pericarditis being a rheumatic manifestation is fairly strong: A. History of joint symptoms, 33 cases; previous attacks, 13 cases; shortly preceding the pericardial symptoms, 10 cases; accompanying the pericardial symptoms, 7 cases; developing after the pericardial symptoms, 3 cases.

B. No history of joint symptoms, 25 cases; chorea, 10 cases; tonsillitis or sore throat, 5 cases; no rheumatic manifestation, 10 cases.

Those cases in which the connection with the general picture for rheumatic fever is not clear, precisely resembled in their clinical course the cases in which the pericardial manifestations were associated with arthritic manifestations. A number of cases were aspirated, including several of those without other rheumatic manifestations. The fluid was always serous, never purulent. There was a marked contrast clinically between all these cases and 2 cases of purulent pericarditis which occurred

during the same period. Both of these latter complicated pneumonia and showed a temperature chart with a high, widely varying fever, and a septic condition very different from the cases in the series.

Primary pericarditis, that is, pericarditis without other manifestations, is fairly common in children. There were 30 cases, in which pericarditis alone or pericarditis with endocarditis, were the sole manifestations of infection. They are analogous to the cases of primary endocarditis already considered. In some of them there were several days of fever before any definite symptoms developed, then precordial pain and dyspnea followed. This point should be remembered. If a child is suffering from an acute febrile disease, if a friction rub is heard, the diagnosis of rheumatic fever is probable. If no friction rub is heard, the possibility of rheumatic fever should still be remembered, as any one of its three principal manifestations may subsequently develop. There were numerous cases of this kind in the series. A child is seen with a mild febrile attack, perhaps slight headache, and vague pains in the limbs, but nothing abnormal on physical examination. One such patient, a girl, was discharged with the diagnosis grippe. On the evening after discharge she had a rise of temperature and severe precordial pain, and returned to the hospital the next day with a dry pericarditis. Later an effusion developed and an endocardial murmur. After two weeks she had severe pain in the knees and shoulders, lasting two days. Fever persisted four weeks. About the time the temperature reached normal she developed chorea.

## CHOREA.

The frequent occurrence of chorea in the series is strongly in support of its rheumatic origin. There were 86 cases of the 300, or 29 per cent., which gave a history of chorea. There is, of course, no evidence that chorea is always a rheumatic manifestation, as a large number of cases were admitted into the hospital during the period without other rheumatic manifestations: Admitted for chorea, 121 cases; existing or previous rheumatic fever, 69 cases; no rheumatic history, 52 cases.

Even including all the cases admitted for chorea during the same period, 57 per cent. were in patients with some rheumatic history.

The chorea does not seem to bear any definite relation in time to the infection. At times it occurred in previous attacks, at other times it shortly preceded or followed the manifestations of infection.

It is possible that chorea may be the result of the action of toxin on the nervous system, as diphtheritic paralysis is the result of the action of the diphtheria toxin. This theory, however, does not explain the cases in which chorea precedes the cardiac or articular manifestations. With the tendency of rheumatic fever in children to take the form of recurrent mild infections, it is possible that there may have been an infection preceding the chorea, which was overlooked. It is also possible that such a mild infection might not even produce fever, or any signs of infection, other than the mere physical sign of endocarditis. This would explain the development of a cardiac murmur in cases of chorea under observation in which there is no other evidence of an active infectious process. That chorea can occur without evidence of rheumatic infection, or as the result of fright or other recognizable condition is no argument against the analogy of chorea with diphtheritic paralysis, as a manifestation of specific infection, for neuritis and paralysis can also occur from other causes.



## THE THROAT IN RHEUMATIC FEVER.

A great deal of attention has recently been directed toward the throat in rheumatic fever, both as the portal of entry for and the seat of development of the infecting agent. As early as 1789, Eyerlen, in his "*Materia Rheumatica and Tonsillas Deposita*," recognized a relation between rheumatism and the tonsils. Roos,<sup>36</sup> in 1894, called attention to the frequent connection of acute rheumatism and tonsillitis. Bloch<sup>37</sup> called attention to the same point in 1898. The experimental work of Widal and Bezancon,<sup>8</sup> Meyer<sup>13</sup> and of Menzer<sup>14</sup> has already been mentioned.

There is great difficulty in obtaining clinical evidence on this point. Children frequently do not complain of sore throat, even when considerable inflammation is present, and always the evidence of the parents is of little value. In spite of these obstacles, during the latter part of the period covered by this series of cases, special pains were taken to collect data on this point. In the whole series of 300 cases, 98 gave a history of sore throat: Frequent previous attacks, 65 cases; preceded rheumatic manifestations, 13 cases; present at the onset, 20 cases.

## SPECIAL PECULIARITIES OF RHEUMATIC FEVER IN CHILDHOOD.

In considering as a whole the acute infection in its varied manifestations making up this conception of rheumatic fever, certain facts stand out as marked peculiarities of the disease in early life:

1. The comparative mildness of the articular manifestations.

2. The relative frequency of cardiac manifestations.

3. The large number of cases in which there are only cardiac manifestations. This number is actually greater than the number of cases having only articular manifestations.

4. The frequent occurrence of endocarditis or pericarditis as the primary manifestation.

5. The most severe manifestations are the cardiac. In acute endocarditis, and to a still greater degree in acute pericarditis, the severity of the case, as measured by subjective discomfort and duration of fever, as well as by danger to life, is greater than in acute arthritis.

6. The marked tendency to recurrent attacks, with varying manifestations. A very large number of the patients had had frequent attacks of fever, with articular or cardiac symptoms, previous to the attack for which they were then under treatment. It is not uncommon for a child to have arthritis at 4 years; a febrile attack with dyspnea and precordial pain at 5; several attacks of fever, joint pain and dyspnea during the next three years; chorea at 9, and again the following year; and finally, acute pericarditis at 11. These recurrent attacks show no particular order of occurrence. Sometimes the first is the most severe; sometimes the mildest. At times chorea occurs first; at times arthritis, at times fever and dyspnea, at times pericarditis. Sometimes joints, endocardium and pericardium are affected together; at other times endocarditis may occur alone, to be followed after months or years, by an articular attack, and later still by a pericarditis. The whole of childhood seems to be a period when, at various times, endocardium, pericardium and articular synovial membrane are particularly susceptible to this infection.

7. A seventh point suggested by a study of the rheumatic fever of early life is interesting in connection

with what is known as "broken compensation." Many of our text-books, in speaking of valvular disease of the heart, say rightly that the lesion is compensated by cardiac hypertrophy, but they go on to say that the symptoms, dyspnea, edema, etc., are caused by failure of this compensation, and mention overexertion as the chief cause of this condition of broken compensation. The throwing of more work on a heart with damaged valves by overexertion, or by an increase in the resistance in the peripheral circulation, is made the most prominent cause of these symptoms.

After studying the cases of so-called broken compensation in my series, I became convinced that as far as this condition occurs in children, the above statements in the books cover only one side of the question, and that not the most important. Obviously, the symptoms can only occur from inability of the heart properly to perform its work. But the idea that the failure is due to the valvular lesion plus more work required does not seem to conform to the facts. In my series 121 cases had signs of so-called broken compensation. Of these, 49 patients were suffering from acute endocarditis only, and 25 from acute arthritis and endocarditis at the time when the compensation failed; that is, in 74 cases the symptoms called failing compensation dated from and accompanied an acute rheumatic fever infection. In 10 further cases there was a history of a shortly preceding infection, so that in 84 cases out of the 121 the cardiac symptoms seemed to be caused by or at least to follow acute infection. In only 2 cases was there any history of overexertion. On the other hand, none of the cases of chronic endocarditis without heart symptoms gave a history of any shortly preceding infection.

A natural inference is that the principal cause of the development of cardiac symptoms in childhood is not overexertion, but a fresh infection. That this fresh infection is effective as a cause by increasing the valvular stenosis or insufficiency is not probable, because many cases of acute endocarditis show severe cardiac symptoms from the start, before there is much probability of marked damage to the valves, and sometimes even before the advent of the murmur. While it is possible that any infection may increase the work thrown on the heart in some way, this would hardly explain the specially severe cardiac symptoms so frequently seen in the acute endocarditis of early life. It seems probable that the heart in these cases of rheumatic fever is weakened by an accompanying myocarditis, in accordance with the well-known fact that myocarditis is a frequent accompaniment of acute endocarditis. In such a condition it is very possible that the rôle of the valvular lesion in contributing to the failure of the heart to do the work required is very slight; and in any event it seems that the view of disturbance of a condition of compensation developed on account of a valvular lesion by increased demands on the heart, as a cause of symptoms, is by no means established. The term cardiac insufficiency is suggested as preferable to broken compensation in that the latter points to the damaged valve as the chief agent in producing the condition. However its mode of action, the evidence is very strong that the fresh acute infection is usually the chief agent.

A number of convalescent cardiac cases are from time to time sent to the Convalescent Home of the Children's Hospital at Wellesley. At one time these children were allowed to play and run about more than is proper for cardiac cases. I know of no child who developed cardiac insufficiency from overexertion at the Convalescent

36. Roos: Berl. klin. Wochft., 1894, Nos. 25 and 26.

37. Bloch: Münch. med. Wochft., 1898, Nos. 15 and 16.



Home. Several patients did develop such symptoms there, but in every case the symptoms were ushered in by a fresh febrile attack, a recurrence of infection in short, both with and without articular manifestations. I do not wish to imply that precautions against over-exertion in cardiac cases should be relaxed, but simply to point out that recurrence of infection, being so important a cause of heart failure, at least an equal amount of attention should be paid to so regulating the child's life as to exposure, etc., as to minimize as far as possible conditions favorable to fresh infection with rheumatic fever.

#### DIAGNOSIS OF RHEUMATIC FEVER.

The figures in this series of cases give some indication of the frequency of occurrence in early life of arthritis, endocarditis and pericarditis of a certain type, as compared with other types. The particular type described above is overwhelmingly the most frequent. Given, therefore, any case of acute arthritis, especially if there are the physical signs of endocarditis, or given any case of acute infectious disease in which there are no other evidences of localization than in the endocardium or pericardium, the probability is strong in childhood that it is a case of rheumatic fever. A history of previous cardiac or articular attacks, or of recurrent attacks, strongly increases this probability. Chorea and sore throat, either previous attacks, or as an accompanying manifestation, also increases this probability. On the other hand, the clinical picture seen in endocarditis and pericarditis due to the pyogenic cocci, is very different from that in the type which forms the majority of cases, and can easily be recognized. In those much less common cases of endocarditis, pericarditis or arthritis which occur as complications of other recognized infections, the cause of the cardiac and articular processes is obvious. In cases with no recognized other cause, we probably have to do with rheumatic fever.

#### PROGNOSIS.

In this series of 300 cases, 55 died in the hospital, making the mortality of rheumatic fever in hospital cases, judged from this comparatively small number, as high as 18.33 per cent.; 10 fatal cases, however, showed no evidence of acute infection while in the hospital, although in most of them the beginning of cardiac failure which ultimately caused death dated from an infectious attack. Taking the 223 cases of acute infection in the series of which 45 were fatal, the mortality was 20 per cent. This figure is much higher than in adults, where acute infection is more exclusively confined to the joints. I think many physicians do not realize that in a case of rheumatic fever in early life the chances of death may be as high as one in five.

If all the 300 cases were followed throughout their subsequent years of childhood, I think it very possible that the mortality might be still higher: Cardiac failure was the cause of death in all cases. Of the articular cases 7 died, or 7 per cent. Of the acute endocarditis cases, 20 died, or 14.3 per cent. Of the acute pericarditis cases, 18 died, or 31 per cent.

The fatal articular cases all had acute endocardial manifestations. As a whole, they represent the mildest form assumed by rheumatic fever in early life. But in such a case with cardiac symptoms the prognosis is the same as in the cases of acute endocarditis. The severest form is pericarditis, with a high mortality.

Only 17 patients in the entire series were discharged well. The remainder were discharged with a valvular lesion.

#### THE RELATION OF THE CLINICAL PICTURE IN CHILDHOOD TO THE THEORIES OF THE NATURE OF THE DISEASE.

The chief characteristic of the clinical picture in childhood is its definiteness and the strong resemblance of all the cases one to another. The general course, range of temperature, symptomatology, recurrences, associated manifestations, give a picture strongly suggestive of a definite disease. If this clinical picture merely represents a specific reaction of the body to various causes, it must at least be admitted that the reaction is very specific. It rather suggests an infection, and more, a specific infection, in which the infecting agent has a marked tendency to select constantly, and over and over again certain definite parts of the body. Whatever its portal of entry, it localizes itself with a remarkable constancy in the synovial membranes of the joints, in the endocardium and in the pericardium. When it has so localized itself, it produces a definite and constant febrile reaction, and definite and constant lesions, chiefly a non-purulent inflammation. A certain number of these cases came to autopsy. The finding showed only minor deviations, being essentially the same pathologic process, which has for years been described as occurring in acute rheumatic arthritis, endocarditis and pericarditis.

That these lesions can be produced by the organisms is possible, but remains to be further proved. There is at least a marked contrast between the lesions in all these cases and those produced by the ordinary virulent pyogenic cocci. The severity of the cardiac manifestations points toward a virulent infection, and hence is against the view that the manifestations are due to a variety of pyogenic cocci in an attenuated form.

I think the definiteness of the clinical picture alone is sufficient justification for regarding rheumatic fever as a definite entity, and most probably a specific infection to be placed in the same category as scarlet fever and measles.

Whether the specific cause has been discovered is another matter. The fact that the *Micrococcus rheumaticus* has not been proved to be the specific cause must be admitted, but it must also be admitted that its claims are strong. When those who deny that it is the specific cause base their denial on the ground that specific results in animal inoculations are not to be taken as a criterion of specificity, and require a further method of differentiating this organism, they are right, but are only pointing out that the chain of proof is not absolutely complete. If we assert only the probability of its being the specific cause, a probability based on the experimental and clinical evidence in support of this position, a certain burden of proof is thrown on those who believe otherwise. In so far as they can show that other organisms give experimental and clinical results identical with those constantly produced by the micrococcus isolated from cases of rheumatic fever, they lessen this probability. Up to the present so little has been done in this direction that there is justification for the provisional acceptance of the *Micrococcus rheumaticus*.

[FOR THE DISCUSSION ON THE PAPERS OF DRs. SNYDER AND DUNN, SEE PAGE 542.]

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Mind in Medicine.—Medical psychology, therefore, can no longer be limited to pathologic psychology, but must embrace the whole study of the connection of the sound mind with disease both in cause and cure. It is, indeed, true that this connection is everywhere tacitly acknowledged, everywhere exploited by quacks, and yet that it is nowhere taught in our schools or scientifically studied.—Schoefield, in *Brit. Med. Jour.*



# AUTOINTOXICATION IN RELATION TO THE EYE.\*

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## INTRODUCTION.

Observers differ, often widely, in their conception of autointoxication; hence it is necessary first to describe, briefly at least, what is included in the term in so far as the present contribution is concerned.

As W. Louis Chapman<sup>1</sup> points out, "the variety of definitions given for this state bears testimony to the difficulty of obtaining one which is terse yet comprehensive." The one advocated by Albu<sup>2</sup> is as follows: "Autointoxication is a poisoning of the organism by the products of its own metabolism, which may be normal, but accumulated in excessive quantities, or they may be abnormal. Among the latter it is necessary to distinguish between those which are subject to further transposition, and those which are formed not at all or only in slight degree in the healthy organism."

Food in its passage from the mouth to the large intestine is subject to complex chemical processes which include oxidation, reduction, decomposition and synthesis. The results are the end products of assimilation, water, inorganic salts, urea, uric acid, etc. Between the introduction into the mouth of nourishment and the appearance of these ultimate substances occurs the development of the intermediary products of metabolism, called by Gautier the leucomaines. Normally, they are oxidized, reduced, decomposed, or united with other substances in the body. Abnormally, if the outlet of metabolism meets with a check, they accumulate and are reabsorbed, and have been thought to hold etiologic relation to a number of disease-processes.

The matter, however, does not end here. During the transposition processes which are going on in the human organism, there are produced not only useful and indifferent substances, but also injurious and poisonous products. Under normal conditions they create no evident disturbance, because they are formed only in very small quantities, or in marked attenuation; or they unite with other substances, or are rapidly expelled. Under abnormal conditions and in the presence of the failure in action of the inhibitory processes, the injurious and toxic action of the imperfectly oxidized products of metabolism is evident; in other words, autointoxication of the organism. Thus writes Albu, and it is from his introduction to this subject that the preceding statements have been quoted.

Let us see for a moment how the subject is approached by others. Von Jaksch<sup>3</sup> distinguishes (a) retention-toxicoses, with clinical (morbid) symptoms depending on the retention of physiologic bases; (b) noso-toxicoses, referable to the presence of basic products, which are formed in the organism (blood, etc.) in disease and eliminated with the urine; (c) auto-toxicoses, with clinical symptoms which are caused by the formation of toxic basic substances from morbid materials, such as pathologic fluids present in the body, which bases are absorbed and give rise to manifestations of severe poisoning; and (d) exogenous toxicoses,

with clinical symptoms or morbid entities due to toxic basic substances ingested with the food, such as the poison of sausages and cheese. Other authors, for example Albu, are unwilling to accept without modification von Jaksch's classification, or to agree with him and others; for instance, Kobert, Schwalbe and Bouchard, who count among the autointoxications all those diseases which arise from the action of a *contagium vivum*, that is, all the infections, or infectious diseases. Albu, also, and it would seem properly, wishes to strike from the list of autointoxications nutriment poisonings by flesh, sausage, cheese, mussels, etc., which Bouchard<sup>4</sup> includes. As Chapman<sup>1</sup> puts it: Specific infectious diseases must not be included with autointoxications; only substances which originate in, or are elaborated within, the system should be regarded as causing autointoxications. Thus, mussel or sausage poisoning is a different process from intestinal putrefaction in which poisonous diamins are formed within the bowel lumen. In other words, autointoxication must not be confounded with autoinfection.

Although some authors would designate as autogenetic diseases only such as originate within the living cell itself and have gone so far as to regard the contents of the intestinal tract as being outside of the organism and, therefore, not participants in the condition under discussion, this ultra view is not accepted by the best authorities. It is true that putrefaction and decomposition of the intestinal contents are referable to the action of bacteria which have been introduced into it; but the autointoxications which arise from the poisonous substances thus produced differ from the infectious diseases caused by bacteria because the latter represent specific intoxications of the organism, while the former come into existence as the result of conditions which constantly obtain in the organism (Albu).

The classification adopted by Albu is as follows: (1) Autointoxication caused by loss of function of an organ, e. g., myxedema, pancreatic diabetes, Addison's disease, acute yellow atrophy of the liver; (2) autointoxication due to general abnormalities of metabolism, e. g., gout, oxaluria, etc.; (3) autointoxication from retention of physiologic products of metabolism in various organs of the body, e. g., toxic phenomena after extensive burns, carbonic acid poisoning in difficult respiration, uremia, etc.; (4) autointoxication caused by overproduction of physiologic and pathologic products of the organism, e. g., acetonuria, coma of diabetes, etc. In a position between groups three and four, and probably belonging to both, are the great majority of the autointoxications which proceed from the intestinal tract.

## AUTOINTOXICATION AND THE EYE.

Let us next briefly review this subject from the standpoint of those who are especially concerned with its relationship to the eye. Uhthoff<sup>5</sup> divides the autointoxications into: 1. Intestinal or enterogenous, (a) caused by affections of the digestive tract which lead to abnormal fermentation and decomposition processes; (b) caused by abnormal changes resulting from the presence of intestinal parasites (helminthiasis, etc.). 2. Histogenetic, (a) caused by the products of individual metabolisms (diabetes, gout, uremia, carcinoma, chlorosis, pregnancy, puerperium, lactation, etc.); (b) caused by insufficient elimination of the poisons of the

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Chapman: "Autointoxication as a Cause and Complication of Disease," Fiske Fund Prize Essay, p. 9.

2. Albu: "Ueber die Autointoxicationen des Intestinal Tractus," Berlin, 1895, p. 3.

3. Jaksch, R. von: "Clinical Diagnosis." Fifth English edition, edited by A. E. Garrod, 1905.

4. Bouchard: "Lectures on Autointoxication in Disease." Translated by Thomas Oliver, 1905, p. 159.

5. Graefe-Saemisch: "Handbuch der gesamten Augenheilkunde," second edition, 32-34, 1901, p. 179.



body as the result of disease of certain organs (thyroid, adrenals, liver, hypophysis (?)).

Elschnig,<sup>6</sup> the most recent systematic writer on the subject from the ocular standpoint, after reciting the classifications of von Jaksch and Uthoff, already quoted, points out that thus far diseases of the eye of probable autogenetic origin have almost exclusively been brought into association with the affections which belong to the histogenetic autointoxications. The intestinal autointoxications have received little notice either in general ophthalmic literature or in ophthalmic text-books, and he, therefore, records the results of his study of such diseases of the eye which have come under his observation and which may have etiologic relationship to this variety of autointoxication. In order to make clear his viewpoint, he quotes Weintraud's<sup>7</sup> definition: "Gastrointestinal intoxications in the most restricted sense of the word are those conditions in which poisonous substances, foreign to the normal metabolism, are produced in the gastrointestinal canal by reason of abnormal fermentation, and are reabsorbed in such quantities that they call into existence pathologic phenomena. It is further to be understood that products of normal indigestion, if produced and reabsorbed in abnormal quantities, may also lead to autointoxication."

While it is admitted that certain diseases and certain symptoms are the result of autointoxication, in the present state of our knowledge it is not possible to indicate the exact nature of the toxic product which causes any autotoxemia, save one. In this connection it is interesting to quote from Alonzo Taylor:<sup>8</sup>

"We do not know the entity of a single autointoxication except the acidosis of diabetic coma. We do know that no known autointoxication is to be attributed to any known end product of any known metabolism. Bouchard's work on the toxicity of the urine is untrustworthy, and there is no measurable toxicity in the urine apart from that of the electrolytes. All our present knowledge rests on clinical analogy. When a nephritic suddenly becomes blind without a retinal lesion we say that he has a toxic blindness; until we have objective criteria of the assumed autointoxication we are limited to clinical analogies and these are naturally to be used with the greatest caution, since they are subject to no known objective control. Of course, autointoxications exist, probably in plenty, but of their true nature we know nothing."

For the sake of the discussion of the subject, we may divide ocular conditions to be considered from the standpoint of autointoxication into those which occur in connection with diseases which are believed to be the result of such a condition, and, in turn, to divide these into two sub-groups, that is to say, again quoting from Taylor: "Psychoses being excluded, any visual abnormalities that exist independent of structural lesions and conditions of probable autointoxication, such as uremia, diabetes, tetany, etc., might reasonably be termed symptoms of autointoxication." In the second group would appear such structural lesions in the eye that arise in connection with diseases of quite certain nature as autointoxication, namely, nephritis, diabetes and the essential anemias. With these we are familiar, although we do not know how the nephritis or diabetes or pernicious anemia causes the retinal alterations any more than we know how diabetes causes gangrene, how pernicious anemia creates spinal sclerosis or how nephritis originates endarteritis. With such phenomena of

autointoxication the present communication is not concerned. We are, therefore, limited to the discussion of various ocular diseases, which, other etiologic factors being eliminated, seem, largely by reason of therapeutic tests and not from knowledge of any exact product, to be the result of an intestinal toxemia, or to be caused by an enterogenous decomposition product.

If we are to assume an autointoxication of gastrointestinal origin as a probable etiologic factor in any ocular disease, it is necessary to know some sign by which such enterogenous decomposition may be recognized. The most definite symptom, as Elschnig points out, is the presence of abnormal organic compounds in the urine, for example, phenol and conjugate sulphates, substances which are difficult to test. Easier of recognition is indican, the presence of which in increased and persisting amounts in the urine indicates decomposition of albumin in the digestive tract. To be sure, it is present in fevers, in anemia, in leukemia and even in neurasthenia, but it is said not to be present during simple constipation. It is this presence of indican which Elschnig regards as the best test of disturbances in the alimentary canal and the production of products the reabsorption of which gives rise to the toxemia to which he attributes the influences that bring about various ocular conditions, and in his experience the corneoscleral region and the uvea are most likely to suffer.

#### DISEASES OF THE OPTIC NERVE AND RETINA.

Referring to the possible relation of autointoxication to diseases of the optic nerve and retina, Uthoff expresses the opinion that, while histogenetic autointoxication, with which the present paper is not concerned, may cause diseases of these tissues, intoxication of intestinal origin is almost entirely innocent of such etiologic relationship, although he is willing to admit that it may originate affections of the interior ocular muscles.

That retrobulbar neuritis may occasionally be the result of an intoxication which proceeds from the intestinal tract is indicated by Kraus' case, to which Elschnig<sup>9</sup> makes reference. A woman became suddenly blind, with all of the symptoms of retrobulbar neuritis. Eight days later she died, and autopsy failed to reveal any cause for death save gastrointestinal catarrh. The urine contained neither sugar nor albumin, but 25 per cent. of oxybutyric acid, and Kraus believes it probable that in this case an acid intoxication of intestinal origin was responsible for the symptoms and for the death of the patient.

Of much more importance is the possible relationship of intestinal toxemias to the development of so-called toxic amblyopia, that is to say, to the ordinary tobacco-alcohol amblyopia. I discussed this subject some years ago,<sup>10</sup> and pointed out that it was quite possible that nicotine or one or more of the many principles freely present in tobacco smoke liberate some toxic influence in the system which must be held accountable for the disease, which, in other words, depend on a species of autointoxication. Long ago Horner contended that neither alcohol nor tobacco as such was the direct toxic agent in cases of central amblyopia, but that together

6. Elschnig: *Klin. Monats. f. Augen.*, vol. xlii, No. 2, 1905, p. 417.

7. Weintraud: "Gastrointestinale Autointoxicationen," *Lubarsch u Osterag, Ergebnisse*, vol. iv, 1897.

8. Personal communication, Dec. 31, 1905.

9. Elschnig briefly recapitulates this case because, according to him, it appears to be unknown in ophthalmic literature. Edsall and I, however, have used this case in connection with our report of the examination of urine in cases of tobacco amblyopia, *Trans. Amer. Ophth. Soc.*, 1903.

10. Norris and Oliver: "System of Diseases of the Eye," vol. iv, p. 183.



these drugs produced chronic gastric catarrh, which, in its turn, established a chronic anemia of the optic nerve, terminating in the pathologic changes which are found in this disease. Sachs maintained that even in the pure tobacco cases certain complex chemical combinations occur in the stomach, and that there was a resulting transformation of the normal gastric juices into acids of the fatty type, which combined with nicotin into substances which were more injurious than the simple tobacco bases themselves. Förster and Groenouw have also referred to disturbances of appetite and inanition as factors in the production of this amblyopia, and Elschnig himself is able to confirm Sachs' statement of the constant presence of gastrointestinal disturbances in association with alcohol-tobacco amblyopia. So far as I know, only Edsall and I have thus, up to this time, tried to prove this suspected relationship to the amblyopia by an analysis of urine,<sup>11</sup> the results of which were reported to the American Ophthalmological Society in 1903. Seven cases of tobacco-alcohol amblyopia were carefully examined, with the following findings:

Case 1—High increase for conjugate sulphates, temporary intense indicanuria and slight urobilinuria. Case 2—Intense urobilinuria. Case 3—Moderate urobilinuria and high volatile fatty acids. Case 4—Moderate urobilinuria, marked indicanuria, decided reaction for phenol and high volatile fatty acids. Case 5—Intense indicanuria, moderate increase of conjugate sulphates, marked urobilinuria. Case 6—Intense urobilinuria and indicanuria and intense phenol reaction. Case 7—Marked reaction for phenol and notably high values for volatile fatty acids, with slight urobilinuria.

The results in general show that there was in all cases an excessive excretion of enterogenous decomposition products in the urine, and in all there was a more or less marked urobilinuria. In all the patients repeatedly examined these abnormalities nearly or quite disappeared under treatment, coincidentally with improvement in the eye conditions. A case of optic nerve atrophy examined as a control, the atrophy not being caused by tobacco and alcohol, showed almost entirely negative results, with only a slight reaction for indican and none for phenol. We stated that these facts gave just ground for the belief that toxic substances produced in the digestive tract, or in the course of metabolic processes, have at least a part in the production of amblyopia in these cases, and that at times they are probably the direct cause of the continuance of the symptoms when the latter do not appear after alcohol and tobacco have been stopped.

An amblyopia without ophthalmoscopic change in association with obstinate constipation has been attributed to an autointoxication proceeding from the intestinal tract by Young. Bulson<sup>12</sup> attributes the visual disturbances caused by excessive use of coffee (coffee amblyopia) to irritation of the digestive tract, created by this agent and consequent processes of decomposition and abnormal fermentation.

Elschnig refers to cases of scintillating scotoma and other neurasthenic symptoms which are seen in association with chronic intestinal catarrh and constipation, but very properly casts doubt on this etiologic factor, inasmuch as it is not proved that they may not be reflex manifestations from other sources, or from the intestines themselves, but not the indications of an absorbed poison.

#### OCULAR MUSCLE ANOMALIES.

When all other causes for the presence of an exterior ocular muscle palsy have been excluded, it has been attributed at times to an autointoxication, but without any very definite examinations to justify the diagnosis. Paralysis of the interior ocular muscles are probably more likely the result of gastrointestinal intoxications, and their symptoms would not in any sense differ from those which are caused by ptomain poisoning, which, as we have already noted, is not to be reckoned among the autointoxications.

I have seen several cases of unexplained paresis of accommodation apparently follow the ingestion of pure foodstuffs, that is to say, the ingestion of food which was not in any sense tainted, and doubtless all of us can recall similar examples in our practice. Some years ago, before the ophthalmic section of the College of Physicians of Philadelphia, Dr. Charles Herman Thomas exhibited a young man who always an hour after food suffered from paresis of accommodation. The subsequent history of the case I do not know. In none of these cases, however, has accurate urinary analysis been made, and they, therefore, are only classified in this group because other etiologic factors were not evident. Elschnig records a more carefully examined case of cycloplegia and loss of the pupil light reflex in a patient whose urine showed marked indican reaction, and who had no other cause for this condition, and who promptly recovered under treatment directed to the digestive organs.

Elschnig refers to one case of ocular muscle palsy reported by Varese without greater detail, in which the condition was attributed to an intestinal intoxication as the result of helminthiasis. Such intoxications are classified by Uhthoff under the autointoxications, the second group of them, at least, but more properly, according to Elschnig, they should be brought into relationship with the noso-toxicoses of von Jaksch's classification.

#### AFFECTIONS OF THE CORNEA AND SCLERA.

That a certain number of corneoscleral affections may possibly be referred to the action of toxins absorbed from the intestinal tract seems likely, the difficulty being, however, to eliminate other factors which are well established in their etiologic relation. A case in point is quoted by Elschnig of relapsing marginal ulceration of the cornea with increased indican reaction in the urine, and with cure which followed a careful diet and a regulation of habits tending to correct the abnormal intestinal fermentation. It certainly must be the experience of all ophthalmologists that regulation of the diet, intestinal antisepsis, and in general terms, what I may call gastrointestinal hygiene, is of the greatest moment in the treatment of relapsing corneal ulcers, especially in children and young adults, but that these corneal lesions should be designated as symptoms of the autointoxication is not by any means certain, although if persistent urine analysis persistently gave the indications of enterogenous decomposition and other factors were eliminated, such relationship would at least be probable.

Exactly the same remarks apply to various forms of scleritis, both of the deep and superficial variety and to that form which is known as the periodic fugacious episcleritis, the "hot eye" of the English writers. In these diseases the regulations of diet, etc., which have been referred to are of the greatest moment in treatment.

These types of scleritis and keratitis have recently been the subject of a brief communication by Frederick

11. de Schweinitz and Edsall: "Concerning a Possible Etiologic Factor in Tobacco-Alcohol Amblyopia, Revealed by an Analysis of the Urine of Cases of this Character."

12. Bulson: Amer. Jour. of Ophth., vol. xxii, 1905, p. 55.



Groyer,<sup>13</sup> and he is satisfied, using the method of Obermayer for indican reaction, that its persistent presence in the urine with these diseases, especially if the other signs of abnormal intestinal fermentation are present, must be accepted as a sign that the exciting cause arises in the gastrointestinal tract.

#### DISEASES OF THE UVEA.

The extreme difficulty of finding a satisfying cause for various types of uveitis, that is to say, uveitis with punctate keratitis, iridocyclitis, iridochoroiditis, recurring plastic choroiditis, and so-called relapsing or recurrent iritis, has led in recent times to a search for some toxin other than that supplied by syphilis and in vague terms by the rheumatic or lithemic diathesis.

According to Elschnig, what may be termed the gastrointestinal factor bears an important relation to these uveal tract diseases, and should be regarded in many of them, if not the sole, at least a contributing cause. Two varieties are in his experience particularly to be classified here.

1. Chronic iridocyclitis with deposits in the anterior chamber and opacities in the vitreous which occurs in women whose breath has an acetone-like odor and who are the subjects of gastrointestinal indigestions and who tend to be obstinately constipated. It is not necessary to burden the communication with many case histories, but the type is a familiar one. An excellent example recently under my care occurred in a woman aged about 20, of sedentary habits owing to her occupation, who appeared with a moderate episcleral flush, which rapidly developed, as is so often the case, into a sharp uveitis, with mutton-fat drops deposited on the posterior surface of the cornea, succeeded rapidly by a web-like exudate in the anterior chamber and flake-like opacities in the vitreous. Ordinary remedies were entirely insufficient, but cure came with startling rapidity after thorough intestinal antisepsis preceded by the free administration of calomel and regulation of habits and diet. In this case scientific urine examination was not made, therefore the exact amounts of indican cannot be given. It is used simply as a type of those varieties to which Elschnig makes special reference and which all of us must frequently have seen.

2. Elschnig's second variety is relapsing or recurrent iritis. He believes the subjects are ordinarily healthy individuals. An attack of iridocyclitis occurs, is recovered from, and the process repeated until, if the inflammation is not checked, blindness is likely to result. In his experience the ordinary antisiphilitic remedies are useless, while treatment of the digestive organs arrested the process in five out of seven of his cases. He gives the case histories of seven patients, and for details the original article should be consulted.

Again, a very important series of phenomena, postoperative in character, should be considered from the same standpoint, namely, postoperative delirium and postoperative iridocyclitis. As is well known, postoperative insanity, particularly after cataract extraction, has been ascribed to the use of the bandage, the effect of atropin, to exaggeration of an imperfect mental balance existing prior to operation, and in a certain number of cases to autoinfection. The last etiologic factor has been especially the subject of discussion by Fromaget, who attributes the condition to an autotoxemia. Elschnig is satisfied that certain cases of iridocyclitis which follow operation may be caused by digestive disturbances, either reflexly or by the absorption of intestinal toxins.

He also believes that glaucoma following extraction may have a similar determining cause. In a remarkable case of this character recently under my care, on the morning of the sixth day, after a perfectly normal extraction without complications of any sort, pain began, followed rapidly by rise in intraocular tension, and, in short, an attack of glaucoma. In the preceding twenty-four hours the urine, which had been normal in quantity and which contained no albumin, although an occasional cast, fell to eighteen ounces, also there were stubborn constipation and other indications of gastrointestinal disturbance. With the relief of these symptoms and the restoration of the urine to the normal amount, associated with myotics locally, the entire attack subsided, to be repeated twice afterwards, in, however, much milder degree, again with a return of all of the symptoms, in so far as the urine and intestinal tract are concerned, which have just been described. The ultimate result was a brilliant cure, with a vision with correcting lenses of fully normal degree. It will at least be admitted that a gastrointestinal intoxication may have been responsible for this complication, although it is not proved. John Green, Jr.,<sup>14</sup> reports a case of juvenile glaucoma, preceded by optic neuritis which he thinks, with reason, may have been due to the resorption of noxious material from the intestinal canal.

Elschnig believes that many cases of chronic choroidal disease may be due to gastrointestinal intoxication, but is unwilling to state more than that this condition should be regarded as a probable cause. The relationship of this form of toxemia to plastic choroiditis will be dealt with to a certain extent by Dr. John T. Carpenter, in his paper on plastic choroiditis to be read at our present meeting, and therefore I will leave details to him. In common with many of my colleagues, I have felt that in many of these cases we must look for etiologic factors not gathered from the usual sources of syphilis, tuberculosis, scrofulosis, and the like, but from some toxin, and therefore from one that may be well attributed to enterogenous decomposition products. The important point, again, is the necessity of a search from this standpoint and the establishment of a dietetic and therapeutic regimen according to the conditions which have been found.

In so far as diseases of the lids are concerned, two important and troublesome affections should be mentioned, namely, recurring styes and various types of blepharitis. To styes Elschnig refers, and is satisfied that the discovery of indican in abnormal degree in these cases indicates their probable origin. The same is equally true of blepharitis. Modern dermatologists have recognized the important relationship of gastrointestinal toxemia to certain diseases of the skin, and many of their most brilliant results are not achieved through topical medication, but by vigorous antisepsis of the gastrointestinal canal.

In a recent conversation with Professor Duhring, one of America's most distinguished dermatologists, he impressed on me the absolute importance of investigation of the urine and treatment of the intestinal tract under these conditions, and urged me to make similar searches in the various chronic inflammatory conditions of the lid which we are so prone to encounter. We are only too often content with the corrections of refractive errors and the giving of some resolvent or stimulant salve, and while these are most important adjuncts in the treatment, they are not sufficient.

13. Groyer: Muench. med. Wochft., Sept. 26, 1905.

14. Green: Amer. Jour. of Ophth., vol. xxii, 1905, p. 318.



## TREATMENT.

In so far as treatment is concerned, Elsehnig believes that diet occupies an important position, and must be exclusively milk or mixed, according to circumstances. Calomel, in his experience, is a sovereign remedy, and he believes thoroughly in intestinal disinfection by the administration of guaiacol carbonate. Discussing this remedy with Dr. H. A. Hare, I find he also is satisfied that in many instances it furnishes him the best results in so far as intestinal antisepsis is concerned.

## CONCLUDING REMARKS.

This communication is presented to the Section, not with the idea that it has in any sense reviewed the elaborate and conflicting literature of autointoxication, or that it has done anything more than to add to Elsehnig's earnest advice that in the diseases already recited examinations should be made in accordance with the best methods of modern physiologic chemistry, that, in other words, we should not be satisfied with the ordinary routine, so-called alterative treatment, but that even so apparently simple a disease as scleritis, or certain types of recurring corneal ulceration, and particularly the various types of uveitis which have been described, should be the signal for patients to be submitted to an examination as thorough as modern clinical medicine can yield.

To summarize: Although we do not know the entity of a single autointoxication except the acidosis of diabetic coma, and although we know that no known autointoxication is to be attributed to any known end product of any known metabolism, to quote Alonzo Taylor, we do know, from clinical analogy, at least, that autointoxications exist, even if their true nature is as yet a secret. We do know, too, that after food is swallowed and before the end products of assimilation are eliminated, there may be processes arising under abnormal conditions which yield poisonous products foreign to normal metabolism, the reabsorption of which may be followed by definite symptoms. We have reason to believe, in the absence of other causes, that under these conditions ocular troubles may also arise largely in the corneoscleral and uveal tracts, and probably, in so far as the nervous apparatus is concerned, in manifestations to which we apply the term acute or chronic retrobulbar neuritis. We do not know whether these toxins, whatever they may be, actually are the only and sole cause of these conditions, but such examinations as have been made by Elsehnig, by Kraus, by Grover, by Edsall and by myself, at least indicate that, to use Elsehnig's term, they may be considered accessory causes. As Edsall and I have said, they may be able to play a certain part in the production of the symptoms, and at times are probably the direct cause of their continuance, even when other more commonly accepted etiologic factors have ceased to be active.

[FOR THE DISCUSSION, SEE PAGE 543.]

**The Tendency Toward Routine.**—No matter what the early efforts of a physician may be, to give his patient the latest and best in the treatment of his disease, the final effect of the practice of medicine in the greatest number of instances resolves itself into the mere seeing of patients. He who permits himself to drift into a *status quo* never realizes the full measure of his possibilities, no matter what his ability or training.—James F. Percy, M.D., president of the Illinois State Medical Society.

# VALUE OF TESTS FOR INVISIBLE HEMORRHAGE IN DIAGNOSIS AND TREATMENT OF DISEASES OF THE DIGESTIVE ORGANS.\*

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Hemorrhage into the stomach and bowel may be divided into two groups, visible and invisible, which have in general the same significance and differ only in degree. Hemorrhage has always been considered an important sign in the diagnosis and treatment of diseases of the digestive tract, but until Boas,<sup>1</sup> in 1901, called attention to the value of chemical tests for blood the gastric contents and feces had been chiefly examined with the naked eye and the microscope.

The simple appearance is not a good guide, as Kuttner<sup>2</sup> was the first to point out, for a stomach contents may, if strongly acid, contain considerable blood without its being visible to the eye, the stools may be colored dark or reddish by food or drugs and be very deceptive; finally, very light colored stools may contain considerable blood coming from high up in the digestive tract. Microscopic examination is sufficient with large undigested hemorrhage, but will entirely overlook small but permanent and very significant bleeding.

Tests for invisible hemorrhage into the gastrointestinal tract have excited increasing interest in the last few years and have proved, in my opinion, to be the most valuable single method recently developed for the recognition of latent causes of cancer and ulcer and for separating them from neuroses and other benign affections of the stomach and bowel.

The value of the presence of blood as a sign of cancer or ulcer of the digestive tract depends on the care with which other sources of bleeding are excluded. The absence of blood has equal value in diagnosis as a means of ruling out well-developed cancer and the severe type of acute ulcer of the stomach and bowel. A large amount of valuable data bearing on this subject has been accumulated in the last few years by the combined efforts of Boas,<sup>1</sup> Kochmann,<sup>3</sup> Ewald,<sup>4</sup> Hartmann,<sup>5</sup> Joachim,<sup>6</sup> Clemm,<sup>7</sup> Schmilinsky,<sup>8</sup> Rossel,<sup>9</sup> Steele and Butt<sup>10</sup> and others. Boas<sup>1</sup> especially has written early and often on this subject, and it is due largely to his energy and enthusiasm that its importance has been recognized.

Since opinions differ somewhat as to the technique of the test and the value of the result, I present my own experience with 800 examinations of feces and a much smaller number of stomach contents in nearly 200 cases in the hope that it may contribute something to our knowledge of the subject.

Before giving my own results let me speak of the

\* Read in the Section on Practice of Medicine of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. Boas: Deutsche med. Wochschr., 1901, No. 20; Deutsche med. Wochschr., 1903, No. 47; Volkmann klin. Vorträge, N. F., 1905, No. 387.

2. Kuttner: Berlin klin. Wochschr., 1895, No. 7; Ztschr. f. klin. Med., 1902, vol. xlv, p. 1.

3. Boas and Kochmann: Archiv. f. Verdauungskr., 1902, vol. viii, p. 53.

4. Ewald: Berlin klin. Wochschr., 1906, No. 9.

5. Hartmann: Archiv. f. Verdauungskr., 1904, vol. x, No. 1.

6. Joachim: Berlin klin. Wochschr., 1904, No. 18.

7. Clemm: Archiv. f. Verdauungskr., 1904, vol. x, p. 373.

8. Schmilinsky: Münch. med. Wochschr.: 1903, vol. xlv, No. 49.

9. Rossel: Deutsche Archiv. f. klin. Med., 1903, vol. lxxvi.

10. Steele and Butt: Am. Jour. Med. Sci., 1905, N. S., No. 130, p. 36.



technic of the test and its modifications and the precautions necessary in using it. The necessity for a chemical test for hemorrhage is obvious when we recognize that the number of cases in which blood can be seen in gastric contents and feces is very small in comparison with the number which show it by the chemical test. Gastric contents with considerable decomposed blood may be clear and colorless and feces may have the yellow color of milk and yet contain much blood.

The methods which till recently have been used most by the clinician are Teichman's test for hemin crystals and the spectroscope. These require special skill or apparatus and have never been popular with the general practitioner. They must yield both in simplicity and delicacy to the recent guaiac and aloin tests which can easily be carried out by the practicing physician without other apparatus than a test-tube and a few simple drugs. Weber<sup>11</sup> introduced this method in its present form in 1893 as a modification of Van Deen's guaiac turpentine test. (Solutions of gum guaiac turn blue in the presence of blood on addition of old turpentine.)

A large number of substances in addition to blood gave this Van Deen reaction; food materials, such as green vegetables, milk, body fluids, such as bile, saliva, pus, and a number of drugs, such as iron and copper, iodine, and bromine salts, so the test in this form was not available as a test for blood. Weber's<sup>11</sup> modification consisted in making first an acetic acid-ether extract of the material to be examined and applying the above test to this extract. Weber discovered, and all later observers have confirmed the fact, that the above-named substances do not pass over into the extract, so that a blue coloration of the acetic acid-ether extract by guaiac and turpentine is significant of the presence of blood. Rossel<sup>9</sup> introduced later a similar test, using aloin in place of guaiac.

#### TECHNIC.

The technic of the test is as follows:

Ten c.c. of gastric contents or feces rubbed up with a little water, is shaken up with 3 c.c. of glacial acetic acid and then extracted in a test tube with an equal volume of ether, by gently shaking back and forth. The test tube is allowed to stand till a clear layer of ether separates; the latter is poured off and tested for blood by the addition of 10 drops of freshly prepared tincture of guaiac or aloin, and 30 drops of hydrogen peroxid, or well ozonized turpentine.

In the presence of blood the guaiac gives a clear blue color to the mixture and the aloin a clear cherry red. Either peroxid or turpentine may be used in the guaiac test. In the aloin test turpentine is better than peroxid.

#### PRECAUTIONS.

Several simple precautions are necessary for the success of the test. Use plenty of turpentine or peroxid if the extract is rich in fat. If little blood is present use more turpentine and less guaiac. The guaiac solutions are very variable. One will spoil in 4 to 5 hours; another will keep for a week. The only sure way is to make it fresh from the inner part of a solid lump of guaiac, never from the powder.

It is very necessary to add water to the ordinary solid stool before it is rubbed up with acetic acid, otherwise the ether-extract is mixed with the acetic acid and no true extraction occurs. Oxydases and vegetable stuffs are contained in the mixture and confuse the result. With water a true separation occurs, and only the hematin goes over into the ether-extract. Liquid stools need no addition of water.

#### EMULSION.

To avoid emulsion of the contents and difficult separation of the ether, tip the test-tube slowly back and forth, so that the ether runs gently first to one end and then to the other; do not shake it up vigorously. If an emulsion should form it may often be destroyed by the addition of a few drops of alcohol, or a clear extract obtained by filtering after the addition of 2 or 3 extra c.c. of ether. This takes only one or two minutes. Use too much acetic acid rather than too little.

Rossel<sup>9</sup> and others have advised the previous extraction of fat with ether in order to avoid the formation of an emulsion; others have used separating funnels to obtain a clear extract. I have found the previous extraction of fat unnecessary except in a very few cases, and a simple test-tube provided with a rubber stopper which is always at hand is quite sufficient for thorough extraction and the production of a clear extract. The simpler the method and the less apparatus the better for the practitioner, provided the test is delicate and accurate. In some cases, however, when an excess of fat is present, its previous extraction undoubtedly breaks up the feces, renders the extraction of the blood pigment easier and thereby improves the delicacy of the test. Occasionally a small hand centrifuge, such as is commonly used to throw down a urinary sediment, is useful in rapidly clearing an extract, but even this is rarely necessary. Very watery stools separate slowly; it may be necessary to let the tubes stand for some hours.

#### DELICACY.

The test is a very delicate one. Either guaiac or aloin will give a positive test with approximately 1 part of blood in 10,000. A good positive test in the stools is obtained by 3 c.c. of blood ingested which show that little blood which is eaten raw or poured out in the upper digestive passage is absorbed, and that the examination of the stool will show a very small admixture from the stomach or small intestines. In general the aloin and guaiac tests are equally delicate, or nearly so, and the slight differences in the hands of different observers may well be due to slight individual differences of method, or differences in the samples of drugs used. My own experience using the best quality of Barbadoes aloes I could obtain and Merck's best turpentine well ozonized for several months was that the aloin test was slightly less delicate than the guaiac. Occasionally extracts would give a pale clear blue with guaiac when no aloin reaction was obtained.

#### COLOR.

The color reaction is usually clear, definite and easily recognized; occasionally, however, instead of a clear blue with guaiac or red with aloin, a shade of green, reddish brown or brown appears. There has been considerable discussion whether these colors should be considered positive or negative.

Schmilinsky says these colors are due to faint traces of blood and that if only clear blue is called positive in the guaiac test some stools which contain blood will be missed. Boas,<sup>1</sup> Schloss,<sup>12</sup> Clemm<sup>7</sup> and Siegel<sup>13</sup> consider them negative because they may appear in feces free from blood, and Boas<sup>1</sup> states that the greatest dilution of normal blood which reacts with the guaiac test gives only a blue or violet color. This latter statement is true of blood in most stomach contents, but it certainly is

11. Weber: Berlin klin. Wochschr., 1893, No. 19.

12. Schloss: Archiv. f. Verdauungskr., 1904, vol. x, p. 267.

13. Siegel: Münch. med. Wochschr., 1905, vol. iii, p. 1579.



not true of blood in stools, as any one can easily demonstrate by making this simple experiment:

If an acetic acid-ether extract containing blood is diluted gradually with ether, or with an ether-extract of bile-free gastric contents and tested with guaiac and turpentine, the blue color becomes paler and paler, but always remains "true blue" till it disappears, while if the same extract containing blood is diluted with an extract of normal blood-free feces, the clear blue color is lost in the weaker dilutions and is replaced successively by violet, greenish, red brown, and brown colors, showing that these other colors may be due to faint traces of blood in the presence of urobilin and other fecal pigments.

It is possible, however, that these colors do not always indicate faint traces of blood and for clinical purposes the way is plain. It is not necessary to utilize this test to its extreme chemical limits, since these limits are doubtful, but it is simplest and most practical to disregard the doubtful colors and consider the test positive only when the guaiac test gives a clear blue or violet and the aloin a clear red color. Iron, bismuth, chlorophyll, or an excess of urobilin may give the ether-extract a yellow, greenish, or red brown color, which somewhat obscures the color reaction; it is sometimes wiser to omit drugs and green vegetables at the time of the test, but this is by no means invariably necessary. Schmilinsky<sup>8</sup> has stated that the presence of HCl in stomach contents interferes with the delicacy of the test and advises neutralizing the contents before extraction. After long experience Boas says this is unnecessary.

#### OTHER HEMORRHAGES.

The greatest use of the test is in the diagnosis, prognosis and treatment of gastric ulcer and cancer, but the presence of invisible blood in the feces and gastric contents will only be of value when other small hemorrhages which have no significance are excluded, such as those from the mouth, nose, throat, lungs, hemorrhoids, fissure and the catamenia. The test shows the presence of blood, but does not indicate its source, which must be found in other ways.

Usually the insignificant sources of bleeding can be readily excluded, and it is worth while to take considerable trouble to do so if necessary. Examination of the anus and of the rectum with the protoscope may be necessary to exclude piles, polyp, fissure, etc. No stool should be examined which shows a streak of blood on the surface. We must always be careful in constipated persons to obtain a soft pasty stool which can not abrade the mucosa of the lower bowel and cause bleeding. In all such patients when the test was positive, a laxative was given and the test repeated several times with soft stools.

#### MEAT.

If a positive test for blood is to have clinical value, all meat and fish and their preparations must be excluded from the diet for two days before the test is made. There has been much difference of opinion as to the effect of diet containing rare cooked meat on the blood test in the feces. All agree that the feces may give a positive test after eating raw or rare meat, though this by no means invariably occurs. Many observers (Weber,<sup>11</sup> Schloss,<sup>12</sup> Boas,<sup>1</sup> Kochmann,<sup>3</sup> Rossel<sup>9</sup>) consider thoroughly cooked meat safe; others (Schmilinsky,<sup>8</sup> Hartman<sup>5</sup>) mistrust it and advise a meat-free diet.

My own experience is that a positive test in the stools is found frequently, but not invariably, after a diet containing rare meat or beef juice and may still appear, though very much more rarely after a diet of thoroughly

cooked meat. The variation in the results of examination of the feces after eating meat evidently depends largely on the degree of digestion of the meat. In some patients with good digestion it may be simpler to make the test first, without change of diet (not excluding meat). If a negative result is obtained, it is just as valuable as if meat had been excluded. If a positive result is obtained, meat must be forbidden. I found it practically better to exclude all meat for a few days, particularly with ambulatory patients over whose diet I had less absolute control, otherwise a positive result only made me suspicious of the degree of cooking of the meat eaten. When the stools to be examined come from a patient who is being fed by rectum, we must be sure that no meat extract is used in the nutrient enemata.

#### MATERIAL FOR EXAMINATION.

Hemorrhages into the stomach are the most frequent and important of those we are dealing with, and the question is important which material, stomach contents or feces, gives us the most reliable evidence of invisible gastric hemorrhage. It seems natural to conclude that the stomach contents will be the best because then all other sources of bleeding into the bowel are excluded.

It is unfortunate, however, that the use of the stomach tube is a very frequent artificial cause for the presence of minute traces of blood in the gastric contents. This blood may be either visible or invisible, frequently the latter, and it may be difficult or impossible to distinguish these slight traces of blood due to rubbing the mucosa from small spontaneous hemorrhages into the stomach. If the test is made frequently in all classes of cases, one is astonished to find how frequently a positive test is obtained in clear stomach residue which showed no gross evidence of blood. It has been claimed that fresh blood due to the tube can be distinguished from older bleeding; this is true no doubt if a fresh red streak is seen, but in many cases it is entirely impossible. If any one doubts this, let him make the following experiment: Add a drop of blood to 50 c.c. of water or very dilute HCl and see how rapidly it is decolorized and how strong a guaiac test it gives. In some conditions, namely, organic diseases of the stomach associated with anacidity, such as chronic catarrh, achylia and atrophy, the mucous membrane is very easily wounded, and, while spontaneous bleeding is absent, this slight artificial bleeding is easily produced and is very confusing. In examining the stomach contents in these cases, which are just the ones it is most necessary to distinguish from cancer, we may frequently get a positive blood test. In other conditions, such as normal stomachs, or those with a large amount of contents, easily aspirated, it rarely occurs.

A chemical examination of the stomach contents for blood in 50 consecutive cases in which there was no reason to expect spontaneous bleeding into the stomach, in which the stomach contents showed no sign of visible blood and in which the examination of the stools was invariably negative, gave the following results:

Functional diseases:	Cases.	Positive.	Negative.
Hyperacidity, subacidity, hyperesthesia, etc. ....	43	11	32
Achylia gastrica .....	4	2	2
Chronic gastric catarrh .....	3	2	1
Total .....	50	15	35

A comparison of this large number of positive results in the stomach contents in these benign cases with the uniformly negative results in the stools, shows at a glance which method is most useful in distinguishing these cases from cancer or ulcer.



Let me cite a few other figures in this connection. Schloss examined 187 feces from 20 cases of anacid catarrh and achylia and found 185 negatives. Boas and Kochmann<sup>3</sup> found the feces in 40 such cases negative and 2 positive. Hartmann<sup>5</sup> found 35 feces negative.

The examination of the stomach contents for blood has certain advantages over the examination of the feces; it is simpler, pleasanter, no excess of fat is present and no fecal pigments to obscure our color reaction, and we are not confused by other sources of blood below the stomach, but these advantages are vastly outweighed in my opinion by the risk of misleading results from minute artificial hemorrhages due to the use of the stomach tube.

Negative results in stomach contents have much value on the contrary as a means of ruling out cancer of the stomach, though they cannot be absolutely relied on for that purpose. It may rarely happen that no blood is found in the gastric contents in cases of gastric cancer, even when it is constantly present in the feces. Strauss attempts to explain this paradox by active gastric motility which passes the blood rapidly on to the bowel and Boas by the vertical position of the stomach, in which case the blood has a greater tendency to flow toward the duodenum than the fundus, especially if the cancer is near the pylorus. In ulcer this combination of signs may be due to the fact that by the time blood appears in the feces it may have all left the stomach and no new bleeding have occurred.

Boas<sup>1</sup> and almost all later observers have advised examination of the feces in preference to stomach contents for the purpose of diagnosis because no artificial method is necessary to obtain the material for examination. Even in constipated persons all mechanical scraping of the mucous membrane and subsequent bleeding can be easily avoided by the use of a laxative.

In the investigation of my cases, I have used the feces almost entirely for the reasons just given and because in following the results of treatment of ulcer, stools may easily be obtained at frequent intervals when the use of the stomach tube is contraindicated. In general no stools were examined for blood within two days of the passage of a stomach tube. I believe that when proper precautions are used both positive and negative results in the stools have a greater value than the same in stomach contents.

Recently, in a few cases I have used the benzidin test introduced by O. and R. Adler,<sup>14</sup> which differs from those described above in using a concentrated alcoholic solution of benzidin in place of guaiac or aloin, and gives a clear green color in the presence of blood. This is decidedly more delicate than the guaiac test, giving a positive reaction with 1 part of blood in 200,000. Boas,<sup>1</sup> Ewald<sup>4</sup> and Schumm<sup>15</sup> agree that the reagent is too delicate for clinical use. We have a close analogy with tests for lactic acid in the stomach; if we introduce too fine a test, we get very frequent positive results which have no value from a clinical standpoint.

Boas<sup>16</sup> has just described a new reagent for finding invisible blood in feces and stomach contents which I have not had opportunity to test thoroughly. This is a 1/200 solution of chlorhydrate of phenyldiamin. This is used in place of the tincture of guaiac or aloin of the older tests and gives a very characteristic olive green

color in the presence of blood. This reagent apparently has no special advantage over the older ones except the property of keeping well, but is equally delicate and has value as a means of confirming their results in a doubtful case.

#### CLINICAL SIGNIFICANCE IN GENERAL.

A positive test has great value as a danger signal, a sign of disease, but the discovery of invisible bleeding does not constitute a diagnosis. This is made only by considering this sign in conjunction with the other signs and symptoms of the case. The appearance of the test, either temporary or permanent, its recurrence and its disappearance are all significant. Its absence has somewhat less value in diagnosis, in my opinion, than its presence, for in rare cases invisible hemorrhage has not been found where it would be looked for (cancer, ulcer), though in other cases it has occurred unexpectedly, (rectal polyp, etc.); both its absence and its presence have great value in spite of rare exceptions. It has great value in prognosis, and may be useful as a premonitory sign of profuse hemorrhage. No ulcerative process in the digestive tract can be regarded as healed while there is evidence of continued bleeding. The persistence of invisible blood for a short time after a profuse hemorrhage is not especially significant, but invisible bleeding of long duration and large amount is a bad omen and should lead always to a guarded prognosis in spite of an otherwise favorable outlook. On the other hand, continued absence of blood from the stools is a favorable sign. This is well illustrated by 3 cases which Boas<sup>1</sup> reports of severe sudden hematemesis in old people (senile gastric hemorrhage associated with arteriosclerosis) in which the first thought was of malignant disease. A long continued examination of the stools, however, gave a persistently negative result and the diagnosis of cancer was given up. All three patients entirely recovered.

The test is valuable in prophylaxis. There is no need to dwell on the necessity of recognizing losses of blood, which though small in amount may become serious and important if long continued. It is just as important to recognize and try to check a small, but constant invisible bleeding, as a more profuse acute hemorrhage, and the earlier the condition is recognized the better. While we unfortunately can do little or nothing to check the minute hemorrhages due to cancer of the digestive tract, in benign conditions we can do much.

The test is very useful as a measure of the results of treatment. The value of rest in bed and a liquid diet in the treatment of continued hemorrhage is emphasized by the results of this test, which show that invisible bleeding in acute ulcer as a rule entirely ceases after four or five days of this treatment. The test may be used as a measure of the effect of bismuth, gelatin or other substances upon hemorrhage, as Schloss<sup>12</sup> has already done with bismuth in gastric ulcer, and Boas with hot poultices in the same diseases.

Our ideas about the frequency of hemorrhage are changed by using the blood test; for example, Leube, Rosenheim and Riegel<sup>17</sup> state that hemorrhage occurs in about one-half the cases of cancer. The fact is new that slight continuous hemorrhages in cancer are the rule.

#### CLINICAL RESULTS.

I will now take up the divisions of the alimentary canal, one after another and give my own findings.

14. Adler, O. and A.: *Ztschr. f. physiol. Chemie*, 1901, xli, p. 59.  
15. Schumm: "Die Untersuchung der Fäzes auf Blut," Jena, 1906.

16. Boas: *Centrbl. f. Inn. Med.*, 1906, No. 24.

17. Riegel: "Diseases of the Stomach," Nothnagel's Encyclopedia.



## ESOPHAGUS.

I have not had an opportunity to study the reaction in esophageal cases. Boas<sup>1</sup> has shown that the test is of value in doubtful cases of cancer; here, as in other parts of the digestive canal, the constant presence of blood favors this diagnosis. Spasm, and diverticulum, and benign stricture have given negative results. The conditions of the test here are less clear than in diseases of the stomach, however.

## STOMACH.

Following Boas'<sup>1</sup> example we divide our stomach affections into three classes; those in which no bleeding occurred, those with temporary, and those with permanent bleeding.

I. *No Bleeding*.—In this class of stomach diseases in which the test was always negative are 89 cases consisting of

	Cases.	Stools examined.
Normal stomach .....	10	30
Functional disease:		
Subacidity .....	17	57
Achyilia .....	6	22
Hyperacidity .....	22	67
Other neuroses .....	28	70
Chronic gastric catarrh .....	6	27
	89	253

In every case the examination of the stools gave invariably negative results when the proper precautions of the test were observed; occasionally a relapse from vegetarianism or marked constipation with abrasion of the rectum or piles gave a fugitive positive result, but when these disturbing factors were excluded, uniform negative results were obtained. These results accord with those of other men. The only disease in this group about which there has been any difference of opinion is achyilia gastrica. Kuttner<sup>2</sup> found positive results with the test in several cases in which this diagnosis was made. Boas,<sup>1</sup> Kochmann,<sup>3</sup> Schmilinsky,<sup>8</sup> Hartmann<sup>5</sup> and Schloss,<sup>12</sup> however, found invariably negative results in achyilia, with which my cases agree. Kuttner's<sup>2</sup> opinion seems to be overruled by weight of evidence. The absence of a positive test in achyilia is valuable in the differential diagnosis from cancer in which positive results are the rule. The great similarity between cancer and achyilia gastrica in middle aged and elderly persons, when the latter is accompanied by loss of flesh and strength and some anemia, makes any new aid in diagnosis most welcome.

I shall speak more fully in connection with my cases of cancer of the value of the test in the differential diagnosis of cancer from the benign anacid cases which most resemble it.

With the exception of acute gastritis of the severest type and one or two extremely rare diseases (such as polyposis of the stomach) we have only three conditions of the stomach to consider in connection with positive blood tests, namely, ulcer, cancer or cancerous ulcer, and benign stenosis of the pylorus.

II. *Temporary Bleeding*.—This class includes cases of ulcer and benign stenosis and one case of severe acute gastritis. In 4 cases of acute gastritis thirteen stools were negative, and in one severe case eight stools were negative, and three intermittent positive results were found at a time of violent persistent vomiting and retching.

Gastric and Duodenal Uleers: In 33 cases in which the diagnosis of gastric or duodenal ulcer has been made, 202 stools were examined. Twenty-seven were cases of undoubted ulcer, but in 6 cases the diagnosis was doubt-

ful; they were either mild cases of ulcer or gastric neuroses which closely resembled it. In one-half the 33 cases, both positive and negative results were obtained, and in the other half only negative results were found. The latter was made up almost entirely of cases of previous undoubted ulcer in which it was a question of recurrence, and of mild ulcer or neuroses resembling ulcer. The results of blood tests were very variable and intermittent and much affected by the kind of ulcer, whether acute or chronic, the kind of diet and the degree of rest.

The ulcer cases may be divided into two groups which differ greatly with respect to bleeding, the acute cases in which visible and invisible blood is frequent and abundant, and the chronic indurated ulcers, which often give a negative blood test; and in which positive results may be obtained only once a week or at much longer intervals. In these cases especially we must never be content with a single examination.

Of 14 cases of acute ulcer 12 gave positive results. In these acute cases treated by rest in bed, rectal feeding and absolute rest of the stomach for five to seven days, the last trace of invisible blood usually disappeared from the stools in four to six days. In one case the blood persisted for ten days entirely without symptoms and in 2 cases intermittently for nearly a month. It is noteworthy that not even a trace of blood was found in the feces in two obvious acute cases of ulcer during the height of the attack. I will cite 3 cases to illustrate the course of invisible bleeding in acute ulcer under the above treatment.

CASE 1.—Female, aged 38, had nausea, much vomiting, dark brown vomitus and tarry stools twice in last month. No pain. Hgn., 60 per cent.

## Occult Blood.

February 14, positive.	February 20, negative.
February 15, positive.	February 22, negative.
February 16, positive.	February 24, negative.
February 18, positive.	March 3, negative.

CASE 2.—Female, aged 53, had recurrent ulcer, hematemesis 5 years ago, prompt recovery, no symptoms till vomiting of blood yesterday, no pain, no tenderness. Hgn., 50 per cent.

## Occult Blood.

January 19, intense.	January 25, negative.
January 20, positive.	January 26, negative.
January 22, positive.	January 27, negative.
January 23, positive.	January 30, negative.

CASE 3.—Female, aged 24, had epigastric pain and tenderness 3 months, vomiting 1 hour after meals, blood in vomitus 3 days ago. Hgn., 65 per cent.

## Occult Blood.

March 31, intense.	April 11, negative.
April 2, positive.	April 12, negative.
April 3, positive.	April 13, positive.
April 4, negative.	April 14, positive.
April 5, negative.	April 16, negative.
April 6, negative.	April 17, negative.
April 7, positive.	April 18, negative.
April 9, positive.	April 20, negative.
April 10, negative.	April 23, negative.

On April 7 and 13 epigastric pain and tenderness appeared with the blood; all disappeared promptly on limiting the diet. Here the examination of the feces was a valuable aid in treating the case.

The test is of much value in helping us to distinguish a gastric ulcer, or at least an ulcer which requires strict treatment, from a neurosis. Here a positive result has the same significance as a visible hemorrhage. By this test it is impossible to distinguish an ulcer from so-called erosions or other causes of minute or capillary bleeding into the stomach.

A positive result has greater value in diagnosis than a negative, for we must of course remember that a negative test does not rule out ulcer in a case in which the



other signs and symptoms point strongly to this diagnosis. This is especially true of the chronic indurated ulcers in which bleeding may occur only at long intervals. My own high per cent. of positive results in acute ulcer (12 in 14, or 86 per cent.) is probably due to the severe type of ward cases examined. The chief use of a negative test here is in helping us to decide how a doubtful ulcer case should be treated. Those which give constant negative results certainly need less thorough protective therapy. Since occasionally blood is found only in the feces and not in the gastric contents in ulcer (and cancer) of the stomach, this finding can not be used as a sign of duodenal ulcer. Fortunately the differential diagnosis of gastric and duodenal ulcer has little practical value.

Stools were examined in 13 cases of chronic ulcer, including cases in which the recurrence of an ulcer was suspected. All these patients had had one or more recurrent attacks of epigastric pain and hematemesis at considerable intervals, extending over a period of from two to four years. Eight of them came under my observation at a time when there was a return of epigastric pain, hyperacidity or vomiting, but no visible hemorrhage, in order to decide the question whether any trace of bleeding had again occurred, or was threatened. The blood test proved most useful in deciding this question. Uniformly negative results were obtained and the treatment based on this finding proved satisfactory. In 4 cases of chronic ulcer intermittent positive results were found and were of great interest in diagnosis, prognosis and treatment. In three of these cases cancer had been suspected by experienced physicians, but the examination of the stools served to put us on the right track and our diagnosis of chronic ulcer was in each case confirmed by operation or autopsy. In one case of chronic gastric ulcer only negative results were obtained. The case is worth quoting:

CASE 4.—Male, aged 36, had epigastric pain and vomiting intermittently for three years; hematemesis one year ago. For two months there was severe pain and much vomiting; no visible blood. Gastric contents after test meal, 50 c.c., free HCl, 27, total acidity, 60, no blood. Stools examined twice, no blood. At operation a large chronic indurated gastric ulcer was found.

This case shows that old hard gastric ulcers may occasionally exhibit no trace of blood in gastric contents or feces, and emphasizes the need for repeated examinations if such a condition is suspected. One or two negative results can not be used in diagnosis to exclude chronic ulcer. On the other hand, the guaiac test is occasionally of value in picking up a latent chronic ulcer without symptoms save anemia and invisible hemorrhage of long duration. Hartmann reports seven such cases, which he discovered by this method, chronic ulcers without hematemesis with days and weeks of bleeding without symptoms. I agree with Hartmann<sup>5</sup> that the diagnosis of chronic gastric ulcer from gastric cancer by examination of the stools for blood is usually easy. In all well developed gastric cancers which I have seen every stool examined has given a uniform strong positive test even when the examinations have extended over several months. This uniformity and persistency of invisible bleeding over long intervals has not been present in a single case of chronic ulcer which I have seen. Intermittency of bleeding is the characteristic of gastric ulcer. The positive test is very variable from barely recognizable blue to deep blue black, then absent for a time, then recurring, etc. I have seen several cases, of

which the following is an example, in which the diagnosis of cancer had been made, and examination of the stools for blood was of great help in correcting the diagnosis.

CASE 5.—Female, aged 40, epigastric pain and frequent vomiting of small amount for 6 months, loss of 40 pounds weight. "Coffee ground" vomit several times. Vomit free HCl, 0; total acidity, 16; guaiac positive. Stomach tube not used. Rectal feeding and liquids.

## Occult Blood.

January 27, positive.	February 11, negative.
January 28, positive.	February 13, positive.
January 29, positive.	February 15, positive.
January 30, positive.	February 18, negative.
January 31, negative.	February 21, negative.
February 8, negative.	February 24, negative.

At operation, February 26, a small chronic ulcer was found on the posterior wall of the stomach.

Persistent bleeding on a strict diet in older people with a history of chronic ulcer has been said to indicate the development of a cancer on the ulcer base. This seems natural and logical and is probably true if by "persistent" we mean uniform invisible bleeding which continues under observation for four or five weeks. On the other hand, we must not be misled into assuming the presence or development of a cancer, if we find invisible blood constantly present in the stools for ten or fifteen days after a considerable hemorrhage.

In acute ulcer, if the patient is put to bed and fed exclusively by rectum, the last trace of invisible bleeding stops as a rule at the end of four to six days. Exceptional cases of ulcer occur in which the invisible bleeding may last considerably longer. Two cases in my series may be mentioned here; in the first, the development of a cancer was suspected, and in the second the diagnosis of gastric cancer on an ulcer base was made. The diagnosis in both cases was corrected by a careful routine examination of the stools and the gradual disappearance of blood excluded cancer.

CASE 6.—Gastric ulcer. Male, aged 38. Mother died of gastric cancer. Patient had had no previous illness except acute appendicitis three years before. For one month he had suffered epigastric pain between meals. Rapid loss of 20 pounds. He did not vomit till day of entrance, when he vomited one pint of "coffee grounds" material. Test breakfast was not given.

Treatment: Rest in bed, exclusive rectal feeding first week, liquids by mouth next four weeks. Stools, guaiac test uniformly positive for twelve days after the visible hemorrhage, then persistently negative. Patient was given dietary after treatment of ulcer. At end of five months had gained 18 pounds, and considered himself perfectly well.

CASE 7.—Chronic gastric ulcer. Male, aged 46. For two years he had had distress or pain two or three hours after meals, occasional vomiting, gradual loss of weight. In last three weeks there was much epigastric pain, frequent vomiting of small amounts of "coffee ground" material. Pale, emaciated, very weak, rapid recent loss of weight, 25 pounds in all. Hgn., 65 per cent., reds 3,000,000. Gastric contents after test meal, 150 c.c., free HCl 63, total acidity 90, guaiac positive. Treatment same as in Case 6.

## Occult Blood.

November 20, positive.	December 8, negative.
November 26, positive.	December 12, negative.
November 28, positive.	December 13, positive.
November 29, positive.	December 15, negative.
November 30, negative.	December 17, negative.
December 1, positive.	December 19, negative.
December 3, positive.	December 23, negative, and negative thereafter.

Dietary after treatment of ulcer given. Patient seen six months later, had gained 20 pounds, had felt perfectly well, and worked steadily for four months. Gastric contents normal.

In the diagnosis of chronic ulcer from cancer or benign stenosis of the pylorus, oftentimes the usual



methods of examination are sufficient and the evidence obtained from tests for invisible blood is only confirmatory.

Perhaps the greatest value of the test in gastric ulcer is in treatment.

1. In prophylaxis, using the test as a premonitory sign, it warns us that we must treat the small early hemorrhages with great care in order to avoid larger ones. I feel sure that the test may be occasionally useful in this way, though I can say little from my own experience, because relatively few of these cases were seen in consultation or in the hospital wards until after some visible bleeding had occurred. One case of gastric ulcer, however, showed occult blood in the stools, and as a result of prompt treatment (I believe) cleared up without ever showing any visible blood. Several cases of chronic ulcer were seen in which occult bleeding was followed in a few days by a severe hemorrhage.

2. It is a good measure of the results obtained by treatment, a measure of the effect of the diet on the patient. We can determine when food is well borne, when it can be increased and the effect of the increase. Our dietary treatment, especially of gastric ulcer, has been placed on a much more satisfactory basis as a result of examinations for invisible blood. Our estimate of the results of treatment in healing the ulcer need not be based on the subjective symptoms of nervous young women, but on a definite objective sign. By the use of the test we obtain an idea of the course of the disease impossible to get in other ways.

Repeated recurrence of the bleeding when the diet is increased may be taken to mean a lack of proper healing and suggests a chronic ulcer and a need for surgical interference. The test may be used as a measure of the effect of drugs on the hemorrhage as Schloss<sup>12</sup> has done with reference to bismuth in gastric ulcer.

3. It is of use in determining prognosis. As long as occult hemorrhage persists, the patient can not be looked on as out of danger and must be kept under observation.

This is well illustrated by the two following cases:

CASE 8.—Duodenal ulcer. Female, aged 24, had been previously well. First symptom was the passage of a quart of clots and dark bloody fluid from bowel, no pain, much vomiting, not containing blood.

Treatment: Rest in bed, rectal feeding. Patient rallied rapidly from hemorrhage, the general condition promised a speedy recovery, and the stools soon became normal in appearance; they continued, however, to give a strong positive test for invisible blood for ten days. On the eleventh day a fatal hemorrhage occurred.

The next case was under observation for several months. The intermittent bleeding is typical of chronic ulcer. Twice the appearance of invisible bleeding was followed in a short time by gross hemorrhages.

CASE 9.—Chronic duodenal ulcer. Female, aged 43, had had five previous attacks of epigastric pain and melena at intervals of two to six months, beginning three years ago. One year ago had had gastric-enterostomy and entero-enterostomy, then was well for eight months. In last two months pain recurred, with frequent vomiting, free from blood, and small clots in feces.

Treatment: Rest in bed and rectal feeding during hemorrhages, liquids by mouth in intervals.

#### Occult Blood.

January 1, positive.	March 5, positive.
January 3, positive.	March 7, positive.*
January 7 to 25, 6 tests negative.	March 10, positive.
January 31, positive.	March 12 to 24, 4 tests negative.
February 1, positive.	April 2, positive.*
February 2, positive*	April 3, positive.
February 5, positive.	April 5, positive.
February 9 to March 2, 5 tests negative.	April 6 to 25, 11 tests negative.
* Gross hemorrhage.	

Before leaving the subject of gastric ulcer, let me give a warning from practical experience in the examination of stools. In several cases of acute ulcer on finding blood in the stools two or three weeks after treatment has been begun, I was misled into thinking that the course of healing of the ulcer had been interrupted and fresh bleeding had occurred, and all food by mouth was stopped, etc. On careful examination I found that the only stools which contained blood were those which followed the giving of a daily cleansing enema by means of a rectal tube. Other stools not preceded by the passage of a rectal tube showed no blood. I therefore concluded that the presence of blood in these instances was artificial, not a sign of latent gastric hemorrhage, but due to the rubbing of the rectal tube over the mucosa of the rectum, which had become slightly inflamed or irritated by a long course of nutrient enemata. We have here an analogy to the minute artificial hemorrhages into the stomach which may follow the passage of a stomach tube in chronic gastric catarrh and allied conditions. All confusion with artificial hemorrhages in such cases may be easily avoided by not using any stool for examination for occult blood which has been preceded by the passage of a rectal tube.

Benign Stenosis of the Pylorus: This affection belongs to the class of cases which may show temporary bleeding. We have examined 5 cases in all of which the stenosis was secondary to gastric ulcer, and caused by cicatricial contractions or adhesions about the pylorus. Three were severe cases, with copious vomiting, hypersecretion, stomachs whose lower margin was 3 or 4 inches below the navel, and a morning fasting stomach residue of 400 to 1,500 c.c. Two were cases of moderate grade. We have examined 22 stools and 11 stomach contents in these 5 cases, and obtained only two positive results in both feces and stomach contents, in one of the severe cases. This case improved much on treatment and the blood promptly disappeared.

These cases and others which have been reported indicate that in the milder grades of benign pyloric stenosis when there is no stasis of food in the stomach, the gastric contents and stools give a negative result; in severe cases with stasis an occasional positive result may be found, which readily disappears as the result of lessening the stasis by proper treatment, and finally that even high grade stasis may cause no trace of bleeding. It is easier to be sure of these facts than to explain them. The positive result may occasionally be due to meat residue which has remained a long time in the stomach, but this source of blood can be easily avoided. In other cases, Boas<sup>1</sup> suggests that it may be due to small erosions or capillary hemorrhages resulting from stasis and irritation of the mucosa, and the disappearance of the blood is probably due to the healing of these erosions, and the reappearance of blood to their recurrence under the influence of marked stasis and excess of HCl.

The entire absence of blood or a changeable result with long periods of absence are characteristics of benign stenosis. These facts are of great value in distinguishing it from malignant stenosis of the pylorus.

III. *Permanent Bleeding.*—In this class we practically have only cancer to consider among chronic affections.

Cancer of the Stomach: I examined seventy-seven stools in 12 cases of cancer of the stomach; all the stools examined (namely, fifty-eight) in 10 cases were positive. In 2 cases in which operation was refused, nine earlier



stools were negative and all the stools, ten in number, at a later period were positive. In one case this change undoubtedly coincided with the change from the pre-ulcerative to the ulcerative stage of cancer, and in the other with the development of a cancer on an ulcer base. These cases are quoted.

CASE 10.—Cancer of pylorus. Male, aged 47. Nov. 1, 1905, two months epigastric distress, loss of appetite, careless in diet, loss of 25 pounds in one and one-half months, no vomiting. Fasting stomach contents, 70 c.c., with microscopic food remains, no blood, lactic acid present. Contents after test meal, 80 c.c., free HCl 0, total acidity 4. General condition fair. Nothing abnormal found on abdominal examination.

November 15: Considerable vomiting, losing ground. Stomach contents same. Exploratory operation advised, but refused.

January, 1906: On careful diet and hygiene much improved, gained 7 pounds; no distress or vomiting.

May, 1906: Has lost 22 pounds in last four months. Marked pyloric obstruction, anemia, cachexia, palpable pyloric tumor and large liver.

#### Oculta Blood.

November 1,	negative.	January 3,	positive.
November 5,	negative.	January 17,	positive.
November 7,	negative.	February 24,	positive.
November 14,	negative.	May 2,	positive.

CASE 11.—Gastric ulcer, benign pyloric obstruction, gastric cancer. Female, aged 63.

June, 1905: Last year patient had several severe attacks of epigastric distress and pain two hours after meals, with vomiting. No blood passed or vomited. General condition excellent.

October, 1905: Marked pyloric obstruction had developed, frequent distress and copious vomiting of old food. There was moderate loss of weight. Fasting stomach contents 650 to 800 c.c., three layers, free HCl 24, total acidity 86, sarcinae, no blood. Lower border of stomach 3½ inches below navel.

January, 1906: Much improved on lavage and diet; distress and vomiting disappeared.

May, 1906: Patient had failed rapidly in last three months, lost 30 pounds, marked anorexia, persistent pain in stomach, vomiting of small amounts, weak and cachectic, epigastric tumor. Lavage continued, very little residue in fasting stomach. Contents after test meal, 90 c.c., free HCl 0, total acidity 13, no lactic acid, blood present.

#### Oculta Blood.

October 15,	negative.	May 25,	positive.
November 9,	negative.	May 30,	positive.
November 15,	negative.	June 4,	positive.
January 5,	negative.	June 9,	positive.
January 18,	negative.	June 20,	positive.
May 20,	positive.		

The diagnosis in this case is not absolutely certain, but the early history suggestive of ulcer, followed by secondary ectasy with little change in weight and condition, and finally the rapid growth of a tumor and cachexia with marked loss of weight and the accompanying change from hyperacidity to anacidity could hardly be more typical of the diagnosis given.

The high per cent. of positive results in cancer agrees with the findings of other men. Boas<sup>1</sup> in 124 cases of gastric cancer, including both early and late cases, found 107 positive. Joachim<sup>6</sup> in 18 cases found 17 positive, and Hartmann<sup>5</sup> in 17 cases, 14 positive. The few negative results in cancer of the stomach are probably due to the fact that the cases were examined when the cancer was in an early pre-ulcerative stage, or that the cancer was of the much less common scirrhus type which develops slowly and does not ulcerate or ulcerates only in its latest stage.

The test is of much value in the diagnosis of cancer; no other condition shows so much blood except acute hemorrhage, and the persistence and permanence of the bleeding is in strong contrast to non-cancerous diseases. The test is most important in the diagnosis of cancer from chronic anacid gastritis, achylia gastrica and per-

nicious anemia. Its permanent absence speaks against cancer. In the diagnosis of cancer from ulcer, rectal feeding or a liquid diet may be of great value. It usually stops the bleeding of ulcer, but has little effect on cancer.

The test is interesting in cases with stasis, free HCl in abundance, yeast and sarcinae and no palpable tumor, a group of symptoms which occasionally occurs in cancer, but is much more common in benign stenosis. We have already mentioned the fact that in the latter condition occult blood may occur. The constant presence of blood in the feces when the stasis has been much relieved by treatment is strong evidence in favor of cancer, and the permanent absence of blood in such a case is strong evidence against cancer.

The test is unfortunately not valuable in the early diagnosis of cancer, as cases 10 and 11, already quoted, clearly show. Occult blood is not an early sign, it appears only in ulcerated cases, but as Boas<sup>1</sup> says, the difficulties of early diagnosis lie not so much in our inability to make it as in the latency of the symptoms which bring the patient to us in an advanced stage. It is not fair, however, to say that the reaction appears only when other signs are unmistakable. In my experience the blood examination has repeatedly proved valuable in the diagnosis of latent cancer without tumor and without stasis of food, or in excluding cancer in cases in which the palpable tumor was of doubtful origin (perigastritis, chronic ulcer, etc.). Of 10 cases (forty-eight stools examined) in which the clinical picture closely resembled cancer of the digestive tract and in which the blood test was negative, all were proved not to be cancer by operation or autopsy or subsequent history. Of the 8 cases resembling gastric cancer, 4 proved to be pernicious anemia, 2 chronic gastric catarrh, 1 simple achylia gastrica and 1 tuberculosis. Of the 2 cases resembling intestinal cancer, 1 proved to be chronic appendicitis and 1 tuberculous peritonitis. In many of these cases the resemblance to cancer was very close and the blood test of great diagnostic value.

#### BOWEL.

In diseases of the bowels there is much less to be said. Duodenal ulcer has been considered with gastric ulcer; no cases of typhoid are included in my series, which is chiefly composed of chronic diseases of the digestive tract.

In 23 cases eighty stools were examined. In 16 cases comprising mucous colic, chronic catarrh, neuroses, ascariasis, chronic appendicitis, all stools (forty-nine in number) were negative. Stools in 2 out of 3 cases of tuberculous ulceration of the bowel were negative, 1 case gave seven intermittent positive and five negative results. In one case of tropical dysentery two early stools were positive and four later ones negative. These intermittent positive results in ulcerative diseases of the bowel have some importance because simple catarrh and positive congestion usually give negative results. In diseases of the colon, blood is often found without the use of these tests.

In cancer of the bowel the test has some value, but curiously enough positive results are decidedly less constant and frequent than in cancer of the stomach. I have examined nine stools in 3 cases. Two, cancer of the sigmoid, gave always a positive result. One, a large ulcerative cancer of the cecum, in which unfortunately I was able to examine only one stool, gave a negative result. This shows the need of repeated examinations in a suspected case. Boas<sup>1</sup> cites 3 cases of cancer of the bowel. One case gave always positive results, the other



two gave only one positive result each; at all other times negative. A case cited by Hartmann<sup>5</sup> showing the value of the blood test in the early diagnosis of cancer of the colon is worth remembering. The patient's only symptom at first was mild diffuse pains. He gained weight under treatment. The blood test, however, was always positive. He refused operation and "felt well." Three months later he returned; the blood test was still positive, and laparotomy showed an inoperable cancer of the sigmoid.

My cases of intestinal cancer and the recorded cases which I have found are too few for conclusions, but I should expect a positive result to be a great help in the diagnosis of cases without palpable tumor. A negative test has apparently only a limited value in ruling out cancer of the bowel in conditions which simulate it, such as chronic appendicitis or tuberculous peritonitis. In cancer of the rectum blood is usually visible.

#### LIVER.

In 18 cases of hepatic disease sixty-one stools were examined. In 7 out of 9 cases of cirrhosis all stools, twenty-four, were negative, in 1 case all three stools were positive, in 1 case four were positive and four negative. The bleeding has no diagnostic value and is likely to lead occasionally to error in diagnosis because cirrhosis often exists with indefinite digestive symptoms. In 5 cases of gallstones all stools, thirteen, were negative. The blood test ought to help occasionally in the diagnosis between gallstones and gastric ulcer. Joachim<sup>6</sup> and Clemm<sup>7</sup> state that cancer of the liver always shows blood. This is not true. If the hepatic disease is secondary to cancer of the stomach or bowel, the positive results are easy to understand. On the other hand, six stools in 2 cases of extensive cancer of the liver secondary to cancer of the breast gave only negative results.

#### PANCREAS.

I have had no opportunity to use the blood test in diseases of the pancreas. Reported results are too few and contradictory to base an opinion on. I see no reason for expecting this test to be of value in the diagnosis of pancreatic disease.

#### PERNICIOUS ANEMIA.

The most important group of cases examined of disease outside the digestive tract were 11 patients with pernicious anemia. Forty-five stools were examined with an invariably negative result. This constant absence of blood is very valuable in the diagnosis of these cases from cancer of the digestive organs. It also agrees with our present ideas of the pathology of the disease, namely, that pernicious anemia is due to disturbances of the blood-forming organs rather than to loss of blood by minute recurrent internal hemorrhages.

#### MISCELLANEOUS CASES.

Forty-five stools were examined in a group of 11 miscellaneous cases. In 9 cases only negative results were found; these were 2 tuberculous peritonitis, 1 tubercular adenitis, 1 rheumatic purpura, 1 diaphragmatic pleurisy, 1 myocarditis, 1 abdominal aneurism, 1 secondary anemia, 1 senility.

One case of cardiac insufficiency with severe passive congestion gave two positive results. One case was unique in our experience. The blood test was almost invariably positive and no satisfactory explanation was found.

CASE 12.—Male, aged 73, was previously well, but in the past month lost strength. Dizziness, slight edema of ankles,

vague digestive symptoms were present. General condition was good. Physical examination negative, except as follows: Hgn., 55 per cent.; reds, 4,000,000. Gastric contents after test meal, 90 c.c., free HCl 0, total acid 4. Fasting stomach contents normal. Stools at times were slightly loose and contained a little mucus. Subsequent analysis of gastric contents gave the same result. Thorough examination of the rectum and lower sigmoid with the proctoscope showed nothing abnormal.

#### Occult Blood.

January 29, intense.	March 6, negative.
February 5, intense.	March 16, positive.
February 13, intense.	March 27, positive.
February 20, positive.	April 3, positive.
February 27, positive.	April 16, faint positive.

The patient was at first suspected of cancer, but entire recovery from the anemia and a steady persistent gain of 13 pounds weight in ten months rules it out.

In this case the blood reaction made the diagnosis more difficult. Ewald<sup>4</sup> thinks this is frequently the case.

#### SUMMARY OF CASES.

The summary contained in the table gives the number of cases seen and stools examined, with the number of positive and negative results.

The summary of our positive results is instructive.

Ten out of 12 cases of cancer of the stomach gave only positive results. Two cases of cancer of the stomach gave both positive and negative results.

Two out of 3 cases of cancer of the bowel gave only positive results. Twelve out of 14 cases of acute gastric ulcer gave both positive and negative results.

Four out of 5 cases of chronic gastric ulcer gave both positive and negative results.

In only 8 of the remaining 163 cases were any positive results obtained as follows:

Two cases of cirrhosis of the liver.  
Two cases of ulcerative colitis.  
One case of severe acute gastritis.  
One case of severe passive congestion of the bowel.  
One case of benign pyloric obstruction of severe type.  
One case of anemia and gastric anacidity (Case 12).

Four-fifths of all our positive results were in cases of cancer and ulcer of the stomach or bowel.

#### TABULATION OF CASES.

Diseases.	Cases.	Stools examined.	Cases with only negative results.	Cases with both positive and negative results.	Cases with only positive results.
Normal stomach .....	10	30	10	..	..
Functional gastric diseases:					
Subacidity .....	17	57	17	..	..
Achyia .....	6	22	6	..	..
Hyperacidity .....	22	67	22	..	..
Other neuroses .....	28	70	28	..	..
Chronic gastric catarrh....	6	27	6	..	..
Acute gastric catarrh.....	5	24	4	1	..
Acute gastric ulcer .....	14	127	12	12	..
Chronic gastric ulcer.....	5	37	1	4	..
Recurrent (?) gastric ulcer..	8	22	8	..	..
Benign pyloric stenosis....	5	22	4	1	..
Gastric cancer .....	12	77	..	2	10
Diseases of bowel:					
Neuroses .....	7	22	7	..	..
Ulcerative colitis.....	4	24	2	2	..
Mucous colic .....	3	9	3	..	..
Chronic catarrh .....	3	9	3	..	..
Chronic appendicitis .....	1	3	1	..	..
Cancer .....	3	7	1	..	2
Diseases of liver:					
Cirrhosis .....	9	35	7	1	1
Gallstones .....	5	13	5	..	..
Cancer .....	2	6	2	..	..
Pernicious anemia .....	11	45	11	..	..
Miscellaneous cases:					
Tuberculous peritonitis ...	2	8	2	..	..
Tuberculous adenitis .....	1	4	1	..	..
Rheumatic purpura .....	1	3	1	..	..
Diaphragmatic pleurisy ..	1	2	1	..	..
Myocarditis .....	1	4	1	..	..
Abdominal aneurism .....	1	3	1	..	..
Secondary anemia .....	1	4	1	..	..
Senility .....	1	4	1	..	..
Cardiac insufficiency .....	1	3	..	1	..
Anemia with gastric anacidity .....	1	10	..	1	..
Totals .....	197	800	160	25	13



## CONCLUSIONS.

1. The guaiac or aloin test for invisible blood is, in spite of exceptions, the most valuable single clinical method recently developed for the recognition of latent cancer and ulcer of the digestive canal and as a guide in the treatment of peptic ulcer.

2. The method is very delicate and yet so simple it can be easily carried out by the practicing physician. It must invariably be used in conjunction with the other methods of physical examination.

3. The value of the test depends on the care with which other sources of bleeding are excluded. The interpretation of the results requires some experience.

4. The test in the stools has greater value. Both positive and negative results are significant. Positive results in gastric contents are often misleading, but negative results are significant.

5. Never be content with a single examination, no matter how well the result accords with the previous opinion of the case.

6. In gastric and duodenal ulcer the chief value of the test is: *a* In distinguishing ulcer from a neurosis or disease of the bile passages. *b* As a premonitory symptom of severe hemorrhage. *c* As a measure of the results of medical treatment and as an aid in deciding when surgical interference is needed. *d* In prognosis.

7. In gastric cancer, in diagnosis from anacid gastritis, achylia gastrica, pernicious anemia and similar conditions, and from chronic gastric ulcer.

8. In general, the test has great value in discovering or ruling out hemorrhage in a suspected case.

The majority of these observations were made at the Boston City Hospital. I am greatly indebted to the other members of the medical and surgical staff for the opportunity to study their patients.<sup>18</sup>

DIAGNOSIS BETWEEN DUODENAL ULCER  
AND GALLSTONE DISEASE.\*

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In gallstone disease and ulcer of the duodenum we have two of the principal lesions of the upper abdomen. Because of their frequent occurrence, intimate relation and similar type of symptoms, they often lead into great difficulties in differentiation.

In our clinic 163 cases of duodenal ulcer have come to operation. I here consider 141 which have tabulated histories. Two-thirds of this number (67.4 per cent.) were fairly diagnosticated. One-tenth (10 per cent.) were called gallstones; one-seventh (14.3 per cent.) were thought to be either gallstones or duodenal ulcer. Of those remaining the diagnosis was not stated or they were variously diagnosed as one of three or four different ailments.

The gall-bladder cases have run a higher percentage of correct diagnoses; four-fifths (86.5 per cent.) we have met satisfactorily; about one-sixteenth (6.9 per cent.) were called either ulcer or gallstones, while the remainder were called gallstones or appendicitis (5.6 per cent.) or duodenal ulcer (1 per cent.). It is well to

notice here that in about seven-ninths of those cases in which ulcer of the stomach was seriously considered there was duct obstruction and adhesions or some form of chronic trouble. Despite the most painstaking care in history development and clinical observation there will yet remain a rather large number of ulcer cases that can not be differentiated from gallstone disease; while the same may be said of the gall-bladder, but in a less degree. More especially will this be true if the clinician is determined to meet surgical indications in both cases when most opportune for his patients.

It is the early gallstone and early acute type of ulcer, with spasm and perforating tendencies, whose histories are oftenest confounded. Some chronic gall-bladder patients, however, may so complain that stomach lesions seem positive. Still fewer chronic ulcer patients will present symptoms not to be differentiated from biliary calculi unless perforations repeat; that is, early ulcer of the duodenum is oftener mistaken for gallstone trouble than is early gallstone for acute ulcer of the duodenum, while in the chronic stage of both conditions gallstone trouble has oftener been diagnosed ulcer than has the reverse been done.

## SYMPTOMATOLOGY.

The symptoms of these two conditions run very nearly the same as to kind, and the field of complaint is often identical. Pain and distress, gas, belching, eructations, vomiting, sour stomach (oftenest in ulcer), jaundice (much more frequent in gallstones), hemorrhage (much more frequent in ulcer), general weakness and nervous irritability. Condition of the bowels and state of nutrition are frequently determining factors. It is the interpretation of these symptoms as they appear singly or combined on which a differentiation depends.

*Pain.*—Pain in cholelithiasis is usually sudden of onset, with the mid-epigastrium as center. It may have a wide field of radiation, usually to the right costal arch and scapular region. It is severe and lancinating, and spasm of diaphragm is usually observed. The pain comes absolutely irregularly as to time, is independent of and not caused by food, nor often traced to it as a cause. Great anxiety and free perspiration accompany the severe attacks and chills and fever may be observed. Gas often troubles during the attack and gives the sensation of upward pressure often extreme. Vomiting is frequently present, but relief is not so certain to follow in gallstones as in ulcer; hot applications often give a certain amount of comfort, but only morphin or natural return to health stays the terrific pain. Fully as characteristic as is the onset is the rapid disappearance, even at the height of pain, with almost immediate return to normal health. When the above symptoms prevail and no complication has arisen, because of repeated attacks, gallstones may be reasonably considered as the cause of disturbance.

In duodenal ulcer the pain runs in decided periods of attack, lasting from a few days to several months, may, and often does, come suddenly, is usually daily, or several times a day during this period. It is burning and gnawing in character, and if perforation has not complicated affairs or spasm has not been marked it less often reaches the sharp lancinating type of gallstone colic. In the greater number of cases the pain is caused by the irritant action of the acid-acrid contents on the ulcer area of the duodenum (or stomach) itself, heightened by the accompanying spasm and gas formation. In the lesser number it is due to perforating peritonitis,

18. The following references not elsewhere referred to in the text are here appended: Steele: N. Y. Med. Jour., 1906, vol. lxxxiii, p. 125; von Torday: Wien. klin. Rundschau, 1905, vol. xix, pp. 453 and 471; Schumann and Westphal: Ztschr. f. physiol. Chemie., 1905, vol. xlv, p. 510; Koziczowsky: Deutsche med. Wochschr., 1904, No. 33.

\* Read in the Section on Practice of Medicine of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.



a complication more frequent in duodenal than in stomach ulcer, because of the thinner walls of the duodenum. Pain is at its height from 2 to 5 hours after food or just preceding meal hour, and the field of radiation is usually limited to the stomach and duodenal areas. It entirely disappears or is quieted for a time by food, drink, alkalis, vomiting or irrigation; that is, anything that diverts, dilutes, neutralizes or removes this acid liquid brings relief to pain as well as to most of the other distressing symptoms. Until obstruction approaches the easiest moments are those immediately following a meal or when the stomach is wholly emptied by vomiting or irrigation. Continuous distress is rarely met unless motor power is decidedly lessened or large ulcers elsewhere add their baneful influence. In both conditions peritonitis often gives pronounced rigidity and great tenderness, but in (perforating) ulcer they are usually much more persistent. Spasm of the diaphragm is rarely caused by pain of ulcer.

*Gas.*—Gas as a factor in gall-bladder pathology is of little moment. It is often present during the intense spell, and some relief is usually experienced if cructed, but the bloated, distended, bursting sensation that so many experience is due to the character of the pain and its radiation rather than to gas, as is supposed by so many sufferers.

In duodenal ulcer the history of gas formation is almost as valuable as is that of pain, and frequently on this factor alone a diagnosis depends. This may be the first sign to call attention to a deranged digestion. It appears apparently before obstruction in any degree can be demonstrated, and it surely comes as soon as motor power is appreciably lessened. Few, indeed, are the patients in whom gas is not mentioned as a distressing feature. It is at its height when the pain is greatest, from 2 to 5 hours after meals, and may be the cause of the distress, the result of overdistension of the stomach. The same measures relieve gas that relieve pain—food, drink, alkalis, vomiting and irrigation. The greater the degree of acidity the greater the degree of discomfort from gas as well as pain, and it is only in those cases of ulcer in which acidity is not increased or is diminished and obstruction is absent that gas and pain are not complained of, because, first, the irritant to the membrane is then lacking, and, second, spasm is not induced.

*Vomiting.*—Vomiting is common to both troubles and should be of less importance than the two already considered, because in the early stage of each disease, when diagnosis should be made and treatment instituted, vomiting is not so frequently a significant factor. In gallstones it appears soon after the initial pain and may give more or less relief; it is profuse only if the attack comes on soon after a meal and then the normal food and normal acid condition will be recognized. Usually the intense nausea produces severe retching, followed by a greenish, bitter fluid and mucus.

A very different picture is present in ulcer. In the earlier stage nausea and eructation are oftener present than is vomiting, and when in the earlier history it is present it is rarely profuse, is acid-acrid, and bitter-burning. For a time relief follows the vomiting. As the trouble progresses the picture intensifies until vomiting may become not only distressing, but threatening. It varies in time, intensity and quantity. Rarely, indeed, does it come immediately after food, and only then, if there is much stasis and the meal has overburdened the remaining stomach capacity. Usually

vomiting begins from 2 to 4 hours after food, when pain and gas are greatest, and, unless hypersecretion is present, dilatation marked, or obstruction advanced, the amount is not great, but irritating. Just as often we get a history of daily vomiting, or every second or third day, a few hours after the evening meal; then the pain is marked, the quantity of vomit is large and frequently so eroding that the teeth suffer. Relief follows this copious amount, until added ingesta and stomach secretions again lead to a similar condition. These are the cases in which motor power is decreased either through dilatation, obstruction or other cause; that is, the train of vomiting varies as does the degree of dilatation, amount of obstruction and quantity and acidity of secretion. Also the kind and amount of food is a factor, acids (salts and less often sweets) are the ones most frequently left from the diet list. To the food the sufferer usually traces the complaint and, except there be obstruction or marked dilation, he too often fails to find relief through diet, though he may find amelioration.

*Hemorrhage.*—Hemorrhage in gallstones is rare and may be an accidental accompaniment. In ulcer it is not infrequent, but we must be ready to diagnose ulcer of the duodenum without hemorrhage, or many of our patients will suffer unto death. Blood varies from mere traces found while irrigating the stomach to huge quantities vomited or passed by the bowel. By this single manifestation of ulcer we must occasionally make our diagnosis, for blood from the stomach in an otherwise healthy person should be taken as evidence, even when all so-called dyspeptic symptoms are wanting. When passed by the bowel it is usually dark, tarry, granular and will rarely be mistaken for hemorrhage lower in the tract. Fainting and collapse with sudden anemia accompany decided hemorrhage of the stomach, and even when not in great amount the effect may be profound.

*Jaundice.*—Jaundice in gallstones, like hemorrhage in duodenal ulcer, ought not to be waited for. In duodenal ulcer it is rare, only following when the papillary area is invaded or, after perforation, when adhesions have formed and complicated the gall ducts. This condition, however, is not frequent. In neglected gall-bladder trouble jaundice follows, 1, the forcing of a stone into the common duct; 2, inflammation of the ducts; 3, pressure of stones within the gall bladder on the common and cystic ducts at their junction; 4, swelling of the pancreas and resultant pressure on common duct; 5, perforation and adhesions. When jaundice follows sudden and severe pain in the gastric or gall-bladder area with radiation backward, one can make no intelligent diagnosis save gallstones. If ulcer exists, nothing but a guess will make the differentiation, except surgical measures.

*Condition of Bowels.*—This is a distinct factor in the diagnosis of duodenal ulcer. Often the patient will complain of constipation early in ulcer history, even when the troublesome element (of digestion) can be diagnosed nothing more than hyperchlorhydria or hypersecretion, but as the disease progresses and motor power lessens either from obstruction, spasm or myasthenia, constipation increases and is at times the great complaint for which relief is sought. Constipation usually varies with the spells, and during the intermission the bowel may be tolerant if not normal. Late in the disease the bowels are usually obstinate, so also are the other symptoms. In gallstones the bowels play a much less important rôle. In jaundice we have the clay stools and



at times constipation, but rarely at any stage that obstinate condition so frequent in advanced ulcer.

*Loss of Nutrition.*—This is often seen in ulcer of the duodenum, more frequently, however, in the later stages. Early, the gain follows rapidly on the path of intermission or loss and gain may not be marked in degree either way. Simply, if the trouble developed during the period of natural growth, normal gain may never have been realized. Late, the nutrition usually suffers and at times so profoundly that the patient when he presents himself at the clinic is practically moribund.

In early gall-bladder trouble we rarely find nutrition affected. The attacks are short and widely separated, vomiting infrequent and if present there is little or no sacrifice of material ingested and, there being no food delay its nutritive value has not been changed or lessened. A poor state of nutrition is reserved, first, for the common-duct cases; second, those with more or less chronic jaundice from any cause; third, the chronic sufferers who have developed stomach symptoms through adhesions, ulceration or constant gall-bladder irritation. Pancreatic infection following this latter class of cases is a potent factor in nutrition.

Ulcer will often be closely simulated by, 1, duct obstruction; 2, some chronic forms of cholecystitis, and, 3, gallstone cases in which one or a few large stones are in a shrunken gall cyst.

*Stomach Contents.*—Analysis of the stomach contents has a degree of determining force. In uncomplicated gall-bladder disease the gastric contents will be normal. In ulcer the acidity runs above normal in the larger number of cases, being about that found in peptic ulcer elsewhere. Blood may be found in traces or in large quantities, not constant at all, unless large areas are involved, and obstruction, dilatation and myasthenia are marked.

#### CONCLUSION.

To sum up, we may say that pain in cholecystitis is sudden and severe, usually has a wide field of radiation, comes with no regularity as to time, is rarely caused by food and as rarely eased by it, nor does the patient often trace his distress to it. There is no stomach history between the short sharp attacks; spasm of the diaphragm with dyspnea is common, vomiting and gas, if present, are so only during the colic, and the relief from eructation and vomiting is not so marked as in ulcer. Nausea and intense retching may be followed by vomiting of a small amount of thin, yellowish, bitter liquid mixed with mucus.

In duodenal ulcer pain comes in periods of attack lasting for days or weeks, is often sudden, may be severe, yet usually not that intense type of pain met in gallstones, but rather gnawing and burning in character. It may be irregular as to time of the separate attacks, but regular during the period of the stomach disturbance. The pain is clearly related to food, the intensity often modified by kind and quantity taken. Food eases for a time, the pain returning from 2 to 4 hours later. Hot drinks, soda and irrigation give relief. Spasm of the diaphragm is rarely seen except in some cases of perforation.

The chronic gallstone case, with impacted stone, ulceration and adhesions in which no jaundice appears and the stomach symptoms as gas, vomiting, burning distress, sour eructation, impaired appetite and dilatation predominate, and the pain is moderate and follows food, will too often be diagnosticated ulcer; while the duodenal case, in whose early history we can elicit only

irregular attacks of sudden, sharp, intense pain of peritonitis or acute spasm (and with no obstruction or hyperacidity) we do not have gas, vomiting or sour eructations, will as surely be mistaken for gallstones.

To the conceits of surgery we shall too often be obliged to leave the differentiation of this class of cases and to its comprehensiveness the surety of relief.

#### DISCUSSION

ON PAPERS OF DRS. WHITE AND GRAHAM.

DR. GARRY DE N. HOUGH, New Bedford, Mass., said that in the diagnosis of gallstone disease one occasionally meets with an abnormally situated pain and would be exceedingly apt to be misled unless attention was called to this fact. In one case the pain simulated a renal colic on the left side. In three cases the pain was in a situation hitherto undescribed, viz., starting in the left sacroiliac synchondrosis and passing through to a point about an inch below the umbilicus and a little to the right of the median line. Tenderness in the gall-bladder region and the history of the case made the diagnosis possible.

DR. GEORGE W. McCASKEY, Fort Wayne, Ind., discussing Dr. White's paper, said that he knew of the difficulties in the way of diagnosis, especially in the way of excluding minute gastrointestinal hemorrhages, which was only equaled by their importance when present. It was true that this did not aid in diagnosis in the early stages of malignant disease; for, as all know, there is no tendency for ulcerative processes to occur in the early stages of malignant disease, while in ulcer it was different, and important help can be secured. Dr. McCaskey called attention to the importance of small hemorrhages as factors causing symptoms and influencing the prognosis, independent of their diagnostic aid. It was well known that minute quantities of blood lost from the system, covering periods of months possibly, might produce a grave type of anemia, such as was produced by ankylostomiasis, although a hemolytic toxin may here cooperate. But the general conclusion was that small quantities of blood removed from the body each day might finally produce grave types of anemia, and he believed it was important to draw attention to this kind of bleeding. He said he had seen several cases. He referred to the case of a man aged 65, with no other history than a gradually increasing anemia and asthenia. The physical examination revealed absolutely nothing. The surgeon who was called in could find no indication that would warrant or justify an exploratory procedure. The feces were examined for blood, but none was found. But a second examination, made a week or two later, revealed blood, and when continuous search was made larger quantities were found. The diagnosis of an ulcerative process in the colon was made, this conclusion being strengthened by finding small fecal masses which had apparently been forcibly detached from the mucosa. The patient was treated accordingly and a prompt recovery followed, the patient remaining well for a long time. Dr. McCaskey believed that a great many cases of progressive anemia and emaciation were due to occult hemorrhages as described by Dr. White.

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#### Clinical Notes

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#### A SIMPLE, EASY AND EFFICIENT METHOD OF ANCHORING A MOVABLE KIDNEY.

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Indications for the performance of this operation have long ago been elucidated and to the modern doctor, skilled in the interpretation of symptoms caused by injurious degrees of renal mobility, these indications are clear and positive. The hesitation, so often manifested by patients and shared by the family physician and in



no small degree by many surgeons, to advise fixation of a kidney injuriously mobile, has been incident to the fact that too often there has been no relief of the symptoms in friends and patients previously operated on. This failure need not exist when the operation is properly performed. The problem is no longer how to prevent recurrence of excessive mobility. Indeed, one caution is to avoid too rigid fixation. The real problem, however, is to fix the organ properly in its normal location with its upper pole in proper relation to the eleventh intercostal space, twelfth rib and spinal column, and not so low nor so far from the median line as to cause tension on the renal vessels and nerve plexus. This needs no emphasis to those of us who constantly hear the complaint from those previously operated on that their symptoms are not relieved and find on examination the kidney firmly fixed in a position too low and too far removed from the median line.

The old method of delivering the organ on the back to pass the fixation sutures is entirely unnecessary, even if the surgeon should prefer to remove the capsule. Decapsulation is never necessary in order to secure fixation, and I have often wondered why any surgeon should perform this as a part of nephropexy. There are, moreover, definite reasons why the organ should not be delivered on the back into the cold world, from its warm, cozy corner behind the peritoneum and colon, and on the right side, the liver, where it is kept snugly and additionally protected by a blanket made of its fatty capsule. The additional shock incident to chilling and to traction on the renal plexus of sympathetic nerves, while in no case not inconsiderable, is in some cases of real consequence.

From the hilum of the kidney to the skin overlying the erector spinæ muscle, is generally, at least, three inches; and from the median line of the vertebral column to the renal hilum the distance rarely exceeds two to three inches, and even this is greater than the length of the shorter of the two renal vessels. Indeed, the shortness of the right renal vein is sometimes the cause of embarrassment to the operator when performing right nephrectomy and the proximity of this organ to the vena cava is universally respected. The renal vessels must therefore be stretched to at least double their lengths to make delivery of the organ a physical possibility, and when it is remembered that they are joined to their fixed parent trunks (the aorta and vena cava) at a right angle, it is manifest that they must be actually stretched. Diminution of caliber in the renal vessels is, therefore, proportionate to the amount of stretching thus caused. The effect of constriction is manifestly more marked in the ease of the vein (since this structure is possessed of thinner coats than those of the artery and is without the counteracting effect of pulsation) and marked passive engorgement is the result. If, during the process of delivery, the organ should be even slightly twisted on its pedicle (the vessels and ureter), the injurious effect is obviously more marked. Gangrene of the kidney has occurred.

In at least one case in which the kidney was thus necessarily pulled out for the purpose of removing a calculus, the pancreas was unexpectedly found adherent to the anterior surface of the kidney and was consequently injured. In this particular case death followed on the third day after the operation, and autopsy showed fat necrosis of the omentum.<sup>1</sup> Everyone knows that the duodenum is not rarely adherent to the right kidney even when the latter is movable.

In every case the kidney is necessarily contused during the act of delivery, even when the operator is gentle in his manipulations through a large incision. Thus, in many cases the organ is considerably injured. The minute structure of the kidney is delicate and highly organized; and while, in many cases, the organ tolerates positive insults, these will be minimized as much as possible by the conscientious and skilful surgeon. All of these effects are obviated, and the kidney securely maintained in its normal position by a single suture placed at the outer convex border of its lower pole.

#### CASE REPORT.

The following case illustrates the ease and efficiency of the method of thus performing the operation:

*Patient.*—Mrs. H., aged 44, for years the victim of recurrent abdominal pain and of that type of "indigestion" which I choose to call pseudo-gastro-enteric catarrh,<sup>2</sup> was referred to me May 26, 1906.

*Examination.*—On examination, the right kidney was found to be freely movable to the third degree, i. e., on deep inspiration the organ slipped downward past the anterior examining hand and failed to return to its normal location during expiration, while the fingers were held above its upper pole. In addition she suffered with uterine fibroids. I unhesitatingly advised that the kidney be anchored, the uterus be removed and that both operations be performed during the same anesthesia.

*Operation.*—A week later I operated. Under ether anesthesia, with the patient in the left lateroprone position and on a pillow so placed under the opposite loin as to widen the right ilio-costal space, a three-inch incision was made, extending from the twelfth rib vertically downward along the right margin of the erector spinæ muscle. The lumbar muscles were separated, not cut, and the ilioinguinal and iliohypogastric nerves were isolated, so as to avoid being cut or caught in the sutures. By means of pressure by an assistant's fist anteriorly, the kidney was held within easy reach. Separation of the perirenal fat from the lower half of the organ was easily effected for about an inch, so as to expose the true renal capsule. This fat was not stripped entirely away from the kidney and need in no case be removed. By means of a curved needle threaded with No. 3, twenty-day chromicized catgut, a single suture was then placed at the lower pole of the kidney through its true capsule and a small proportion of the renal cortex, according to the method of Brödel as follows: The suture was passed from above, downward for half an inch, then from below upward, the needle entering a quarter of an inch from its previous point of exit and coming out near the point of entrance.<sup>3</sup> The capsule of the kidney was then scratched and rubbed with gauze to facilitate the formation of scar tissue to further aid fixation. The two ends of the fixation suture were then passed through the muscles at the upper part of the posterior edge of the incision and securely tied. When the assistant's fist was removed the organ was seen to occupy its normal position and failed to move with inspiration.<sup>4</sup> The wound was then dried with gauze and closed without drainage. Three sutures of silk-worm gut and one of horse hair closed the skin wound completely. The time required was twelve minutes.

The patient was then placed on her back and an easy hysterectomy was performed. A small, plain gauze dressing to each wound was held in place by adhesive plaster, a wad of gauze about the size of an adult fist was placed anteriorly, to make moderate pressure over the region of the kidney for twenty-four hours and both dressings secured by an abdominal binder.

*Further History.*—There was no shock, no vomiting; convalescence was uninterrupted and at the end of three weeks the patient was out of bed, and four days later discharged, cured. I may add that at the end of seven days following the operation

2. Charlotte Med. Jour., March, 1906.

3. This method of suture is well illustrated in the sixth edition of White and Martin's text-book of "Genito-Urinary Diseases."

4. I would emphasize that one suture placed in this manner, especially when supplemented by irritation of the capsule and surrounding tissue, is amply sufficient to cause firm fixation.

1. Bradford, S. S.: Medical Record, July 21, 1906.



she was allowed anything she wanted to eat, and in abundance. At the present time she is without a symptom, is eating food which she has not taken for fifteen years, is heavier than she has been during this time and is gaining weight steadily. Her present weight is 125 pounds, a gain of 20 pounds in two months. The lower pole of the kidney operated on is barely palpable and does not move.

In conclusion I would summarize the cardinal principles on which the treatment of movable kidney is based:

1. Injurious degrees of renal mobility are characterized by: (a) recurrent attacks of abdominal pain of the character of ureteral or renal colic; and (b) remittent periods of indigestion of the type of pseudogastroenteric catarrh, finally causing true catarrh of the alimentary tube; and (c) a kidney which, on deep inspiration, moves downward to a sufficient extent to be maintained in this location during expiration, by the examining hand placed anteriorly at its upper pole.

2. Such a kidney is a menace to its own health and to that of the individual, and should be sutured to the overlying muscles in its normal location. The so-called "palliative treatment" by means of pads, corsets and trusses, together with the rest cure, is inefficient, time wasting and may do harm.

3. The old method of pulling the organ out of its nest, on to the back, for the purpose of placing the suture, is entirely unnecessary and entails great risk to the integrity of the organ and its anatomically related structures, sometimes resulting disastrously.

4. The operation as here described, with one properly placed suture at the lower end of the kidney, will maintain the organ in its normal location with its upper pole anterior to the twelfth rib and eleventh intercostal space, its lower pole just above the level of the umbilicus and its outer convex border even with and not external to the outer border of the erector spinæ muscle. Such an operation is efficient and should be attended by no mortality.

There is no longer any justification for allowing these patients to suffer the misery and semi-invalidism incident to injurious degrees of renal mobility.

506 East Grace Street.

## CONGENITAL ABSENCE OF UTERUS, BROAD LIGAMENTS, TUBES AND UPPER TWO- THIRDS OF THE VAGINA.

VICARIOUS MENSTRUATION RELIEVED BY OÖPHO-  
RECTOMY.\*

EARL HARLAN, M.D.  
CINCINNATI.

The case here reported is one of more than usual interest, inasmuch as I have been unable, by extensive inquiry and correspondence, to locate one in which the history is parallel.

*History.*—Miss F., aged 18, consulted me Sept. 23, 1900. She was a bright, intelligent girl of rather slight build. She stated that she had never menstruated. I thought nothing particularly strange of this, however, as occasionally one meets cases in which this function does not manifest itself until the age of 17, 18 or 19 years. In fact, I had at that time a patient, a well-developed girl of 19, in whom the menses did not appear until the eighteenth year.

The patient further stated that at intervals of about every three months since she was 16 years of age, she had "swell-

ings," as she termed them, in the right and left iliac regions. These points were tender and painful, especially on pressure. No pain or tenderness had ever existed in the region where the uterus should lie. No pain or heaviness were experienced in the back or thighs, although a sense of heaviness manifested itself in the locality of the "swellings" when the latter developed. No vaginal discharge had ever been present. She stated that for a period following these attacks she had what she termed a "bloody flux" which lasted several days, at the cessation of which her whole trouble disappeared.

*Examination.*—There was a complete stenosis of the vagina about one and one-quarter inches from the external vulvar orifice. I made a thorough bimanual recto-abdominal examination of the internal genitalia and discovered a complete absence of the uterus and the upper two-thirds of the vagina, the latter ending at the point of occlusion. I thought I could define the ovaries over against the ilio pelvic walls, but could detect no evidence of the presence of the tubes or broad ligaments.

*Diagnosis.*—My diagnosis was vicarious menstruation produced by the absence of the tubes, broad ligament, uterus and upper two-thirds of the vagina. With the presence of a well-developed pathologic menstruation giving rise to symptoms which were serious in nature, I decided that abdominal section with removal of the ovaries (of whose presence I was positive), was justifiable.

*Operation.*—On September 25, at the Good Samaritan Hospital, in the presence of several physicians, I opened the abdomen. The internal field, exposed to view by the aid of broad retractors, presented a picture which was at least unusual. There was no uterus, no upper two-thirds of the vagina, no tubes or broad ligament. The ovaries hung suspended in folds of the peritoneum from the sides of the pelvis; they were removed and the wound closed. The patient made an uneventful recovery from the operation, which was followed by an easy establishment of the menopause. She has since married.

The professional value of this case, outside of the fact of its almost unparalleled occurrence as a congenital deformity, is of great weight and importance. It furnishes conclusive evidence of the fact that the stimulus which produces menstruation originates in the ovaries, and also that this important function can be fully discharged in the complete absence of every other pelvic organ of the internal genitalia; proof conclusive, in my opinion, that the ovary is the primary organ of menstruation. I am unable to say, however, that the uterus is not a coincident primary organ of menstruation. I am inclined to believe that the impulse which generates menstruation originates spontaneously at the same time in both the uterus and ovaries; but that the mechanical evidence, the menstrual débris, must result from circulatory changes in the ovary; this fact being further proved by its absence after the removal of the ovaries. Proof of this statement is furnished us in the occurrence of the periodical nervous crises present in women at the time of the menopause, whether the latter is established by nature or by sudden operative removal of the ovaries, and the occurrence, also, of certain symptoms of uneasiness about the pelvis, with the presence, at times, of a peculiar uterine discharge at these periods and due reflexly to disappointed nerve impulses.

In answer to correspondence, Mayo says: "I have seen but four cases of the kind you are reporting." Kelly says: "We have had a number of such cases here and rarely have done an operation."

This statement brings out the point I wish to emphasize, viz.: that the diagnosis was confirmed in my case by operation. So far as I am able to judge, in all similar cases about which I have been able to get any information, the diagnosis was made by external abdominal examination and not by actual internal exploration of the abdominal cavity.

\* Read at the meeting of the Ohio Valley Medical Society, Louisville, Ky., Nov. 14, 1906.



Baldwin says: "I have never seen a parallel case," while Ochsner writes: "I have had similar cases, in which there existed a rudimentary formation of the uterus, tubes or vagina and in which these organs were represented by fascia-like formations, but I have never seen a case in which the uterus was entirely absent."

628 Elm Street.

## COMPLETE INVERSION OF THE UTERUS WITH PROLAPSE.

A. C. OLMSTED, M.D.

WELLS, NEV.

The comparative infrequency of the condition and some unusual surroundings prompt the report of this case.

*Patient.*—L., Shoshone squaw, aged 29. This was the sixth pregnancy and was normal so far as I was able to learn. She is half-civilized and lives in a frame house, but adheres to the custom of seeking solitude out of doors at the time of labor.

*History.*—I was called Sept. 20, 1906, and was told at the time that the child had been born two hours, but the placenta had not yet come away. I reached the patient four and one-half hours after delivery, finding her in the sagebrush, near a mountain stream, lying on the ground with only a blanket for covering.

*Examination.*—I found her suffering from shock and half-conscious: pulse was 135, but the extremities were warm. Her husband said that she had complained of but little pain. I found the placenta lying on the ground between the thighs, completely detached and with membranes entire. Saturation of clothing and soil gave evidence of a profuse hemorrhage. A tumor, larger than a large orange, projected from the vulva. Bimanual examination showed this to be the inverted and prolapsed uterus, the entire body of the organ being outside the vagina.

*Treatment and Result.*—After cleansing as well as was possible under the circumstances, the fundus was pushed upward until it passed the relaxed cervical ring. The fingers in the uterus then held the fundus well up until a contraction occurred.

Improvement was rapid, and an hour later the patient said she was "all right." I did not see her again for three weeks, but received daily reports of her rapid and steady recovery. On Oct. 12, 1906, she came to my office for examination. The uterus was found to be of normal size for corresponding period of puerperium; there was no indentation of fundus, no tenderness, no prolapse. The patient denied having pulled on the cord, and said that she was in a recumbent position at the time of delivery. The husband said, however, that she had pulled on the tumor, but soon desisted on account of pain.

## A RARE FORM OF MALIGNANT TUMOR OF THE TESTICLE.

WILLIAM A. ROLFE, M.D.

BOSTON.

The following case is reported as being of interest, more especially from a pathologic viewpoint:

*History.*—C. D. R., aged 38, married, of good previous history, noticed in August, 1906, a commencing enlargement of the left testicle. This was thought to be due to a slight injury received while riding a bicycle. The man was first seen in October, at which time he was in good physical condition except for the enlarged testicle, which was moderately painful, and caused considerable discomfort from the dragging sensation along the cord. The patient's paternal grandfather died from cancer of the liver, but otherwise the family history was unimportant.

*Examination.*—The testicle was found to be uniformly enlarged, measuring about 8 cm. in length by 6 cm. in diameter.

The epididymis could not be clearly made out, and there was an absence of fluid in the serotal sac. Pressure on the testicle caused much pain. Operation was advised at this time but declined, and the patient left for his home in a distant city. I did not see the patient again until December 3, at which time the testicle was much larger and there was a history of a loss of 25 pounds in weight. At this examination my attention was directed to a small node situated in the skin over the right costal margin in a line with the right nipple. This was hard and painful on pressure, and appeared to be a metastatic growth, but operation on the testicle was advised for the relief of pain and increasing discomfort.

*Operation.*—Castration was done and the postoperative history was uneventful.

*Macroscopic Examination.*—On section the testicle presented a dark red appearance, was firm in consistency and suggested a melanotic sarcoma. The tumor, together with the skin node, was sent to the pathologic laboratory of the Boston City Hospital, and the following is the report of the pathologist, Dr. Samuel T. Orton: "Specimen consists of a tumor, a flat sheet of tissue, and several fragments preserved in alcohol; it is ovoid, about 9 cm. in length by 6 cm. across. At one end are the remains of the caput epididymis. On section it is dark red in color with a few small grayish areas at various points especially near its periphery. The flat (tunie) membranous sheet varies in thickness in various areas; one of the smaller pieces is an elliptical piece of skin about 2 cm. in diameter with a firm nodular mass at its center.

*Microscopic Examination.*—The tumor is largely disintegrated and hemorrhagic. The few intact areas consist of groups of polyhedral cells more or less surrounded by a layer of flat, deeply staining (syncytial) cells, some of which are multinucleated. The tumor in the skin is of the same structure. Tunie shows chronic inflammatory change, but no tumor masses.

*Diagnosis.*—Chorion-epithelioma. Chorion-epithelioma in this site places the tumor among the teratomata."

*Subsequent History.*—The patient died December 25 from metastatic involvement of the lungs.

The attending physician, Dr. W. T. Crosby, Manchester, N. H., used the trypsin treatment for cancer, but with no apparent benefit.

A tumor of this nature is rare in the testicle, and I have been unable to find any reference to a similar case.

755 Boylston Street.

## SCURVY IN AN ADULT.

A. F. MAISCH, M.D.

GLOBE, ARIZ.

*Patient.*—Male, American, aged 33, robust; height 5 feet 9 inches; weighed 173 pounds; complained of bleeding from the mouth and pain while chewing food. Condition had existed two weeks.

*History.*—Negative family history; no hemophilia; no serious illness; denies lues.

*Examination.*—No apparent anemia or enlargement of lymphatics; muscles were solid, no tenderness on pressure. Heart, lungs and kidneys normal. Mouth showed slight oozing of blood at the margin of the gums; no pus; bleeding free on slight pressure and also hemorrhage from numerous areas on hard palate. On further questioning, patient said he had been employed building roads on an Indian reservation for the past five months. His food during this time had been limited to such articles as beans, coffee, salt pork and potatoes; once a week had fresh meat, but no fruits or vegetables, except potatoes.

*Diagnosis.*—Scurvy.

*Treatment Local.*—Saturated solutions of potassium permanganate as mouth wash; an 8 per cent. solution silver nitrate to gums, also hydrogen peroxid to check bleeding. Constitutional: Lemons, oranges, fresh meat and vegetables.

*Result.*—Pain became less after 12 hours; bleeding ceased in 48 hours. Two weeks later the patient was entirely well.



UNIQUE CASE OF FOREIGN BODY IN THE  
BLADDER.J. F. BALDWIN, M.D.  
Surgeon to Grant Hospital.  
COLUMBUS, OHIO.

While the literature of foreign bodies in surgery is voluminous and interesting, the case detailed below is, so far as my investigation of the literature goes, entirely unique, especially as regards the snare devised by the patient for the removal of the foreign body.

*History.*—An old soldier, aged 70, for several years had been troubled with prostatic retention of urine. For about a year he used a catheter, which while it answered the purpose fairly well, was not entirely satisfactory. He therefore took a piece of steel rod, about two inches long, rounded it at one end and flattened it at the other, and through a perforation in the flattened end passed a fine wire to be used in withdrawing the device, which, as thus made, very much resembled a sinker, such as boys sometimes use in fishing. He had a capacious urethra, and by lying down and allowing this sinker to drop into the deep urethra and into the neck of the bladder, the obstruction was so displaced that he was able to urinate without difficulty. He found the device exceedingly satisfactory and had used it for about a year when, unfortunately, the wire rusted where it passed through the hole in the sinker, and the latter was left in the bladder. The wire had been purely for the purpose of withdrawal, since he relied on the weight of the sinker for its passage into the bladder. To remove the metal, and without consulting a physician, the patient bent a wire into an elongated loop, as shown in the cut. He had a piece of steel from which he had made his original sinker, and in bending his loop he so made it that when the



ends of the wire were approximated the sinker might engage in the loop and then be caught by separating them. With great fortitude he introduced this loop into the bladder, and spent considerable time in a fruitless attempt to snare the sinker. He finally consulted his physician, Dr. Kiouss, through whom the case was referred to me for operative intervention.

*Operation.*—An ordinary suprapubic cystotomy was performed Dec. 9, 1905, through which the piece of steel was easily removed. The obstruction was found to consist in a transverse bar in the floor of the internal meatus. This bar was cut across with scissors, and the surface touched with the electric cautery—a sort of transvesical Bottini. Recovery was prompt and entirely satisfactory.

The accompanying illustration shows the sinker and snare, one-third actual size.

*Special Article*

## SOME FACTS ABOUT DIGESTIVE FERMENTS.

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(Continued from page 416.)

## OTHER INCOMPATIBILITIES IN LIQUID DIGESTANTS.

The compound digestive liquids do not constitute the only incompatibility in the manufacture or prescription of digestive ferments, although they are probably the most glaring example. We must again recall that ferments are peculiarly unstable bodies; indeed, there are few substances so sensitive to reagents, so liable to injury, as the ferments, especially when they are dissolved.

Acids and alkalies, salts, metals, alkaloids, tannins, antiseptics, chloroform, ether and alcohol—all these interfere more or less with the action of ferments and injure their activity. Alcohol is especially important, since it is a conspicuous constituent of the digestive “wines” and elixirs, particularly those of pepsin.

## THE EFFECT OF ALCOHOL ON FERMENTS.

A short contact with alcohol does not appear to be injurious to most ferments, since one of the ordinary methods of purifying the crude ferments consists in their precipitation by alcohol. Prolonged contact with alcohol, however, even when quite dilute, causes a gradual destruction. This deterioration is a rather slow process, especially with pepsin, so that there may be no great objection to prescribing a freshly made wine or elixir of pepsin when it is to be used in a few days. The proprietary preparations, however, are generally made a long time before they are administered, and their activity must be very unreliable. As a matter of fact, the preparations of this class examined by the Council proved quite worthless from the digestive standpoint, and the popularity of certain proprietary compounds must be attributed solely to their seductive taste and appearance.

## GLYCERIN AS A PRESERVATIVE.

Aqueous solutions of the ferments also deteriorate very rapidly. The only liquid medium in which ferments can be preserved for any length of time is glycerin. In this connection it may be pointed out that the advantage of glycerins of pepsin made by extracting the mucous membrane directly with glycerin, over those made by dissolving dried, soluble pepsin in glycerin, is not very apparent. A carefully made glycerin extract would certainly be better than a cheap glycerin solution, for the glycerin extraction precludes putrefactive changes; but the careful manufacturer of pepsin will have no difficulty in avoiding putrefaction. It may be true that the glycerin extract contains more milk-curdling ferment and is superior for the manufacture of junket. For internal administration, however, this has no significance. Pepsin is used to digest proteids, and this power is possessed by the dry pepsin and by its solution in glycerin. If there are any therapeutic indications for other ingredients of the gastric juice (aside from the acid) they have not yet been formulated. As to the rennin, the most authoritative book dealing with ferments (Oppenheimer) says as follows:

It does not appear to have any essential significance for the digestion of proteids. It is strikingly absent in the newborn, who consume much milk. Zuntz and Sternberg have even found that milk proteid coagulated by rennin is less easily digested than the original milk proteid, and attribute to this in part the relatively smaller availability of milk for adults, who produce more rennin.

## DRY MIXTURES OF FERMENTS.

Since the digestive ferments act only in solution, it might be thought that the object of combining pepsin, trypsin and diastase could be attained by administering the mixtures as dry powders or tablets. These will, indeed, keep indefinitely if they are protected from moisture; but a moment's thought will show that their destruction will begin with their action. The conditions for this will arise the moment that they enter into solution in the mouth or stomach. This brings us to the question as to how far ferments, artificially introduced by mouth, may be effective in the alimentary canal.



## THE FATE OF FERMENTS IN THE ALIMENTARY CANAL.

The sojourn of food in the mouth is so short that this need not be considered. The stomach is peculiarly the seat of the activity of pepsin, so that there can be no question that artificially introduced pepsin may develop its activity in this organ. The question as to the possibility for the action of diastase and trypsin is somewhat more complicated. It will be recalled that both these ferments are destroyed by even very low concentrations of acids and by pepsin; on this account it has been supposed, for instance, that the salivary digestive ferment is practically useless.

This view, however, is erroneous, as is demonstrated, for instance, by the careful experiments of Grützner. This investigator<sup>2</sup> fed animals with successive portions of differently colored food. After a variable time the animals were killed, and the stomach and its contents frozen so as to prevent any disarrangement of the food. When this was cut open, it showed that the greater portion of the gastric contents remains unmixed for several hours, the effective churning motions of the stomach being confined to the pyloric portion. Therefore, only the very first morsels of a meal are exposed at once to the digestant action of the acid and pepsin, each successive portion of food being deposited as a successive layer within the preceding portion.

By adding litmus to the food Grützner could show in this way that the reaction within the main mass of the food remains alkaline or neutral for some two hours, pepsin digestion occurring only in those portions which actually touch the walls of the stomach and in the pyloric portion. At the end of this time the process proceeds more rapidly. Grützner also tested the different portions of the gastric contents directly for diastase, and found this present for several hours, especially in the fundus, although it is destroyed before the gastric digestion is completed.

## DIASTASE AS A DIGESTANT.

It is evident, therefore, that the diastase of the saliva has a very good opportunity, during several hours, of exerting its action. The same opportunity would exist for diastase artificially introduced if it were equally mixed with the food; it must be remembered, however, that the circumstance which makes the gastric action of diastase possible—namely, the quiet condition of the food in the fundus—would greatly hinder the action of the ferment unless this were taken intimately mixed with the food; for ferments diffuse extremely slowly, and diastase taken after eating would, therefore, have only a very small surface of food exposed to its action. The same holds true of trypsin; but in regard to this ferment it may further be doubted whether the alkalinity of the food in the stomach is ever as high as is necessary for the effective action of the trypsin.

It is evident, therefore, that little can be expected from the action of either diastase or pancreatin in the stomach. If they are to act at all it is necessary that they should escape destruction and pass into the intestine, where the conditions would be reversed; the pepsin being destroyed by the bile, the alkali and the trypsin; while the diastase and the pancreatin could develop their full activity.

## CAN THE FERMENTS SURVIVE GASTRIC DIGESTION?

It is, therefore, an important question whether any considerable part of these ferments can pass unscathed

through the ordeal of the gastric digestion. In the experiments of Wroblewski, Bednarski and Wojcinski, quoted above, it was shown that peptic digestion completely destroys the trypsin within six hours, the diastase within nine hours. No experiments are reported as to the effects of a shorter digestion, but the destruction of the ferments must have been far advanced or completed in a much shorter time, and we know that digestion generally proceeds faster in the body than in the test-tube.

The experiments of Cannon and others have shown that the main mass of the food remains in the stomach for a considerable time—three hours with a carbohydrate meal, six hours with a proteid meal, twenty-one hours with a fatty meal. It is true that a portion of the food leaves the stomach much earlier, but evidently the main mass of the ferments remains sufficiently long to insure their thorough destruction. This is also shown by Grützner, who found that the salivary diastase has completely disappeared from the stomach before the gastric digestion is completed. Fluids, taken on an empty stomach, pass into the intestine very rapidly, and it is conceivable that ferments introduced in this manner might escape destruction; however, there would be no therapeutic indication for ferments when the stomach is empty. It is, therefore, evident that no effect can be expected from trypsin, unless it is given by "enteric" capsules. Diastase could conceivably be effective if thoroughly mixed with the food, although this is somewhat problematic.

*Papain (Papayotin):* This vegetable proteid-digesting ferment is said to digest in neutral, acid and alkaline media, although authorities differ on these points. On this assumption, however, it has been prescribed as a substitute for pepsin in conditions of achlorhydria; but the success has not been especially striking. Indeed, many preparations on the market are so worthless that the drug is thoroughly unreliable.

## ARE THERE ANY THERAPEUTIC INDICATIONS FOR THE INTERNAL USE OF DIGESTIVE FERMENTS?

Digestive ferments are administered on the theory that they supplement a faulty digestion. Evidently, they could only be useful if the digestive disorder is due to a deficiency of ferments. This, however, appears to be a rare condition, and the use of ferments is bound to be useless when the dyspepsia depends on alterations of acidity or on motor insufficiency or on bacterial fermentation. Even when the ferment is really deficient it is doubtful whether the condition is properly met by giving pepsin. The work of Pawlow and his school indicates that the composition of the digestive juices is modified according to the work which they have to perform. Of the workings of this adaptive process we have as yet only the faintest conception, and to attempt to influence them by giving pepsin appears rather as crude bungling. Much more should be accomplished by searching for the causal condition. When this can not be found or remedied, then pepsin may be tried, since it might happen to fit the case, and it is harmless. Any deficiency in the gastric acidity must be corrected or the pepsin is bound to be useless.

**Tablet Medication.**—Dr. James F. Percy (*Illinois Med. Jour.*, January, 1907) deprecates the universal use of ready-made tablets by the physician. He holds that it destroys the ambition for a correct knowledge of therapeutics which all progressive physicians should have.

2. Pfüger's Archiv., 1905, cvi, 436.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 421.)

(A list of all accepted articles is published on one of the advertising pages of *The Journal* in the first issue of each month.)

### COLLARGOL OINTMENT.

UNGUENTUM CREDE: OINTMENT OF SOLUBLE METALLIC SILVER.

Collargol Ointment is an ointment containing 15 per cent. of collargol.

It is prepared by incorporating 15 parts of collargol with 5 parts of water, 10 parts of white wax, and 70 parts of benzoinated lard, observing care that the soluble silver shall not be transformed into metallic silver of the ordinary kind. This, it is asserted, it is prone to do unless great care is observed in the manipulation.

The natural color of collargol ointment is dark bluish-gray. The addition of water may impart to the ointment a brownish shade; this does not, however, in any way impair its efficiency. The ointment is good as long as it colors the skin black.

*Actions and Uses.*—These are described under "Collargol," which see.

*Dosage.*—From 2 to 4 Gm. (30 to 60 grains)—with children about half this dose—should be rubbed very thoroughly into the skin for from 15 to 30 minutes.

Manufactured by The Heyden Chemical Works, Radebeul, Germany, and Garfield, N. J. (Schering & Glatz, New York). U. S. trademark No. 32,452.

### CRESYLONE.

A name applied to a preparation essentially similar to Liquor Cresolis Compositus, U. S. P.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

### CUPRO-HEMOL.

HAEMOLUM CUPRATUM.

Cupro-hemol is hemol containing 2 per cent. of copper in organic combination.

It is prepared by precipitating a solution of blood with a dilute neutral solution of a copper salt at a temperature not materially exceeding 0° C. (32° F.).

*Actions and Uses.*—Cupro-hemol is said to be useful in tuberculosis, scrofula, anemia, chlorosis, etc.

*Dosage.*—The maximum dose is 0.5 Gm. (8 grains).

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). German patent, No. 86,146.

### EUFORMOL.

A solution said to contain in each 30 Cc. (1 fluidounce): Oil of eucalyptus, 0.025 Cc. ( $\frac{1}{2}$  minim); oil of gaultheria 0.018 Cc. ( $\frac{3}{10}$  min.); thymol 0.03 Gm. ( $\frac{1}{2}$  grain); menthol, 0.005 Gm. ( $\frac{1}{12}$  grain); boric acid, 0.78 Gm. (12 grains); fluid extract of wild indigo, 0.076 Gm. ( $\frac{1}{4}$  min.); solution of formaldehyde (40 per cent.) 4.00 Cc. (60 min.).

*Actions and Uses.*—Euformol is a germicide, antiseptic and deodorant.

It is recommended for external application and for disinfection of excreta in infectious diseases.

*Dosage.*—For general use euformol should be largely diluted.

Prepared by Parke, Davis & Co., Detroit, Mich.

### EXODIN.

Exodin is a mixture of derivatives of rufigallie acid (hexahydroxy-anthraquinone). It contains diacetyl-rufigallie acid tetra-methyl ester, acetyl-rufigallie acid penta-methyl ester and rufigallie acid hexa-methyl ester.

According to the patent it is obtained by treating rufigallie acid tetra-methyl ester with acetic anhydride and sodium acetate and purifying the product by crystallization.

Exodin is a greenish yellow, odorless and tasteless powder, insoluble in water and difficultly soluble in alcohol.

*Actions and Uses.*—Exodin is claimed to be a pleasant and reliable cathartic. It is said to produce a mild and protracted tonic effect on the digestive tract and to produce neither stomach pains nor colic.

Exodin is claimed to be useful in acute and chronic constipation of the atonic form and also in cases in which regular evacuation of the bowels must be stimulated in consequence of hemorrhoids, etc.

*Dosage.*—For children, 0.5 Gm. ( $7\frac{1}{2}$  grains); adults, 1 to 1.5 Gm. (15 to 22 grains) in tablets or in powder stirred up with water. Exodin is sold in the form of a powder and in tablets, each containing 0.5 Gm. ( $7\frac{1}{2}$  grains).

Manufactured by Chemische Fabrik auf Actieu. vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. Patent No. 751,216. U. S. trademark No. 43,029.

### HÆMOFERRUM.

LIQUID OXYHEMOGLOBIN, STEARNS.

Hæmoferrum is a preparation of purified blood said to contain in each 30 Cc. (1 fluidounce), 2 Gm. (32 grains), of oxyhemoglobin in a menstruum containing 12.75 per cent. of alcohol.

It is prepared from purified blood and the amount of hemoglobin determined by assay.

Hæmoferrum is a dark blood-red liquid, of a pleasant odor and taste.

*Actions and Uses.*—It is claimed that hæmoferrum acts as a preparation of organic iron (see Organic Iron). It is used in anemia.

*Dosage.*—4 to 8 Cc. (1 to 2 fluidrams) three or four times a day.

Prepared by Frederick Stearns & Co., Detroit, Mich.

### IOTHION.

DIODOHYDROXYPROPANE.

Iothion,  $\text{CH}_2\text{I}.\text{CHOH}.\text{CH}_2\text{I} = \text{C}_3\text{H}_6\text{OI}_2$ , is 1,3-di-iodo-2-hydroxy-propane.

Dichlorhydrin, obtained by chlorinating glycerin, is heated with the theoretical quantity of potassium iodide in the presence of water, chlorine being replaced by iodine with the production of di-iodo-hydroxy-propane being produced.

Iothion is a yellowish, oily, heavy liquid, of sp. gr. 2.4 to 2.5, containing 77 per cent. of iodine. It is volatile at the body temperature, and not unpleasantly odorous. It is insoluble in water, but soluble in glycerin, oils, alcohol and other organic solvents.

If Iothion be heated on the water bath under a reflux condenser for 5 to 6 hours, with 33 per cent. solution of potassium hydroxide and the iodine liberated from the residue by sulphuric acid and sodium nitrite and extracted with carbon disulphide, the titration of this iodine carbon disulphide solution with sodium thiosulphate in the usual way, should indicate 77 per cent. of iodine.

*Actions and Uses.*—Iothion acts like iodine and the iodides, but it is said to be rapidly absorbed by the intact skin.

It is said to be a satisfactory substitute for iodine and iodides, being applied to the surface of the body in the same manner as mercurial inunctions.

*Dosage.*—It is applied in the form of a 25 to 50 per cent. ointment with a mixture of equal parts of wool fat (lanolin) and petrolatum as a base.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark No. 39,252.

(To be continued.)



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, FEBRUARY 9, 1907.

## HORMONES.

This term (derived from *ὁρμαω*, meaning to arouse or to stimulate) is making its appearance frequently in current physiologic literature, and, supplying, as it does, a well-developed need, seems destined to have an established place in the scientific vocabulary; consequently a discussion of its application and of the subject to which it is applied may be considered profitable. The word was proposed and introduced by Starling to furnish a general name for that group of substances which are characterized by being formed in one tissue or organ for the purpose of stimulating some other more or less remote tissue or organ, to which they are carried by the blood stream. Hormones are, in fact, "chemical messengers," by which one tissue stimulates another to some function, which function is, in the majority of cases, supplementary or complementary to that of the first tissue. The number of hormones with which we are familiar is rapidly increasing, and it is along this line of investigation that some of the most interesting and important discoveries are now being made by the physiologists.

To illustrate the principles of hormone action we can select no better example than the secretin of the intestinal mucosa, which was discovered by Bayliss and Starling in the following way: It had long been known that shortly after the acid chyme enters the duodenum from the pylorus a marked increase in the rate of flow of the pancreatic juice occurs, and also that a similar stimulation could be produced by injecting a weak acid solution into the duodenum. This increase in secretion was at first attributed to a reflex stimulation from the duodenal mucosa, passing through a long arc from the intestinal mucosa to the central nervous system and back through the vagus or splanchnic nerves to the pancreas; later, when it was found that any part of this arc might be severed without decreasing the stimulating effect of the chyme, the reflex was supposed to depend on a more local nervous mechanism connecting the intestine and the pancreas. The above-mentioned investigators, however, finding that after all possible nervous connections between the pancreas and the intestine had been severed, the stimulation of pancreatic secretion still followed the entrance of acids into the duodenum, sought for some chemical stimulant which might perhaps be formed

in the intestinal wall under the influence of acids, and from thence reach the pancreas through the vessels. This substance they found in preparations made by extracting the duodenal mucosa in weak acids, and called it secretin, and their observations have been abundantly confirmed. Secretin is, therefore, a chemical messenger, by means of which the duodenal mucosa is enabled to stimulate the pancreas into activity at just the time when the pancreatic secretion is most needed. Secretin is not a complex proteid-like or enzyme-like substance, such as one might expect to be required for such purposes, but a relatively simple alcohol-soluble substance, which resists boiling and other procedures which would quickly destroy enzymes, and in this respect it resembles the other hormones with which we are familiar. Among these may be mentioned the following: The "pancreas activator" of Cohnheim, which is an alcohol-soluble substance secreted by the pancreas, with the function of activating the glycolytic ferment of the muscles; thyroiodin, which seems to stimulate metabolic processes generally, and adrenalin, which is a hormone that seems to be necessary for the excitation of the sympathetic nerves. Starling considers also that the secretion of the liver and of the intestinal mucosa is stimulated by hormones formed in other portions of the gastrointestinal tract. Probably the fetus secretes hormones which stimulate growth of the mammary glands of the mother, while the corpus luteum seems to furnish hormones which influence menstruation and the course of pregnancy. Presumably the internal secretions of the ovary and testicle are hormone-like bodies—indeed, the term hormone is practically equivalent to our more indefinite term "internal secretion," although in the broad sense not all internal secretions are hormones.

Starling explains the existence of hormones on teleologic grounds<sup>1</sup> as follows: In the lowest organisms, before the appearance of any nervous system, it is by chemical means that any coördination of function is determined, and in this case the mechanism has been given the name of chemotaxis. Since the application of these chemical stimuli depends on their diffusion through the medium bathing the cells, the process is necessarily a very slow one, and so far as the communication of one cell with another in the same organism is concerned the process could be quickened by the circulation of a common nutrient fluid, such as the blood. Before the appearance of such a vascular system, however, we find that the need for quick reactions has determined the setting apart of special reactive cells, constituting the nervous system. The whole history of the evolution of the higher types of animals henceforward centers about this nervous system, and it is only with reference to the complexity of this nervous system that man has any advantage over the lower animals and plants. However, the development of a special nervous system, adapted

1. "Recent Advances in the Physiology of Digestion," 1906, W. T. Keener & Co.



for the carrying out of quick reactions, has not abrogated the more lowly and primitive method for coördinating the activities of different parts of the body. Where the necessity does not exist for a specially rapid reaction, as, for instance, in the adaptation of the activities of the digestive glands to the presence of food in the alimentary tract, one might expect to find, as has been found, that the connection between the part of the body receiving the stimulus and the part of the body which has to react to the stimulus should be by chemical means.

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#### THE LABORATORY IN DIAGNOSIS.

The use of laboratory methods in diagnosis is, for the most part, a growth of recent years. While it is true that the laboratory examination of the urine is a procedure which has been practiced by several generations of physicians, the more complicated hematologic, bacteriologic and serologic examinations have come into general use only recently. It is probably no exaggeration to state that fifteen years ago there were not half a dozen medical schools in the United States in which a laboratory course in clinical diagnosis was given. Even ten years ago such courses were rare, and at the present time there are many schools in which they either are entirely inadequate or do not exist. The reason for this lies in the fact that such courses require expensive apparatus, are time consuming, and need men with special training as instructors. In the average medical school instruction in clinical microscopy is seldom given in a hospital, and the subject is often taught by the professor of pathology, who, most likely, has excellent laboratory training, but little clinical experience. In comparatively few schools has the student the opportunity of applying the laboratory methods at the bedside, for in the majority of American schools bedside instruction worthy of the name does not exist.

The effect on the student of the conditions of instruction now existing is often to give him a false idea of the value of laboratory work, and this idea may or may not be dispelled during his final years. If he happens to come under the guidance of a clinical teacher who has passed through the laboratory as a part of his training, and who thoroughly realizes the value as well as the limitations of laboratory work, he may graduate with a just conception of the subject. Very often, however, his teacher is a man who, at the time laboratory methods came into vogue, was too busy to take the time to master laboratory procedures, or too old to grasp their significance. In such a case the student often leaves the walls of his alma mater with a false conception of the use of the laboratory in diagnosis.

A large proportion of the profession in America to-day consists of men who graduated before laboratory procedures, other than the ordinary routine urinary examination, were taught in the schools. Many of them are pro-

gressive men, anxious to learn new methods, enthusiastic, hard working, but too often, of necessity, only half trained in laboratory work. It has been impossible from lack of time and opportunity for many of these men to become expert themselves, and they frequently employ recent graduates, or even students, as laboratory assistants, who, depending on their training, have good or erroneous ideas of the value of laboratory methods.

It is perhaps fair to say that the average physician of to-day has too exalted an idea of the science of medicine and too pessimistic a view of the art. The medical profession has been striving so long to drag itself out of the realms of the purely empirical, and has achieved so much in this direction along certain purely scientific lines, that the practitioner, whose laboratory training is, after all, only rudimentary, is apt to overestimate the value of laboratory procedures, and to forget that the application of laboratory methods to clinical medicine is new, and that the results are not to be compared in accuracy with those of the pure, as distinguished from the applied, sciences.

We would be the last to deny that advances of the most far-reaching character have been made by laboratory workers in the last one hundred years. Our whole conception of certain classes of disease has been changed by the work of laboratories, and the treatment of some bacterial diseases has been taken from an empirical and placed on a rational basis by the pure scientists of the profession. All this we acknowledge and glory in, and we would suggest that the glamor which surrounds these brilliant laboratory achievements is one factor which leads the average practitioner to place too high a value on laboratory diagnosis. No one will acknowledge more quickly than the laboratory workers themselves that laboratory diagnosis only reaches its highest usefulness when the findings of the bench are correlated with the findings of the bedside. The profession must learn that, in most instances, the result of a laboratory test should have, in a given case, the same value as a cardinal symptom or an approved clinical sign. Too many men forget this, and fail to correlate the laboratory findings with the clinical findings. Too many sit back in their easy chairs, so to speak, waiting for the laboratory to solve a problem whose solution could often be just as accurately reached by the use of their own eyes, ears and fingers.

There is danger that occasionally laboratory findings may be allowed to take the place of the keen thinking and the educated senses which our professional ancestors used to such good purpose. It lies in the hands of the clinical teachers of this country to overcome the obvious tendencies in this direction. Every practitioner should preferably do his own laboratory work, and, if this is impossible, he should at least know how to properly interpret and correlate the findings of others. Too many errors are made when the physician, lacking in knowledge of the significance of laboratory findings, relies on the reports of the pathologist who lacks in clinical ex-



perience, and who bases his returns on the examination of abstract specimens from a concrete patient of whose history he is usually almost completely ignorant.

#### THE FOURTH DISEASE (FILATOW-DUKES' DISEASE)?

The mild character of many of the cases of scarlet fever occurring in Chicago and elsewhere at the present time has raised the query whether this epidemic is not an example of the group of cases to which the name of Dukes' disease or the "fourth disease" has been given. It has long been known that German measles presents two varieties, one closely resembling measles and the other approaching scarlet fever so closely that the diagnosis is very difficult and at times impossible. N. Filatow, in 1885, suggested that this form constituted a distinct entity, and has since advocated this view in his works. As early as 1894 C. Dukes referred to the possibility of a new disease comprising these cases, but gave his opinion that the evidence for a distinct disease was insufficient. Later, however, his experience as physician to a large school for boys caused him to change his opinion, and in 1900 he reported<sup>1</sup> three epidemics which furnished evidence sufficient, in his opinion, to establish the existence of a distinct pathologic species, which, for want of a better name, he called the "fourth disease," to distinguish it from the three similar exanthemata, measles, scarlatina and German measles. Certain cases of rubella or r  theln present at first a morbiliform eruption which later assumes a scarlatiniform character. These, however, are not reckoned as examples of the fourth disease.

The cases falling in this new category have the following character, which in many points distinguishes them from genuine scarlatina: the period of incubation is long, two weeks as a rule, contrasting with that of scarlet fever, which averages four or five days; the stage of invasion is absent, the disease beginning with the eruption; vomiting is very seldom observed, the pulse does not reach 100, the temperature averages 101, but may rise to 104, or even with very complete eruption may not rise above 99.4, and usually becomes normal on the fourth day. The throat is only slightly affected, but the lymph glands, especially the post-cervical glands, are enlarged and tender. The eruption is practically indistinguishable from that of scarlet fever and may cover the whole body in the course of a few hours. It appears first on the face and is seen at the corners of the mouth contrasting with the circumoral pallor of scarlet fever. It produces less heat and itching than the eruption of scarlet fever. Albuminuria is rare; the symptoms pass off in a few days, and recovery is rapid and without sequel  , except that Dukes has observed swelling of the submaxillary glands. Desquamation may be very complete, but is not usually in strips or sheets and bears no relation to the severity of the eruption. The tongue does

not peel. The disease is infectious for not more than 21 days where disinfection has been employed. The most conclusive evidence on which Dukes relied to establish the independence of the affection was that which showed that this disease was not prevented by the previous occurrence of scarlatina or r  theln and showed no power to protect against either of these diseases.

Subsequent observation and the criticism to which the cases reported have been subjected have led to a divided opinion. Broadbent,<sup>2</sup> Weaver, F. T. Simpson,<sup>3</sup> P. C. Curtis,<sup>4</sup> Bokay<sup>5</sup> and a number of others have either accepted Dukes' view or reported cases tending to confirm his conclusions. On the other hand, R. W. Marsden,<sup>6</sup> C. B. Ker<sup>7</sup> and others, after studying large clinical material, have found themselves unable to confirm the existence of a distinct disease of this character and, although not denying its existence, hold with Ker that the verdict must be a Scotch one, "not proven." Edson<sup>8</sup> considers this symptom-complex identical with rubella morbiliforme, while Cheinisse<sup>9</sup> regards it as the same as rubella scarlatiniforme, but suggests the name "epidemic pseudo-scarlatina." Probably the conservative opinion of the best observers may be summed up as follows: The epidemics classed under the designation "fourth disease" comprise either cases of r  theln or mild scarlatina or some cases of r  theln and some of scarlatina.

The apparent lack of protection afforded against these diseases may be explained by supposing that both infections prevail and that r  theln attacks those who have had scarlatina and scarlatina those who have had r  theln. It is possible that the previous experience of scarlatina may not always give immunity. At any rate the tendency to multiply varieties of infectious diseases is to be deprecated and the frequent occurrence of atypical forms of all these diseases should be borne in mind. The present epidemic probably comprises a large number of cases of mild scarlatina with occasional examples of diphtheria, measles, German measles and whooping-cough, showing a general epidemic influence under which the development of various atypical forms of infection is greatly favored.

#### HEALTH AND HIGHER EDUCATION.

Physicians who are brought much in contact with women who have had the advantages of the higher education, often note instances in which the strain of college and university life seems to have been seriously detrimental to health. There are many sides to the question, of course, and there can be no doubt that the encouragement of gymnastics and athletics in our American colleges for women has been a source of great good

1. Lancet, July 14, 1900.

2. Lancet, July 28, 1900.

3. Archives of Pediatrics, 1901, p. 692.

4. THE JOURNAL A. M. A., Aug. 30, 1902.

5. Deutsch. med. Wochschr., xxx, 43.

6. Lancet, Aug. 16, 1902.

7. Practitioner, February, 1902.

8. Brooklyn Med. Jour., March, 1905.

9. Semaine M  d., March, 29, 1905.



for the health of the educated women of this generation. College life has tempted girls to be out of doors much more than was the rule in the past, and this also has been a decided factor for the amelioration of the physical condition of women. When it is remembered that the pale, delicate heroine of fiction has gone out of fashion, and that novelists no longer consider it necessary to introduce heroines who are interestingly nervous, faint on the slightest provocation and have qualms of various kinds, cardiac, gastric and hysteric, almost without provocation, it will be recognized that a great improvement in feminine ideals has come. For this, college life is responsible to a considerable extent.

On the other hand, there are some crying evils that would seem to demand serious attention. Dr. Ralph Wait Parsons, in a recent article,<sup>1</sup> calls particular attention to several of these. The annual report of the New York State Commission in Lunacy for 1902 shows that of over 35,000 women admitted to the state hospitals for the insane in New York during the preceding eight years, over 15,000 (or fully 42 per cent. of the whole number) had been well educated. By contrast, of the 36,422 men who were admitted during the same period, 6,912 (or only 16 per cent.) were reported as having a corresponding degree of education. A difference of nearly three times as many mentally diseased in the two sexes of the same class of the population demands explanation. It would seem to indicate that there is some serious strain put on educated women. It is generally admitted that education always adds much more to the possibilities of mental suffering than to the probabilities of intellectual enjoyment in life, and that women, because they usually have more time for introspection, are more likely to suffer seriously from the bitter things of life than are men, but there would seem to be some much more direct and immediate factor at work in the causation of this generally increased susceptibility.

The question is entirely too serious to be decided off-hand. Woman is thoroughly capable of receiving as high an education as man. Whether or not her physical nature is able to stand the strain of the mental work necessary to secure it remains to be seen, however, for it can not be said that our limited experience up to the present time is decisive in this matter. There is no doubt that, in our modern system of education, young girls are often encouraged to overdo their school work just at the time when certain physiologic changes in their nature lower their vitality, and when the exaggerated natural calls that are made on their nervous systems would seem to counsel a quiet and easy life rather than the intellectual and emotional strain of school work. Between examinations and competitions, both of which are taken much more seriously by girls than by boys, demands are made on the girl's energies that may easily leave serious marks behind. At the same time, it must

not be forgotten that late hours and the prevalent indulgence in adult pleasures—evening parties, dances, progressive dinner parties, theaters, etc.—are responsible for much of the nervousness and general ill health of growing girls. For any given case of ill health, therefore, it would be unjust to condemn a strenuous educational system as being the sole cause, unless the dissipation common to these days of fast living were found not to be a contributing factor.

At the last meeting of the American Association for the Advancement of Science, as the result of a suggestion in the president's address, a section was established for the study of the science of education. Undoubtedly, one of the most important subjects that this section will have to discuss is the relation of the strain of educational effort to health during the period of adolescence in both boys and girls, but especially in girls.

Physicians should interest themselves in this question, for the educator does not always realize the harm that may be done by his methods, and often the physical deterioration consequent on school work in the teens does not manifest itself until much later in life. Physicians whose work takes them among the students of institutions in which young women are acquiring higher education, should realize that they are in a position to collect data that may be of great importance in the solution of this problem. We are now in the second generation of advanced education for women, and the next generation should be able to know from our experience just what is the result of feminine application to study especially in the years immediately following puberty, and how much truth or falsity there is in the suspicion still held by many, that woman's physical nature, and especially her nervous system, is in many cases detrimentally affected by ill-advised efforts for higher education.

#### SANITARY SECTIONS IN THE ARMY.

In the camps of instruction which were held in various parts of the country during the past summer and autumn, a new principle in camp sanitation was given a trial on the recommendation of the Surgeon General of the Army. The idea was that, if sanitation was to accomplish anything, not only should the recognized sanitary experts, the medical officers, be charged with advising proper methods for the prevention of disease, but that the machinery and personnel necessary to carry the recommendations into effect should also be placed under their control. The principle is so self-evident that it needs only to be stated to be accepted by any thinking man, and the success of the experiment was unqualified. The new organizations were called the Sanitary Sections and were composed of hospital corps men and of civilians hired by the quartermaster's department and turned over to the medical department for use as drivers, scavengers, etc. The functions of the Sanitary Sections were, under the direction of the commanding officers and medical officers, to carry out all sanitary measures for

1. *The American Girl versus Higher Education, Considered from a Medical Point of View*, New York Med. Jour., Jan 19, 1907, p. 115.



the prevention of disease. They took entire charge of the disposal of excreta and wastes, the sterilization of water, the polieing of latrines, anti-mosquito work, etc. In addition to these functions they constituted a personnel always at hand and available, for the correction, without delay, of the many minor sanitary defects which were continually arising in camp. Much interest was aroused by the new scheme and its operation was closely watched by both medical and line officers. At first there was some friction and criticism, as is usual with new departures, but soon the machinery was running smoothly, and the results attained in improved sanitary conditions, the relieving of the line and quartermaster's department of uneongenial work, and the placing of the responsibility on one department, removed practically all criticism. Never before in the history of the Army have such clean and well-kept camps been seen, and it is hoped that steps will be taken to make the new method a permanent feature of the military service in the field.

#### BOVINE TUBERCULOSIS.

According to the London dispatches, the British Royal Commission appointed to investigate the possible dangers of bovine tuberculosis to man has just made a report, confirmatory of a former opinion issued by it, that Koch's theory that bovine tuberculosis is not communicable to the human species is incorrect. They have found, they say, that milk containing bovine tubercle bacilli can by feeding produce tuberculosis in apes, and they have no doubt that many cases of human tuberculosis, especially in children, are due to this germ. This report is only what might be expected; the same conclusions had been reached by the United States Agricultural Department's investigators, but it is some advantage to have cumulative evidence as to this very important point. The importance of proper bacteriologic analyses of milk and the inspection of dairies can not be sufficiently emphasized, and it is very possible that while the milk of tuberculous cows may be comparatively innocuous to adults of fair resisting powers it may be extremely dangerous to young children and those having a predisposition to tuberculous infection. In fact, the milk is most likely to be far more dangerous than the meat of such animals, which, before being eaten, is usually sterilized in the process of cooking. Hence the greater necessity of stamping out tuberculosis in dairy herds.

#### THE ACTION OF THE X-RAYS ON LEUKEMIC BLOOD.

The use of the *x*-ray in leukemia was at first practiced on purely empirical grounds, as the method of action of the rays was little understood. Later, experimental and clinical work showed that the *x*-rays had a destructive power of a selective character, picking out certain varieties of cells and causing their solution. Now, Capps and Smith<sup>1</sup> have shown that the serum of a leukemic patient in whom such cell destruction has taken place, develops lytic power, also of a selective character, and that both within and outside of the body it is capable of causing solution of certain varieties of

leucocytes. Not all leukemic patients develop this power in their serum, for not all of them improve under the *x*-ray, and the lytic properties seem to be proportional to their improvement. These observations are interesting and suggestive, and may pave the way for improvements in the *x*-ray treatment of leukemia.

## Medical News

### ILLINOIS.

**Violent Deaths Increase.**—The report of the coroner of Cook County for January shows that his office investigated 385 deaths during the month. Of these 187 were due to violence. Railway accidents caused 36; falls, 24; suicide, 34; asphyxiation, 21; burns and scalds, 17; street car and wagon accidents, 16; homicides, 14; criminal operations, 8, and exposure, 3.

**Medicine Bill.**—Mr. Schermerhorn has introduced a bill in the House of Representatives, making it unlawful to sell proprietary medicines containing narcotics or poisons unless each package is labeled with the name and quantity of such drugs printed in large type. The penalty for violation is placed at fines of from \$100 to \$1,000, or 30 days to one year in jail, or both.

**County Hospital Staff Reorganized.**—It is reported that under the reorganization at Cook County Hospital, the staff will consist of 60 in place of 81, as in the past. Only one examination will be given, and those holding the highest marks will be given positions on the staff, irrespective of the school of medicine. This will also do away with the separate wards for the different schools of medicine, which has caused so much trouble in past years.

**State Board Appropriations.**—The appropriations asked for by the State Board of Charities for state institutions amount in all to \$7,804,916. This includes \$265,000 for the establishment of an epileptic village, and \$150,000 for a state sanatorium for consumptives. The board also suggests that a new hospital be built to take the place of the present hospital at Menard, which is reported to be poorly ventilated, overcrowded and unsatisfactorily arranged.

**County Society Endorses State Board.**—At the meeting of the Macoupin County Medical Society, held January 22, resolutions were adopted that the society urge its representatives in the legislature to consider favorably and pass the recommendations of the State Board of Charities for an appropriation of \$15,000 for the free distribution of diphtheritic antitoxin to the poor outside of Chicago; of \$250,000 for the establishment of a farm or colony for epileptics; and of \$150,000 for the establishment of a state sanatorium for the treatment of incipient tuberculosis and, furthermore, that insane, feeble-minded and epileptic dependents become state charges, leaving to the county only the care of paupers.

**Personal.**—Dr. Edwin A. Weimer, Pekin, is reported to be dangerously ill at his home.—Dr. Harry G. Hardt, first assistant physician of the Illinois Northern Hospital for the Insane, Elgin, has been elected superintendent of the Illinois Asylum for Feeble-minded Children, Lincoln, vice Dr. Charles B. Taylor, resigned.—Dr. Austin E. Palmer, health physician of Morris, has resigned.—Dr. Samuel E. Munson, Springfield, has been elected president of the Brainard District Medical Society, to fill the unexpired term of Dr. William E. Guthrie, Bloomington, resigned.—Dr. St. Elmo M. Sala, Rock Island, is reported to be securely convalescent.—Dr. Paul G. Manley, Mount Carmel, for 28 years a practitioner of Wabash County, will soon leave for his ranch in Mexico, on account of ill health.

**The Osteopathic Bill Again.**—Senate bill No. 21, introduced by Senator Chafee, and House bill No. 66, introduced by Mr. Allen, are practically the same as the Senate bill of 1905, which was killed through the efforts of the medical profession and the State Board of Health. These bills just introduced would create a State Board of Osteopathic Examiners to examine and license osteopaths; would give to osteopaths practically all rights and privileges of licensed physicians and surgeons; would permit them to practice surgery, obstetrics and medicine; to prescribe and administer all drugs coming within the broad classification of antiseptics, antizymotics, paracitides, intestinal antiseptics, general and local anesthetics, hyp-

1. Jour. of Exper. Med., January, 1907.



noties, local and mydriatic anodynes, analgesics, antipyretics, emetics, laxatives, alteratives, cardiac stimulants, diaphoretics, respiratory stimulants, etc. The committee on medical legislation of the State Medical Society and the State Board of Health are opposing these bills on the ground that the public health, safety and welfare demand their non-enactment; and furthermore, because they are inimical to the rights and privileges of licensed physicians of Illinois, who have complied with the laws of the state. They make the request through *THE JOURNAL* that the members of the medical profession of Illinois express their views at once to their representatives in the forty-fifth General Assembly (both senators and representatives) on Senate bill No. 21 and House bill No. 66.

#### Chicago.

**First Aid Association Concert.**—A concert is to be given in Orchestra Hall, February 12. Mme. Ernestine Schumann-Heink, Mr. Bruno Steindel, Mr. Ferdinand Jaeger and Mlle. Rosa Zukowskaja, for the benefit of the American White Cross First Aid Association.

**Chicago Tuberculosis Institute.**—The heirs of the Spalding estate have made a gift of \$20,000 in memory of Mrs. Jesse Spalding, to the Chicago Tuberculosis Institute, to be used as the directors see fit, in promoting the fight against the disease. The institute decided to have dispensaries in various congested districts of the city.

**Deaths During the Week.**—During the week ended February 2, 741 deaths were reported, or six more than for the preceding week and 84 more than for the corresponding week of 1906, the respective annual death rates being 18.33, 18.18 and 14.16 per 1,000. Pneumonia caused 157 deaths; consumption, 83; violence (including suicide), and scarlet fever, each 44; heart disease, 55; nephritis, 43; cancer and nervous diseases, each, 29; bronchitis, 20, and diphtheria, 15. The number of deaths from scarlet fever during the week was exactly double the number reported for the previous week.

**January Deaths.**—The highest death rate on record for January, with one exception, was reported this year. During the month 3,066 deaths from all causes were reported, equivalent to an annual death rate of 17.13 per 1,000, a rate more than 10 per cent. higher than the average. The increases and principal causes of death were as follows: Pneumonia, 592, an increase of 118 as compared with January, 1906; scarlet fever, 95, an increase of 67; heart disease, 235, an increase of 67; bronchitis, 91, an increase of 27; influenza, 51, an increase of 27; consumption, 326, an increase of 27; violence, 168, an increase of 25; diphtheria, 73, an increase of 18; measles, 26, an increase of 20; nervous diseases, 115, an increase of 10; convulsions, 61, an increase of 9, and nephritis, 212, an increase of 6.

**Scarlet Fever and Diphtheria.**—Dr. Heman Spalding, chief medical inspector, reports that during the week 292 cases of diphtheria were reported to the department of health, or six fewer than during the previous week. In the same time 1,686 cases of scarlet fever were reported, an increase of 681 cases over the preceding week, and 190 cases of measles, an increase of 51 over the preceding week. He considers that the agitation of the newspapers and the increased interest taken by the people in the matter of contagious diseases accounts in part for the increase in reported cases. The newly appointed medical inspectors in their visits to schools have uncovered a large number of cases unattended by physicians and unreported to the department. In numerous cases they have found school children recovering from mild attacks of scarlet fever, but still in condition to communicate the disease. Aside from these causes of increase there has, however, been a steady increase in the number of contagious diseases. For several months children with a mild form of scarlet fever, who were unattended by physicians, have been allowed the freedom of the streets, places of amusement and schools. Under these conditions multiplication of cases was a foregone conclusion, as has been pointed out repeatedly by the department of health. Three hundred and fifty medical inspectors of schools have now been appointed. This increased force will permit an inspector at every school, including the parochial schools, every morning. The finance committee has recommended the erection of a municipal hospital for the treatment of infectious diseases. This hospital is an absolute necessity, and the lack of it has long been a reproach to the city.

#### INDIANA.

**Medical School Bill Defeated.**—The Edwards bill, which authorized the Indiana University to build a medical school at Indianapolis, was defeated, without debate, in the House of Representatives, January 29, by a vote of 51 to 44.

**State Board Election.**—At the meeting of the State Board of Medical Examiners, held in Indianapolis, January 7, Dr. James M. Dinnen, Fort Wayne, was elected president; Dr. J. Edwin P. Holland, Bloomington, vice-president; Dr. Moses S. Canfield, Frankfort, treasurer, and Dr. William T. Gott, Crawfordsville, secretary (re-elected).

**Society Election.**—At the annual meeting of the Indianapolis Medical Society, January 8, the following officers were elected: Dr. Orange G. Pfaff, president; Dr. Alfred S. Jaeger, vice-president; Dr. Roscoe H. Ritter, secretary-treasurer; Drs. Alembert W. Brayton and David Ross, members of the judicial council, and Drs. Edmund D. Clark and Thomas B. Noble, delegates to the state medical society.

**Epidemic Diseases.**—An epidemic of scarlet fever is reported in and around Camden. An outbreak of typhoid fever has occurred at Evansville, which is believed to be due to the flood in the Ohio River. The board of health of South Bend reports that 109 cases of smallpox occurred in that city from Sept. 19, 1906, to January 1, and that 10 new cases were reported this year. Fifteen houses are now under quarantine. Scarlet fever is reported to be prevalent among the flood refugees at Aurora.

**December Disease and Deaths.**—During December bronchitis and tuberculosis were the most prevalent diseases. Pneumonia caused 408 deaths, or 61 more than in the corresponding month of 1905. Diphtheria was reported to be epidemic in 12 localities during the month. It was present in 50 counties, and 443 cases were reported, with 67 deaths. Only one death occurred from smallpox, although 493 cases were said to exist in 19 counties. Typhoid fever was reported from 50 counties. There were 439 cases, with 79 deaths. Tuberculosis is reported to have caused 329 deaths. The annual death rate of all cities was 15.7 per 1,000, and the county death rate was 11.6 per 1,000.

**An Active Health Board.**—The Indiana State Board of Health is doing yeoman work in the interest of pure food and drugs as shown by the monthly bulletin issued by the organization. Hundreds of analyses of foods and drugs have been made and the results tabulated, giving (what is most essential), the names of the various manufacturers, the brands and the degree, if any, of adulteration. The campaign has already borne fruit and sophistication is much less frequent than formerly. The board also prints in its bulletin an abstract of mortality statistics, with a summary of the morbidity and the mortality for the month. The division of bacteriology reports the number of microscopic examinations made for pathogenic bacteria, the number of Widal tests, etc. Altogether the state of Indiana is to be congratulated on its energetic and efficient health board.

**Personal.**—Dr. Robert Ansley, Indiana Harbor, has been ill with scarlet fever.—Dr. Charles S. Stewart, Auburn, has been reappointed special eye, ear, nose and throat surgeon for the Chicago division of the Baltimore & Ohio Railroad.—Dr. David G. Linvill, Columbia City, is reported to be critically ill.—Dr. Charles H. Eckert, Marion, has been appointed surgeon for the Indiana Union Traction Company, vice Dr. Aldin J. Dooley, deceased.—Dr. Harry Boyd-Snee, South Bend, has sailed for Europe.—Dr. Alpheus P. Buchman has been appointed a member of the Fort Wayne board of health, vice Dr. John W. McCausland, resigned.—Dr. James M. Larimore, Greenfield, has retired after 40 years' practice.—Dr. L. H. Conley, Gas City, has been appointed physician to the Grant County Infirmary.—Dr. Bert V. Chance, Windfall, has been appointed secretary of the local board of health.—Dr. Alpheus P. Buchman has been elected president, and Dr. Henry O. Bruggeman, secretary, of the Fort Wayne board of health.—Dr. Charles E. Patrick, Indianapolis, is reported to be seriously ill with nephritis.—Dr. Perry Woolery, Heltonville, was seriously injured in a runaway accident, January 23.—Dr. James A. Rawley, Brazil, was thrown from his buggy January 22 and slightly injured.—While attempting to cross a swollen creek, near Pike's Peak, Dr. Alfred J. Ralphy, New Bellsville, had a narrow escape from drowning. His buggy was overturned in the stream and his horses were drowned.—Dr. Theo. M. Brenton has been appointed health officer of Osgood.—Dr. Joseph F. Deputy, Hackleman, who has been seriously ill, is reported to be slowly improving.

#### MARYLAND.

**Smallpox.**—Three cases of smallpox, all in children, and all in one family, are reported from Lansdowne. The disease was first diagnosed as measles.

**Illegal Practitioner.**—"Dr." J. F. Wagner, Hagerstown, was arrested January 30 on the charge of practicing medicine without a state license. In default of \$300 bail he was committed to jail.



**Fund for Prevention of Tuberculosis.**—A movement has been inaugurated for raising \$10,000 annually for the support of the Maryland Association for the Prevention and Relief of Tuberculosis. The money is to be used in education and prophylaxis.

**Protest Against Quarantine.**—Residents of Kent County have sent in a petition to the State Board of Health representing that the quarantine which has been enforced against them on account of the prevalence of smallpox, has caused great hardship, and scarcity of food, fuel and other necessities. They pledge themselves to cooperate with the board in eradicating infectious diseases, and the board has allowed steamboat service to be resumed.

#### Baltimore.

**Health Report.**—During the week ended February 2 there were 36 deaths from pneumonia and 5 from influenza. Measles is reported to be quite prevalent.

**Memorial Tablet to Dr. Latimer.**—A bronze memorial tablet has been erected in the infirmary of the Baltimore College of Dental Surgery by the senior class of that college in commemoration of the late professor, Thomas S. Latimer, M.D.

**January Deaths.**—To the unseasonable weather of January is believed to be due the increased mortality of 1,041, as compared with former years. The increase was chiefly in affections of the respiratory passages, influenza, bronchitis, tuberculosis, etc.

**Registration of Tuberculosis.**—Drs. Henry Barton Jacobs and William H. Thayer went to Washington, February 1, and appeared before the senate committee, to urge the registration of cases of tuberculosis. The committee is considering a bill requiring physicians of the District of Columbia to register such cases.

**Personal.**—Dr. Arthur M. Shipley, superintendent of the University of Maryland Hospital, has returned after four months abroad.—Dr. Daniel St. T. Jenifer has been appointed physician to the South & Western Railroad Company, and is located at construction camp No. 5, near Marion, N. C.—Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, returned to Baltimore from a trip in Cuba, Mexico and California, January 26, and after a few days left for Boston, where he took steamer for Naples.—Dr. Robert E. L. Campbell has returned from Japan and is now in New York City.

#### NEBRASKA.

**Wintering in Florida.**—Dr. Frederick D. Haldeman and family, Ord, are spending the winter in Florida.

**Irregular Found Guilty.**—A. J. White, who advertised himself as a "doctor of vitaopathy," was found guilty of practicing medicine without a license at Grand Island, January 9.

**Infectious Diseases.**—Typhoid fever, diphtheria and scarlet fever are reported from York.—The scarlet fever epidemic at Lincoln shows slight signs of abatement. On January 26, 82 cases were reported, as compared with an average of more than 100 for several days previous.

**To Aid Carroll.**—At a meeting of the Nebraska Academy of Medicine, held in Lincoln, January 10, a committee of five, consisting of Drs. Solon R. Towne, Omaha; Alexander S. von Mansfelde, Ashland, and Henry B. Ward, Robert H. Wolcott and H. Winnett Orr, Lincoln, was appointed to make an effort to obtain the Nobel prize for Dr. James Carroll, U. S. Army.

#### NEW YORK.

**Coroner Harburg's Bill.**—This measure, now before the legislature, provides that no superintendent of a hospital in the city of New York, or other person in authority, shall refuse admission to an applicant brought by ambulance or other conveyance to such hospital if the hospital has room for the patient, and if the patient has not a contagious disease. Nor shall any superintendent or other person in authority in any hospital order the removal of any patient while in a dangerously sick or precarious condition to another hospital. The penalty for violation of this law is a fine not to exceed \$100.

**Bright Outlook for Stonywold.**—At the annual meeting of the managers of Stonywold Sanitarium for working girls afflicted with tuberculosis, it was announced that the \$75,000 mortgage would probably be lifted by March 1, as John D. Rockefeller and Anson R. Flower had each promised \$12,500, provided the rest of the money is raised by March 1. Smaller amounts have brought the sum in hand up to \$40,000. The medical report showed that of the 113 patients discharged during the year 17 were apparently cured, 43 had the disease arrested, 32 were improved and 21 were not improved. The total income for the year was \$111,463 and the expenditure \$107,000.

**Memorial to Dr. Alexander E. MacDonald.**—Dr. C. M. Campbell, secretary of the New York Psychiatric Society, reports that at a recent meeting a committee consisting of Drs. Carlos F. MacDonald and William Mabon presented a memorial notice of the death of Dr. Alexander E. MacDonald. The deceased had been actively in the care of the insane for many years, being medical superintendent of the New York City Asylum for the Insane from 1874 to 1904. He was one of the first to establish the tent treatment for the tuberculous insane. Dr. MacDonald had rare administrative qualities and was familiar with every detail in the care of the insane; seven thousand of these unfortunates at one time being under his direction.

**Report on Tuberculosis Hospital.**—According to the sixth annual report of the trustees handed to the senate, New York City, Buffalo and Albany furnish the bulk of the patients at the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis, at Raybrook. There were 940 applications for admission during the year and 222 patients were admitted. More than 60 per cent. of those who have been in the hospital for two months or longer have apparently recovered, and more than 30 per cent. have been benefited. Superintendent Burnham says that incipient tuberculosis is practically unknown to the profession save to those actually engaged in special work along this line, and many cases are referred to this institution which are subsequently rejected because they are not in the incipient stage.

#### Buffalo.

**Wants Separation of County Hospital and Almshouse.**—Alderman Callahan recently offered a resolution in the board of aldermen asking for a separation of the County Hospital from the county almshouse.

**Communicable Diseases.**—The total deaths from scarlet fever in 1906 were 21, and total deaths from diphtheria in 1906, 64. In January 45 cases of scarlet fever were reported. At present there are 62 cases of scarlet fever, 56 cases of diphtheria and 765 cases of measles.

**Hospitals Ask More Pay.**—Eight hospitals have petitioned the board of aldermen for increased compensation for city patients. The hospitals now receive \$5.00 a week *per capita*. They now ask \$7.00 a week. The advance in the cost of necessities causing increased cost of maintenance was the principal argument advanced.

**New Regulations Proposed for Health Department.**—The charter revision committee, through its subcommittee, has drafted regulations governing the health department. The regulations provide that the health commissioner is to be appointed by the mayor (as he is now), and must be a reputable, licensed physician with actual experience in practice of not less than seven years. The commissioner is to appoint his assistants and, with the council's concurrence, shall fix their salaries. In time of "great and imminent peril to the public health," the commissioner of health may take such measures for safety as he deems necessary. As at present he will have supervision over dead bodies, and the registration of births, marriages and deaths. It is also provided that he shall make rules and regulations for enforcement of all laws and ordinances for the protection of public health and care of vital statistics. One section not only authorizes but requires him to prepare ordinances for licensing all persons offering to give massage and medicinal baths, and all persons and organizations advertising to practice medicine in any of its branches. He is further empowered to enforce all health ordinances and is given greater power over tenements than is provided for in the present charter. All drainage, plumbing, etc., in all kinds of buildings shall be subject to the commissioner's approval and if not prohibited by statute or law, the commissioner is empowered to permit or prohibit the building of dwellings to be used by more than two families, of livery stables, barns in which live stock is to be kept, slaughterhouses or rendering plants; or the transforming of present buildings into structures for any of such uses.

#### New York City.

**Hospital Fund Mounts Up.**—The Saturday and Sunday Hospital Association reports that the sum of \$100,000 is assured. All additional contributions up to \$110,000 will be duplicated.

**Harvey Society Lecture.**—The eighth lecture in the present course of Harvey Society lectures will be given at the Academy of Medicine, February 9, by Prof. George Huntington on "The Genetic Interpretation of the Variations in the Genitourinary Tract."

**City Tuberculosis Dispensary.**—The department of health



opened a new dispensary for the treatment of tuberculosis on February 4 at Third Avenue and St. Paul's Place. All who apply are examined, given free treatment and sent to the proper hospitals.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended January 26, 420 cases of tuberculosis, with 197 deaths; 273 cases of diphtheria, with 34 deaths; 268 cases of scarlet fever, with 7 deaths; 181 cases of measles, with 6 deaths; 54 cases of whooping-cough, with 5 deaths; 35 cases of typhoid fever, with 9 deaths; 14 cases of cerebrospinal meningitis, with 14 deaths; 263 cases of varicella, and 2 cases of smallpox, a total of 1,410 cases and 272 deaths.

**Additions to Sanitary Code.**—The board of health has added two new sections to the sanitary code. The first reads that "no cocaine, either alone or in combination with other substances, shall be sold at retail by any person in the city of New York except on the prescription of a physician." The second section is that "it shall be the duty of all persons having in their possession cans or other receptacles containing milk or cream, which are used in the transportation and delivery of milk and cream, to clean or cause them to be cleaned immediately on emptying; no person shall use or cause or allow to be used any such receptacles for any purpose whatsoever other than the holding of milk or cream, or receive or have in his possession any such receptacle so used, or which is unclean or in which milk or cream has been allowed to stand until offensive." This section was made necessary by the bad condition in which cans and bottles are returned to the farms.

#### OHIO.

**Society Has Annual Meeting.**—The East Side General Practitioners' Medical Society, an organization of physicians practicing east of Washington Avenue, Columbus, held its annual social session and banquet, January 10. The wives and friends of the members participated in the pleasures of the evening. Dr. G. M. Clouse, the retiring president, acted as toastmaster. President C. C. Ross delivered his inaugural address. Dr. E. A. Hamilton responded to "Professional Friendship." Dr. I. C. Edwards to "The Physician's Wife." Dr. S. M. Sherman to "Reminiscences," and Dr. S. O. Griffin to "Our Purposes and Needs." The work of the society for the year promises to be very successful.

#### PENNSYLVANIA.

**Appointed on State Board.**—Drs. J. Guy McCandless, Pittsburgh, and James B. Walker, Philadelphia, have been appointed members of the Regular Board of Examiners, to take effect March 1.

**Scranton Free from Typhoid.**—The typhoid fever epidemic in Scranton is almost ended. Instructions have been issued that the patrolmen who have been acting as sanitary guards be sent back to their police duties. Two medical inspectors have been dismissed. The \$5,000 voted by the councils as an emergency fund has been expended, and another appropriation for the same amount will be requested by the health board.

**Hospital Notes.**—The South Side Hospital, Pittsburgh, is to be enlarged with two wings, at a cost of \$200,000, by Mrs. Amelia N. S. Oliver and her children, in memory of the late James B. Oliver. At the annual meeting of the St. Vincent's Hospital Association, Erie, the following medical staff was appointed: Consulting physicians, Drs. D. H. Strickland and J. E. Silliman; attending physicians and surgeons, Drs. F. A. Walsh, C. A. O'Dea, G. A. Reed, G. S. Ray, D. V. Reinohl, John J. Bell, F. L. Hall, John W. Schmelter, Charles G. Strickland, Richard O. Miller, Elmer G. Weibel and Clarence Lefevre; eye department, Drs. O. M. Shreve and G. William Schlindwein; pathologist, Dr. Charles G. Strickland.

**Trustees of Medical School in China Organize.**—The trustees of the University of Pennsylvania's medical school in Canton, China, had their first meeting, and organized with George Wharton Pepper, president, Edward C. Wood, treasurer, and Dr. William Schultz, secretary. The other members of the board are: Samuel F. Huston, Dr. Charles H. Frazier, Dr. Rufus B. Searlet, William A. McKinney of Philadelphia, Dr. Howard Kelly of Baltimore, and William Guggenheim of New York. The name by which the work will be known and under which it will be conducted is the University School in Canton. It is to be under the immediate supervision of a board of trustees appointed by the Christian Association of the University of Pennsylvania.

#### Philadelphia.

**Jacobi in Philadelphia.**—Dr. Abraham Jacobi, New York City, delivers a lecture on "Specialism and Specialists" at the Woman's Medical College of Pennsylvania, February 9, at

8 p. m., on the invitation of the "Students' Medical Society" of that college. Previous to the lecture Dr. Jacobi is entertained at dinner by the faculty of the college. Dr. Jacobi's wife, Mary Putnam Jacobi, was a distinguished alumna of the college.

**Health Report.**—Although the deaths from all causes and a number of contagious diseases reported to the bureau of health during the week ended February 2 show a decrease over those of last week, the figures are nevertheless abnormally high. Owing to the large number of typhoid fever cases since January 1—about 1,500—the deaths therefrom are increasing steadily, those for the past week reaching 42. Deaths from pneumonia and tuberculosis also continue to be unusually heavy. From all causes the number of deaths aggregated 620, a decrease of 31 from the number reported last week and an increase of 49 over the number reported in the corresponding period of last year. The chief causes of death were as follows: Typhoid fever, 42; influenza, 11; tuberculosis, 71; cancer, 20; apoplexy, 31; paralysis, 31; heart disease, 50; diseases of arteries, 11; pneumonia, 88, and Bright's disease, 36.

#### SOUTH DAKOTA.

**Personal.**—Dr. R. J. Straeten, Rapid City, has successfully passed the examination of the Navy board at Washington, D. C., and is home waiting for commission as assistant surgeon, U. S. N.

**Illegal Practitioners.**—F. J. Gilbert, M.D., Rapid City, is reported to have been tried in justice court in December, found guilty of practicing medicine without a license and fined \$50. The case of Elliott, D. O., for practicing medicine without a license, it is said, was temporarily dismissed. Dr. A. Allen, Deadwood, member of the South Dakota State Board of Examiners, represented the board at these trials. P. J. Waldron, Rapid City, who is reported to have been tried before the State Board last September, on charges of drunkenness and unprofessional conduct, found guilty and license revoked, has appealed to the Circuit Court, and is now practicing pending the decision. The case of "Dr." Brunning of Aberdeen, charged with practicing medicine without a license has been settled by the court directing a verdict of not guilty. Brunning calls himself a "chiropractic" and his arrest was caused last summer by the secretary of the State Board of Health.

#### WASHINGTON.

**Society Elections.**—The Snohomish County Medical Association has elected the following officers for the ensuing year: President, Dr. James Chisholm, Everett; vice-presidents, Drs. F. R. Hedges and P. L. Opsvig, Everett; and Dr. N. S. McCready, Snohomish; secretary-treasurer, Dr. J. S. Newcomb, Everett. The annual meeting and dinner of the Pierce County Medical Society took place at Tacoma, January 9. The following officers were elected: President, Dr. G. D. Shaver, Tacoma; vice-presidents, Drs. L. L. Love and S. Sargentich, Tacoma; secretary, Dr. A. de Y. Grecne, Tacoma; treasurer, Dr. Wilnot De Leo Read, Tacoma.

#### GENERAL.

**The Medical Society of the Missouri Valley.**—The nineteenth semi-annual meeting of this society will be held at Omaha March 21-22, under the presidency of Dr. O. B. Campbell. A number of the presidents of the various state associations within the province of the society intend to present papers. The oration on medicine will be given by Dr. Robert T. Sloan, Kansas City, Mo., and the oration on surgery by Dr. Alexander Hugh Ferguson, Chicago. The local arrangements are in the hands of an able committee, with Dr. W. F. Milroy as chairman.

**Medical Fraternity Meets.**—The eleventh annual meeting of the Phi Chi fraternity was held in New Orleans, January 3 and 4, and the following officers were elected: Dr. Thomas S. Jones, Clinton, La., grand presiding senior; Dr. E. L. Brinson, Philadelphia, Pa., grand presiding junior; Dr. Fred L. Koontz, Louisville, editor-in-chief of the *Phi Chi Quarterly* (re-elected); Dr. H. W. Newman, Ann Arbor, Mich., associate editor; Dr. Alfred Henry, a member of the executive committee; Dr. Ebb C. Johnson, Chattanooga, Tenn., chief of the Delta Province. Dr. Rudolph Matas held a special clinic at the Charity Hospital in honor of the convention. Baltimore was decided on as the place for the next annual meeting.

**Rockefeller Institute Scholarships.**—The Rockefeller Institute for Medical Research announces a number of scholarships for work to be carried on in the laboratories of the institute in New York City, in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, and physio-



logic and pathologic chemistry. They are open to men and women who are properly qualified and are granted for one year, the value ranging from \$800 to \$1,200 each. It is expected that holders will devote their entire time to research. Applications accompanied by proper credentials should be in the hands of Dr. L. Emmett Holt, secretary, 14 West Fifty-fifth Street, New York City, not later than April 1, 1907. The announcement of the appointments is made about May 15. The term of service begins preferably on October 1, but, by special arrangement, may be begun at another time.

#### CANADA.

**Personal.**—Dr. Charles W. Vipond, Montreal, has returned from a visit to Jamaica.—Dr. George R. McDonough, Toronto, has gone on an extended trip to Egypt.

**Contagious Diseases.**—Of 120 deaths in Winnipeg in January 30 were caused by pneumonia.—There were 62 cases of diphtheria and 50 of scarlet fever in Toronto during January.

**Smallpox.**—Rural districts in the counties of Peel, Lambton, Kent and Wellington, Ont., have centers of smallpox outbreaks. At Chatham, Ont., there have been 94 cases within the past few months, all of a mild character. There are six or seven cases in Toronto. The disease has also broken out in Reston, Man.

**New Medical Association Formed.**—The physicians of Oxford County, province of Ontario, have formed a medical association. Dr. Welford of Woodstock is president, and Dr. Rogers, Ingersoll, vice president; Dr. Brodie, Woodstock, is secretary; Drs. Joy, Tilsonburg; Williams, Ingersoll, and Adams, Embro are honorary presidents.

**Hygienic Institution for London.**—The Ontario government has decided to grant \$50,000 toward the erection of a hygienic institute in the city of London and to give \$5,000 per annum for its maintenance for five years. The city of London will give a free site for the institution and will also vote a sum equaling that of the government toward the cost of the building.

**Hospital News.**—Mr. George T. Tuckett, Hamilton, Ont., has donated \$1,000 to the Hamilton Hospital for instruments and furniture for the operating room.—Mr. William Southam, Hamilton, Ont., offers to build a wing to the Hamilton City Hospital at a cost of \$10,000, for the treatment of advanced cases of consumption, if the governors of the hospital will consent to take charge of it.—Mr. R. M. Boswell, Elora, Ont., has sent \$150 to the Toronto General Hospital for the nervous disease wards recently established.

**University News.**—On January 15, Lord Grey, the governor-general of Canada, who is at present entertaining Secretary Root of the United States, addressed the Montreal Board of Trade on behalf of the endowment fund of McGill University. In view of the fact that Mr. Robert Reford, a prominent citizen of Montreal, has recently offered to contribute \$50,000 toward an endowment of \$1,000,000, a resolution was adopted calling on the citizens of Montreal to supplement the donation, as otherwise it will be impossible to carry on the affairs of the university so as to maintain its present efficiency and prestige.

#### FOREIGN.

**Public Tuberculosis Sanatorium at Venice.**—The city of Venice has set aside a comparatively large island, Isola Grazia, for a hospital and grounds for the tuberculous.

**Plague in Australia.**—According to the cable reports, there is a recrudescence of bubonic plague in Sydney, New South Wales. Eleven cases, two of which were fatal, have been reported since January 25.

**Bubonic Plague at the Canary Islands.**—Spain is alarmed at the presence of a few cases of bubonic plague on the Canary Islands. Energetic prophylactic measures have been enforced, under the direction of an expert sanitary officer dispatched at once to the spot.

**For Cancer Research at Brussels.**—A committee of prominent physicians and laymen has been appointed at Brussels to devise ways and means for organizing a cancer research institute and cancer dispensary similar to the *Fürsorgestelle* for cancer patients at Berlin.

**German International Review for Surgical and Mechanical Orthopedics.**—Hoffa and Vulpius have founded the *Centralblatt f. chirurgische und mechanische Orthopädie, Heilgymnastik und Massage*. The aim is to review the literature on these subjects, with abstracts of the important articles and occasional short original articles. S. Karger, Karlstrasse 15, Ber-

lin, is the publisher, and the annual subscription, including postage, is 16.50 marks or about \$4.15.

**Mosquito Extermination in India.**—The Calcutta municipality has taken steps toward destruction of mosquitoes. In some parts of the city the insects have been so numerous as to constitute a nuisance, which was repeatedly complained of by the inhabitants. The *Journal of Tropical Medicine* states that there is probably no large city in the world in which the problem of dealing with mosquitoes is more difficult. The whole city is honeycombed with tanks and excavations, while gardens are very numerous.

**Semcentennial of the Leading Medical Journal of Holland.**—A special number of the *Nederlandsch Tijdschrift voor Geneeskunde* is published this month to celebrate its fiftieth anniversary. It contains articles by Pel, Bruinsma, Tilanus, Korteweg and others describing the progress of the medical sciences during the last half century in Holland and the share of the periodical in this progress, and in raising the standard of medical instruction and professional ethics. The journal was founded by the merging of several small publications in 1857.

**Appendicitis Conference at Berlin.**—On the initiative of the secretary of the interior, a national representative conference to discuss the frequency of appendicitis was held recently at Berlin. The consensus of opinion seemed to be that the assumed increase in the number of cases of appendicitis in the last few years is only apparent. The question blank on the subject, to be sent to physicians, was mentioned in these columns recently. Physicians were urged to fill out the blanks with care. It was decided by the conference and the authorities that in future cases of appendicitis should be listed under a separate heading in death certificates and vital statistics.

**Lack of Medical Assistants and "Sanitary Officers" in Germany.**—The introduction of the "practical year" as a requirement after graduation in medicine has diminished the number of students who apply for the post of assistant in the clinics and institutes. Each clinic now needs more assistants than formerly, owing to the scientific tests, etc., deemed indispensable, while salaries have hitherto been low. The *Med. Klinik* raises a warning voice that unless scientific investigators are recruited from the best material, attracted by stipends or protection, the high standard of scientific research in Germany will begin to decline after a few years. The "sanitary officers" are subordinate army medical officers, and there are many vacancies in their ranks. This is the more surprising as the expenses of a military medical course are paid by the government, and an income is assured from the start, with great opportunities for advancement and for chairs in the universities. Among the scientists who commenced life as subordinate military medical officers are mentioned Virchow, von Leyden, Behring, Renvers, Goldscheider and Gaffky.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Jan. 19, 1907.

#### The Spread of Tropical Diseases.

Sir Patrick Manson, as guest at the dinner of the African Society, made an important pronouncement. Disease, he said, has more than any other cause made Africa a "dark continent." But for it Africa, instead of being to-day at the fag end in the race of civilization, would be in the van. Until eight or ten years ago our knowledge of African disease was of a most elementary and unsatisfactory character. At one time all African diseases were included under the one word "malaria." Now, since it has been studied scientifically, the African "malaria" has been found to include half a dozen diseases due to absolutely different causes and producing different results. Among others are blackwater fever, African fever and sleeping sickness. The last was formerly confined to certain districts on the West Coast, but has now crept into the Congo, passed through the great African forests to Lake Victoria Nyanza, devastated Uganda, and now threatens to extend to the upper waters of the Nile and Lake Tanganyika. There is no knowing, he said, whether it may not spread to Rhodesia and possibly to India, and throughout tropical Asia—a calamity to mankind too terrible to contemplate. It is of the utmost importance, therefore, that those responsible should take steps to guard against such a possibility before it is too late. Of late years the policy of the government in the matters of pecuniary assistance to scientific research had undergone considerable change. A more liberal spirit is now shown in connection with grants to the School of Tropical Medicine and similar institutions.



## Pharmacology

### THE DIGESTIVE IMPOSSIBILITIES.

#### The Fallacy of Combining Pepsin and Pancreatin—Advertisements Measured by Scientific Statements.

In THE JOURNAL last week, page 434, we published the official announcement of the Council on Pharmacy and Chemistry relative to the liquid mixtures on the market claimed to contain pepsin and pancreatin. We also commented on the matter editorially and printed the first installment (the second appears this week) of an article on the subject by Professor Sollmann. The evidence showing the absurdity of such mixtures, as already presented by the Council and in the article of Professor Sollmann, ought to be sufficient to convince any physician who will give the subject just one minute's thought. This week, however, we present further evidence in the form of quotations from text-books, a class of evidence which, while not always reliable, must be accepted as reliable in this instance, for the reason that it is capable of proof and has been proved. We inject these quotations into a partial list of the preparations on the market, leaving our readers to draw their own conclusions regarding the manufacture and the use of such impossible combinations.

The manufacturer's excuse, as stated last week, is that physicians demand such preparations, and that they are simply supplying the demand. Why do some physicians demand and use such preparations? The answer is easy: because, repeating again, they have depended on the literature of the manufacturer rather than on scientific literature and on text-books. The "literature" in the form of advertisements of Lactopeptin and Elixir of Lactopeptin probably is more responsible for the demand for these monstrosities than any other one thing. It has been said that more money has been spent in advertising Elixir Lactopeptin than has been spent for any other one proprietary preparation on the market. Probably this is true, if we take into account the liberality of the firm in this regard and the time the preparation has been on the market.

It must be remembered that trypsin—mentioned in some of the quotations—is one of the principal constituents of pancreatin.

#### NEW YORK PHARMACAL ASSOCIATION.

ELIXIR LACTOPEPTINE. "Contains the five active agents of digestion—pepsin, diastase (veg. ptyalin), pancreatin, lactic acid and hydrochloric acid—combined in the proper proportions to insure the best results."

["Useless Pepsin Compounds.—But let me warn you to place no faith in the pharmaceutic monstrosities which are said to contain pepsin combined with pancreatin, with which it is positively incompatible, nor those in which it is combined with wines or any preparation of alcohol which, except in the weakest dilutions, interfere with its action. . . . Pancreatin not only can not be combined in the same mixture with pepsin, since they mutually destroy each other, but it can not be prescribed with any benefit so long as pepsin and HCl are being secreted by the stomach." Boardman Reed, Diseases of Stomach and Intestine, page 347.]

#### SHARPE & DOHME.

PAN-PEPTIC ELIXIR. "An efficient tonic-digestive containing pure pepsin, pure pancreatin, pure caffeine, lactic acid and celery, the latter being added chiefly for its flavoring properties."

ELIXIR PEPSIN AND PANCREATIN.

ELIXIR PEPSIN, BISMUTH AND PANCREATIN.

ELIXIR PEPSIN, STRYCHNIN, BISMUTH AND PANCREATIN.

["Pancreatin digests albuminoids and converts starch into sugar and proteids into peptones, also emulsifies fats in presence of an alkaline solution (pepsin requiring an acid one). Prolonged contact with mineral acids renders it inert. It is digested by pepsin, and hence probably never passes into the duodenum in its own character." Potter, Materia Medica and Therapeutics, tenth edition, page 373.]

#### H. K. MULFORD COMPANY.

ELIXIR LACTATED PEPSIN. "Contains pepsin, pancreatin, lactic acid, maltose, hydrochloric acid, etc."

LIQUOR DIASTOS. "Contains pepsin (isolated), diastase, trypsin, ptyalin, nitro-hydrochloric acid, C. P., nux vomica with aromatics."

["In the presence of an acid it (pancreatin) soon becomes inert." A. A. Stevens, Modern Materia Medica, 1903, page 176.]

["Attention is called to the fact that many ferments—especially trypsin—are destroyed by the pepsin. It is, therefore, very doubtful whether any ferment can be given which will act beyond the stomach." Sollmann, Text-Book of Pharmacology, page 749.]

#### PARKE DAVIS & CO.

ELIXIR PEPSIN, BISMUTH AND PANCREATIN. "Designed to cover the indications when both the stomach and the duodenum fail in functional activity—that is when there is both gastric and intestinal indigestion—with symptoms of catarrh in the regions named."

ELIXIR PEPSIN, BISMUTH, STRYCHNIN AND PANCREATIN. "Covers the same indications as the preceding, with the advantage of the tonic influence of strychnin."

ELIXIR PEPSIN AND PANCREATIN.

ELIXIR PEPSIN AND PANCREATIN WITH CAFFEIN.

MALT EXTRACT WITH PEPSIN AND PANCREATIN.

ELIXIR LACTATED PEPSIN. "A combination of pepsin, pancreatin, diastase, lactic acid and hydrochloric acid."

["Trypsin is gradually destroyed by gastric juice, and even by digestive hydrochloric acid." Hammarsten, Physiol. Chemistry, page 327.]

["Pancreatin and peptonized foods.—We must again point out that the value of these preparations depends on their being predigested foods, and it would be an error to suppose that in administering them we are introducing an active digestive ferment into the small intestine; for the proteolytic action of trypsin is arrested in an acid medium like the gastric juice, and the gastric pepsin aids in the destruction of the ferment." Yeo, Hare's System of Practical Therapeutics, vol. i, page 221.]

#### FREDERICK STEARNS & CO.

ELIXIR LACTINATED PEPSIN. "Few combinations of digestive ferments have given better satisfaction than this one. It contains pepsin, pancreatin, vera diastase, lactic acid, hydrochloric acid, sodium chlorid, and milk sugar, thus representing the various digestive fluids of the body."

ELIXIR PEPSIN, BISMUTH AND PANCREATIN.

ELIXIR PEPSIN AND PANCREATIN.

["Pepsin and pancreatin are incompatible in solution, for the reason that if the menstruum be of such acid nature as to preserve the pepsin, the pancreatic enzyme will in time be destroyed; while if it is neutral or feebly alkaline, the pepsin will be destroyed." B. T. Fairchild, Reference Handbook of Medical Sciences, vol. vi, page 556.]

#### ARTHUR PETERS & CO.

PETERS' PEPTIC ESSENCE COMP. "This valuable preparation contains pure pepsin, pure pancreatin, pure diastase, pure lactic acid, pure hydrochloric acid, pure glycerin, and aromatics."

["It (pancreatin) may be given dry, in powder, capsules or compressed pills, or in solution. It should be administered in combination with an alkali, as the activity of pancreatin is destroyed by acids." Butler, Materia Medica and Therapeutics, fifth edition, page 499.]

#### WM. S. MERRELL CHEMICAL COMPANY.

ELIXIR ATONIC DYSPEPSIA, PHENOLATED. "Contains pepsin, pancreatin, cascara sagrada, ipecac, nux vomica, phenolated elixir."

MALT EXTRACT WITH PEPSIN AND PANCREATIN.

["Kühne made the observation that the activity of trypsin was permanently destroyed by digesting its solutions with pepsin and hydrochloric acid. . . . Meltzer finds that hydrochloric acid alone destroys trypsin, but not as rapidly as when pepsin is also present." Schaefer's Text-Book of Physiology, vol. i, page 337.]

#### WILLIAM R. WARNER & CO.

ELIXIR PEPSIN AND PANCREATIN.

LIQUID PANCREOPEPSIN. "Comprises the natural and assimilative principles of the digestive fluids of the stomach and duodenal tract, viz.: Pepsin, pancreatin, lactic and muriatic acids."

["This ferment (pancreatin) is completely destroyed in the gastric juice. This is why thinking practitioners should not use both pepsin and pancreatin together in the same solution, because the medium in which one must act is opposed to that of the other. In the majority of cases in which pancreatin is given empirically, HCl is still secreted in the stomach and the



ferment is destroyed." Hemmeter, Diseases of the Stomach, pages 345-6.]

SMITH, KLINE & FRENCH.

ELIXIR PEPSIN, BISMUTH AND PANCREATIN.  
ELIXIR PEPSIN AND PANCREATIN.

["The value of pancreatin is even more problematical than that of pepsin, for though it would no doubt be valuable where the digestive ferments, particularly those of pancreas, were deficient, this has not been shown to occur. On the other hand, the pancreatic ferments are certainly destroyed in passing through the stomach." Cushman, Pharmacology and Therapeutics, on the Action of Drugs, page 710.]

COLUMBUS PHARMACAL COMPANY.

PEPTIC DIGESTANT. "Composed of pepsin, pancreatin, diastase, hydrochloric and lactic acids, combined with an aromatic vehicle."

["Pancreatin does not act in an acid medium and should not be given with acid." W. Gilman Thomson, Practical Medicine, 1900, page 403.]

LILLY & CO.

ELIXIR PEPSIN AND PANCREATIN.  
ELIXIR PEPSIN, AND PANCREATIN COMPOUND.  
ELIXIR PEPSIN, PANCREATIN AND BISMUTH.  
ELIXIR PEPSIN, PANCREATIN, BISMUTH AND STRYCHNIN.  
ELIXIR PEPSIN AND PANCREATIN WITH CAFFEIN.

["For action it (pancreatin) requires the presence of an alkali and in the acid gastric juice would not only not act, but would itself in all probability be digested and destroyed as a ferment; and it is of no value except for the preparation of predigested foods." H. C. Wood, Therapeutics, Its Principles and Practice, 1900, page 798.]

THE MALTINE COMPANY.

MALTINE WITH PEPSIN AND PANCREATIN. "Contains the three principal artificial digestants, diastase, pepsin and pancreatin, in such proportions as to be capable of converting all foods required by the human organism into the soluble condition necessary for proper assimilation."

["Hence it is obvious that pancreatic extracts or ferments given by the mouth can be of no value whatever, since the proteolytic ferment at least will undoubtedly be destroyed in the stomach before reaching its normal sphere of action." Chittenden, quoted by Yeo in Hare's System of Practical Therapeutics, vol. i, page 221.]

REED AND CARNRICK.

PEPTIC ENZYME ELIXIR. Formula: "Enzymes of the peptic glands. Enzymes of the pancreas. Enzymes of the salivary glands. Zymogens from the spleen. Enzymes of the intestinal glands."

["Pancreatin, a mixture of the enzymes of the pancreas . . . does not act in an acid medium and is rapidly destroyed by the action of hydrochloric acid in the stomach." Croftan, Clinical Therapeutics, page 365.]

["Pepsin is incompatible with pancreatin, this in neutral or alkaline solution destroying pepsin, while in acid media being destroyed by the pepsin." Culbreth, Materia Medica and Pharmacology, 1906, page 655.]

The above is respectfully referred to the thoughtful consideration of the medical profession of the United States.

#### "Patent-Medicine" Advertising in the Religious Press.

Dr. F. M. Wood, Carlinville, Ill., writes: "I am glad that you are showing up the facts on the advertising in religious papers. It seems to me that nearly all our religious papers are guilty in this matter. The *Christian Herald* is the only one I have found that is practically clean. Even they print the Magic Foot Draft ad. I have written several times to the *Presbyterian* of Philadelphia, and to the *Christian Intelligencer* of the Dutch Reformed church (New York), urging the withdrawal of such ads as Mrs. Winslow's Soothing Syrup and Wood's Sarsaparilla, stating their content and, in the case of the former paper, I received no reply. The latter paper replied, stating that they regretted that it was necessary to take these ads, in order to continue the publication of the paper, since the amount obtained in subscriptions is in no way adequate to carry on the expense of publication. In this case I carried the matter to the Monmouth County classis of the Synod of New Jersey, and they passed a resolution protesting against such advertising in their church paper and urging the Synod of the church to take action. Thus far it went, and no

further, and I was without any resource to carry it further. It seems to me that the only way to get at them is the one you are taking, and to keep urging every physician to call this matter to their attention. If there was a means of getting at their subscription list and cutting it down by reason of such work, that would solve the problem, but it seems as if the gullible public is glad to be fooled. I note that the *Herald and Presbyterian* of Cincinnati also publishes these ads. A list of the religious papers who are guilty, printed in THE JOURNAL, would be a help in this matter."

If every physician who is subscribing for a religious journal that carries quack medicine advertisements would do as Dr. Wood has done, there would soon be an end to this co-partnership of the religious press in the Great American Fraud. Furthermore, if physicians would get their friends and patients to act also, they would help the cause along still more.

#### Analysis of Remedies for Kidney Diseases.

The *British Medical Journal*, Dec. 8, 1906, page 1645, gives the results of analysis of some of the chief proprietary remedies for kidney diseases. Several of these preparations are in the form of pills, while others are liquids.

The two principal drugs employed are oil of juniper and potassium nitrate, separately or together; in some cases aperients are added. Altogether extravagant claims are made for some of the articles, as is usual with proprietary medicines.

Analysis of Doan's Backache Kidney Pills gave results from which the following formula giving a similar pill was constructed:

Oil of juniper	1 drop.
Hemlock pitch	10 gr.
Potassium nitrate	5 gr.
Powdered fenugreek	17 gr.
Wheat flour	4 gr.
Maize starch	2 gr.

Divide in twenty pills.

Forty pills and four dinner pills sell for 2 shillings and 9 pence (66 cents); the estimated cost is one halfpenny (one cent).

The dinner pills were found to have approximately the following composition:

Oil of peppermint	1 drop.
Podophyllin	3.8 gr.
Aloin	6.9 gr.
Jalap resin	0.8 gr.
Powdered capsicum	0.5 gr.
Powdered licorice	0.6 gr.
Maize starch	0.5 gr.
Acacia gum	1.5 gr.
Extract of henbane	1.5 gr.

Divide in twenty pills.

Dodd's Kidney Pills, which are advertised as the "only remedy that has cured Bright's disease," were found to consist of extract of cascarrilla, jalap resin, hard soap, potassium nitrate, sodium bicarbonate, hard paraffin, turmeric, and wheat flour. Var's American Kidney Pills are similar to Doan's, containing also oil of peppermint and powdered squill and extract of henbane. Fitch's Kidney and Liver Cooler, a liquid preparation, was found by the analyst to consist simply of a solution of potassium nitrate in water, 56 grains to the ounce—that is, 14 grains in a dose. The estimated cost of a bottle, containing rather under 4 ounces and selling for 2 shillings (48 cents), is one-eighth of a penny (1¼ cent).

#### Board of Trustees of the U. S. P. Convention.

The 1900 Convention for the Revision of the United States Pharmacopoeia adopted a constitution and by-laws providing for a board of trustees which has "the management and control of the affairs and funds of the convention." The board consists of five elected members, with the president of the convention and the chairman of the Committee on Revision, as ex-officio members. The members originally elected were: William S. Thompson, Washington, D. C.; Dr. George W. Sloan, Indianapolis; Charles E. Dolme, Baltimore; Albert E. Ebert, Chicago, and S. A. D. Sheppard, Boston; with Dr. H. C. Wood, president of the convention, and Dr. Charles Rice, chairman of the Committee on Revision, as ex-officio members. Deaths have made several changes in the board. Dr. Charles Rice died May 13, 1901, and Joseph P. Remington was made chairman of the Committee on Revision and thus became an ex-officio member of the board. William S. Thomp-



son died Sept. 26, 1901, and Dr. James H. Beal of Scio, Ohio, was elected October 21 to fill the vacancy. Dr. George W. Sloan died Feb. 15, 1903, and Dr. Henry M. Whelpley was elected April 14, to fill the vacancy. Albert E. Ebert died November 20, and F. W. Meissner, La Porte, Ind., has just been elected to fill the vacancy. Dr. Murray Galt Motter, Washington, D. C., was selected by the board in 1900 as secretary, which position he retains to the present time. The next meeting of the board will probably be the annual meeting, which is likely to be held in St. Louis early in May.

#### More Deaths from Soothing Syrups.

Dr. John E. Campbell, South St. Paul, Minn., reports the death of a child aged 10 months from the effects of Mrs. Winslow's soothing syrup, administered by the parents for restlessness.

Dr. Thomas C. Buxton, Decatur, Ill., coroner of Macon County, reports the death of a child from the effects of Rex cough syrup. An inquest was held and the following verdict was rendered: "The aforesaid child came to its death from an accumulation of cough syrup administered for the croup and a cold." Dr. Buxton states that the child had a cold and that it died from poisoning.

Dr. J. Elliott Dorn, Brooklyn, reports the death of a child from the effects of the administration of Monell's teething syrup. He states that the baby had been extremely cross and three drops of the preparation were administered, followed in one hour by 10 drops more.

#### Kopp's Baby's Friend Still Deadly.

The twin children of Joseph Minolich of Newcastle, Pa., died as the result of an overdose of some "patent medicine." Dr. Jesse R. Cooper, New Castle, to whom we wrote for information, reports as follows:

The family were very reticent in giving me any particulars, as Mr. Minolich sells the preparation. I finally found the physician who attended the children and obtained the information. The name of the medicine is Kopp's Baby's Friend. The parents gave it according to the directions accompanying the bottle: 6 drops every 2 or 3 hours to keep the infant from crying. The children were not sick; they lived about one day after beginning to take the medicine. When Dr. Warner, the attending physician, saw them they were in the last stages of opium poisoning. They had not been given any other medicine. The children were six weeks old.

## Correspondence

### Alcohol in Official Preparations.

ST. LOUIS, Feb. 4, 1907.

*To the Editor:*—When the question of the mutual relations of the professions of the physician and of the pharmacist was first agitated here last October, at a meeting of the Medical Society of the City Hospital Alumni, which was reported in *THE JOURNAL*, Nov. 10, 1906, page 1584, a strong presentation of reasons was made by an eminent pharmacist in favor of physicians prescribing the preparations recognized by the United States Pharmacopeia and the National Formulary, these being recommended in the place of proprietary products, and an exhibition was made of a number of such preparations—elixirs, syrups, etc.—all being attractive to the eye, and some to the senses of smell and taste as well.

As a medical student, I had been taught perhaps as much or as little in pharmacy as the average beginner, but, whatever the instruction was in amount, it had been nearly obliterated and, while listening to the pleas advanced, in which attention was called in particular to the samples of elixirs, I was compelled to ask my neighbors, doubtingly, how much alcohol was contained in such preparations, and could get no exact information on this point from well-educated physicians, until at last the, to me, surprising disclosure was made that a mere vehicle, such as elixir aromaticum, contains more than 25 per cent. of alcohol.

Since that meeting I have possessed what I never owned before, namely, a copy of the United States Pharmacopeia, and I have given it some attention, with interesting results.

To illustrate, I have found from a study of the formulas given there that a considerable amount of figuring is required to ascertain the alcoholic strength of certain preparations.

For example, take that of the elixir before mentioned: First, the alcoholic strength of compound spirit of orange (over 70 per cent. ?) must first be calculated, and to this must be added the 291 + parts of alcohol required to make 1,000 parts, and from these results the problem may then be solved.

But why should a physician be required to make such calculations in order to know just what he is giving in the guise of a harmless vehicle intended to make acceptable that which is presumed to be either more potent or less palatable?

And this leads to the suggestion that it is incumbent on the medical profession to ask, first, that the Pharmacopeia shall state in plain terms the alcoholic strength of every preparation containing spirits in appreciable amount; and, second, that a requirement be made on pharmacists for something that will suitably and harmlessly replace alcohol in what is termed a vehicle—a definition of which is: "any inert substance that serves as a medium for taking drugs or medicines, an excipient."

Can any substance that contains 25 per cent. and more of alcohol be termed therapeutically inert, in good conscience? It is my dissent from such a proposition that prompts the representation now made, for I am satisfied from observation and reflection that not merely possibilities but actualities of much harmfulness attend the condition above pointed out.

GEORGE HOMAN, M.D.

### A Course in Medical Economics.

CHICAGO, Jan. 25, 1906.

*To the Editor:*—In *THE JOURNAL*, Jan. 19, 1907, pages 228 and 246, I saw an editorial and a report on the value of a course in medical economics. I think it is a fine idea and hope it may be pressed so that all the schools may institute such a course. I may suggest, however, that there is no compact literature on the subject, and I doubt very much whether in any college a man can be found capable of giving a connected course on the various subjects embraced in the recommendation of the House of Delegates. A literature ought to be made and this would require many contributions from many people. I think that if a section on this subject could be established in the American Medical Association, it might bring out the best information of the profession and individual ideas would, from the discussion, receive such modification as necessary to adapt them to the needs of the profession at large. It would not be so very difficult for a person to give instruction in medical ethics. Some could give some instruction in finance, but nearly every one would have some ideas that he believed feasible that would not work for the majority of the profession. I hope you may devise some way to have this carried out systematically.

E. FLETCHER INGALLS.

## Society Proceedings

### COMING MEETINGS.

ASSN. of American Med. Colleges, Richmond, Va., March 18, 1907.  
Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.

### MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*One Hundred and First Annual Meeting, held in Albany, Jan. 28-30, 1907.*

The President, Dr. JOSEPH D. BRYANT, in the Chair.

(Continued from pages 426 and 429.)

### Danger Signals from the Skin.

DR. L. DUNCAN BULKLEY, New York, read a paper on the above subject which will appear in *THE JOURNAL*.

### The Importance to Healthy Individuals of Periodic Aural Examination with Functional Tests.

DR. W. SOHIER BRYANT, New York, said that inasmuch as serious damage to the ears may take place due to insidious affections without the knowledge of the patient it is important that periodic examinations be made at all ages, especially after any general disease or affection of the upper air tract. In many instances by the time the patient becomes



aware of the existence of disease pathologic changes have advanced so far that recovery becomes very difficult, whereas the early detection of disturbance gives time for adequate treatment. Aural vertigo, tinnitus, deafness, danger of systematic infection and intracranial lesions from middle ear suppuration may frequently be prevented by expectant treatment.

## DISCUSSION.

DR. BUSBY ALLEN, New York, thought also that deafness can easily be prevented if parents test the hearing of children with a watch occasionally. The prevention of deafness would be a large asset to the state.

DR. E. EDWARD DAVIS, New York, thought that where a hereditary tendency to deafness exists the ears should be tested every two years.

### Practical Legislation for the Prevention of Blindness from Ophthalmia Neonatorum.

DR. F. PARK LEWIS, Buffalo, said that there is no discussion among scientific medical societies in regard to the statement that ophthalmia neonatorum is dependent on an infection and, also, that it is almost absolutely preventable either by keeping the cocci from entering the eyes of the new-born child or by using some germicide that will destroy their virulence before they have time to propagate. Several well-known measures are effective. Infection is less frequent and less disastrous in the hands of hospital obstetricians and others than formerly, but he thought that ophthalmia is quite as common as ever among careless practitioners and midwives, and that no protection whatever is afforded the child in such cases, and hence there should be some legal measure that would offer protection. He advised bills in the legislatures of the several states providing registration of births with boards of health; gratuitous distribution by the board of light-proof, sealed ampoules containing the selected germicide to all obstetricians, midwives and others making application for them; instruction of all such persons as to possibility of ophthalmia; measures of protection and necessity for immediate treatment; a requirement that on each birth certificate there shall be a signed statement that the germicide provided by the board of health or some other accepted prophylactic has been used in each eye of the child on the day of birth; a penalty in case the child lose the sight of one or both eyes when the statement is not made that the measures of protection recommended have been taken. He asked the endorsement of the society as to the propriety of enacting such laws.

## DISCUSSION.

DR. PETER A. CALLAN, New York, said that the necessity for such a paper is a sad commentary on the indifference of the profession. A society for the prevention of blindness ought to be established in New York City, with branches in all the large cities.

DR. L. BORTON BANGS, New York, said that while he approves of compelling obstetricians and midwives to make use of prophylaxis, educational propaganda will reach the source of infection. The matter brings in the social and economic questions with which the society should concern itself.

### A Plea for New Methods in the Prevention of Blindness.

DR. LUCIEN HOWE, Buffalo, showed that ophthalmia of infancy is the most important cause of blindness and how much it costs both this state and the United States to care for this class of unfortunates. The best preventive thus far obtained for this affection is a 2 per cent. solution of silver nitrate. Other compounds of silver have recently been furnished, some of which are said to have advantages over the nitrate of silver and not to possess the disadvantages. There is much ignorance in regard to these compounds and some of them are no doubt greatly overestimated as germicides. He thought the obstetrician and not the oculist must decide on the relative value of these drugs as prophylactics. He urged obstetricians to experiment with these various compounds of silver in a large series of cases at large hospitals to decide this point.

### The Physiologic Therapy of Sanitarium Treatments.

DR. P. O. KINNEAR, Clifton Springs, described a modern sanitarium and named the diseases most frequently met there. He showed how sanitarium methods in the treatment of chronic diseases possess advantages over those employed in cities. He also cited illustrative cases, telling why the successful results were obtained, and called attention to the importance of special study of the sympathetic nervous system in this connection.

(To be continued.)

## Association News

### NEW MEMBERS.

List of new members of the American Medical Association for the month of January, 1907:

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| <b>ALABAMA.</b>                      | Hyde, Katherine D., Chicago.        |
| Chamblee, Z. B., N. Birmingham.      | Kelley, T. H., Chicago.             |
| Ford, W. F., Hoke's Bluff.           | Kuntz, W. W., Kinderhook.           |
| Jackson, L. F., Blossburg.           | Langhorst, H. F., Elmhurst.         |
| Leach, Sydney, Tuscaloosa.           | Lawson, J. M., Sidney.              |
| Little, E. G., Birmingham.           | Leslie, J. F., Maunie.              |
| McCallum, E. P., Greensboro.         | Linder, L. J., East St. Louis.      |
| Mitchell, H. Eugene, Birmingham.     | Mackey, A. N., Chicago.             |
| Nice, C. McK., Palos.                | Manning, E. T., Prairie City.       |
| Ransom, W. W., Birmingham.           | Marshall, F. D., Chicago.           |
| Schoolar, T. E., Centerville.        | McGee, J. A., Virginia.             |
| Wilson, E. A., Birmingham.           | Metcalf, H. S., Mt. Carroll.        |
| <b>ARIZONA.</b>                      | O'Connor, J. L., Chicago.           |
| Brown, O. S., Winslow.               | Pendleton, F. M., Quincy.           |
| Hickman, A. R., Douglas.             | Portuondo, B. H., Belleville.       |
| Sampson, G. P., Winslow.             | Rayhill, C. G., Belleville.         |
| Swetnam, J. M., Phoenix.             | Reis, G. W., Chicago.               |
| <b>ARKANSAS.</b>                     | Rettig, F. A., Chicago.             |
| Beard, J. H., Gentry.                | Rutherford, Leslie, Peoria.         |
| Childers, J. M., Wattensaw.          | Schultz, Louis, Chicago.            |
| Crigler, J. R., Biggers.             | Smith, L. J., Chester.              |
| Eubanks, F. G., Decatur.             | Smith, W. E., Grand Ridge.          |
| Hawkins, J. T., Mt. Holly.           | Spencer, O. B., Kankakee.           |
| Willson, E. L., Fowler.              | Van Wormer, W. W., Girard.          |
| Worsham, M. A., Centerville.         | <b>INDIANA.</b>                     |
| <b>CALIFORNIA.</b>                   | Boston, C. H., Bradford.            |
| Cochran, Guy, Los Angeles.           | Buck, D. A., La Porte.              |
| Connolly, T. W., San Francisco.      | Famulener, L. W., Bloomington.      |
| Dangerfield, Arthur, North San Juan. | Fox, M. G., Indianapolis.           |
| Gould, E. T., Sonora.                | Hill, F. E., Muncie.                |
| Gregory, F. S., Black Diamond.       | Mann, E. B., Muncie.                |
| Tebbe, F. H., Weed.                  | Marshall, G. D., Young America.     |
| Tickell, A. H., Nevada City.         | Moore, Wm., New Albany.             |
| <b>COLORADO.</b>                     | O'Neill, T. J., Anderson.           |
| Lamberton, R. F., Denver.            | Ruby, F. McK., Union City.          |
| Middelkamp, Marion S., Pueblo.       | Wagner, S. C., Wakarusa.            |
| Russell, C. W., Monte Vista.         | <b>INDIAN TERRITORY.</b>            |
| Stoddard, T. A., Pueblo.             | Somerville, O. S., Bartlesville.    |
| Swartz, C. M., Pueblo.               | Wilson, McClellan, South McAlester. |
| <b>CONNECTICUT.</b>                  | Wyatt, M. Clay, Bartlesville.       |
| Coe, Anton, New Haven.               | <b>IOWA.</b>                        |
| Moser, O. A., Rocky Hill.            | Augustine, J. L., Ladora.           |
| Stockwell, W. M., Suffield.          | Bathey, F. H., West Liberty.        |
| <b>DISTRICT OF COLUMBIA.</b>         | Beach, A. E., Carroll.              |
| Souter, W. N., Washington.           | Bell, J. F., Lucas.                 |
| Yates, Frederick, Washington.        | Beauchamp, J. W., Bedford.          |
| <b>FLORIDA.</b>                      | Brown, H. V., Griswold.             |
| Stringer, Sheldon, Tampa.            | Bussey, W. J., Sioux City.          |
| <b>GEORGIA.</b>                      | Comb, L. A., Fremont.               |
| Barfield, F. G., Cuthbert.           | English, H. H., Conesville.         |
| Combs, J. A., Locust Grove.          | Fitzpatrick, D. F., Iowa City.      |
| Cooke, W. L., Columbus.              | Fulliam, J. D., Muscatine.          |
| Quillian, H. P., Winder.             | Hall, C. H., Cherokee.              |
| <b>ILLINOIS.</b>                     | Hallinan, E. L., Clinton.           |
| Absher, A. A., Sibley.               | Heaton, E. D., Centerville.         |
| Adderly, H. C., Chester.             | Jay, D. A., Eldon.                  |
| Baker, Nellie M., Urbana.            | King, O. W., Keystone.              |
| Beilstein, F. W., Chicago.           | Leitze, F. C., Sioux City.          |
| Besley, F. A., Chicago.              | Limbocker, E. R., New Virginia.     |
| Bisson, M. W., Abingdon.             | Lonsdale, James, Dale.              |
| Bisson, W. C., Abingdon.             | Luke, Edward, Coin.                 |
| Bohannon, H. R., Jerseyville.        | Martindale, E. L., Clinton.         |
| Buecking, E. F., Chicago.            | Matson, J. A., Kiron.               |
| Burkett, Susie L., Chicago.          | Morton, W. G., Marshalltown.        |
| Caron, T. E., Kankakee.              | Oggel, H. D., Maurlee.              |
| Church, E. E., Lafayette.            | Paisley, C. L., Farmington.         |
| Clark, C. C., Chicago.               | Pone, G. C., Ottumwa.               |
| Cole, C. E., Jacksonville.           | Rendleman, W. H., Davenport.        |
| Conroy, T. Frank, Chicago.           | Riordan, M. F., Melrose.            |
| Dillon, William, Urbana.             | Seroggs, J. P., Lenox.              |
| Eskridge, Belle C., Chicago.         | Sherman, A. W., Burlington.         |
| Gale, A. Ernest, Chicago.            | Smith, E. E., Sioux Rapids.         |
| Goetzinger, C. F., Chicago.          | Sproule, E. W., Petersen.           |
| Heinzmann, C. B., Metamora.          | Stephenson, R. B., Libertyville.    |
|                                      | Vinson, H. W., Millersburg.         |
|                                      | Walker, J. C., Boone.               |
|                                      | Weston, B. F., Mason City.          |
|                                      | <b>KANSAS.</b>                      |
|                                      | Brethouwer, C. G., Norton.          |
|                                      | Brown, C. E., Leavenworth.          |



Edgerton, H. W., Canton.  
Gard, J. F., Cherryvale.  
Hale, T. H., Fall River.  
Henderson, R. C., Erie.  
Hoover, C. F., Saffordville.  
Jones, J. B., Garnett.  
Mabie, L. D., Kansas City.  
Mahan, H. P., Parsons.  
McBride, J. S., Lyons.  
Menard, C. E., Paxico.  
Miller, W. S., Uniontown.  
Moore, J. M., Madison.  
Morgan, G. W., Kimball.  
Palmer, W. R., Kansas City.  
Pitts, E. P., Atchison.  
Rakestrow, H. E., Chanute.  
Schoonover, George, Garnett.  
Seacat, G. M., Cherryvale.  
Shaw, J. Cook, Holton.  
Snyder, Z. H., Greenleaf.  
Stockton, M. L., Gridley.  
Stough, J. H., Arkansas City.  
Tanquary, E. D., Independence.  
Tanquary, Mamie J., Independence.  
Trowbridge, W. C., Howard.  
Vail, G. N., Parker.  
Vaughn, C. K., Leavenworth.  
Wingar, J. M., Hamilton.  
Wood, H. L., Whitewater.  
Youngs, W. E., Cherryvale.

## KENTUCKY.

Bayless, B. W., Anchorage.  
Flanagan, W. G. D., Jamestown.  
Heizer, W. Lucien, New Haven.  
Johnson, E. Y., Louisville.  
Turner, E. D., Cave City.  
Wilson, B. C., Clarkson.

## LOUISIANA.

Bremer, B. F., Long Leaf.  
Pratt, J. B., Natchitoches.  
Roberts, S. T., De Ridder.

## MAINE.

Chapman, H. M., Bangor.

## MARYLAND.

Bratton, Howard, Elkton.  
Goldbach, L. J., Baltimore.  
Griffith, Timothy, Frostburg.

## MASSACHUSETTS.

Abbott, H. E., Lynn.  
Bannon, J. H., Lawrence.  
Bartlett, P. C., Danvers.  
Frothingham, Channing, Jr., Boston.  
Harrow, C. W., Melrose Highlands.  
Henry, J. G., Winchendon.  
Jones, C. D., Malden.  
MacKenzie, L. F., Wellfleet.  
McGrath, B. F., Beverly.  
Phippen, W. G., Salem.  
Potter, P. S., North Adams.  
Roberts, L. A., Dorchester.  
Safford, W. P., Brockton.  
Stetson, F. W., Boston.  
Stevenson, W. M., Cambridge.  
Sweetser, F. E., Merrimac.  
Swift, H. M., Hathorne.

## MICHIGAN.

Christenson, J. A., Manistec.  
Denslow, J. F., Muskegon.  
Frenzel, Otto, Pigeon.  
Luton, F. E., Kilmanagh.  
Miller, R. E., Lansing.  
Mitchell, James, Gladstone.  
Rooks, J. J., Grand Rapids.  
Whitney, Oat., Jasper.  
Wicks, O. C., Muskegon.

## MINNESOTA.

Baker, A. L., Kasson.  
Beckley, F. L., Merriam Park.  
Boxell, E. C., St. Paul.  
Cady, Charles W., Mabel.  
Campbell, J. E., South St. Paul.  
Cooper, D. J., Dent.  
Frost, E. H., Willmar.  
Hegge, C. A., Austin.  
Hoidale, A. D., Tracy.  
McLaughlin, W. E., Willmar.  
Sherman, C. L., Luverne.  
Stevens, R. G., Heron Lake.

## MISSISSIPPI.

Keyes, C. T., Tupelo.  
Molloy, D. M., Calcedonia.  
Odeneal, E. P., Greenville.  
Winchester, Sprague, Natchez.

## MISSOURI.

Anderson, G. M., Pleasant Hill.  
Anthony, C. A., Fredericktown.  
Armour, W. A., Kansas City.  
Austene, C. W., Centralia.  
Baker, C. M., Santa Fe.  
Barnes, F. M., Brashear.  
Beaty, J. G., Huntingdale.

Bles, V. A., St. Louis.  
Bracklein, W. A., Higginsville.  
Bramel, H. W., McGirk.  
Brewington, G. F., Bevier.  
Britts, J. H., Clinton.  
Bronaugh, J. H., Calhoun.  
Brossard, P. M., Maplewood.  
Brown, J. C., Lewistown.  
Brown, W. G., Triplett.  
Burgwin, A. B., Fayette.  
Campbell, Givin, St. Louis.  
Carter, W. C., Dixon.  
Christian, C. H., New Bloomfield.  
Cole, P. F., Steffensville.  
Cook, G. E., St. Louis.  
Corley, H. N., St. Paul.  
Cottingham, I. A., Aurora.  
Davis, J. S., Whiting.  
Dewey, C. O., Breckenridge.  
Donaldson, G. H., Kansas City.  
Douglas, J. H., Dexter.  
Dunigan, J. P., Sullivan.  
Dusenbury, C. T., Monett.  
Duwelins, L. H., Briscoe.  
Eskew, De Witt, Poplar Bluff.  
Evans, R. L., Boonville.  
Fair, S. W., Belton.  
Forgrave, L. R., St. Joseph.  
Frame, C. N., Ewing.  
Freund, N. M., St. Louis.  
Gatley, V. A., Grant City.  
Gordon, David, Chillicothe.  
Gray, L. L., St. John.  
Gunn, A. J., Versailles.  
Hasse, Freeman, Revere.  
Haley, O., Fredericktown.  
Hancey, T. L., Flat River.  
Harwood, W. S., Rensselaer.  
Hawkins, G. W., Triplett.  
Hawkins, W. R., Glasgow.  
Head, C. W., Windsor.  
Hemker, W. H., Catawissa.  
Hendrix, W. G., New London.  
Hermann, H. W., St. Louis.  
Huffman, D. M., Crane.  
Hume, E. L., Bourbon.  
Humphrey, H. M., Locust Hill.  
Isaiah, J. W., St. Joseph.  
Jerard, Harold, Pleasant Hill.  
Jones, H. S., Kansas City.  
Jurgens, H. J., Edina.  
Keeling, F. V., Elsberry.  
Kerr, W. B., Dudley.  
Knight, G. P., Benjamin.  
Landis, H. B., Kings City.  
Leonard, W. H., Kansas City.  
Lewis, C. O., Fayette.  
Lewis, N. O., Kansas City.  
Lockwood, W. A., Conway.  
Lofton, E. Ambrose, Laddonia.  
Love, J. G., Nevada.  
Manning, D. F., Marshall.  
Marshall, Albert, Bonne Terre.  
Mason, L. O., Bevier.  
Mayes, J. F., St. Louis.  
McCallister, W. A., Centralia.  
McCormick, E. C., Farmington.  
McNeil, C. A., Sedalia.  
McNutt, W. B. A., Monroe City.  
Meng, E. R., St. Louis.  
Millem, J. A., Sikeston.  
Moore, M. H., Dearhorn.  
Morley, F. R., Sedalia.  
Mueller, G. L., St. Louis.  
Mugrove, W. H., Wheeling.  
Nieweg, J. W., Lois.  
Norris, W. A., Columbia.  
O'Connor, W. F., Baring.  
Park, G. M., St. Louis.  
Parkhurst, C. L., Odessa.  
Parsons, Wm., Greencastle.  
Paul, T. M., St. Joseph.  
Piatt, K. S., Chillicothe.  
Porterfield, Elmo, St. Louis.  
Powell, C. E., Elsberry.  
Radmacher, J. J., Meta.  
Rambo, J. H., Glenwood.  
Rice, J. T., Excelsior Springs.  
Reece, W. C., Elvins.  
Reid, E. W., Humphreys.  
McReynolds, U. R., Knox City.  
Rootes, G. F., Tabbetts.  
Rudd, W. E., Salem.  
Rusk, E. McD., Villa Ridge.  
Russell, R. Lee., Humansville.  
Schofield, L. J., Warrensburg.  
Shacklett, J. A., Rutledge.  
Shanks, B. O., Canton.  
Sheetz, Robert, Orrick.  
Shriver, C. F., Harris.  
Slaughter, S. C., Fredericktown.  
Slavden, J. L., Dexter.  
Smith, B. H., St. Joseph.  
Smith, O. A., Farmington.  
Smith, U. S., Hannibal.  
Snow, A. E., Union.  
Sparling, G. A., Kirksville.  
Swone, W. L., Wheeling.  
Thompson, L. M., Macon.  
Thornton, J. E., Columbia.  
Todd, Luther A., St. Joseph.  
Tomlinson, T. E., Morley.  
Tracy, L. E., Chillicothe.

Trumpour, R. H., Spring Bluff.  
Vandiver, C. E., Hannibal.  
Waldo, E. E., Hannibal.  
Walker, H. L., St. Joseph.  
Walter, Frederick, Perry.  
Weinsberg, Charles, St. Louis.  
Wescoat, W. H., Oran.  
West, Samuel, Idalia.  
Wilkerson, J. O., Cowgill.  
Williams, G. B., Flat River.  
Wilson, R. E., La Belle.  
Wysong, W. L., Missouri City.

## NEBRASKA.

Bohannon, C. L., Elmwood.  
Van Fleet, E. A., Omaha.

## NEW HAMPSHIRE.

Pratte, A. A., Keene.

## NEW JERSEY.

Asher, Maurice, Newark.  
Banker, P. A., Elizabeth.  
Duffield, E. M., Glassboro.  
Harreys, C. W., Ridgewood.  
Livingood, T. F., Elizabeth.  
Nelson, A., Jersey City.  
Ward, W. J., Newark.

## NEW MEXICO.

Schermann, A. H., Pinos Altos.

## NEW YORK.

Armstrong, S. T., New York City.  
Babbitt, O. H., Auburn.  
Baker, R. L., Utica.  
Bedell, A. J., Albany.  
Bentz, G. V., New York City.  
Bierhoff, Frederic, New York City.  
Bigelow, J. M., Albany.  
Butler, C. S., Harpersville.  
Chapman, Milton, Rochester.  
Coon, C. E., Syracuse.  
Cooper, W. G., Ogdensburg.  
Culler, F. W., New York City.  
Dalphin, P. F., Malone.  
Drake, J. B., Norwich.  
Dyer, F. M., Binghamton.  
Faust, W. P., Schenectady.  
Fisher, G. M., Utica.  
Foster, P. M., Whitesboro.  
Fowler, E. P., New York City.  
Gould, L. A., Schenectady.  
Guntzer, J. H., New York City.  
Hanbidge, W. B., Ogdensburg.  
Haskell, C. K., Bath.  
Hawkes, Forbes, New York City.  
Herman, Henry, New York City.  
Johnson, F. M., Jr., Yonkers.  
Kellogg, J. H., Bemus Point.  
Kinch, C. A., New York City.  
Livingston, E. P., New York City.  
Loughran, E. H., Kingston.  
Mace, H. M., Catskill.  
Mandel, A. R., New York City.  
McCauley, J. W., Rochester.  
McLean, F., Chenango Forks.  
Miles, G. W., Oneida.  
Moschowitz, A. V., New York City.  
Myers, H. G., New York City.  
O'Connor, T. S. A., Troy.  
Padelford, C. E., Clarendon.  
Parker, S. H., Sonyca.  
Peiser, Louis, New York City.  
Reynolds, G. H., Delhi.  
Reynolds, H. H., Malone.  
Richards, B. A., Rochester.  
Rulison, E. T., Schenectady.  
Schapira, S. W., New York City.  
Scholderfer, Edmund, Yorktown Heights.  
Sharp, J. C., Brooklyn.  
Sherman, W. T., Crown Point Center.  
Shoudy, J. C., Syracuse.  
Spiegel, Leo, New York City.  
Todd, J. C., Tarrytown.  
Whaley, J. H., Rome.  
Wheeler, L. H., Lockport.  
Whitney, L. A., Rochester.  
Williams, J. G., Brooklyn.  
Woodruff, J. B., Rochester.

## NORTH CAROLINA.

Fox, M. F., Guilford College.  
Gilmore, W. D., Cameron.  
Graham, W. A., Durham.  
Hall, J. K., Morganton.  
Hassell, S., Plymouth.  
Knight, J. B. H., Williamston.  
Little, T. R., Greensboro.  
Moncre, William, Raleigh.  
Murphy, W. B., Snowhill.  
Myers, J. Q., North Wilkesboro.  
Sexton, C. H., Dunn.  
Strickland, E. F., Bethania.  
Walker, H. D., Elizabeth City.  
Ward, W. H., Plymouth.

## NORTH DAKOTA.

Bentzen, Olaf, Grand Forks.  
Forbes, C. G., Washburn.

Le Bien, E. A., McHenry.  
Schanche, H. S., Portland.  
Scott, W. W., Wallhalla.

## OHIO.

Bainter, R. B., Zanesville.  
Balsley, A. W., Findlay.  
Brubaker, J. L., West Hope.  
Force, C. A., Attica.  
Gorbold, A. A., Ross.  
Hartman, S. D., Tippecanoe City.  
Hattery, Seth, Massillon.  
Heyde, J. M., Walnut Creek.  
Horton, E. G., Columbus.  
Howell, J. G., Freeport.  
Kauffman, H. R., Staunton.  
Kellum, M. R., North Royalton.  
Kimerline, C. E., New Washington.  
Lucas, W. W., New Washington.  
MacFarland, C. H., Jr., Cleveland.  
Martz, G. J., Hollansburg.  
McMillen, J. B., Somerton.  
Moore, F. P., Lisbon.  
O'Neill, O. U., Ironton.  
Palmer, D. G., Geneva.  
Pierret, G. A., Madisonville.  
Strohbach, George, Cincinnati.  
Uberoth, Marion W., Tiffin.

## OKLAHOMA.

Mills, J. T., Henderson.  
Will, A. A., Oklahoma.

## PENNSYLVANIA.

Arthur, W. C., Newville.  
Benz, H. J., Pittsburg.  
Castlebury, A. M., Williamsport.  
Dyson, J. R., Hazleton.  
Edie, E. B., New Haven.  
Fiet, Harvey J., Philadelphia.  
Frank, A. C., Pittsburg.  
Green, G. D., Lock Haven.  
Hammond, C. C., Wishaw.  
Kennedy, A. R., Philadelphia.  
Laughlin, Rebecca P., Waynesboro.  
Long, Charles, Altoona.  
Metzler, Gottfried, Philadelphia.  
Plank, J. R., Steelton.  
Reed, M. W., South Fork.  
Shannon, C. E. G., Philadelphia.  
Swigart, S. W., Lewistown.  
Willock, J. S., Pittsburg.  
Wyckoff, S. D., Wilkes-Barre.

## RHODE ISLAND.

Scanlon, M. H., Westerly.

## SOUTH CAROLINA.

Haines, H. T., Jonesville.  
Reese, J. H., Tatum.

## SOUTH DAKOTA.

Atkinson, J., Spencer.  
Benner, W. J., Willow Lakes.  
Brink, F. A., Pierre.  
Hohf, J. A., Gayville.  
Kaps, F. O., Winfred.  
Sampson, I. J., Mellette.  
Yates, C. A., Clark.

## TENNESSEE.

Bowen, William, Knoxville.  
Brown, T. B., Columbia.  
Byrd, E. H., East Chattanooga.  
Catlett, W. A., Sevierville.  
Dahncy, T. G., Memphis.  
Farmer, W. S., Gentry.  
Hardison, S. T., Lewisburg.  
Hargis, Frank, Chestnut Mound.  
Hibbett, W. E., Nashville.  
Jones, Heber, Memphis.  
Moore, W. P., Memphis.  
Northcutt, E. E., McMinnville.  
Simpson, W. L., Memphis.

## TEXAS.

Abell, G. C., Texarkana.  
Beck, J. W. H., Lorraine.  
Burnett, S. H., Lounie.  
Byars, James, Columbus.  
Clark, W. A., Cumby.  
Cobb, G. M., Ely.  
Decherd, G. M., Austin.  
Dice, R. J., Byers.  
Durham, C. E., Hico.  
Elmendorf, E. H., San Antonio.  
Gihson, J. F., Paris.  
Graves, A., Jr., San Antonio.  
Helms, W. L., Maud.  
Hogan, S. L., Pottsboro.  
Holt, J. H., Sherman.  
Howell, Asa, Burnett.  
Kennem, W. E., Sulphur Springs.  
LeMaster, R. R., Goliad.  
Marrs, M. C., Caro.  
McBride, W. C., Denton.  
McHarg, J. O., Fort Worth.  
Motherol, J. D., Cotulla.  
Raine, J. E., Clarksville.  
Roberts, T. F., Paris.  
Smith, H. R., Detroit.



Underwood, S. J., Morgan Mill.  
Ware, Ella, Stockdale.

## VERMONT.

Branch, G. H., Grand Isle.  
Hutchinson, A. T., Burlington.  
Lee, H. H., Wells River.

## VIRGINIA.

Brown, S. E., Norfolk.  
Carson, H. C., Sugar Grove.  
Cherry, T. M., Glamorgan.  
Harris, Percy, Tye River.  
Iden, B. F., Manassas.  
Kendig, E. L., Victoria.  
Kendig, W. D., Tinkling.  
Pine, J. S., Lebanon Church.  
Ross, C. F., West Point.

## WASHINGTON.

McDowell, W., Seattle.  
WEST VIRGINIA.  
Sole, J. R., New Martinsville.  
Varner, S. W., Glenville.

## WISCONSIN.

Cook, D. M., Gays Mills.  
Donnelly, F. J., Mouches.  
Kingsley, J. R., Sheboygan.  
O'Leary, T. J., East Troy.  
Pearce, W. J., Dodgeville.  
Smith, O. E., Mukwonago.  
Stein, J. F., Pulcifer.

## WYOMING.

Nelson, N. D., Shoshoni.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### SYPHILITIC INFECTION FROM DEAD BODIES.

SAN FRANCISCO, Jan. 11, 1907.

*To the Editor:*—In an editorial in THE JOURNAL, Oct. 27, 1906, this statement is made: "It is well known that inoculation of syphilis from dead bodies, either in course of autopsy or later in the dissecting room, have never been reported. As some of the autopsies on syphilitic subjects have been undertaken within a few hours after death, and occasional accidental injuries have been produced during such autopsies, yet without positive results, it would seem clear that the microbe of syphilis dies almost simultaneously with its host."

In refutation, I am submitting a few cases which certainly are authentic, considering their sponsors:

R. W. Taylor ("Some Unusual Modes of Infection with Syphilis," *Journal of Cutaneous and Genito-Urinary Diseases*, June, 1890, p. 201), in reporting two cases that came to his notice, says: "With the exception of the eminent Danish syphilographer, Dr. R. Bergh ("Ueber Ansteckung und Ansteckungswege bei Syphilis," *Monatsh. f. prak. Dermatologie*, vol. vii, 1888, p. 149), I believe no author has treated of the occurrence of syphilitic infection from the cadaver of a person who died during the active stage of the disease." Taylor's first case was a young physician who infected himself while making a postmortem examination, held eight hours after death, on the body of a patient who died from malignant syphilis. His second case was a physician twenty-six years of age, who infected himself while making an autopsy nine hours after death on the body of a prostitute. The chancres in both cases were located on the fingers.

Morrow (*Jour. of Cutaneous and Genito-Urinary Dis.*, 1898, p. 541) reports the case of a physician who received his chancre on the terminal phalanx of the left index finger. The patient stated that the lesion had developed at the site of injury which he had inflicted on himself with a knife while performing an autopsy.

Blaschko (*Berlin. klin. Wochschr.*, xli No. 52) states that in his observation of twelve cases of syphilis in physicians, there was one case where infection was unmistakably derived from dissection of a syphilitic cadaver twenty-four hours after death.

E. H. Hansteen also mentions a case of infection from a cadaver (*Norsk Magazin. f. Lægevidenskaben*, Christiania, lxvii, No. 6).

As the text-books are silent on this particular mode of extragenital infection, I trust this short communication will lead physicians to be more cautious in handling these dangerous subjects.

LOUIS GROSS, M.D.

ANSWER.—We are glad to have these instances of apparent infection from cadavers called to our attention. The very fact that so few cases have been reported, although probably thousands of autopsies on syphilitic subjects are made every year, tends to throw some doubt even on the reality of these. If the danger of such infection were always present we should expect to find many more cases reported. It must not be forgotten that practically every patient who dies in the large hospitals in Europe comes to the autopsy table. It has been repeatedly stated that 20 per cent. of the population of the large towns are infected with syphilis and that at least one in three of those who are treated in hospitals are, or have been, sufferers from the disease. In spite of this no special precautions are ever taken to avoid the possible communication of the disease in the pathologic department. There is a tradition in the autopsy rooms of such large hospitals as the Charité in Berlin and the Allgemeines Krankenhaus in Vienna, that such infections do not take place, and as a consequence the bodies of patients who are known to have been sufferers from syphilis are not designated in any way in order to call special attention to the fact so that more care should be taken. Most of the cases of reported cadaveric infection in the literature occurred in physicians who were in active practice and happened casually to make an autopsy during which they infected themselves. In these cases, the possibility of their having become infected from other sources in the course of

their practice can not be entirely excluded. If, moreover, the infrequency of the reported cases is taken into consideration, it would seem as though the general persuasion as to the non-infectiousness of cadaveric liquids or tissues from syphilitic subjects is probably true. On the other hand, in the editorial in which the statement was made with regard to the absolute non-occurrence of such cases, attention was called to the fact that the lesions of late syphilis, formerly considered to be absolutely incapable of conveying the disease, are, by a series of cases that can not be doubted, now proved to be contagious. Our ideas with regard to syphilis are being much modified in recent years, though the amount of study devoted to the disease might seem to have exhausted knowledge with regard to so important a subject. It is possible then, that the other persuasion with regard to absence of infection from the cadaver may be a mistake, and precautions should, therefore, be taken. Any one who has had much experience with syphilis knows how often primary lesions are taken for something else, especially when they are mild in character, and knows also how fleeting may be the manifestation of secondary symptoms. It is possible that many more such syphilitic infections take place than is known. The subject is well worth investigating and because it represents an important problem in prophylaxis, it deserves the careful attention of the young generation of American physicians.

### A PHYSICIAN'S EXPERIENCE WITH THE AUTOMOBILE.

SHELBYVILLE, IND., Jan. 23, 1907.

*To the Editor:*—Having been one of the pioneers among the medical profession of my state in the use of an automobile I thought it might not be uninteresting to other members of the profession to give you something of the cost and maintenance of a machine. I purchased my first machine in February, 1902, for delivery April 1. During the five years that I have had a machine I have used it 8 months each year, that is from April to November, inclusive. I used it one year until late in December, but it was unsatisfactory for the reason that it was impossible to wrap up sufficiently to keep warm, and if trouble should occur on the road it was not pleasant to sit on the fence and wait for the repair man. Besides this, with a water-cooled machine there is the constant danger of freezing up, with consequent bursting of pipes, cylinders, etc.

I have kept an accurate account of the expense connected with my machines, as the following will show. This account includes three new machines, which must be counted in the cost, as after two years any machine is practically worthless. In my business I wear out a machine in two years and about 6 tires each year. My expenses have been as follows: This includes new machines, tires, gasoline, repairs, storage, etc.

1902 .....	\$ 990.57
1903 .....	1,160.05
1904 .....	583.04
1905 .....	1,189.28
1906 .....	556.82

Total .....\$4,479.76

The first year the machine was out of commission at least one-third of the time on account of repairs. In 1905 I was in New York for six weeks and of course the machine was not in use during that time. It is impossible for a physician to be without a horse in case of emergency, and this expense must be incurred also. Using a machine eight months in the year this amount will make the cost \$895.95 per year and \$111.99 per month. This is a conservative statement, as there must have been many days in the five years that it was not in use either on account of repairs or other purposes. Another item of expense not to be ignored is the increased cost of gasoline. It has more than doubled in the past five years, and will no doubt continue to advance because of the constantly increasing demand for it. In concluding I will say that I have no advice to offer to any one on the subject of automobiles, except: Don't believe an automobile salesman when he tells you that it is cheaper to maintain than a horse.

SAMUEL KENNEDY, PH.D., M.D.

### INJECTION TREATMENT OF "GOITER."

MULBERRY GROVE, ILL., Jan. 24, 1907.

*To the Editor:*—A claim was recently made by a physician that he was able to cure goiter by hypodermic medication, administered once or twice a week. As I know of no remedy that will effect a cure in this manner, and, after consulting a number of authorities, can find no reference of the method, I write for any information that can be given.

E. A. GLASGOW, M.D.

ANSWER.—If by "goiter" is meant the ordinary enlargements of the thyroid gland, its treatment by injection with the hypodermic needle is very old. Tincture of iodine was perhaps one of the first remedies used in this way. About 20 years ago, 5 per cent. carbolic acid was a very popular injection. These injections soon pass into desuetude. More recently Dubar has treated these cases by injecting 1 c.c. of 40 per cent. iodoform-oil into the gland once a week. Beck has brought into use the Roentgen-ray as a means of differentiating those cases in which the injection method is useful. By this means he is able to exclude those in which lime salts are deposited and which he considers unsuited to the injection treatment. The others, or so-called "negative cases," he treats by injecting



Iodoform-ether. The operative treatment of the ordinary goiter, however, as practiced to-day, is so much more satisfactory that the injection method, with its uncertainties and risks, finds few followers. If the question refers to goiter of the exophthalmic variety, or Basedow's disease, it is entirely another matter, as a number of so-called sera have been produced recently for this condition, some of which may be used internally and some hypodermically. The antithyroidin of Moebius in Germany, and the sera of Murray in England, and of Rogers and Beebe in this country are prepared in different ways, according to the particular experimenter's views. The results obtained from their use have been variable, some reporting apparent success, others complete failure, so that, in the present state of our knowledge, nothing definite can be said concerning their value.

#### A DEATH-BED ADVERTISEMENT.

Under the above heading the *British Medical Journal* prints the following unkind comment about a surgeon whose name is, by some means, very frequently before the public:

In a recent issue of the *St. James' Gazette* the following paragraph appeared: "Lady —, who last year was very ill, is now much better. She was for some time under the care of Dr. Doyen of Paris, and speaks most highly of his treatment." A day or two later the name of Lady — appeared in the obituary column of the *Times*. The poor lady might have said, with Alexander Pope, that she was dying of favorable symptoms. But even a dying patient has his uses for the cancer curer, for he continues to "get better" to the very last.

#### ABSCESS OF LIVER.

FAYETTEVILLE, N. C., JAN. 24, 1907.

To the Editor:—Will you kindly give me some information or send me some literature whereby I can get authentic data on abscess of the liver in this country?

J. H. MARSH, M.D.

ANSWER.—It is assumed that "in this country" means within the boundaries of the United States. The increased traffic between the United States and her island ports already has been the means of increasing the number of liver abscesses "in this country," as shown by the report of Craig (*Annals of Surgery*, xxxix, 711) at the Army General Hospital, Presidio of San Francisco, who finds that in 5 per cent. of the dysenteric cases the patients have liver abscess complications. He says that owing to the "large numbers of dysenteric patients returning yearly to our shores, the subject will be of some interest to physicians under whose care these cases eventually come for treatment." This percentage of liver abscess is very much higher than occurs in cases of dysentery indigenous to this country. Suppuration in the liver is due to the same specific cause as suppuration elsewhere in the body, viz., the presence of pyogenic microbes. These microbes reach the liver through the portal circulation; through the systemic circulation; by direct extension through the tissues; by direct implantation (trauma). By far the most common infection atrium is the ulceration which takes place in the lower bowel in the dysentery of the tropics. The microbes entering the distal radicles of the portal circulation reach the liver where they lodge and give rise to what is commonly called tropical abscess of the liver. Excluding the tropical abscess, which is rare in this country except when imported, the most common antecedents of abscess of the liver are well shown in the following table of 108 cases collected by Baresprung (*Langenbeck's Archives*, xviii, 557.)

Pyemia (Septic emboli from local infected areas).....	30
Pyemia (complicating local infected areas without demonstrable emboli) .....	13
Injuries of the liver.....	13
Ulceration processes in the region of the portal vein:	
Cecum and appendix.....	8
Cancer of the stomach.....	5
Cancer of uterus and vagina.....	3
Cancer of pancreas.....	1
Femoral hernia .....	1—18
Infections of the gall tracts.....	11
Gangrene and abscess of lung.....	4
Diabetes mellitus .....	1
Phosphorus poisoning .....	1
Unknown .....	5

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All four of the routes mentioned above by which microbes may reach the liver are illustrated in the table. Although not mentioned in the above table, abscess of the liver occasionally follows typhoid fever, as shown by Da Costa (*Amer. Jour. of Med. Sci.*, July 1898) and by Sheldon (*Amer. Jour. of Med. Sci.*, cxxv, 618). As the pyemic abscesses are usually discovered at postmortem and are associated with multiple abscesses in other organs of the body, they seldom become the subject of surgical intervention. Exclud-

ing these, therefore, it is found that more than 50 per cent. of the abscesses of the liver are due to localized infectious of some of the intra-abdominal organs tributary to the portal vein, and as the large majority of them occur late in the course of these diseases, rather as terminal complication, most of them could be prevented by timely recognition and treatment of the primary condition. The diagnosis of abscess of the liver is not always easy, in fact at times it may be impossible. One of the most important points in connection with the diagnosis is the recognition of the fact that the above mentioned conditions may be complicated with abscess of the liver. Whenever one of these affections begins to deviate from its usual clinical history and the patient, instead of progressing to recovery, continues to manifest an irregular fever; to complain of a sense of fulness, or of discomfort or of pain in the region of the liver; to assume constantly a right-sided decubitus; to exhibit tenderness on pressure over the liver; perhaps to show an enlargement of the liver on examination, etc., an abscess of the liver must be suspected and its presence demonstrated or disproved by direct means if necessary. For details as to diagnosis, consult Rhoads' excellent article (*Annals of Surgery*, xxxix, 711). As the prognosis of liver abscess uninterfered with is decidedly bad, all cases should be treated surgically at the earliest possible moment, and not simply by aspiration but radically by thorough opening and drainage. As to the superiority of radical measures over aspiration, etc., see Johnson's article in *Annals of Surgery*, xxvi, p. 424.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Feb. 2, 1907.

Murtagh, John A., asst.-surgeon, leave of absence extended one month.

Mason, Charles F., surgeon, appointed member of board of officers to meet at Fort Monroe, Va., to consider the requirements of the situation of that post with reference to the Jamestown Exposition.

Smith, Herbert M., asst.-surgeon, granted two months' leave of absence, to take effect about March 1, 1907.

Krebs, Lloyd Lelt., asst.-surgeon, relieved from duty at General Hospital, Fort Bayard, N. M., and ordered to Fort Hancock, N. J., for duty.

Harvey, Philip F., asst.-surgeon-general, relieved from duty as chief surgeon, Department of the East, and on expiration of present leave of absence will proceed to Chicago, for duty as chief surgeon, Department of the Lakes.

Davis, William B., deputy surgeon-general, relieved from duty as chief surgeon, Department of the Lakes, Chicago, and will proceed to Governor's Island, N. Y., for duty as chief surgeon, Department of the East.

Whitney, Walter, contract surgeon, granted an extension of one month to his leave of absence.

Gregory, Verdo B., contract surgeon, arrived at Fort Adams, R. I., for duty.

Ames, Roger P., contract surgeon, granted leave of absence for one month.

Chase, Alpha M., contract surgeon, granted leave of absence for one month.

Leeper, John F., contract surgeon, ordered from Fort Duchesne, Utah, to the Army General Hospital, Fort Bayard, N. M., for treatment.

Brooks, John D., contract surgeon, returned to Fort Meade, S. D., from leave of absence.

Tyler, George T., contract surgeon, order for duty at Fort Wadsworth, N. Y., revoked; will remain at Fort Monroe, Va.

Allen, Ira A., contract surgeon, granted leave of absence for one month.

### Navy Changes.

Changes in the Medical Corps, U. S. N., for the week ending Feb. 2, 1907.

Leys, J. F., surgeon, detached Norfolk Hospital, duty with Department of Government and Sanitation, Canal Zone, sailing from New York, February 5, 1907.

Marsteller, E. H., surgeon, detached Naval Recruiting Station, Baltimore, ordered to U. S. S. *Franklin*.

Decker, C. H., surgeon, orders to U. S. S. *Franklin* revoked.

Bachman, R. A., P. A. surgeon, detached Naval Recruiting Station, Minneapolis, ordered to U. S. S. *Franklin*.

Michels, R. H., asst.-surgeon, order of January 22, modifying order of January 4, revoked.

Miller, J. T., acting asst.-surgeon, detached U. S. S. *Franklin*, ordered to Naval Recruiting Station, Minneapolis.

Gill, J. E., P. A. surgeon, orders of January 22, 1907, revoked.

Bogan, F. M., P. A. surgeon, ordered to Naval Recruiting Station, Baltimore, Md.

Straeten, R. J., asst.-surgeon, duty Naval Hospital, Mare Island, Cal.

Grieve, C. C., asst.-surgeon, detached U. S. S. *Southery*, to duty Navy Yard, Portsmouth, N. H.

Traynor, J. P., P. A. surgeon, detached Navy Yard, Boston, ordered *Scorpion*.

Chapman, R. B., asst.-surgeon, detached Navy Yard, Mare Island, Cal., ordered Naval Recruiting Station, Oklahoma, Okla.

Murphy, J. F., P. A. surgeon, detached U. S. S. *Georgia*, ordered to U. S. S. *Scorpion*.

Traynor, J. P., P. A. surgeon, orders of Jan. 30 modified, when detached from Navy Yard, Boston, ordered to U. S. S. *Georgia*.



**Public Health and Marine-Hospital Service.**

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 30, 1907:

Gwyn, M. K., P. A. surgeon, granted an extension of leave of absence for two days from January 18.

Stimson, A. M., asst.-surgeon, leave of absence granted for seven days from January 16 amended to read five days.

Mullan, E. H., asst.-surgeon, granted leave of absence for fourteen days from February 7.

Falk, Charles C., acting asst.-surgeon, granted leave of absence for ten days, from January 15, 1907.

Knowles, Ralph, acting asst.-surgeon, granted leave of absence for five days from Jan. 28, 1907, under Paragraph 210 of the Regulations.

Watts, T. W., acting asst.-surgeon, granted leave of absence for nine days from Jan. 22, 1907.

Brown, F. L., pharmacist, granted leave of absence for ten days from Jan. 29, 1907.

Richardson, S. W., pharmacist, granted leave of absence for ten days from Feb. 7, 1907.

**BOARD CONVENED.**

A board of medical officers was convened to meet at Baltimore, Jan. 28, for the physical examination of applicant for cadetship in the Revenue Cutter Service. Detail for the Board: Surgeon L. L. Williams, Chairman; P. A. Surgeon D. E. Robinson, Recorder.

**Health Reports.**

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Feb. 1, 1907.

**SMALLPOX—UNITED STATES.**

California: Quincy, Dec. 1-15, 10 cases; Marion County, Jan. 19-26, 6 cases, Polk County, 10 cases.

Georgia: Augusta, Jan. 15-22, 11 cases.

Illinois: Chicago, Jan. 19-26, 1 case; Galesburg, 11 cases; Peoria, 6 cases.

Indiana: Indianapolis, Jan. 13-20, 12 cases; South Bend, Jan. 19-26, 10 cases; Terre Haute, 1 case.

Louisiana: New Orleans, Jan. 19-26, 2 cases (imported).

Missouri: St. Joseph, Jan. 12-19, 4 cases.

New York: New York, Jan. 19-26, 2 cases.

Ohio: Cincinnati, Jan. 18-25, 1 case.

Virginia: Hanover County, Jan. 31, 35 cases.

**SMALLPOX—FOREIGN.**

Argentina: Buenos Ayres, Dec. 1-22, 5 cases, 1 death.

Brazil: Pernambuco, Dec. 1-15, 25 deaths; Rio de Janeiro, Dec. 23-30, 1 case.

Nova Scotia: Colchester County, Jan. 19, present; Cumberland County, present; Pictou County, present.

China: Shanghai, Dec. 19-26, 1 death.

France: Marseilles, Dec. 1-31, 88 deaths; Paris, Dec. 29-Jan. 5, 8 cases.

Italy: General, Jan. 3-10, 1 case.

Malta: Dec. 15-22, 1 case.

Mexico: State of Tamaulipas (on line of Mexican Central R. R.), Jan. 18, epidemic.

Russia: Moscow, Dec. 15-29, 3 cases, 1 death.

Spain: Barcelona, Jan. 1-10, 7 deaths; Cadiz, Dec. 1-31, 8 deaths.

**YELLOW FEVER.**

Brazil: Rio de Janeiro, Dec. 23-30, 1 case, 1 death.

**CHOLERA.**

India: Bombay, Dec. 25-Jan. 1, 8 deaths; Madras Presidency, Nov. 1-30, 10,700 cases, 6,305 deaths, Dec. 1-15, 5,256 cases, 3,293 deaths; Rangoon, Dec. 15-22 cases, 39 deaths.

**PLAGUE.**

Arabia: Djeddah, Jan. 9, 1 case.

Brazil: Bahia, Dec. 8-29, 13 cases, 5 deaths; Rio de Janeiro, Dec. 22-30, 12 cases, 8 deaths.

Egypt: Alexandria, Jan. 4, 1 death; Ishmailia, Jan. 6, 1 case;

Keneb, Jan. 9, 1 case, 1 death.

Gibraltar: Dec. 16-Jan. 13, 7 cases.

India: Bombay, Dec. 25-Jan. 1, 13 deaths; Rangoon, Dec. 15-22, 15 deaths.

Japan: Formosa, Nov. 1-30, 100 cases, 84 deaths.

Peru: Catacaos, Dec. 1, 10 cases, 7 deaths; Mollendo, 7 cases; Pacasmayo, 4 cases, 2 deaths; Paiza, 2 cases, 1 death; Trujillo, 48 cases; 2 deaths.

**Marriages**

FRANCIS A. SCHULTE, M.D., to Miss Marie Powers, both of St. Louis, January 14.

WILLIAM A. STOECKS, M.D., to Miss Anna Koch, both of Davenport, Iowa, January 26.

MATILDA MAY BEERS, M.D., and A. S. Lindenfeld, both of St. Joseph, Mich., January 26.

ROY V. HAVER, M.D., to Miss Margaret Ellen Remsburg, at Middletown, Md., January 16.

MCCREA C. BANKS, M.D., to Miss Amelia Smith, both of Raleigh, W. Va., January 12.

GRANVILLE TURNER COLLINS, M.D., Highland Springs, Va., to Miss Elsie McDowell, January 15.

HAROLD J. LEVIS, M.D., to Miss Margarethe Schroedel, both of Rochester, N. Y., January 31.

JOSEPH T. IRBY, M.D., Enterprise, Miss., to Miss Epphie Smith, at Oakland, Tenn., recently.

ARTHUR E. SHAW, M.D., to Miss Elizabeth Logan Graham, both of Columbia, S. C., January 23.

VERNON ALASKA CHAPMAN, M.D., to Miss Marjory Smith, both of Muskegon, Mich., January 28.

EDWARD F. YOUNGER, M.D., Brookneal, Va., to Miss Grace E. Gilliam, at Lynchburg, Va., January 23.

VICTOR MAZURIE REYNOLDS, M.D., Darby, Pa., to Miss Lulu Ann Dobelhower, Prospect Park, January 25.

HENRY LYNDE WOODWARD, M.D., Cincinnati, Ohio, to Miss Estelle Nixon, at Ironton, Ohio, January 16.

WILLIAM VINCENT LAWS, M.D., Hot Springs, Ark., to Miss Mary Josephine Pottinger, Chicago, January 29.

FREDERICK STEVENS SMITH, M.D., to Miss Helen Louise Josselyn, both of North Andover, Mass., January 22.

**Deaths**

Arnot Spence, M.D. Bellevue Hospital Medical College, N. Y., 1884; a member of the New York County Medical Society; American Academy of Medicine and the Association of Military Surgeons of the United States; major and surgeon in the Ninth regiment, National Guard; visiting physician to St. Joseph's Home for Consumptives, died at his home in New York City, January 26, aged 43.

Charles Wilmot Townsend, M. D. College of Physicians and Surgeons in the city of New York, 1890; one of the best known physicians on Staten Island, was shot and fatally wounded while in bed, at his home at New Brighton, early in the morning of January 26 by the husband of a former patient, it is said, and died late the same night, aged about 40.

William C. Lott, M.D. University of Pennsylvania, Philadelphia, 1885; a veteran of the Spanish-American War; a fellow of the American Academy of Science, of the Philadelphia Academy of Surgery and a member of the Philadelphia County Medical Society, died at his home in Philadelphia, January 21, aged 49.

Richard H. McDonnell, M.D. Barnes Medical College, St. Louis, 1893; formerly physician in charge of the Emergency Hospital, Colorado City, and for a number of years a practicing physician at Colorado Springs, died at his home in Pittsburgh, Kans., January 9.

M. W. Waterman, M.D. Bellevue Hospital Medical College, 1871; for many years a practicing physician in New York state and northern Wisconsin; at one time coroner's physician in New York City, died at the home of his son in Chicago, January 25, aged 55.

William D. Milroy, M.D. College of Physicians and Surgeons, Chicago, 1900; secretary of the city board of health, Logansport, secretary of the Citizen's Club, Logansport; died at his home in that city, January 20, after an illness of three months, aged 37.

Joseph Manning Cleveland, M.D. College of Physicians and Surgeons, New York, 1850; superintendent of the Hudson River State Hospital, Poughkeepsie, from 1867 to 1893, died at his home in that city, January 21, from pneumonia, aged 82.

Harry Sheldon Allen, M.D. Rush Medical College, Chicago, 1902; a member of the American Medical Association; died at the home of his father in Keithsburg, Ill., January 18, after an illness of several months, aged 29.

Matthew T. Fulcher, M.D. Medical Department of Washington University, St. Louis, 1878; who retired from the practice of medicine a year ago to enter the ministry, died suddenly at his home in Belle, Mo., January 20, aged 63.

David B. Ward, M.D. College of Physicians and Surgeons, New York, 1876; city bacteriologist, Poughkeepsie, N. Y., died at his home in that city, January 24, after an illness of a few days, aged 53.

Henry A. LeBarbier, M.D. Dartmouth Medical School, Hanover, N. H., 1891; fleet surgeon of the Larchmont Yacht Club, died at his home in Larchmont, N. Y., of facial erysipelas, January 21, aged 50.

George Douglass, M.D. Medical College of the state of South Carolina, Charleston, 1877; of Union, S. C., died at Johns Hopkins Hospital, Baltimore, after a short illness, aged about 56.



**Ernest Jonsson Oarby, M.D.** Dearborn Medical College, Chicago, 1906; died in Passavant Hospital, Chicago, January 24, as a result of street car injuries, sustained January 22, aged 32.

**S. W. Dennis, M.D.** University of Pennsylvania, Philadelphia, 1875; a prominent physician of San Francisco, died at St. John's Hospital, Oakland, January 21, from pneumonia.

**Robert W. Gray, M.D.** Medical School of Maine, Portland, 1861; a veteran of the Civil War, died at his home in Boston, January 20, after an illness of several weeks, aged 71.

**Halsey B. Jenks, M.D.** University of Michigan, Ann Arbor, 1870; a veteran of the Civil War, died at his home in Ypsilanti, Mich., January 19, after a long illness, aged 64.

**Absalom A. Adair, M.D.** Rush Medical College, Chicago, 1857; a former practitioner of Kellogg, Iowa, died at his home in Des Moines, January 23, from apoplexy, aged 78.

**Archibald Crary, M.D.** Starling Medical College, Columbus, Ohio, 1883; died suddenly at his home in Huntington, W. Va., January 10, from a nervous affection, aged 60.

**George B. Ridley, M.D.** College of Physicians and Surgeons, Chicago, 1904; pathologist of Ancon Hospital, Canal Zone, died at that place from pneumonia, aged 33.

**John H. White, M.D.** University of Nashville, 1872; a member of the State Medical Association; died at his home at Bell Buckle, Tenn., January 21, aged 57.

**Christopher P. Lyons, M.D.** Harvard University, Boston, 1892; died at his home in Boston, January 27, after an illness of a few days, aged 36.

**Edith A. Emmett, M.D.** Homeopathic Medical College, Kansas City, Mo., 1883; died at her home in Kansas City, after a year's illness, January 19.

**Robert B. Thomson, M.D.** Sioux City College of Medicine, 1906; died at his home in Ida Grove, Iowa, from typhoid pneumonia, January 21, aged 24.

**Julius Roane, M.D.** Medical College of Virginia, 1853; a veteran of the Civil War; died at his home in Charles City, Va., January 18, aged 80.

**Oliver K. Reynolds, M.D.** Missouri Medical College, St. Louis, 1859; formerly of Fieldon, Ill., died recently in Oklahoma City.

**Ulysses S. Grant Fink, M.D.** Jefferson Medical College, died at his home in Larchmont, N. Y., from facial erysipelas, January 13.

**George Thayer, M.D.** Geneva Medical College, Geneva, N. Y., 1848; died at his home in Medina, N. Y., from paralysis, January 19.

**James H. Kime, M.D.** University of Oregon, Portland, 1890; died at his home in Fortuna, Cal., January 12, from pneumonia, aged 70.

**Joseph H. Peebles, M.D.** University of Nashville, 1891; a prominent physician of Shelbyville, died January 18, aged 42.

#### Deaths Abroad.

**L. Emile Javal, M.D.**, the well-known ophthalmologist of Paris, inventor of the Javal ophthalmometer, died recently, aged 68. His published works dealt mainly with the physiology of optics and hygiene of schools until 1900, when he became blind from glaucoma. After this date he published a work, *Entre Aveugles*—(From the Blind to the Blind), which has been translated into several languages, and also a work on the physiology of reading, writing, etc., and several communications on reading for the blind and allied subjects.

**P. J. Moebius, M.D.** Privat docent of neurology at Leipsic until 1893, died recently, aged 53. His works on neurology, on the pathology of Goethe, Rousseau, Schopenhauer and Nietzsche, on migraine and various aspects of psychology are well known, but his fame chiefly rests on his research on exophthalmic goiter and his treatment of it, with the serum of thyroidectomized sheep. The latest edition of his work, "Exophthalmic Goiter," 1906, states that no treatment gives positive, certain results except surgical intervention. The operation is more dangerous than under other conditions, he says, but its curative action is beyond question. Moebius preached the physiologic inferiority of the female mind and made many enemies by his critical summaries in Schmidt's *Jahrbücher* of which he has been editor since 1885. He never married. He has been lately engaged in drawing up the plans and specifications for the Rothschild million dollar endowment at Vienna for curable nervous affections. In his report he insisted that the physicians connected with the institution should receive sufficient salary to permit them to marry and to make the work of the institution their life work.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

**KANSAS** State Board of Medical Registration and Examination. Topeka, February 12. Secretary, Dr. F. P. Hatfield, Grenola.

**NEBRASKA** State Board of Health, State House, Lincoln, February 13-14. Secretary, Dr. George H. Brash, Beatrice.

**MAINE** Board of Registration in Medicine, Common Council Room, Portland, March 5. Secretary, Dr. W. J. Maybury, Saco.

**MASSACHUSETTS** Board of Registration in Medicine, Room 15, State House, Boston, March 12-13. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

**CONNECTICUT** Medical Examining Board (Regular), City Hall, New Haven, March 12-13. Secretary, Dr. Charles A. Tuttle, New Haven.

**CONNECTICUT** Eclectic Medical Examining Committee, State Capitol Building, Hartford, March 12. Secretary, Dr. George A. Faber, Waterbury.

**CONNECTICUT** Homeopathic Medical Examining Committee, New Haven, March 12. Secretary, Dr. Edwin C. M. Hall, New Haven.

**IOWA** Board of Medical Examiners, Des Moines, March 19-21. Secretary, Dr. Louis A. Thomas, Des Moines.

**OKLAHOMA** Board of Medical Examiners, Guthrie, March 26-27. Secretary, Dr. J. W. Baker, Enid.

**North Dakota January Report.**—Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, Jan. 2-5, 1907. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 15, of whom 13 passed and 2 failed. Four reciprocal licenses were granted at this examination. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Illinois Med. Coll.....	(1904)		76
College of P. & S., Chicago.....	(1905)		82
Chicago Homeo. Med. Coll.....	(1895)		77
Minneapolis Coll. of P. & S.....	(1902) 79; (1905)		85
University of Minnesota....	(1904) 88; (1905) 82; (1906)		85
Ohio Med. University .....	(1897)		78
Wisconsin Coll. of P. & S.....	(1902)		79
Manitoba Med. Coll.....	(1906)		89
University of Toronto, Ontario.....	(1906)		81
Trinity Med. Coll., Ontario.....	(1906)		77

College.	Year Grad.	Per Cent.
Gate City Med. Coll.....	(1906)*	
University of Christiania, Norway.....	(1904)*	

#### REGISTERED THROUGH RECIPROCITY

College.	Year Grad.	Reciprocity with.
American Coll. of Med. & Surg.....	(1906)	Illinois
Keokuk Med. College, Coll. of P. & S.....	(1906)	Iowa
University of Michigan.....	(1905)	Michigan
St. Louis University (Marion-Sims-Beaumont Med. Coll.) .....	(1906)	Illinois

\* Percentage not computed.

**Higher Preliminary Standards at the University of Pennsylvania.**—Dr. Charles H. Frazier, dean of the Medical Department of the University of Pennsylvania, announces that the requirements for the session of 1908-9 as published in the annual announcement, have been modified to include (1) two foreign languages, one of which must be either French or German; (2) physics, based on at least one standard text-book and including laboratory work covering at least 35 exercises; (3) chemistry, with laboratory work in qualitative analysis which shall include two analyses of each group of metals and of acids, as well as analyses of at least six mixtures containing metals and acids of the various groups, and (4) general biology, or general zoology, based on a year's course of five hours per week or its equivalent, not less than two-thirds of the time being devoted to laboratory work, this to be supplemented by a study of some modern elementary text-book. For the last three subjects all students must submit laboratory note-books accompanied by the usual teacher's certificate as to the trustworthiness of the record. For the session of 1909-10 all students must have the equivalent of the freshman work in a recognized university including the work above outlined, and for the session of 1910-11 and thereafter the equivalent of the freshman and sophomore work in a recognized university, including the work in physics, chemistry, biology and languages.

**Medical College Advertisements in the Lay Press.**—Dr. A. P. Butt, secretary of the Barbour-Randolph-Tucker County (W. Va.) Medical Society reports that at the meeting of the society held Jan. 4, 1907, a resolution was passed concerning certain medical colleges:



WHEREAS, The profession of medicine is already very much overcrowded, there being a far greater number of physicians than there is demand for their services; and

WHEREAS, We believe there should be a desire on the part of men intending to study medicine which it is unnecessary to stimulate by the arts of advertising; and

WHEREAS, We believe that the men who, by means of advertising, might be led to make the study of medicine their life work, are not likely to be a credit to our profession or the public; and

WHEREAS, It has come to our knowledge that the \_\_\_\_\_ of \_\_\_\_\_, and the \_\_\_\_\_ of \_\_\_\_\_, are advertising in other than medical publications, therefore, be it

*Resolved*, That we, the members of the Barbour-Randolph-Tucker Medical Society believe it to be to the best interest of the profession and the public to discourage further attendance on these colleges, and on any and all other medical colleges that may advertise in other than medical journals.

**Meeting of Texas Examiners.**—Dr. T. T. Jackson, secretary of the Board of Medical Examiners for the State of Texas, reports that the next regular meeting of that board will be held in Austin, April 30 to May 2, 1907.

## Section Discussions

### RHEUMATISM IN CHILDREN.

(Continued from page 501.)

#### DISCUSSION

ON PAPERS OF DRS. SNYDER AND DUNN.

DR. S. M. HAMILL, Philadelphia, thought there was a liability to overlook the joint conditions of brief duration because they are so frequently unseen at the time they are present, because they do not impress those who care for the patients and because they are often not indicated by the child's symptoms. Another point is the prolonged and peculiarly mild temperature which he has observed very frequently. He is entirely in accord with Dr. Dunn relative to the difference between the clinical manifestations of the cases designated as rheumatic fever. He believes Dr. Dunn is right in attributing the so-called failure of cardiac compensation in these cases to the effect of the toxic process on the heart muscles rather than to the effect of exercise. Physicians are often misled in attributing it to the result of exertion, because such good results are obtained by placing the patients at absolute rest. The fact that 17 patients were discharged without cardiac lesion suggests the importance of differentiating between the functional and organic cardiac conditions. It has been his misfortune to have seen a number of cases of rheumatic fever which had been kept at rest for weeks because of functional murmurs, which were thought to have been organic. Functional murmurs and those arising from valvular lesions will not be confounded if studied carefully as to the position of the apex beat, the size of the heart, the point of location, the direction of transmission and the time of the murmur.

DR. ISAAC A. ABT, Chicago, said that Cheadle's dictum that cardiac lesions are manifestations and not complications of rheumatism must be regarded as a fact. Heart disease among children seems to be in some instances a family affair. He was not prepared to offer a general explanation of this fact, nevertheless his assistants and himself had noted among their dispensary material that in certain families a large proportion of the children were not only rheumatic, but also suffered from the associated heart disease. Whether this can be ascribed to environment alone, or whether possibly it is due to a rheumatic tendency in certain families, is not easy of explanation. He was glad to hear Dr. Dunn speak of the continuous fever which is noted in some of these cases of chronic endocarditis. A great number of times he has noted that children in the wards with chronic valvular disease and more or less ruptured compensation, would have some fever for weeks at a time. Perhaps Dr. Dunn's explanation is correct, that the fever is due to the persistent rheumatic infection which involves the cardiac valves or possibly other structures. Dr. Abt was inclined to question the correctness of Dr. Dunn's statement, namely, that in 77 of his cases there was no evidence of acute rheumatic infection at the onset of the disease. He should rather think that there was some error in obtaining the histories from the patients. Very frequently the patient neglects to give essential facts. He was inclined to adhere to the assumption of British physicians, who maintain that the large majority of cases of endocarditis among children is

rheumatic in origin. English writers, too, emphasize the fact that rheumatism in children is an insidious affair, and may escape recognition. The very slight joint pains, torticollis, or pain located in the region of the cervical vertebra, the so-called growing pains, are in most instances rheumatic in character and should be treated accordingly. He believes it is of great importance that these cases of rheumatism in young life should be recognized early and treated energetically. The treatment with salicylates should be begun early, and the doses should be sufficiently large. If the rheumatic toxins, whatever their nature, can be neutralized at the inception of the disease, the damage to the heart will be greatly minimized. When the stomach does not tolerate the various preparations of salicylic acid, he is in the habit of giving suppositories containing gr. 10 of the salicylate of soda, and repeating them two or three times a day.

DR. R. T. GLENDENNING, Manchester, Mass., said that in January, 1905, he had an experience with a child. She had been playing about in the yard and came in, complaining of feeling tired. There was weakness of the ankles, high temperature, no redness of the joints, but there was pain on handling them. The pain in the joints disappeared in 48 hours. Then there was pain in the chest, endocarditis and temperature for three weeks. Small doses of the salicylate took all the pain away and she soon recovered. In November of the same year she had another attack. She could not then bear the salicylates on account of the severe abdominal pain, and she was given aspirin (acetyl-salicylic acid) in doses of gr. 2½, which relieved the pain very quickly. The endocarditis lasted about the same length of time that it did in the first attack.

DR. ARTHUR FAIRBANKS, Boston, referred to a case which had come under his observation. A boy, aged 11, had a history of having been struck in the stomach by another boy, 11 months previously. He did not vomit, but had severe pain, and was constipated. A week later "St. Vitus' dance" appeared, with "rheumatism" in all the joints. After 10 days in bed the pain disappeared, and he was allowed to get up. At the end of a week he had a slight relapse and chorea reappeared. It again improved, but he returned to the hospital the following spring, with the statement that the St. Vitus' dance was "bad again." He could feed himself, but could not button his clothes. Examination of the patient at this time showed that he held his head rigid and complained of pain on active or passive attempts to rotate or flex, the pain being referred to the posterior cervical region, where he complained of acute tenderness on pressure over the vertebræ. There was no tenderness over the muscles. Some tenderness was evident also in the dorsal region, but to a much less degree. There was complaint of pain and he winced when the vortex of skull was pressed downward, but there was no pain on jumping. In both wrists and in the metacarpophalangeal joint of the thumbs and in both knees there was pain of slight degree, but no swelling or redness. There was no swelling of the hands or tenderness; temperature was 101; heart was negative, except that there was slight prolongation of the first mitral sound. Choreic movements in upper extremities were very evident. On the supposition that rheumatism was the cause of the symptoms, he was given salicylate and bicarbonate of soda. Three days later all pain had vanished. He could then rotate and flex the head well, except some limitation in turning the head to the left. Chorea was still well marked. From that time on the salicylates were continued and movement in the head became perfectly free.

DR. WILLIAM J. BUTLER, Chicago, said that the proportion of cases in which there was endocarditis seems to him unusually large. It would be interesting to know how many cases of acute febrile conditions in which cardiac murmurs are heard, actually persist and remain as definite endocardial lesions. In chorea, which is so frequently associated with rheumatism, it is common to have systolic murmurs. It would be of interest to determine how many of these cases are really endocarditis and in how many the murmurs are accidental. It is probable that a considerable number are accidental, that disappear in the course of time, as may the



murmurs heard in various other acute conditions. The broken compensation referred to is usually dependent on one of two or three conditions; chiefly, when the pericardium is not affected, on the integrity of the heart muscle and the condition of its valves. In rheumatism there is no doubt that the myocardium frequently suffers as well as the endocardium, and a heart that has suffered an attack of endocarditis very frequently has also suffered more or less involvement of its myocardium, and as a result the occurrence occasionally of broken compensation, while it is referred to over-exertion, is really dependent on a prior myocardial involvement and a subsequent fatigue period; or, on the other hand, as stated by Dr. Dunn, it is frequently due to recurrent endocarditis in which the lesion existing is exaggerated or other lesions are added thereto.

DR. J. ROSS SNYDER, Birmingham, Ala., condemned the too free use of salicylates for all the uncertain conditions thought to be rheumatic. He thought that if all these symptoms should disappear, nothing has been proved, and salicylates are capable of a good bit of mischief.

DR. C. H. DUNN, Boston, said that the 77 cases of chronic endocarditis which he studied were not cases of acute infection. He did not see the clinical evidence of acute infection at the time of observation, but no doubt every one of them at some previous time was an acute infection. He did not have time to go into the matter of heredity, although a number of points on this were brought out. He studied the relation of chorea to rheumatism, but the figures did not give any very definite results. Many of the cases of chorea had cardiac symptoms in addition to the murmur, and those having an insidious development of cardiac murmur were carefully followed and showed in most cases a marked cardiac dilatation. He did not think there was much doubt that they were organic lesions. A point brought out was that the broken compensation was not the result of stenosis or insufficiency of the valve, as there are many cases in which cardiac symptoms develop before there is much stenosis, and many other cases in which there are no cardiac symptoms with rather marked stenosis. From these facts he is inclined to believe that the development of so-called broken compensation is due rather to an acute myocarditis accompanying an acute infection.

## AUTOINTOXICATION IN RELATION TO THE EYE.

(Continued from page 506.)

### DISCUSSION.

DR. CASEY A. WOOD, Chicago, is inclined to believe that as Americans we are affected by the danger of getting tired of a subject, and it has been thought by some that this subject has been settled. So far is this not true that he is of the opinion that this effort of Dr. de Schweinitz's will tend to explain a great many troubles in the eye that we know nothing about. While it is true that the auto-intoxication refers to changes that take place in the blood, that which leads up to it is important, namely, the changes that take place in the intestinal tract. Some six or seven years ago when the question was brought up about the probability that the so-called retrobulbar neuritis was not due to tobacco or alcohol, but to the secondary changes referred to by Dr. de Schweinitz, Dr. Turek was making some experiments on dogs, using the products of what might be termed indigestion, taken from the intestinal tract and injected into the blood. Fifteen per cent. of these dogs became blind and organic changes were found in the nerve head as well as in the eye itself. Dr. Wood thinks it legitimate still further to follow out these investigations. Any deductions to be drawn from experiments on the dogs, however, can not be applied to the human eyes, as they differ so widely. The observation is an interesting one, showing that there is some connection between auto-intoxication and eye diseases. Dr. Wood directed attention also to the probability that that class of cases known as primary optic nerve atrophy, not dependent on syphilis, is probably due to auto-intoxication. He thinks the work of Dr. de Schweinitz and Dr. Edsall points that way.

We should have these experiments carried on, he said, with monkeys instead of dogs or guinea-pigs.

DR. CHARLES S. BULL, New York, said that little attention has been given to the possible connection existing between certain obscure diseases of the eye and intestinal auto-intoxication. There are certain cases, for instance, of chronic inflammation of the uveal tract, occasionally met, the etiology of which is either very obscure or entirely unknown. He has seen a number of such cases within the past three years, all cases of general uveitis, in which the gastrointestinal factor has been the sole contributing cause. In all these cases the posterior portion of the uveal tract was more seriously involved than the anterior, though iritis was present in all. In all of them indican was present in a large percentage in the urine, which Elschnig regards as the best test of disturbance in the intestinal canal; and the reabsorption of the products developed by its presence he considers gives rise to the toxemia, which causes various diseased processes in the eye, notably uveitis. In the obscure cases referred to there has been complete absence of the usual etiologic factors. Dr. Bull agreed with Dr. de Schweinitz that the important point for us to recognize is the necessity of beginning a search from this standpoint, and the establishment of the dietetic and therapeutic regimen according to the indications which have been found. The examination of these patients should be made according to the best methods of modern physiologic chemistry, even when on the surface there seems to be no need of such exhaustive work. In the cases under Dr. Bull's care not the slightest improvement occurred until these exhaustive examinations were made and the dietetic and therapeutic regulations carried out according to the results found. Only then did improvement set in and vision was ultimately restored. This is particularly well illustrated in the case of a man recently under treatment. He presented himself with a general uveitis in both eyes and vision reduced to ten-two hundredths. He had been thoroughly saturated with mercury, potassium iodid and the salicylates before he came under Dr. Bull's observation. The fundus was very indistinct on account of the turbidity of the vitreous. The urine showed a high percentage of indican and the examination of the gastric contents revealed a chronic gastroenteritis. Under direct antiseptic treatment of the stomach and intestinal canal, flushing out the whole intestinal tract, followed by the administration of calomel, the vitreous cleared up and revealed numerous patches of pale yellow exudation in the choroid which slowly disappeared as the disease yielded to the treatment, and at the end of three months the media were perfectly clear, the exudation entirely disappeared from the choroid, and the vision was restored to normal.

DR. W. B. MARPLE, New York, agreed with Dr. Bull, and said that there is no other condition where the etiology has seemed to him more unsatisfactory than in uveitis. Dr. Marple has treated these patients with iodid of potassium, salicylate of soda, calomel, etc., and whether they got well because of the medicine or not it is difficult to say. The day after he read Dr. de Schweinitz's paper he had a patient, a child 15 years old, who had this uveal form of inflammation. The child was robust, with no specific history; vision was 20/100 in each eye; there was slight flush of the sclera and some opacities on Descemet's membrane. Dr. Marple had the urine carefully examined and the report was that there was marked excess of indican in the urine. He had never seen a case that has shown such improvement on the treatment—principally salines—based on the idea of intestinal intoxication.\* He thinks that we are under great obligations to Dr. de Schweinitz for turning our ideas in the direction of the possible etiologic connection between this form of uveal inflammation and auto-intoxication. He believes that it is not at all unlikely that in cases of relapsing iritis the patients may have no specific disease, for these patients do better under the use of salines than under specific treatment.

DR. WILLIAM C. POSEY, Philadelphia, reported the case of a boy, aged 9, with paralysis of both ciliary muscles, who had been subject for a number of years to duodenal disease. The

\* This patient was seen subsequent to the meeting (June 15), and the vision was 20/20, and the punctate keratitis had entirely disappeared.



symptoms came on after a rather active attack of indigestion. Indican was found in the urine. The cycloplegia cleared up after several weeks of treatment directed to the intestinal canal. Dr. Posey observed also, in connection with the delirium after operation on the eye, and which has been attributed by Fromaget to autointoxication, that about five years ago he reported twenty-four cases of delirium following eye operations. He observed at that time that autoinfection could scarcely have been the causal factor in any of the cases, as particular care was taken to eliminate this source of intoxication, both as regards diet and the opening of the bowels and the prevention of any retention of urine.

DR. WM. ZENTMAYER, Philadelphia, said that Francis Hare and Russell have recently called attention to the frequency with which spasms of the vessels occurs in beginning arteriosclerosis and have pointed out the benefit resulting from aiding in the elimination of waste products in migraine, epilepsy, etc. It has occurred to him, he said, that in monocular transient blindness, which is probably due to spasm of the central artery of the retina, autointoxication may be an exciting causative factor. It is of interest to note that in the case cited by Dr. Zentmayer the day before, there were no further attacks of spasm of the central artery of the retina after the intestinal tract had been flushed.

DR. JOHN E. WEEKS, New York, referred to two cases that have come under his observation within the last year. One was a case of optic neuritis and the other one of retinitis, which, in his opinion, were due to autointoxication. In both cases a careful examination was made of the urine and an excess of indican was found. These were cases from which syphilis or any constitutional taint that might have led to such development could be excluded, and the recovery was brought about by the use of intestinal antiseptics in addition to regulation of the diet.

DR. F. S. DE LUE, Boston, declared that he has been working along this line for several years. He has found that many of the cases that give trouble are due to autointoxication. Many of these patients come back complaining of discomfort, or perhaps go to some other oculist, who changes the glasses, making them a little weaker or a little stronger. He said that he could not agree with Dr. de Schweinitz that indican is the important thing to look for in the urine. He has been in the habit of having his patients examined very carefully, and believes that the trouble is due to uric acid. Many of these severe cases show no increase of indican. There may be no uric acid on the first test. The uric acid must be eliminated, then the symptoms pass off. He has seen cases of beginning optic atrophy, uveal trouble and nervous conditions immediately relieved by the elimination of what we call uric acid.

DR. S. D. RISLEY, Philadelphia, declared that at last the shades which have worried and made sleepless the nights of all practitioners from the early history of medicine down to the present time will be laid to rest and that we are finally to have a scientific statement instead. Ghosts which the practitioners of the sixteenth century and later attempted to lay by shedding rivers of blood; which our immediate predecessors tried to lay with calomel and jallup purges, we find are removed by calomel and soda followed by salines and intestinal antiseptics. His attention, he said, was first directed to this subject by a paper which Dr. de Schweinitz read at Washington and it was again emphasized and impressed on his mind by a practitioner who devotes himself to the study of diseases of the skin. Dr. Risley had a case of apparent herpes zoster frontalis, and the first question the dermatologist asked was about the intestinal tract, which elicited the information that there was an alternate diarrhea and constipation. He prescribed not only an alkaline purge, but an intestinal antiseptic immediately following it. The comfort to the patient and the speedy removal of the condition amazed Dr. Risley, and since then in all cases of uveal disease and many obscure conditions he has paid attention to this, and many cases have been cleared up by simply attending to the removal from the intestinal tract of the fermenting and decaying products of impaired digestion and faulty metabolism.

DR. EDWARD JACKSON, Denver, in reference to amblyopia, mentioned a case seen recently. A man, aged 58, had gradu-

ally decreasing vision for several weeks. The field of vision was not impaired, and there were no ophthalmoscopic changes. The case was referred to Dr. E. C. Hill, who found a diminution in the excretion of urinary solids, increased indican, and a moderate cardiac dilatation. The peripheral circulation was markedly impaired. Treatment brought the vision up from 4/22 and 4/15 to 4/8 and 4/5 in about two months. With reference to uveal diseases from autointoxication, Dr. Jackson said that he has now under observation three patients with chronic relapsing iritis who have had no serious attacks since placed on treatment for autointoxication under the care of intelligent medical men. Two of them are under such care constantly, while the third rather treats himself. In 20 years he had seven very severe attacks of iritis and innumerable slighter attacks. He always carried atropin, and full dilatation of the pupils stopped the slighter attacks. In the past four and a half years he has had no severe attack. His principal dependence in the latter period has been on absolute starvation for several days.

DR. JOHN GREEN, JR., St. Louis, cited the case referred to by Dr. de Schweinitz. A young woman, aged 30, had well-marked glaucoma simplex in either eye. The disease had begun about the age of puberty and had progressed in one eye to total blindness. In the other eye she still retained good central visual acuity (16/19) with a moderately contracted field. Both nerve heads were deeply excavated. Treatment with miotics was pushed vigorously, but vision gradually went off to 16/38, accompanied by a drawing in of the nasal boundaries of the field. Dr. Green said that at first the case did not appeal to him as one with a possible constitutional basis. Finally, however, a searching inquiry into the patient's general medical history revealed the fact that she had suffered from earliest childhood with an intractable constipation. The patient was referred to an internist, who ascribed the trouble to a congenital atonicity of the stomach and intestines, and instituted dietetic and electrical treatment. Concomitant with the improvement in intestinal function vision rose to 16/19 and later to 16/15, with increased ability to use the eyes, accompanied later by widening of the field. Dr. Green is inclined to the opinion that the prolonged resorption of noxious material from the intestinal canal gave rise to an optic neuritis which, through inherent weakness in the lamina cribrosa, resulted in excavation of the nerve heads.

DR. G. E. DE SCHWEINITZ, Philadelphia, stated that the difficulty of introducing a subject the knowledge of which is so limited is considerable, and his only desire has been to call the attention of the Section to a matter that is worth investigating, with the hope that obscure cases may be studied with this possible etiologic factor in view. With reference to the remarks that have been made in regard to uric acid and the uric acid diathesis, he said that this has nothing to do with the subject. His only purpose was to study the possible relationship of autointoxication to obscure ocular complaints, and to suggest that the presence of persistent indicanuria may be an indication, as Elschmig has insisted, of enterogenous decomposition products. He repeated and emphasized his conclusions in regard to this matter. We do not know, he said, the entity of a single autointoxication except the acidosis of diabetic coma, and we know that no known autointoxication is to be attributed to any known end-product of any known metabolism (quoting from Alonzo Taylor), but we do know from clinical analogy that autointoxications exist, even if their true nature is as yet a secret. There is reason to believe, in the absence of other causes, that ocular troubles may arise, largely in the corneo-scleral and uveal tracts, and probably, in so far as the nervous apparatus is concerned, in manifestations to which we apply the terms acute or chronic retrobulbar neuritis, which may be etiologically related to toxins elaborated in the intestinal tract. It is not at all certain, Dr. de Schweinitz said, that such toxins are the only and sole causes of these conditions, but at least investigations thus far indicate that they may be considered accessory causes, and, as Edsall and he have tried to show, they may play a certain part in the production of the symptoms and at times are probably the direct cause of their continuance, even where other more commonly accepted etiologic factors have ceased to be active.



## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

### Prophylaxis of Typhoid Fever.

(Continued from page 450.)

Following this discussion of sources of infection Thayer concludes that prophylactic measures which should be adopted may be grouped into two general classes:

#### 1. PREVENTION OF INFECTION OF THE PATIENT.

This may be accomplished by:

**Protection of the Water Supply.**—In towns the relation of the well to the house and to other structures should, of course, be carefully considered. In the city the surroundings of the source of supply should be carefully cleared up and installation of filtration plants which have been tested and passed on by disinterested scientific experts is an unquestioned necessity for all our large municipalities if we wish to protect our citizens and to keep pace with the progress of the world. The water supply has an undoubted relation to the urban prevalence of typhoid fever.

The necessity of conscientious and general boiling of water, if the supply be suspicious, is familiar enough to all. Reasonable care should be observed with regard to the eating of all contaminable foods, and unsterilized milk from uncertain sources should be shunned. The more general use of mosquito netting as a sanitary measure should be encouraged. Special measures should be adopted to keep flies away from food in kitchens, pantries, and on the table.

The construction of sanitary water-closets or outhouses is an important though most difficult matter in the country. Every measure should be taken to preserve the dejecta from exposure to flies. Tight spring doors should be provided, and all windows and openings should be netted.

It is of the utmost importance to remember that typhoid fever is a contagious disease. He who comes in any way in contact with the patient can not be too careful. Dirty hands are often the agents of infection, not only to the individual, but of food, and may serve to spread the disease. Preventive inoculations in time of epidemic in armies or among attendants in fever ward may be carried out.

#### 2. PREVENTION OF THE ESCAPE OF THE INFECTION AGENT FROM THE PATIENT.

The point of greatest importance, however, in the prophylaxis against typhoid fever consists in the prevention of the escape of bacillus from the human being into the external medium. The problem is no way different from that in cholera, yellow fever, plague and tuberculosis.

To prevent the escape of typhoid bacilli from the infected individual demands the concerted efforts not only of the individual physician, but of local, state and national departments of health. To carry out thorough and complete measures would involve the establishment of hygienic stations throughout the country, systematic examination of the dejecta, stools and blood in suspicious cases and, more than this, examination of healthy individuals in the immediate neighborhood. It would involve keeping the typhoid patient under supervision for a long period of time after his convalescence, as is now done in cases of diphtheria. Usually the typhoid patient ceases, in the great majority of cases, to be a danger to the community at the end of his convalescence. Proper sterilization of everything which may be contaminated by the patient should be insisted on. The following measures, the author states, have been admirably summarized by Colc:

**Protection of the Patient from Flies.**—This is an extremely important point. It would be far better if typhoid patients were isolated in separate rooms or wards, not only on account of the danger of transmission of the infectious agent by

means of flies, but because of the influence which it would have on the attendants in stimulating them to carry out the necessary rules of precaution better than is now commonly done. It would be well if the medical and general public realized more fully that typhoid fever is a contagious disease. The ward or room should be thoroughly protected by fly-screens, or the patient should be continually covered by a netting.

(This subject will be continued.)

### Incipient Tuberculosis.

Twitty states that he has given the following method of treatment a very careful and extensive trial and that he has no hesitation in recommending this special plan of treatment in incipient tuberculosis. The wide experience not only of himself but of other reputable physicians has put this method of treatment beyond the experimental stage. The following is the original prescription:

R. Iodi .....gr. x-xxx |60-2.00  
Carbonei disulphidi .....f3i 30|

Put from 5 to 10 drops on the gauze in an antiseptic (glass) inhaler and inhale through the mouth and exhale through the nostrils. Inhale from three to five minutes, slowly at first; repeat from three to six times a day, depending on the physical condition as well as on individual idiosyncrasies. Indications: respiratory inflammation, including incipient tuberculous disease.

It is needless to add that this inhalation is not independent of such valuable agents as open air and hygienic measures as may be indicated. As to other medicines or foods, crude cottonseed oil may prove one of the best flesh builders.

The following aromatic modified formula may sometimes be useful:

R. Iodi .....gr. x-xxx |60-2.00  
Mentholi .....gr. x |60  
Olei gaultheriæ.....m. xxx 2|  
Carbonei disulphidi .....f3iv 15|

M. et ft. sol. Sig.: Use as directed above.

### Intralaryngeal Injections.

W. G. B. Harland, M.D., Philadelphia, states that intralaryngeal injections are of great value in certain cases, but if used as a routine measure they will lead to disappointment. They should be reserved, he declares, for patients who have failed to receive benefit from other modes of treatment, and used in this way will often surprise and please the physician by the beneficial results that follow.

The injections are of value in chronic spasmodic affections such as dry racking cough and asthma, and in cases with tenacious, abundant or fetid expectoration, as in chronic bronchitis, bronchorrhea and tuberculosis. He has found the following useful in these conditions:

R. Mentholi .....gr. v |30  
Creosoti .....gtt. v |30  
Olei olivæ or petrolati liq.....f3i 30|

M. Sig.: Warm and inject one or two drams into larynx daily, every other day or biweekly. Iodoform, gr. xv (1.00) may be added in tuberculosis of lung or pharynx.

Any syringe may be employed for making injections, provided it has a curved canula long enough to reach beyond the epiglottis. No local anesthesia is required. The laryngeal mirror holds the soft palate out of the way and gives a view of the larynx, or perhaps of the epiglottis only. The patient holds the breath while the injection is being given and takes a deep inspiration immediately afterward. Of course, much of the fluid is swallowed, but enough enters the larynx to produce results. These injections cause surprisingly little trouble to either physician or patient.

### Tuberculous Laryngitis.

Bane writes on this subject in the *Colorado Medical Journal* and recommends the use of formalin applied locally as follows: Apply the formalin with a swab to the affected part in a comparatively strong solution (from 1 to 500 and 3 to 100). In most cases the formalin, in strong solution, should be preceded by the application of a from 5 to 10 per cent.



solution of cocain or beta-eucain. A 3 to 5 per cent. solution of formalin has a decidedly beneficial action on ulcers of the larynx, he says, and may be applied to granulations about the epiglottis and vocal cords. It causes shrinking and hardening of the tissues, thus encouraging fibrous changes.

## Medicolegal

### Waiver by Heir—Urethritis and Mental Condition.

The Supreme Court of Michigan says that, in the case of *Sibley vs. Morse*, a physician was called as a witness for the purpose of showing the mental capacity of a testator at the time two codicils to his will were executed in 1901. On cross-examination the physician was asked in regard to having treated the testator for urethritis in 1890. This testimony was excluded on objection. It was contended that the testator's son, as heir at law, might waive the statute protecting the patient from the discovery of facts learned by the physician while treating him. But whether the heir can, against the protest of the legal representatives (as executors, etc.), waive the right the court does not decide, on the ground that it was not necessary to do so in this case. It says, however, that there is authority supporting the contention that he may. *Thompson vs. Ish*, 99 Mo. 160. The reason it gives why it was unnecessary to decide this question here was that in any view of the case it thinks that the testimony in question was too remote to be of any value in determining the mental condition of the testator from eight to ten years later, and that no error was committed in its exclusion which prejudiced the rights of the contestant.

### Court, Not Witness, to Determine as to Latter Being an Expert.

The Kansas City Court of Appeals says that in the personal injury case of *Spaulding vs. City of Edna*, the plaintiff introduced as a witness a physician who testified that he was a graduate of a medical school and had practiced medicine and surgery for about nine years. The trial court admitted him to testify as a medical expert. On cross-examination he stated that: "I am 33 years old. I am a general practitioner to some extent. However, I give more attention to surgery. I do not claim to be an expert on the subject of nervous diseases." As the evidence proved that the plaintiff was suffering from a nervous disease, the defendant moved the court to strike out the physician's evidence, which the court refused to do. The action of the court in this respect was assigned as error. But the Court of Appeals thinks that it must be conceded that the court is the authority to determine whether a witness is an expert, and not the witness himself; otherwise, the witness would be clothed with a judicial function. Notwithstanding the utter absurdity of such a contention, it seems the courts have been called on to pass on it, as will be found in *Langston vs. Southern Electric R. R.*, 147 Mo. 457; *Thompson vs. Ish*, 99 Mo. 160. Whether the witness considered himself an expert on nervous affections, although a matter to be taken into consideration by the court in order to determine his competency as such, was not conclusive of the question any more than if he had said he was such. The question was a matter for the court to determine on all the evidence introduced as to his competency in that respect.

### Illegality of Contract to Marry Consumptive.

The Supreme Court of Washington says that the case of *Grover vs. Zook* was brought by a woman to recover damages for a breach of contract of marriage. The principal defense urged by the defendant was that the plaintiff, at the time of the mutual promises of marriage, was afflicted with pulmonary tuberculosis, in an incurable form, and had ever since been physically incapable of entering into the marriage relation. It was the contention of the plaintiff that this condition of hers constituted no defense to her action, for the reason that the defendant knew thereof at the time he promised to marry her. It was admitted by her that she was afflicted with this disease

at the time the engagement of marriage was entered into, although she claimed that she did not know at that time that the malady affecting her was consumption. There was a conflict in the evidence as to whether or not the defendant knew of the character of her illness at the time of the engagement. He swore that he did not. The trial court ruled on the evidence and instructed the jury on the theory that the defendant was liable for a breach of agreement if, at the time of the making thereof, he knew the character of the plaintiff's ailment. The result was a verdict and judgment for the plaintiff.

The Supreme Court, in reversing that judgment, with instructions to dismiss the action, says that the question presented was: Did the defendant under the circumstances have a legal right to disregard the promise of marriage he had given the plaintiff? In the domain of morals it is a maxim that a bad promise is better broken than kept. Moral considerations must have a predominating influence on such a question as now confronts us. In fact, they constitute the reason, the basis and the life of the law applicable in a case of this character. The most profound philosophers join with the wisest statesmen in maintaining the proposition that the home is the unit of the state, and that the character of a people and the stability and welfare of the nation must largely depend on the healthful and wholesome influence of the home life. By reason of this we find the home and the members thereof, especially the young and dependent, sheltered by the protecting care of various statutes, all being evidences and expressions of that public policy which deems the home and its inmates appropriate objects of the solicitude and care of the state. The paramount consideration involved in the determination of this case is not that appertaining solely to the parties to this action (although as to each of them it is of great importance), but it is as to the community, the state and to humanity in general.

Here we have a man and woman engaged to be married. The man is of a family several members of which have died with pulmonary consumption. The woman is afflicted with the same disease to such an extent that it becomes necessary for her to go to a distant portion of the country to recuperate, which she does, returning with the affliction still on her and with small, if any, assurances of recovery. Under these circumstances, if the marriage were to be consummated, what would be the natural consequences to be anticipated?

Unconditional promises of marriage, exchanged by a man and woman, imply, respectively, that each is physically, morally and legally competent to enter the status of matrimony, and capable, in so far as he or she knows or has reason to believe, of effectuating the principal purposes of the marriage relation. One of the most important functions of wedlock is the procreation of children. Offspring are the natural result, and oftentimes the chief purpose, of marriage. That the thought of bringing a child into the world should be one of the most serious that can engage the mind of a human being needs but to be suggested. Born amidst the most favorable environment, there lies before every babe a life of uncertainty so great that no worthy parent may contemplate it without a tremor of apprehension. Thus launched on the sea of time and eternity, what parent can dwell on the birth of his child without the keenest sense of anxiety and responsibility? If the child born in health and with a body of vigor be a matter of deep concern to a parent, what must be said of the advent of a babe burdened with the hereditary plague of consumption?

That pulmonary tuberculosis is both contagious and hereditary as well as infectious admits of little, if any, doubt. That a mother seriously ill with that disease and a father with a hereditary taint thereof in his blood could bring forth a child exempt therefrom is unbelievable. For parents thus afflicted to bring into the world a child would be not only detrimental to the welfare of the state and an offense to the instincts of humanity, but it would be, as against the innocent babe, a moral wrong most abhorrent. Such a child must of necessity be a burden to itself and others and devoid of the joys and blessings that make life endurable. In declining to carry out his promise of marriage, it may be presumed that the defendant apprehended the natural and legitimate con-



sequences of such a union. In addition to the thought of progeny there would be also that of the aggravation of the disease as to both himself and prospective wife, the medical expert evidence showing that the intimate association of married life would tend to augment the ravages of the malady on each.

The apprehension felt by the people of this state from the disease under consideration is evidenced by a statute enacted by the legislature in 1899, entitled: "An act to prevent the spread of tuberculosis," etc., section 5 of which reads: "It is hereby made the duty of every person having tuberculosis and of every one attending such person, and of the authorities of public and private institutions, hospitals or dispensaries, to observe and enforce the sanitary rules and regulations prescribed from time to time by the boards of health of such cities and of the state for the prevention of the spread of pulmonary tuberculosis." Other statutes exist, having for their purpose the prevention of the spread of this and other contagious and infectious diseases. The enforcement of certain rules and the distribution of literature giving information as to the prevention and treatment of such cases is enjoined on boards of health and others.

In the face of legal restrictions and requirements of this character, it is difficult to understand how a man or woman afflicted with this plague may legally insist on the fulfillment of a promise of marriage, which, if consummated, would endanger the health and life of both and blight the life of any offspring that might be born. Any person entering marriage, knowing himself to be seriously afflicted with pulmonary tuberculosis, violates the spirit, if not the exact letter, of the statutes enacted to prevent the spread of that disease. The same is true of one who marries another knowing him or her to be thus afflicted. An agreement which, if executed, would thwart the beneficent purpose of such statutes, ought not to be held binding.

Counsel for the plaintiff cited cases where a man, promising to marry a woman whom he knew to have been formerly unchaste, was held to be bound by such promise. Such a case and this are not analogous. There the man by his promise overlooks the former shortcomings of the woman, and it is a matter concerning him only. She would have the ability to, and presumably would, reform and become a good wife and worthy mother. This is to the advantage of society, and not inconsistent with sound public policy, and the law should interpose no hindrance thereto.

But a consumptive woman is physically incapable of becoming a healthful companion or the mother of healthy issue. It is not a condition that she voluntarily created nor can change at will. The evils to follow her marriage could not be confined to herself and husband, but must of necessity concern and injuriously affect others. The nature and natural sequences of a contract of marriage are such that the state is of necessity a third party to, and interested in, every such agreement. Its interests forbid the enforcement of such a contract between parties physically incapable of making the married state beneficial to themselves or to society.

The court is not disposed to take into consideration any matters personal only to the defendant. If he knew of the nature of the plaintiff's ailment when he agreed to marry her and agreed to make her his wife, notwithstanding the same he ought not to escape responsibility by reason of any inconvenience affecting only himself. But the interests of the community and state step in, and, with the dictates of humanity, demand that no human compact shall be upheld that has for one of its principal objects the bringing into the world of helpless, hopeless, plague cursed, innocent babes. The court can sanction the breaking of a promise and relieve from the terms of a deliberate agreement only when the alternative involves results more deplorable. Had these parties married it is inconceivable that any of the important ends of marriage could have been attained. It is morally certain that sickness, grief and sorrow must have been the sequence of such a union. These considerations, with the possibility and probability of issue afflicted with this terrible malady, constrain this court to hold that the marriage agreement was not binding—that it was the privilege of either party to withdraw therefrom.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

January 24.

- 1 \*Acute Hematogenous Infection of One Kidney in Persons Apparently Well. F. Cobb, Boston.
- 2 \*Cirrhosis of the Liver in Infancy in Connection with Congenital Obstruction of the Bile Ducts. J. L. Morse, Boston.
- 3 \*The Professional Trainer's Theory of Training. E. H. Nichols, Boston.
- 4 \*Medical Aspects of Athletics in Preparatory Schools. J. B. Blake, Boston.
- 5 Medical Knowledge of Shakespeare. A. C. Getchell, Worcester, Mass.

1. **Hematogenous Infection of Kidney.**—Cobb reports a case of this kind occurring in a woman, 45 years old, married, mother of three children, who had always been well until the present trouble developed. Pain in the right side of the abdomen, with some muscle spasm and tenderness most marked over the region midway between the appendix and liver were the only important signs. There were some leucocytosis, some albuminuria and considerable pyuria. The pain gradually localized itself in the region of the right kidney where it was possible to palpate a mass. The kidney was exposed and was found to be enlarged to about twice the normal size. It was dark colored, and on its surface were four areas about half an inch in diameter, dark, looking like spots of infarction. All these areas were soft and seemed to contain old blood clots with some broken down kidney tissue. Otherwise the kidney appeared normal, except for its color. Cultures from these areas gave a pure growth of colon bacilli. The capsule of the kidney was split posteriorly and small gauze wick drains were pushed well down into each softened spot. There was entire cessation of pain and convalescence was rapid. The patient has remained well. Cobb discusses the subject further from a pathologic as well as from a clinical standpoint.

2. **Cirrhosis of Liver in Infants.**—Both of the patients whose histories are reported by Morse and Murphy died shortly after they were operated on. The first patient was three and a half months old; the second patient was fourteen weeks old. In both cases there were found at autopsy cirrhosis of the liver with slight chronic splenitis and retention and inspissation of bile pigment, and dilatation of the bile capillaries.

3. **Training.**—While endeavoring to secure a man to train the members of a football and baseball team, Nichols had occasion to interview personally ten professional trainers. He found an utter lack of accurate basis for training. The whole thing, he says, comes down to a very indefinite general impression, plus the indication shown accurately by the weighing scales. The science of training is very indefinite and crude. The most valuable trainer, is probably, the man who knows human nature, especially the nature of young men, best.

4. **Medical Aspects of Athletics.**—Blake says that in the establishment of subsidiary sports, in the far more strict supervision of the older sports, in the introduction of walking in its various forms, and in the personal interest of the parent, the teacher, the doctor and the coach in the school-boy's play and in his work, lies the restoration of school athletics to its proper position—a position of great importance, a source of much pleasure, and more health, a potential moral influence and an essential educational factor.

#### New York Medical Journal.

January 26.

- 6 \*Management of Laparotomy Patients and their Modified After-Treatment. H. J. Boldt, New York.
- 7 \*Blood Examination in Surgical Diseases. F. E. Sondern, New York.
- 8 \*Treatment of Chronic Urethral Discharges. S. L. Gans, Philadelphia.
- 9 The Physician's Relation to the Social Evil. E. W. Ruggles, Rochester.
- 10 \*Immediate and Remote Consequences of Cranial Injuries. (Continued.) H. Cushing, Baltimore.
- 11 Gonorrhea of the Mouth. S. M. Hyman, New York.
- 12 Empyema of Accessory Sinuses of the Nose, Complicated by Orbital Abscess. J. Guttman, New York.

6.—See abstract in THE JOURNAL, Jan. 12, 1907, p. 161.



7. **Blood Examination in Surgical Diseases.**—Sondern finds that blood examinations in surgical diseases are an aid in determining the general state of health before or after surgical procedure and an aid in the diagnosis of conditions inducing lesions subject to surgical intervention or those complicating surgical diseases or their convalescence. They furnish information for differential diagnosis; they lend aid in determining the degree of depletion due to hemorrhage, and, finally, they present evidence of decided value in determining the presence or absence of an inflammatory lesion, and in the former event they may indicate the degree of toxic absorption and the resistance offered by the animal economy toward this infection. He says that a complete blood examination gives satisfactory evidence as to the patient's condition and power of resistance.

8. **Treatment of Chronic Urethral Discharges.**—In the course of this lecture, Gans answers affirmatively the question of whether or not a stricture can be cured permanently. He says that this can be accomplished by passing a full size steel sound once a week for at least six months.

10. **Cranial Injuries.**—The second case reported by Cushing was one of penetrating stab wound of the skull, with subcortical, postcentral hemorrhage, contralateral sensory disturbances and visual word blindness. The clot was evacuated, and the cortex subjected to faradization with the result that there was a rapid disappearance of all symptoms, except astereognosis.

#### Medical Record, New York.

January 26.

13 *Reminiscences of Medical Practitioners in New York During the Period of the Early History of the Academy.* A. Jacobi, New York.

14 *\*The House Fly and Its Connection with Disease Dissemination.* G. K. Dickinson, Jersey City.

15 *Physiologic Action of Massage.* G. Norström, New York.

16 *\*Proprietary Medicines.* B. Robinson, New York.

17 *\*Unusual Nidus for Gonococcic Infection.* E. G. Ballenger, Atlanta.

18 *\*Ten Years a Nasal Patient.* F. K. MacMurrrough, Jersey City.

14. **House Fly and Disease.**—Dickinson states that the importance of flies as a factor in the dissemination of disease depends largely on existing conditions. Scientifically speaking, the number of flies in a community is in direct proportion to the carelessness of its sanitation. The greatest care should be taken to destroy as many of these insects as possible, and to protect houses and their contents from those that remain.

16. **Proprietary Medicines.**—Robinson believes that nearly all the proprietary medicines are humbugs, and that many people are fond of mystery and like to be deceived. The greatest sinners in regard to this evil, he says, are the manufacturers and men of authority in the business world who place their signatures at the bottom of circulars praising these medicines, about which they know nothing. There are certain cases in which if the character of the firms selling these medicines is reliable and if the printed formula seems unobjectionable or desirable for a certain case, such drugs may properly be prescribed. The sale of proprietary medicines can be stopped, he declares, by never sending the patient to any drug store unless it is known to be reliable; and by never prescribing any particular mixture unless it contains exactly what is called for.

17. **Unusual Nidus for Gonococcic Infection.**—Ballenger's patient contracted gonorrhea and was supposed to have been entirely cured. After treatment, erosions, which had been produced, healed, except in a small pocket on each side just behind the cornea and under the edge of the adherent part of the prepuce. Profuse purulent secretion from the small pockets was started by overexertion. The pockets were found to be the foci of infection. The adhesions which existed were broken up, and the patches cauterized with nitric acid. No further recurrence has been observed for three months.

18. **Ten Years a Nasal Patient.**—MacMurrrough describes the benefits which he has experienced from a submucous operation which was performed on his nasal septum. He had for ten years suffered with catarrhal and obstructive symptoms in the nose and throat. At this operation considerable cartilage and bone were removed. During the sub-

sequent year he was in better health than he had been for years before, but he did not consider himself cured. In consequence, a second submucous operation was performed, and at this time a high bony ridge, reaching nearly to the roof of the nose, was taken out. Since that time he has experienced the desired relief.

#### Journal of Missouri State Medical Association, St. Louis.

January.

19 *\*Intestinal Obstruction from Tuberculous Peritonitis.* R. Hill, St. Louis.

20 *Pericarditis with Effusion.* W. J. Calvert, Columbia, Mo.

21 *Percentage Modification of Milk for Infant Feeding.* G. C. Mosher, Kansas City, Mo.

22 *\*Treatment of Hemorrhoids.* W. H. Stauffer, St. Louis, Mo.

23 *\*Ano-Rectal Fistula.* J. D. Potts, St. Louis.

24 *Arteriosclerosis.* T. Brown, Hamilton, Mo.

25 *Infant Mortality and Infant Feeding.* H. M. Mixer, Neosho, Mo.

26 *\*Method of Operating in Inguinal and Femoral Hernia when Complicated by Abscess.* H. E. Pearse, Kansas City, Mo.

27 *When is Operative Interference Contraindicated.* F. H. Brunlg, Kansas City, Mo.

28 *The Country Doctor and Appendicitis.* M. P. Shy, Knob Noster, Mo.

29 *Etiology and Cure of Hysteria.* F. Walter, Perry, Mo.

19. **Tuberculous Peritonitis.**—Hill reports a case of fibrous tuberculous peritonitis leading to complete obstruction of the intestine with the formation of a large mass, distinctly discernible from the outside of the abdomen, which at the operation proved to be an agglutination of the coils of the small intestine. These were separated and the abdomen was closed without further exploration of the cavity and without drainage. The symptoms of obstruction passed away at once, and the patient made a rapid and uneventful recovery. Since that time, now over nine years, the patient has been perfectly well. A second case reported by Hill is one of intestinal obstruction consequent on tuberculous peritonitis in which, at the operation, there was found in the ilco-cecal region a very peculiar looking mass about 7 inches in length and four in thickness, which was covered with cicatricial tissue. The mass consisted of several coils of the lower portion of the ileum. It was excised and an end-to-end anastomosis was made. The excised mass consisted of thirty-three inches of ileum and at its middle was a structure extending completely around the lumen. The Murphy button used to make the anastomosis had to be removed six weeks after the original operation owing to the onset of obstructive symptoms. The diagnosis in this case was tuberculous peritonitis.

22. **Treatment of Hemorrhoids.**—The operations discussed by Stauffer are excision, clamp and cautery, and the ligature operation.

23. **Ano-Rectal Fistula.**—In discussing the treatment of this condition Potts says that the sphincter should not be incised whenever this can be avoided. If the mucous membrane has not been penetrated and the integrity of the sphincter remains unimpaired, Potts does not make any incision through the muscle. He says that good drainage can be established and maintained without taking any chances on having a case of fecal incontinence to harass the patient the remainder of his life. With the spiral-douche eurette Potts scrapes the walls of the fistulous tract, removing all shreds and infectious material. After the tract is perfectly clean, he proceeds as follows:

A piece of heavy rubber drainage tubing, with lumen of from one-fourth to three-eighths inch in diameter, and from four to six inches in length, is introduced into the rectum. About two inches of this tube are left projecting from the anus. Around the portion within the bowel is carefully packed a sufficient amount of gauze, which has been previously saturated with warm sterile vaseline, to fill the rectal canal. Around the projecting end is wrapped sufficient gauze to make a roll one inch in thickness, and this is held in place by threads passed through from the inside tube. Gauze is now placed around the roll to support it, and the whole is carefully held in position by a carefully adjusted T bandage. Perfect coaptation of the sinus wall is thus secured under pressure, and agglutination results in from three to five days. The tube allows the escape of the gases—if necessary, the escape of fecal matter, and the pressure from above, from below, and from within holds the previously divided sphincter in a condition of rest. The tolerance of



the mucous membrane and sphincter is something remarkable. Sometimes the tube will remain in position for several days without exciting irritation. According to Potts, this mode of treatment is applicable to almost any type of fistula, except those which connect some other organ with the rectum.

**26. Hernia Complicated by Abscess.**—Pearse opens the abdomen directly above the hernia, if inguinal or femoral, and beside it if ventral or postoperative, either below or above if umbilical. In any case, sponges and gauze pads are carefully packed about the ring thus shutting off the abdomen securely from infection. The operator then turns his attention to the abscess. The hernial sac is opened by a small incision only large enough to allow inspection and drainage. The pus is removed and the cavity flushed with 0.5 per cent. formalin solution. The edges of the abdominal incision are protected by sponges. The ring is opened and the inflamed bowel drawn into the abdominal cavity on the sponges arranged to receive it. If the content of the sac be omentum instead of bowel it is not withdrawn but ligated and cut off and the end removed through the hernial incision. The ring is firmly closed from within the abdomen and covered by a second layer of peritoneal sutures. The abdominal wound is closed whenever the structures concerned in the hernia are properly treated, cleaned and prepared for replacement within the abdomen, and the protective sponges are removed. The external wound and hernial cavity is best packed with gauze and forced to heal by granulation.

**Journal of Infectious Diseases, Chicago.**  
*January.*

- 30 \*Stomach Lesion in Guinea-Pigs Caused by Diphtheria Toxin and Its Bearing on Experimental Gastric Catarrh. M. J. Rosenau and J. F. Anderson.
- 31 \*Noma: Gangrenous Stomatitis, Water Cancer, Scorbutic Cancer, Gangrena Oris, Gangrene of the Mouth. G. H. Weaver and R. Tunnicliff.
- 32 \*Virulence of Diphtheria Organisms in Throats of Well School Children and Diphtheria Convalescents. M. E. Pennington.
- 33 Relation of the Bacillus Mucosus Capsulatus Group to Rhinoscleroma, and of Various Members of the Group to One Another. R. G. Perkins.
- 34 \*Spontaneous Phagocytosis of Fusiform Bacilli and Influenza Bacilli. R. Tunnicliff and D. J. Davis.
- 35 \*Hemophilic Bacilli—Their Morphology and Relation to Respiratory Pigments. D. J. Davis.
- 36 \*Pathogenicity of Streptococcus Lacticus. P. G. Heinemann.
- 37 \*Study of Pneumococcus, with Especial Reference to the Inulin Test. J. L. Berry.
- 38 \*Latent and Recurrent Malarial Infection and the Significance of Intracorporeal Conjugation in the Malarial Plasmodia. C. F. Craig.
- 39 \*Virus and Means of Transmission of Rocky Mountain Spotted Fever. H. T. Ricketts.

**30. Artificial Gastric Ulcer.**—Rosenau and Anderson describe the production of gastric ulceration in guinea-pigs injected with fatal quantities of diphtheria toxin. In the early stage there are congestion and hemorrhage followed by ulceration if life is prolonged from two to four days. The lesion occurs at or near the pylorus, and is found in about 50 per cent. of the animals dying within twenty-four hours, and in 75 per cent. of those dying between the third and fourth day after injection.

**31. Noma.**—Weaver and Tunnicliff review the literature on noma from the time of Hippocrates to the present, discussing the frequency of its occurrence and its clinical history. They summarize their findings in the necrotic cheek tissue as follows: 1. There is some leucocytic invasion, but no well-marked zone of demarcation. 2. The fusiform bacilli and spirilla are similar to those seen in the smear preparations made from the nose and mouth before death and from the necrotic tissue of the face immediately after death. 3. Both forms are present in both the necrotic and the living tissue, the spirilla forms apparently being in excess in both places. 4. The thrombosed vessels contain fusiform bacilli, filaments and spirilla. They believe these organisms are the threaded and spiral forms of one organism which correspond with forms shown by them to occur in pure cultures of fusiform bacilli.

**32. Virulence of Diphtheria Bacilli.**—Pennington found that among well school children approximately 10 per cent. harbor in their throats bacilli which correspond morphologically with the organisms of diphtheria. One-half of these organisms were without effect on guinea-pigs; about 30 per cent. behaved like

attenuated forms; and 14 per cent. killed the animals with a fair degree of promptness. Of 25 strains of diphtheria bacilli obtained during the last days of convalescence, 23 were highly virulent and only 2 without virulence. One case gave a virulent organism on the eighteenth day and a non-virulent one on the thirty-fifth day. The author concludes that: 1. The organisms found in the throats of well persons who have not been exposed are, in the majority of cases, without virulence; but even these are occasionally responsible for a true diphtheritic infection. 2. The organisms in the throats of many well, exposed persons possess marked virulence and are responsible for more infections than organisms from well, unexposed persons. 3. The organisms in the throats of patients convalescing from true diphtheria are very virulent, and may be disseminated so long as they remain in the throats, which period may far exceed the duration of the clinical evidences of the disease. The one safe course in regard to patients convalescing from diphtheria, therefore, is to forbid their association with non-immunes so long as the laboratory findings are positive, no matter how well the patient may appear clinically. The course which should be taken in regard to the well persons not exposed to diphtheria who carry bacilli, is not so clear. To quarantine such a number would be impractical; yet the bacteriologist must insist that, in the absence of definite evidence to the contrary, the organism which is harmless and attenuated in the throat of a well individual, may, if planted on another throat under different conditions of susceptibility, so increase in virulence that its specific disease is produced. This increase in virulence is admitted to be infrequent.

**34. Spontaneous Phagocytosis.**—Tunnicliff and Davis find that phagocytosis of fusiform bacilli and influenza bacilli is as active in the presence of normal salt solution as in the presence of serum. They washed the leucocytes from five to seven times to remove the serum. Dead bacilli were taken up to the same extent as the living, showing that growth of the organism did not cause the increase in the number which occurred after a few hours. Different percentages of salt solution were used. With the fusiform bacilli no difference in the number of bacilli ingested was observed until 2.5 per cent. solution was employed, when phagocytosis ceased. Varying concentrations of salt solution between 0.6 and 1.3 per cent. had no effect on the phagocytosis of influenza bacilli.

**35. Hemophilic Bacilli.**—Davis concludes as follows: Various strains of hemophilic bacteria isolated from different conditions can not be differentiated on morphologic grounds. They can utilize in the growth hemoglobins from various warm and cold-blooded animals and also from fresh-water and marine forms, but they are not able to utilize other respiratory proteids, e. g., hemocyanin, hemerythrin, echinochrom. Davis finds that an extremely small amount of hemoglobin in the media (1 part in 180,000 parts of media) is sufficient for the development of these bacteria. No satisfactory cultural results have been obtained with any substance other than hemoglobin. The bacilli do not grow in the presence of hematin.

**36. Pathogenicity of Streptococcus Lacticus.**—Heinemann, in an examination of five strains of *Streptococcus lacticus*, obtained from different samples of milk, concludes that the organism is able to become very virulent by prolonged habitation in the body of the rabbit, and that it may approximate, if not equal, the virulence for this animal of typical *Streptococcus pyogenes* from human affections. The lesions produced are of the same kind and extent as those produced by *Streptococcus pyogenes* from lesions in human beings. By repeated passages through rabbits the virulence of *Streptococcus lacticus* is gradually increased.

**37. Study of the Pneumococcus.**—Berry examined 63 strains of pneumococcus with a view of determining the value of the identification of pneumococci by coagulation of inulin ox-serum water. Of these strains, 27 were obtained from cases of pneumonia, 23 from normal individuals, and the rest from miscellaneous cases. Some of the strains were cultivated on artificial media for a year or more; and it was observed that after variable periods of cultivation decided changes in morphology, virulence and power to ferment inulin occurred. The pneumococci morphologically approached a streptococcus type. Virulence, diminished by artificial growth, increased rapidly



by animal passage. A large number of negative tests to inulin coagulation were given by typical pneumococci, and many coagulations were obtained with cultures of a streptococcus type. Great variations were found between different stocks of inulin powder and even between different lots of medium made from the same powder and inoculated with the same strain. Factors which increased the chances of a positive test were the use of strong emulsions of organisms and animal passage. The chief conclusion is that while coagulation of inulin is valuable corroborative evidence in favor of pneumococci, yet no organism can be rejected as a pneumococcus because of one or even several non-coagulating inulin cultures, especially if they have been grown for some time on artificial media.

38. **Latent and Recurrent Malarial Infection.**—Craig, in observations of 1,653 cases of malarial infection in United States soldiers and Filipinos, discovered that a little over 25 per cent. were latent infections, i. e., those in which the plasmodia of malaria may be demonstrated to be present in the blood without clinical symptoms of sufficient gravity to attract attention. Of these cases a large number were found in soldiers in San Francisco who had returned from the Philippines, and nearly all were of the estivo-autumnal type. He considers this to be of extreme importance as showing the possibility of the spread of malaria in this country by returning soldiers. The number of cases of infection in native children decreased as their ages advanced. In children under 5 years, 51.8 per cent. showed the parasite in the blood. The pathology of latent infections is summed up by the statement that before any clinical symptoms are present the plasmodia are undergoing normal schizogony within the spleen, and can be demonstrated within that organ either by splenic puncture or at autopsy; the lesions produced are the same in character as those occurring in acute infections, but less extensive. The author concludes that the greatest hope of success in combating malaria in the Philippines lies in the distribution of quinin to the natives rather than by attempting to exterminate the anopheles mosquito. From observations on recurrence of malarial attacks the conclusion is drawn that when quinin is given as a prophylactic once a week after the initial attack relapses in estivo-autumnal infections occur most frequently between the twentieth and fortieth days, and in tertian infections between the fifteenth and twenty-second days. During these periods of relapse quinin should be given in full therapeutic doses and increased to the point of cinchonism at the appearance of the first symptoms indicative of a malarial attack. The cause of latency is considered to be a conjugation within the red blood cell of two young amebula; and recurrences are thought to be produced by a later liberation and subsequent sporulation of young plasmodia. The author believes that there is both a tertian and quotidian variety of the estivo-autumnal parasite.

39. The principal points in this article were covered in the preliminary note which appeared in THE JOURNAL, Oct. 6, 1906.

#### Pennsylvania Medical Journal, Athens.

December.

- 40 \*Pathology of the Thyroid Gland. G. P. Müller, Philadelphia.
- 41 \*Etiology of Diseases of the Thyroid Gland, with Special Consideration of Cretinism and Myxedema. T. J. Elterich, Pittsburg.
- 41½ Surgery of the Thyroid Gland. R. G. Le Conte, Philadelphia.
- 42 \*Diagnosis and Medical Treatment of Exophthalmic Goiter and Hyperthyroidism. A. Stengel, Philadelphia.
- 43 \*Relation Between the Thyroid and the Eye. J. E. Weeks, New York.
- 44 The Secretary of a County Medical Society. J. F. Donaldson, Canonsburg.
- 45 Adulteration of Drugs, and Other Subjects Relating to the Profession. J. L. Ziegler, Mount Joy.
- 46 Simple Elixir as a Vehicle in Prescriptions Intended for Children. E. F. Heffner, Lock Haven.

40. —See abstract in THE JOURNAL, Oct. 13, 1906, p. 1221.

41, 42, 53. Id. —Oct. 6, 1906, p. 1131.

#### Medical Age, Detroit.

December 25.

- 47 Puerperal Eclampsia. B. A. Allan, Louisville.
- 48 Practical Consideration of Sexual Assault. C. C. Mapes, Covington.

#### Wisconsin Medical Journal, Milwaukee.

December.

- 49 Pneumonia. J. Noer, Stoughton.
- 50 Syphilis Treated by Intravenous Injections of Mercury. W. F. Bernart, Chicago.
- 51 Spina Bifida. M. M. Spitz, Milwaukee.
- 52 Benefits of Modern Therapeutics. S. R. Moyer, Monroe, Wis.

#### Central States Medical Monitor, Indianapolis.

December.

- 53 Plea for More Frequent Use of the Ophthalmoscope by the General Practitioner as an Aid in Diagnosis. S. C. Norris, Anderson.
- 54 Three Cases of Congestion of the Prostate with Functional Disturbances Due to Anal and Peri-anal Irritation. J. E. Morrow, Indianapolis.
- 55 Hypernutrition. J. T. Scott, Indianapolis.
- 56 Digest of the Surgical Fevers. M. A. Austin, Anderson.
- 57 Dermatologic Axioms. N. E. Aronstam, Detroit.
- 58 Reflex in Appendicitis. C. E. Gillespie, Crothersville.

#### Journal of the Minnesota State Medical Society and the Northwestern Lancet, Minneapolis.

January 15.

- 59 \*Surgical Treatment of Stenosis of Pylorus. J. U. Goodrich, St. Paul.
- 60 \*Stenosis of Pylorus in Infants. W. R. Ramsey, St. Paul.
- 61 \*Three Goiter Cases of Especial Interest. G. Schwyzer, Minneapolis, Minn.

59. **Stenosis of Pylorus.**—Goodrich reports one case in which a gastrojejunostomy was done without a twist. On the fifth day the patient developed an acute enteritis and died in convulsions the same day. The postmortem did not show any evidence of peritonitis.

60. **Id.**—Ramsey gives a complete history of the case reported by Goodrich and reports one additional case. This patient was only two months and five days old when first seen. Operation was advised but the condition of the patient did not permit its performance. The baby collapsed and died soon after. Section of a tumor at the pylorus showed a marked hyperplasia of the circular muscle coat.

61. **Goiter.**—One of the cases reported by Schwyzer was a hemorrhagic goiter in which peristruitis developed subsequently. The tumor was removed under local anesthesia from the patient, a man, 55 years of age. He made a complete recovery. The second case was one of struma colloid hyperplastica. This tumor, although unusually large, was also removed under local anesthesia. The third case was one of intrathoracic goiter, occurring in a woman, aged 63, who had had the goiter for 36 years. The hyperplastic colloid tumor was removed under local anesthesia. All the patients are alive and well.

#### The Journal of the Michigan State Medical Society, Detroit.

January.

- 62 \*Recent Developments in Practical Serum Therapy. A. P. Ohlmacher, Detroit.
- 63 \*Serum Treatment of Acute Articular Rheumatism. G. H. Sherman, Detroit.
- 64 Pathology of Pneumonia. W. Haughey, Battle Creek.
- 65 Indications for Enucleation of Eye. C. R. Elwood, Menominee.
- 66 The Curse of Miscarriage to American Women, with Suggestions in the Way of a Remedy. F. J. W. Maguire, Detroit.

62. **Serum Therapy.**—Ohlmacher discusses refined and concentrated antitoxin; antitetanic serum; the utility of anti-streptococcus serums; the serum therapy of pneumonia; meningitis and gonorrhea; technic of serum injections; hypersensibility to serum, and the rectal and oral administration of serum. He says that the practice of using rectal injections when the bowel has been emptied by a laxative and flushed, and of diluting the serum with two or more times its bulk of normal salt solution is excellent. He also thinks it not improbable that further clinical experience will confirm the claims of those who habitually give curative serums by the mouth, especially under circumstances in which subcutaneous injection is impossible or in which no special urgency exists.

63. **Serum Treatment of Rheumatism.**—According to Sherman, the results thus far obtained from the serum treatment of acute articular rheumatism are a material shortening of the course of the disease, no relapse into the chronic state, heart complications diminished in frequency, or more often entirely prevented, and chronic cases much improved, with a distinct tendency to complete recovery. The length of time required to effect a recovery varies with the severity of the case and the time the treatment is started. Sherman begins with an initial dose of 20 c.c. of the serum, followed with



10 c.c. every day until the inflammatory condition subsides. In severe cases 20 c.c. may be given every day. A good index as to tolerance of the serum is the amount of local inflammation produced by the serum from the previous injection. If there is considerable inflammation and swelling at the site of injection, the indication is that the patient does not tolerate the serum well. In these cases the serum should be given by rectum. In chronic cases it should be given at intervals of from two to three days, in doses of 10 c.c.

**Philippine Journal of Science, Manila.**

*November.*

- 67 Cultivation and Pathogenesis of Amebas. W. E. Musgrave and M. T. Clegg.  
68 \*Types of Bacilli of the Dysentery Group. Y. K. Ohno.  
69 List of Philippine Culicidae with Descriptions of Some New Species. C. S. Banks.

68. **Bacilli of Dysentery Group.**—Ohno isolated, collected and identified from several sources 74 strains of dysentery bacilli and found they could not be distinguished from one another either by their morphologic or cultural properties, although minor differences were shown to exist in their fermentative powers and their action toward immune serum. He believes that the results of his study indicate that the great majority of the bacilli which have been isolated during the past few years from cases of acute dysentery must be considered as being the exciting factor of the disturbance. He sees no reason for separating the dysentery bacilli into two distinct groups, the acid and non-acid, as proposed by Lentz, or for designating any bacillus which causes dysentery as a pseudo-dysentery bacillus, according to Kruse.

**The Laryngoscope, St. Louis.**

*December.*

- 70 Tracheobronchoscopy in its Diagnostic and Therapeutic Aspects. G. Killian, Freiburg, Baden.  
71 \*Examination of Throat in Chronic Systemic Infections. J. L. Goodale.  
72 \*Choice of Operation in Treatment of Maxillary Sinus Suppuration. W. A. Wells, Washington, D. C.

71. See abstract in THE JOURNAL, Dec. 15, 1906, p. 2036.

72. **Treatment of Maxillary Sinus Suppuration.**—Wells says that although the dental origin of many cases of maxillary sinus suppuration is admitted, this must not be interpreted as justifying operation by way of the alveolar process, but only as demanding that the trouble with the teeth should be corrected. If the mere removal of a tooth makes an opening into the sinus, irrigation may be tentatively practiced through this opening, not using, however, any artificial appliance to maintain a permanent opening. But the alveolar operation should never be done, he declares, as an operation of choice, because it establishes a communication between the mouth and a suppurating cavity, and requires the use of a tube or plug, which is decidedly disadvantageous. The open method of doing the canine fossa operation is likewise to be condemned on much the same grounds. When simple irrigation has failed or is not practicable, the next step should be a large opening in the inferior meatus, with removal of a portion of the inferior turbinate, as described. If this method is employed very few patients will require radical operations. When this is necessary, the sinus should be well exposed through the anterior wall, and curetted, after which the external opening should be closed, the communications previously made with the nose in the inferior meatus being utilized for drainage and subsequent treatment.

**Interstate Medical Journal, St. Louis.**

*January.*

- 73 Internal Medicine. J. S. Meyer.  
74 Diagnosis. A. E. Taussig, St. Louis.  
75 Surgery. W. Bartlett, St. Louis.  
76 Pathology and Bacteriology. C. Fisch, St. Louis.  
77 Pediatrics. A. Friedlander, Cincinnati.  
78 Ophthalmology. J. Green, Jr., St. Louis.  
79 Orthopedic Surgery. N. Allison, St. Louis.

This is the annual medical progress number in which are reviewed the notable advances made during 1906 in the subjects indicated.

**Kentucky Medical Journal, Bowling Green.**

*January.*

- 80 Prognosis and Management of Nephritis. D. O. Hancock, Henderson.  
81 Advantages of Life Insurance Examiners Associations. B. J. O'Connor, Louisville.

- 82 \*Early Diagnosis and Treatment of Pulmonary Tuberculosis. W. F. Boggess, Louisville.

82.—See abstract in THE JOURNAL, Oct. 27, 1906, p. 1401.

**Journal of Medical Research, Boston.**

*September.*

- 83 Study of So-called Infectious Lymphosarcoma of Dogs. S. P. Beebe and J. Ewing, New York.  
84 \*Intravenous Injections of Nicotine and their Effects on the Aorta of Rabbits. I. Adler and O. Hensel, New York.  
85 Transmission of Resistance to Diphtheria Toxin by the Female Guinea-Pig to Her Young. J. F. Anderson, Washington, D. C.  
86 Simultaneous Transmission of Resistance to Diphtheria Toxin and Hypersusceptibility to Horse Serum by the Female Guinea-pig to Her Young. J. F. Anderson, Washington, D. C.  
87 Multiple Myeloma with Involvement of the Orbit. A. Quackenbush and F. H. Verhoeff, New York.  
88 Viability of Bacillus Typhosus under Various Conditions. J. M. Wheeler.

84.—See abstract in THE JOURNAL, Dec. 29, 1906, p. 2176.

**New Orleans Medical and Surgical Journal.**

*January.*

- 89 Mitral and Aortic Insufficiency or Regurgitation. E. W. Breazeale, Campti, La.  
90 Case of Probable Black Water Fever. J. B. Cummins, Wyatt, and E. M. Dupaignier, New Orleans.  
91 Scarlet Fever. R. W. Faulk.  
92 Diagnosis and Medical Treatment of Gallstones. A. B. Nelson.  
93 Raynaud's Disease and its Treatment with Atropin. A. E. Foster.  
94 Proctitis. C. J. Drueck, Chicago.  
95 Treatment of Gonorrhea in the Male. J. S. Nagel, Chicago.  
96 Dr. Fernand Henrotin. N. Senn, Chicago.

**Maryland Medical Journal, Baltimore.**

*January.*

- 97 Contributions to Ophthalmology made by the American Ophthalmological Society During the Last 31 Years. G. M. Gould, Philadelphia.

**Medical Fortnightly, St. Louis.**

*January 10.*

- 98 Colica Mucosa. L. Crummer, Omaha, Neb.  
99 Talks to Recent Graduates. A. L. Benedict, Buffalo.  
100 Rheumatism in Children. J. S. Gaumer, Fairfield, Ia.  
101 Chronic Tonsillitis; Its Significance. C. A. Boice, Washington, Ia.

**Canada Lancet, Toronto.**

*January.*

- 102 St. Mary's Clinic, Rochester, Minn. E. A. Hall, Vancouver, B. C.  
103 The Doctor as Expert and Pioneer. C. J. Whitby.  
104 Opsonins and Bacterial Vaccines. G. W. Ross, Toronto.  
105 The Dignity of Medicine. D. Duckworth, London.

**Canadian Practitioner and Review, Toronto.**

*January.*

- 106 Diagnosis and Treatment of Accidental Hemorrhage. A. H. Wright, Toronto.  
107 Phlegmonous Gastritis. C. J. Wagner, Toronto.  
108 Pubiotomy. D. J. Evans, Montreal.

**Denver Medical Times.**

*January.*

- 109 Legislation Prescribing Qualifications for License to Practice Medicine. J. W. McCreery, Greeley, Colo.  
110 Present Status of Roentgen Therapy. G. H. Stover, Denver.  
111 Tonsillectomy vs. Tonsillotomy. W. C. Bane, Denver.  
112 The Typhoid State. T. B. Gormly, Windsor, Colo.  
113 Bronchiectasis. W. C. Abbott, Chicago.  
114 Care and Management of Nervous and Mental Cases. E. M. Brandt, Denver.

**Utah Medical Times.**

*January.*

- 115 Wounds and Injuries of Orbit. L. W. Snow, Salt Lake City.  
116 Medical Legislation. F. C. Glift, Provo.

**FOREIGN.**

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**British Medical Journal, London.**

*January 12.*

- 1 \*Arteriosclerosis. W. P. Herringham.  
2 \*Pathology and Treatment of Adherent Pericardium. K. F. Wenckbach.  
3 \*Anomalous Cases of Pernicious Anemia. G. L. Gulland.  
4 Poisoned Spines of the Weever Fish (Trachinus Draco). H. M. Evans.  
5 Development of Piroplasma Canis in the Tick. S. R. Christophers.

1. **Arteriosclerosis.**—Herringham is convinced that there is a great variety in the metabolism of different persons, and that the diet which is good for one is, quite apart from gastric



indigestion, poison for another. He says that it is not often that a patient's observation of his own symptoms can be accepted without reserve. Chemical analysis should go much further than the mere estimation of calories or of the nitrogenous contents of the ingesta and excreta and that carefully laid observations will often tell more than chemistry can explain. Chronic rheumatism, some forms of headache, and high blood pressure appear to Herringham to be clues of special importance in examining the effects of different forms of proteid.

**2. Adherent Pericardium.**—Wenckebach reports a case of adherent pericardium occurring in a young boy as the result of an exudative pleurisy and pericarditis in which operative intervention produced most excellent results.

**3. Anomalous Pernicious Anemia.**—Among the cases reported by Gulland are the following: Amaurosis; symptoms resembling peripheral neuritis; aphasia; gastrointestinal symptoms; kidney disease masking the pernicious anemia; acute Bright's disease; intercurrent pyemia; long-continued anemia, with acute terminal attack. He emphasizes the fact that pernicious anemia is by no means an uncommon disease, and that many cases are undiagnosed because of the unusual way in which they commence or in which they run their course, and that there is no means of diagnosis except the examination of the blood, which he advises should be made a routine matter in every case.

#### The Lancet, London.

January 12.

- 6 Pathology and Treatment of Ocular Complications of Gonorrheal Infection. W. J. McC. Ettles.
- 7 Substances Favoring and Inhibiting Action of the Hemolysins of Bile and Serum. M. A. Ruffer and M. Crendiropoulos.
- 8 \*Three Stomach Cases from the Physician's Standpoint. W. Russell, Edinburgh.
- 9 \*Paratyphoid Fever in Mauritius. D. B. Spencer and H. E. Staddon.
- 10 \*White-Wine Whey in Infant Feeding. B. E. Myers and G. F. Still.
- 11 \*Scleroderma and Myositis. J. A. Nixon.
- 12 Ruptures of the Urethra, Intrapelvic and Perineal. E. Deanesly.
- 13 \*Gallstones in the Appendix. H. A. Lediard.
- 14 Pneumothorax from Puncture of the Pleura. J. C. F. D. Vaughan.
- 15 \*Treatment of Chronic Sciatica and Similar Forms of Neuritis. J. C. Webb.
- 16 \*Influenzal Meningitis. J. S. C. Douglas.
- 17 \*Persistence of Infection in Scarlet Fever. H. P. Berry.
- 18 Dermoid Cyst in Ramus of the Jaw. N. J. F. Vazifdar.

**8. Stomach Cases.**—The three cases described by Russell are one of pyloric narrowing with gastric dilatation and ptosis; one of duodenal ulcer and one of malignant disease at the pyloric end of the stomach. The three patients were operated on and made uninterrupted and rapid recoveries.

**9. Paratyphoid Fever.**—Although clinically the case reported by Spencer and Staddon was one very similar to true typhoid, there were some important differences, namely, the sporadic nature of the case, the absence of the marked typhoid state, and the absence of any abdominal symptoms, pathognomonic of true typhoid, such as would be expected in a case lasting over nine weeks. The Widal test was negative.

**10. White-Wine Whey in Infant Feeding.**—Myers and Still are very favorably impressed with the value of sherry-whey or white-wine whey as an infant's food, but state emphatically that like any other food which contains alcohol it should never be given to infants in larger quantities or continued for a longer period than the exigencies of the case require. They have often used it as the only food for a week or ten days, or given at alternative feedings, for two or three weeks. The whey is prepared by heating ten ounces of milk until just boiling, then adding two and one-half ounces of sherry, heating the mixture until it begins to boil up, when it is removed from the fire and allowed to stand a few minutes. The curd is then strained off through muslin. The whey is used when only small quantities of food can be tolerated and when a stimulant is necessary. To an infant six weeks old a tablespoonful can be given every half hour or every three-quarters of an hour, and the amount and interval gradually increased until two ounces are taken every two hours. In exceptional cases they have given three ounces, every three hours, to infants six months old, and even four ounces, every four hours, for two or three days, to an infant twelve months old.

**11. Scleroderma and Myositis.**—Nixon reports four additional cases in which muscular atrophy was accompanied by scleroderma.

**13. Gallstones in Appendix.**—Lediard reports the case of a man who was operated on for an attack of appendicitis. The appendix was found to contain some mucus and eleven small stones, varying in size from that of a pea to that of a large pin-head. These stones were black in color, rather soft and faceted, like gallstones. On examination, they were found to consist of cholesterin and to contain bile pigment.

**15. Treatment of Sciatica.**—The results obtained in the treatment of a number of cases of sciatica with static electricity lead Webb to say that all forms of neuritis or neuralgia, provided they are not due to pressure of tumors or other irremovable causes, are among the most satisfactory of the many cases that can be cured or relieved by this agent.

**16. Influenzal Meningitis.**—Douglas' patient was a female infant, aged 10 months. Death ensued on the sixth day of the disease and the clinical diagnosis was confirmed microscopically.

**17. Persistence of Infection in Scarlet Fever.**—Berry found on investigation that in certain cases of scarlet fever the infection may remain in the patient for as long a time as two months. That is, the patient and not his clothing may spread the disease.

#### Journal of Tropical Medicine and Hygiene, London.

January 1.

- 19 Natal Boils. J. F. Elliott.

#### The Medical Press and Circular, London.

December 12.

- 20 Defects in Development; Their Significance. F. Warner.
- 21 \*Treatment of Bronchiectasis. E. Ash.
- 22 Preventive Treatment of Non-Specific Diseases. P. Londe.
- 23 Treatment of Syphilis by Intramuscular Injections. S. T. Beggs.
- 24 Differential Diagnosis of Typhoid Fever and Appendicitis. F. Lejars.
- 25 \*Hysterectomy for Fibromyoma Under Spinal Anæsthesia. J. H. Swanton.
- 26 Fatal Collapse After Prolonged Abdominal Operations. R. H. Hodgson.
- 27 Arterial Plethora as an Early Symptom in Chronic Bright's Disease. J. O'Carroll.
- 28 \*Organic Treatment of Gastrointestinal Affections. G. A. Weill.
- 29 \*Antistreptococcus Serum in Gonorrhoea and Other Infections. J. P. Parkinson.

January 9.

- 30 Caseous Pneumonia. Professor Debove.
- 31 Examination for Life Assurance. R. S. Smith.
- 32 Cerebral Abscess following Acute Mastoiditis. P. T. B. Beale.

**21. Treatment of Bronchiectasis.**—Ash endorses the treatment advocated by Chaplin, which was published in THE JOURNAL, January 26, page 371.

**25. Spinal Anæsthesia.**—Swanton says that spinal anæsthesia is likely to prove useful in gynecologic and obstetric cases in which prompt operative interference is required and in which a general anæsthetic is contraindicated by the existence of shock.

**28. Organic Treatment of Gastrointestinal Affections.**—The treatment referred to by Weil is that in which lactic-acid germs are transplanted into the intestinal canal, the resulting lactic fermentation combating the disease successfully.

**29. Antistreptococcus Serum in Gonorrhoea.**—Parkinson says that although a rational serum treatment can not be employed at present, experience has shown that a considerable proportion of these cases yield rapidly to the serum injection in the absence of any other medication.

#### Glasgow Medical Journal.

January.

- 33 Plea for the Study of the Deaf Child and for the Teaching of Speech to the Semi-deaf and Semi-mute. (Part II). J. K. Love.
- 34 Operations for Deviation of the Nasal Septum With Special Reference to Submucous Resection. J. Macintyre.
- 35 \*Some Curious Bodies Found in the Female Bladder. A. G. Faulds, Glasgow.
- 36 Congenital Dislocation of the Patella. A. MacLennan, Glasgow.
- 37 Address to Glasgow Eastern Medical Society. W. Findlay.
35. Foreign Bodies in Female Bladder.—In one case reported



by Faulds a large calculus was found in the bladder, in the center of which there was a gold ring. In another instance a small silver coin had been pushed into the bladder through the urethra. In a third case a small brass bell, such as is often attached to dolls, formed the nucleus of a calculus. In four other cases a piece of copper, the end of a hat pin, a small piece of slate pencil and a pea were found in the bladder. In all of these cases the onset of a cystitis was the symptom which brought the patient for treatment.

#### Bristol Medico-Chirurgical Journal.

December.

- 38 X-Ray Therapeutics. J. Taylor.  
39 Fibroma of the Abdominal Wall. J. L. Flrth.  
40 \*Preservation of the Limb in Treatment of Sarcoma of the Bone. C. A. Morton.  
41 Proteins and Protein Metabolism. J. M. Fortescue-Brickdale.  
42 Dermatitis from Without and Dermatitis from Within. A. J. Harrison.

40. **Sarcoma of Bone.**—Morton reports a case in which the upper half of the fibula was excised for periosteal sarcoma. The tumor was completely encapsulated, except at its attachment to the bone. The patient made a good recovery, but has had two recurrences, one eight months after the operation, and the other fourteen months after. The leg was not amputated, every effort having been made to save it.

#### Dublin Journal of Medical Science.

- 43 Catalysis and some of its Applications to the Arts and Medicine. W. G. Smith.  
44 \*Complications Arising in 550 Cases of Scarlet Fever. R. P. Beatty.

44. **Complications of Scarlet Fever.**—Among the 550 cases studied by Beatty, the mortality was only 2 per cent. One patient died from whooping cough; three patients died from nephritis; one from bronchopneumonia; one from general septicemia and enteritis. There were 89 cases of albuminuria, 25 of these developing during the acute febrile stage; 17 cases of nephritis; 1 case of laryngitis; 122 cases of rhinitis; 2 cases of vulvitis; 38 cases of otorrhea; 5 cases each of pneumonia and bronchitis, and 16 patients complained of joint pains. Endocarditis occurred in 7 cases, pericarditis in 1, and stomatitis in 4. In six instances a surgical operation had preceded the attack of scarlet fever.

#### Presse Médicale, Paris.

- 45 (XIV, Nos. 103-4, Pp. 821-836.) Pathologic Cytology of the Kidney in Experimental Intoxication with Corrosive Sublimite. (Intoxication exp. avec le sublimé.) G. Mouriquand and A. Policard.  
46 \*Etiology of Tuberculosis in Infants. (Etiologie de la tub. inf.) A. Calmette.  
47 Metallic Mercury in Suspension in Liquid Petrolatum Oil in Treatment of Syphilis. (Injections d'huile grise dans le traitement de la syph.) E. Bodin.  
48 Pernicious Anemia of Syphilitic Origin. (Anémie pern. d'origine syph.) M. Labbé.  
49 \*Vaccination Against Tuberculosis. (Vacc. antitub.) S. Grigoroff.  
50 \*Lannelongue's Technic for Colpoperineorrhaphy. (Procédé nouveau de colpo-périneorrhaphie.) J. Duvergey.

46. **Etiology and Prevention of Infantile Tuberculosis.**—Calmette remarks that the mesenteric glands in children are actual filters and that only fresh infection recurring again and again at short intervals is able to overcome this natural barrier. Whatever the mode of entrance of the bacilli, the first tuberculous lesion, he affirms, is always vascular. If inhalation were the most common mode of infection, lesions in the lungs and larynx would be much more prevalent among children. Whenever the bacilli enter by way of the skin, mucosa or air passages, there must have been some pre-existing lesion at the point. Referring to the frequency of bovine tuberculosis in man, he states that physicians in the Morlaix region, where bovine tuberculosis is common, have informed him of many cases in which every child in a farmer's family developed tuberculosis, although none of the parents or other relatives seems to be affected. He reiterates his former assertions in regard to the intestinal origin of tuberculosis, pointing out that this does not necessarily mean infection by the food. The bacilli get into the alimentary canal in various ways. He urges others to make a practice of inoculating guinea-pigs with the mesenteric and mediastinal lymph nodes of children succumbing to pulmonary affections of all kinds. He is confident that they will find the mesenteric nodes affected by tubercle bacilli in nearly every instance.

He has witnessed again and again that anthracosis develops in the lungs of children or young animals with great facility when inoculation tests show that the lymph glands are already tuberculous, while the particles of charcoal do not reach the lungs in the young when the mesenteric nodes are sound. The milk from suspected cows should be boiled and the lungs of children should be protected against dust, but, first of all, physicians should educate families to know that it is possible to avoid all contagion by simple observance of the most scrupulous cleanliness. The tubercle bacilli are generally introduced into the organism by way of the alimentary canal, in saliva or on contaminated articles of food. The principal sources of contagion are the soiled handkerchief, kisses, the creeping of the child on the floor and its habit of putting everything into its mouth.

49. **Vaccination Against Tuberculosis.**—Grigoroff reports experiences which seem promising for vaccination of human beings against tuberculosis and which he urges others to control. His aim was to destroy the resistant envelope of the tubercle bacillus by diastases derived from saprophytic microbes. He found the amylobacter admirably adapted for the purpose, and relates that living or dead tubercle bacilli treated with cultures of the amylobacter become disintegrated so that they readily succumb to phagocytosis. Tubercle bacilli thus treated presented both a curative and a preventive action in experiments on guinea-pigs and rabbits. The action of the amylobacter is enhanced and the cultures do not degenerate when it is accompanied by its frequent natural associate, the butylic bacillus. The amylobacter is the microbe which produces the fermentation of cellulose. It is cultivated in bouillon containing 10 per cent. dead tubercle bacilli, kept at a temperature of 37 C. for three weeks, filtered through paper and sterilized at 110 C. for fifteen minutes. If the culture then does not contain the butylic bacillus he adds it from a fermentation of butylic alcohol. He obtains the amylobacter by exposing slices of potato in a vessel of water at a temperature of about 19 C. until spontaneous fermentation occurs. His experiences demonstrate that the vaccine thus prepared has a marked curative and preventive action in guinea-pigs. Three weeks after the injection of the infecting bacilli and in spontaneous tuberculosis, injection of the vaccine never failed to arrest the course of the infection.

50. **Lannelongue's Technic for Colpoperineorrhaphy.**—Duvergey gives an illustrated description of the technic which Lannelongue has been using for fifteen years. Twenty-six of the patients thus operated on from three to twelve years ago have been re-examined recently, and the functional and anatomic results have been found perfect, without any tendency to prolapse of the genital organs. A rectangular flap is cut in the mucosa of the posterior wall of the vagina directly on the median line, the retractor, from 3 to 5 cm. wide, serving as a guide, the base of the flap being as far in the posterior cul-de-sac as possible. Three stitches are then taken and tied under the raised flap, and then the base of the flap is cut across and the rectangular defect left is sutured its entire length with catgut. The transverse incision representing the top of the flap is drawn lengthwise and sutured in the same line as the rest of the defect. This reduces the size of the vulva, while affording a support for the perineum.

#### Semaine Médicale, Paris.

- 51 (XXVII, No. 1, Pp. 1-12.) \*Puerperal Autoinfection from Clinical Standpoint. (Auto-inf. puerpérale au point de vue clinique.) R. de Bovis.  
52 (No. 2, Pp. 13-24.) \*Miliary Fever. (Nature et contagiosité de la suette miliaire.) A. Vignol.  
53 \*Pyemia with Mild Course. (Ce qu'on appelle pyohémies atténuées.) F. Lejars.

51. **Puerperal Autoinfection.**—De Bovis reviews a number of recent articles on this subject, the practical conclusions being that it is very important to study the "soil" in each individual case. By so doing unpleasant surprises will be avoided and may even be obviated in a certain measure. Whenever the woman exhibits anything suspicious in her present or past, asepsis should be more scrupulous and intragenital examination should be avoided or restricted to the minimum, to prevent adding the slightest risk of infection to those to which she is already exposed.



52. **Lessons Learned from Recent Epidemic of Miliary Fever.**—Vignol states that after fourteen years of freedom, an epidemic of miliary fever developed in the Charente region this year, study of which seems to show that the disease is subsidiary to measles. The coincidence of measles has been noted in 11 large epidemics, and the outbreak of the epidemic followed a county fair or other large public gathering in every instance. About 6,256 cases were recorded in the recent epidemic, with a mortality of 2 per cent. More than 1,500 houses were officially disinfected, but this did not seem to have any influence on the epidemic, although it may prevent recurrence of the disease. During epidemics of measles, he declares that physicians should be on the lookout for the transformation of the measles into miliary fever and thus detect it in its incipency.

53. **Attenuated Pyemia.**—Lejars describes some cases of general staphylococcus infection resulting from some trifling injury to a finger. In one case a young man had a number of extensive abscesses at various points, shoulder, appendix, lung, at intervals of several weeks, with complete recovery under operative treatment and no recurrences for more than a year to date. The immediate prognosis of this "attenuated pyemia" is grave, but with prompt operative treatment of the abscesses as they develop the outcome is favorable. The agent, the virulence and the gravity of the multiple abscesses are liable to vary with each case, and no anatomic connection between them and the zone of inoculation is apparent, but they are all evidently due to the same original process, frequently unrecognized. An effectual serum, Lejars says, would be a useful aid in treatment.

#### Archiv f. Gynäkologie, Berlin.

54 (LXXX, No. 2, Pp. 237-438.) **Motor and Inhibiting Nerves of the Uterus.** (Bewegungs- und Hemmungsnerven des Ut.) L. Fellner.

55 **Sclerosis of the Uterine and Ovarian Vessels from Pregnancy, Menstruation and Ovulation.** (Graviditäts-, etc. Sklerose der Uterus- und Ov.-Gefäße.) Pankow.

56 **Retention of Fetal Membrane by Fibroma.** (Eihautretention am submucösen Fibrom.) J. Krebs.

57 **Experimental Demonstration that Narcotic Drugs do not Exert a Paralyzing Influence on the Contractions of the Uterus.** (Nark. Mittel und Uteruscontraction.) E. M. Kurdinowski.

58 **Decidual Formations in the Ovaries with Pregnancy.** (Decid. Bildungen in den Ovarien bei intrauteriner Gravidität.) K. Hörmann.

59 **\*Functioning of Ovaries Left After Hysterectomy and Their Relation to the Postoperative Menopause Symptoms.** (Function der zurückgelassenen Ovarien.) E. Holzbach.

60 **\*Menstrual Exfoliating Endometritis.** (Endometritis exfoliativa menstrualis.) S. Aschheim.

61 **Histology of Pregnancy in Rudimentary Cornu.** (Hist. der Schwangerschaft im rud. Nebenhorn.) J. Hoff.

62 **Coagulation of Blood During Menstruation.** (Gerinnung des Blutes während der Menst.) R. Birnbaum and A. Osten.

63 **\*Primary Tubal Cancer, and Metastases in Tubes from Uterine Cancer.** (2 Fälle von prim. Tubencarc.) R. Kundrat.

64 **\*Influence of Trauma on Continuance of Pregnancy.** (Die prognostische Bedeutung operativer und anderer Traumen für die Fortdauer der Schwangerschaft.) M. Neu.

65 **\*Operations for Recurrences of Uterine Carcinoma.** (Ut.-Carc.-Recidiven.) K. Franz.

59. **Functioning of Ovaries Left After Removal of Uterus.**—Holzbach summarizes 3 cases that have been published and reports another in which the ovaries were re-examined years after removal of the uterus for cancer. In every instance the findings showed the presence of an adequate amount of ovarian tissue, capable of functioning, although there was more or less degeneration of some of the vessels. He concludes from study of these cases and from other clinical experience that the ovaries should be left when the uterus is removed, unless their removal is directly indicated. If symptoms of ovarian insufficiency develop afterward the anatomic findings compel the assumption that the cause of the disturbances does not lie in the ovaries themselves. The reciprocal relations between the various organs of the female genital tract are more extensive, he thinks, than is generally accepted to date. Changes in the nervous apparatus of the pelvis are probably responsible for many of the disturbances generally attributed to the supposed missing ovarian function. The 4 cases described were distinguished by the severity of the symptoms of the premature menopause after the hysterectomy, notwithstanding the presence of plenty of functionally capable ovarian tissue.

60. **Menstrual Exfoliating Endometritis.**—Aschheim describes 7 cases, the findings showing the difficulty at times of distinguishing between dysmenorrheic membranes and expelled decidua from an intrauterine or extrauterine pregnancy. The dysmenorrheic membranes are the products of an acute endometritis with effusion, occurring at the time of the menses. The affection has been called decidua menstrualis, membranous dysmenorrhea, and exfoliative endometritis. The cause seems to be some irritation of the uterine mucosa at the time of the menses, the nature of which is still unknown. The patients frequently regard the expulsion of the membranes as a normal feature of menstruation, and do not mention it except on direct inquiry. The expulsion of the membranes and pain during menstruation are the principal features. The membrane formation may follow years of simple dysmenorrhea, and the affection is observed in virgins as well as in married women. The latter frequently complain of sterility. A pregnancy is liable to cure the affection, or it may persist unmodified. Bacteriologic examination was always negative in his cases. The prognosis for a permanent cure is bad, but temporary improvement is generally obtained by appropriate measures, such as curetting, hydrastis, ergot and sedatives internally and hydrotherapy. Even if the expulsion of membranes continues, the patients are satisfied if freed from pain. In the more rebellious cases, he states that cauterization with steam might be tried.

63. **Primary Tubal Cancer and Metastasis in the Tubes with Uterine Cancer.**—The primary carcinoma in the tube in Kundrat's 2 cases accompanied an ovarian cyst, and in one case there was metastasis in the body and cervix of the uterus. Examination of the tubes in 80 cases of carcinoma of the cervix failed to disclose any tendency to cancer in the tubes. On the other hand, in 24 cases of carcinoma of the body of the uterus, metastases were found in the tubes in 2 out of 47 tubes examined.

64. **Prognosis of Operative and Other Trauma for Continuance of Pregnancy.**—Neu relates a number of instances of various traumata and the effect on the pregnancy. In one case severe hemorrhage from a varix in the vulva was followed by the death of the seven-months' fetus. The varix burst during an effort at stool. In another case a couple of cystic nodules in the vagina were excised for examination, followed by severe hemorrhage and the almost immediate death of the fetus. In another case a iii-para with postpartum stenosis of the vagina was operated on at nearly the third month of pregnancy. The cicatricial septum was excised and the circular wound in the vaginal mucosa sutured with catgut, without interfering with the pregnancy. In another case empyema of the gall bladder with diffuse peritonitis, temperature of 40.2 C. and pulse 120, in a ii-para of 29, at the fifth month of pregnancy, required a laparotomy, but the gall bladder was not opened. The incision was merely tamponed at first and sutured later, and the symptoms subsided with normal delivery at term. The diagnosis wavered between empyema of the gall bladder and appendicitis. A gallstone operation became necessary afterward and a stone was found in the common bile duct. The findings at that time indicated that a spontaneous anastomosis between the common bile duct and the duodenum must have followed the previous operation. Extensive adhesions had evidently developed later, and the suppurative cholecystitis must have perforated. Whether this spontaneous cure would have occurred without the incision and tamponing is a question. The fever and icterus vanished and the tumor became smaller soon after the first laparotomy.

65. **Operations for Recurrences of Uterine Carcinoma.**—Franz reports 16 operations for recurrences done on 12 patients. Seven have been free from further recurrence to date. The recurrences were in the wound of the former operation; recurrence in a gland was observed only once. His impression is, further, that the recurrences in the form of nodules are always the result of inoculation during the operation. This was especially apparent in 2 cases in which a nodule in the pelvis accompanied a recurrence in the vaginoperineal incision



or in the abdominal wound. The condition of the rectum and bladder should be investigated before operating on a recurring cancer, and he advises catheterization of the ureters to determine the condition of the kidneys. In one case he was compelled to remove one kidney, and if it had not been that palpation of the other gave unmistakable findings he would have been at a loss, as he had not investigated the condition of the kidneys before attempting the operation. Involvement of the bladder seems less serious to him than involvement of the rectum. Resection of the bladder is less serious and the wound heals more readily than with resection of the rectum. He refrains from operating when he finds the recurring nodule grown to the wall of the pelvis with most of its periphery, as this means that the large vessels are embedded in the cancer, and if they are excised the tissues are left too poorly nourished for primary healing. The ureter is generally involved also in this case.

#### Berliner klinische Wochenschrift.

- 66 (XLIII, No. 50, Pp. 1583-1610.) Bladder Stone with Wax Nucleus. Roentgenoscopy for Bladder Stones. (Diagn. Verwendung der Röntgenstrahlen bei Harnkonkrementen.) A. Rothschild.
- 67 \*African Arrow Poisons in Treatment of Cardiac Affections. (Acocanthera Schimperii als Mittel bei Herzkrankheiten.) L. Lewin and E. Stadelmann.
- 68 \*Acquired Forms of Chronic, Acholuric Icterus with Enlargement of Spleen. (Chron. achol. Icterus mit Splenomegalie.) H. Strauss.
- 69 \*Primary Cancer of the Appendix, and Investigation of Appendix at Every Laparotomy. (Prim. Krebs der App.) T. Landau.
- 70 \*Carbonic Oxid and Illuminating Gas Poisoning. (Kohlendunst und Leuchtgas.) T. A. Maass.
- 71 (No. 51, Pp. 1611-1642.) Experiences with Goiter and Its Treatment. (Kropf und seine Behandlung.) O. Hildebrand.
- 72 Operative Cure of Tumor of Occipital Lobe. (Tumor des Occ.-Lappens des Gehirns.) H. Oppenheim and F. Krause.
- 73 Diagnostic Puncture of Brain. (Hirnpunktion.) M. Ascoli.
- 74 Prophylactic Hemostasis in Osteoplastic Resection of the Skull. (Beitrag zur Hirnchirurgie.) E. Senger.
- 75 To Make an Elastic Bone Valve in Operating for Epilepsy. Id.
- 76 Gigantic Renal Calculus. (Ein durch Operation entfernter Riesen-Nieren-Stein.) Johnsen.
- 77 Contusion of the Abdomen. Two Cases. (Chlr. Behandlung der durch stumpfe Gewalt verursachten Unterleibsverletzungen.) A. Stern and T. E. Dolan.
- 78 Morphine-Scopolamine Anesthesia. (Zur Morph. Scop.-Narkose Korff.) B. Korff.
- 79 Suction Apparatus for Obtaining Blood for Serodiagnosis. (Modifikation des Bier-Klapp'schen Saugapparates zur Blutgewinnung für sero-diagn. Zwecke.) F. Eichler.
80. Hernias. (Herniologisches.) Lessing.

67. African Arrow Poison in Treatment of Cardiac Affections.—Lewin has been studying certain arrow poisons used in Africa, and has found that the active principle of the *Acocanthera schimperii* and *A. deflersii* has a marked action on the heart. It induces much stronger systole, thereby filling the arteries better and raising the blood pressure. Stadelmann relates experiences with it in the clinic which have confirmed the results of experimental and pharmacologic research, demonstrating, he thinks, that it is an effectual heart tonic, worthy to rank with digitalis, acting on the diseased heart in the same way as the latter. The active principle seems to be very durable, as the amount used had been extracted from wood that had been cut for years. In this it has the advantage over digitalis. It has the further advantage that it can be injected subcutaneously without by-effects. The active principle in its crystallized form has been given the name of "ouabain."

68. Acquired Chronic Acholuric Icterus with Enlargement of Spleen.—Strauss describes 2 cases and his treatment, based on the assumed underlying inflammation of the gall bladder. He followed Naunyn's directions for treatment of cholelithiasis, and observed a certain improvement which may, however, have been merely spontaneous remission of the symptoms. The patients were a man and woman of about 26 who had suffered from icterus for years. The spleen was much enlarged and the liver also showed a tendency to enlargement; the stools were brown, and no bilirubin was found in the urine, although urobilin was present. There was also a tendency to gastrointestinal disturbances, obstipation, oppression in the stomach and liver regions, some debility and diarrhea in one case. Both patients suffered from occasional attacks of pain in the liver and stomach region, and one complained of occasional light chills.

69. Primary Cancer of the Appendix.—Landau reports a case in which he was performing a gynecologic operation and casually examined the appendix, as is his invariable custom in all laparotomies for any purpose. He found a primary carcinoma developing unsuspected in the appendix, and expatiates on the fact that a primary cancer in the appendix is not liable to induce any characteristic symptoms for a long time, owing to the anatomic conditions. If symptoms do occur, they are merely those of a chronic, progressive appendicitis. The prognosis with operative treatment seems to be exceptionally good, as no case of recurrence is known, and the progress of the cancer seems unusually slow. In another gynecologic operation the appendix was adherent to the hematoma in a tubal abortion, and was extirpated with the rest. It proved to be inflamed and on the point of perforating. Landau therefore urges every surgeon to examine the appendix as a routine procedure in all abdominal operations, and to remove it without fail if it shows the slightest macroscopic or palpatory findings, or if there is anything in the patient's history to suggest previous trouble in the appendix.

70. Carbonic Oxid and Illuminating Gas Poisoning.—Maass compares the clinical pictures of poisoning from coal gas and from illuminating gas, stating that the symptoms of poisoning from illuminating gas show that it is two and a half times as toxic as pure carbonic oxid. The clinical picture of coal gas poisoning includes coma, dyspnea merging into commencing asphyxia, and frequent twitchings of the body lasting for minutes. Violent convulsions and tetanus are rare, but there are gradually increasing paralysis of the lungs and asphyxia, the blood in general is cherry red, the right heart is gorged with black blood, and finally, there is the carbonic oxid spectrum. With illuminating gas, on the other hand, the tendency to coma is less marked and there is muscular weakness with transient paralysis of the extremities, almost constant general cramps in all cases of a moderate course, with absence of dyspnea, although convulsive respiratory movements occur with expiration. All the organs, especially the brain and meninges, are gorged with red blood showing evidences of toxic action, and there is emphysema of the lungs in the form of circumscribed alveolar emphysema without edema. Recent experimental research on dogs and frogs indicates that the toxic action of illuminating gas must be due in part to some factor aside from the carbonic oxid, as it is so much more toxic than pure carbonic oxid alone.

#### Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed XLVII, page 2126.

- 81 (LXXXIX, Nos. 1-4, Pp. 1-380, W. Ebstein Festschrift.) Estimation of Early Symptoms in Appendicitis. (Bewertung der Frühsymptome, etc.) C. Beck.
- 82 \*Operation for a Tumor Between Cerebellum and Pons. (Geschwulst im Kleinhirnbrückenwinkel.) E. Becker.
- 83 Pathologic Physiology of Gastric Catarrh. (Magenkatarrh.) A. Bickel.
- 84 \*Roentgen Diagnosis of Rare Cardiac Affections. (R.-Diagn. seltener Herzleiden.) T. Deneke.
- 85 \*Clinical History and Significance of Clubbed Fingers. (Trommelschlägelfinger.) E. Ebstein.
- 86 \*"Spontaneous" Rupture of the Stomach. (Magenruptur.) P. Fraenkel.
- 87 \*Importance of Muscles of the Vessels and Their Nerves. (Geräusmuskeln und ihre Nerven.) P. Grützner.
- 88 \*Claims from India for Priority. (Indische Prioritätsansprüche.) J. Jolly.
- 89 \*Rôle of Internal Secretions in Pathogenesis of Diabetes. (Rôle des secr. int. dans la pathogénie du diabète sucré.) R. Lépine.
- 90 Gout and Psychoses. (Gicht und Psychose.) E. Mendel.
- 91 Compounds of Uric Acid with Formaldehyd. (Verbindungen der Harnsäure mit Form.) A. Nicolaier.
- 92 \*Paravertebral Area of Dulness on Sound Side of Chest in Case of Pleural Effusion. (Paravertebrale Dämpfung bei Pleuraergüssen.) C. Rauchfuss.
- 93 Metabolism in Experimental Anemia. (Stoffwechseluntersuchungen bei exp. Anämie.) F. Samuely.
- 94 Nuclein Metabolism. (Nucleinstoffwechsel.) A. Schittenhelm.
- 95 Heart Block in Man. (Herzblock.) E. Schreiber.
- 96 \*Form of Tetany Suggesting Acute Myositis. (Arthrogryposis.) Tintemann.
- 97 \*Diphtheria as Epidemic Disease and Its Prophylaxis. (Diphtherie als Volkscuche und ihre Bekämpfung.) Tjaden.
- 98 \*Miscellaneous in Thoracentesis. (Zwischenfälle bei der Thor., speziell über das Wesen der albuminösen Expektorations.) Waldvogel.
- 99 \*Pathogenesis of Obesity. (Fettsucht.) Id.
- 100 Percussion and Auscultation of Infants and Symptoms of Pulmonary Tuberculosis During First Year of Life. (Percussion und Auscultation der Säuglinge.) O. Wyss.
- 101 \*List of W. Ebstein's Works. 1859-1906.



82. **Tumor Between Cerebellum and Pons.**—Becker's patient was a robust man of 36, of a healthy family, who had suffered for six months from occipital headache, deafness and tinnitus in the left ear and uncertain gait, with occasional vertigo and falling, and still more rarely, vomiting. Visual disturbances developed later, with choked disc in each eye and left trigeminal neuralgia. A fibroma was found at the junction of the pons and cerebellum, originating in the auditory nerve. There was considerable venous hemorrhage as it was removed, and during the efforts to arrest the hemorrhage respiration and heart action suddenly ceased. The cavity was tamponed, the skin sutured in a moment, and under artificial respiration and other measures the patient revived. When the pulse and respiration were good again, the provisional suture was cut and the tampon loosened, when the blood again started to flow, but was controlled by compression from without, and the skin was sutured. The patient aroused from the anesthesia, groaned and struggled, but did not regain complete consciousness, and died in less than three hours. Becker reviews the various similar cases that have been reported and the technic of operative treatment, urging the necessity for early surgical intervention. Experience has shown that when the removal of the tumor is not possible, the opening of the skull is liable to have a marked beneficial effect on the general symptoms. The headache and vomiting cease and the choked disc retrogresses, thus preventing the development of optic neuritis with consequent blindness. He cites Cushing's favorable experience in this line. Sänger recommends palliative trephining as a routine measure for every case of inoperable brain tumors. It immeasurably improved 10 of his 11 patients in this class, and Sick has reported permanent restoration of the earning capacity in 3 out of 27. Becker concludes, therefore, that the patient has only to gain from operative treatment whether it removes entirely the lesion causing the disturbances, or merely mitigates the symptoms.

84. **Roentgen Diagnosis of Rare Cardiac Affections.**—Deneke describes a case of Adams-Stokes' disease, and also a congenital heart defect—a single ventricle and two auricles—with postmortem findings in each case. In the first the disturbed coördination between the auricle and the ventricle was rendered visible by Roentgenoscopy, as also the peculiarities of the contractions of the ventricles and auricles under these conditions. The diagnosis of heart block was clear and its mechanism was shown unmistakably in this way.

85. **Clubbing of the Fingers.**—Ebstein traces the history of drumstick fingers and the various affections in which they have been observed. The list is a long one, including affections entailing suppuration and purulent destructive processes, such as tuberculosis with cavity formation, bronchiectasia, empyema, cysto-pyelonephritis and dysentery, infections and chronic intoxications, cardiac defects, especially the congenital, malignant tumors, sarcoma or carcinoma of the lung and sarcoma of the parotid gland and affections of the nervous system, such as syringomyelia and possibly neuritis. Nearly 8 pages are devoted to the bibliography on the subject, the final conclusion being a quotation from West to the effect that clubbing is one of those phenomena with which we are all so familiar that we appear to know more about it than we really do.

86. **"Spontaneous" Rupture of the Stomach.**—Fraenckel concludes his study of the resisting power of the human stomach walls with the statement that great force is necessary to induce perforation or to rupture the wall of the human stomach. With stomach tube and funnel alone he was never able to accomplish it even on the stomach of a new-born infant. He adds further that in the 2 clinical cases on record of rupture of the stomach during lavage, the patients were both suffering from severe morphin intoxication. The rupture in both these cases was multiple.

87. **Importance of Muscles of the Vessels and Their Nerves.**—Grützner presents arguments to prove that the arteries and even the capillaries and the veins possess an innervated musculature which renders them practically accessory hearts, reinforcing the action of the heart and controlling the distribution of the blood.

88. **Medicine in Ancient India.**—Jolly comments on several claims for priority advanced on behalf of ancient Indian medicine. It is claimed that cowpox vaccination was known in ancient India, and that the mosquito transmission of malaria was described in the Sanskrit writings. He has examined these claims and here demonstrates their lack of foundation, the matters referred to in the ancient writings being entirely different, he declares, from the modern discoveries.

89. **Internal Secretions in Origin of Diabetes.**—Lépine reviews the nature and action of internal secretion of the pancreas, thyroid, hypophysis and suprarenal capsule, coming to the conclusion that the internal secretion of the pancreas plays an important part in the pathogenesis of pancreatic diabetes, owing to its importance as a stimulator of general glycolysis. It is probable, he thinks, that in cases in which the functional activity of the pancreas is reduced from any cause, the reduction in the amount of its internal secretion is an accessory factor in the production of a diabetes for which other causes are directly responsible. Other secretions probably exert a more or less important action on the carbohydrate metabolism. This has been experimentally established for some of them, but the clinical data are not sufficient to affirm whether or not they intervene in an effective manner as adjuvant causes of diabetes mellitus. He has recently announced experimental research demonstrating that the glycosuria observed after injection of suprarenal extract occurs with the same characteristics in dogs that have had their pancreas removed as in normal dogs. His experiments prove the existence of a transient suprarenal glycosuria, and suggest the possibility that abnormal functioning of the suprarenals may aid in the production of diabetes in man. This assumption is not sustained by any clinical data to date, and on account of the large amount of suprarenal extract required to induce it and the way in which the system soon becomes accustomed to it, the assumption, he says, does not seem very probable. The influence on glycolysis displayed by the pancreas is not a special function nor due to special elements, such as the islands of Langerhans; it is merely, he thinks, a functional activity which it shares with other organs.

92. **Paravertebral Triangular Area of Dulness on Sound Side with Pleural Effusions.**—Independently of Grocco in Italy, Rauchfuss discovered the diagnostic importance of a triangular area of dulness along the spine on the sound side in case of a pleural effusion, and has been on the lookout for this sign in the clinic for years. He relates 7 typical examples to show its importance under various conditions and the precision with which it parallels the height of the effusion, although not necessarily on a level with it, but varying as the effusion rises and falls. In 77 cases in which it was noted, the dulness was two or three vertebræ lower in about 50 per cent., and in the rest was on the same level, or one or two vertebræ lower. Two cases are related in which the triangular dulness enabled exploratory puncture to be dispensed with; the effusion was a postpneumonic process in one, and occurred in the course of mastoiditis in the other, both puzzling cases. In other cases perforation of an interlobular empyema into the pleural cavity was accompanied by the appearance at once of the triangular area of dulness. The dulness is the result of the displacement of the mediastinum toward the sound side from the encroachment of the effusion. (See also abstract in *THE JOURNAL*, page 1669, of vol. xliii, 1904, and editorial on page 423 of the current volume.)

96. **Arthrogryposis.**—Tintemann reports a case of this affection which resembles tetany and also acute myositis, but seems to be a distinct morbid entity. A rachitic child of about a year old suddenly exhibited acute fever and tonic contracture of the extremities, which were swollen and apparently very painful. This condition persisted unmodified for several days and then gradually subsided without leaving paralysis. The trouble began in the arms and this fact, together with the involvement of the tongue, suggests a muscular origin, he thinks.

97. **Prophylaxis of Epidemics of Diphtheria.**—Tjaden relates the satisfactory results obtained in Bremen by the coöperation



of the authorities and the public in arresting the spread of diphtheria. Tests as to the ubiquity of the diphtheria germ always resulted negatively. Cultures made from the throats of 233 children and 72 adults brought to the hospital for various other affections never revealed the presence of virulent or even weakly virulent diphtheria bacilli. On the other hand, bacilli carriers were frequently encountered in the environment of diphtheria patients. The sick are divided into two classes, those of merely local or family importance and those important for the health of the public, as in case of a shopkeeper's family, a teacher or the like. All the inmates of the house in the latter class are examined for bacilli and, when found, the carriers are isolated and the rooms disinfected. The isolation has to be kept up for each carrier until no further cultures develop from their throats and the apartment is disinfected. In cases of the first class, the children of the family are kept away from other children until bacteriologic examination is negative for each. By these moderate and far from perfect measures, the public is being educated to promote instead of rebelling against the prophylactic measures.

**98. Accidents in Thoracentesis.**—Waldvogel writes from Ebstein's clinic at Göttingen to describe a case of hemorrhage and another of albuminous expectoration after puncture for protracted pneumonia with great dyspnea and effacement of the interspaces. The first patient was a child and the trocar pierced the intercostal artery, as the autopsy the next day revealed. The hemorrhage had been spontaneously arrested as the coagulum compressed the wound, the rigid lung not yielding. The first effects of puncture had been apparently beneficial, and it was repeated on the other side the next day. As the aspirated fluid showed traces of blood toward the last, the trocar was withdrawn. In a second case a girl of 17 had been operated on the previous year for a tuberculous process in the scapula. Puncture for a left pleural effusion allowed the escape, without aspiration, of a liter of blood-stained fluid containing much albumin. The effusion required tapping again a week later, the fluid showing the same characteristics. The heart action was bad and the liver spleen and stomach showed much congestion, with ascites, development of a pleural effusion on the other side, and pulse of from 120 to 156. Another puncture, about three months after the first, allowed the escape of about 1.5 liters, without aspiration, of a turbid yellowish fluid. The patient began to cough, and at the change from the sitting to a somewhat reclining posture the cough and dyspnea increased and a foamy, slightly reddish fluid was expectorated. The cyanosis increased and the patient died in twelve hours. The amount of fluid thus expectorated was about 1.5 liters and it contained 3 per cent. albumin. Fully 2 more liters were found in the pleural cavities at autopsy. Experiments on dogs and rabbits are related and the clinical data analyzed to explain the mechanism of these mishaps and means to prevent them. The chief preventive measures are early puncture, prevention of coughing by administration of sedatives, before attempting the puncture, and, finally, stimulation of the heart. The last two measures, he states, should be tried in treatment.

**99. Pathogenesis of Obesity.**—From the same clinic Waldvogel announces that a step has been taken toward the solution of the problem of the origin of obesity in the results of experiments undertaken with injection of 5 gm. of beta-oxybutyric acid extracted from diabetic urine, dissolved in 100 c.c. of water, and injected subcutaneously into the chest. The injections in healthy persons caused always a slight rise in temperature. The oxybutyric acid was completely consumed in the body, and no oxybutyric acid or acetic acid appeared in the urine and the proportion of acetone was not increased. In the obese, on the other hand, no rise in temperature was ever noted, a proof of the slower course of the processes of oxidation in those individuals. The proportion of acetone was also increased on the day following the injection, especially in the breath. For these and other reasons which he enumerates, he regards these tests as demonstrating that the obese are unable to oxidate the fat acids reaching the intermediate metabolism with the same intensity as healthy

individuals. The defective transformation of the fat acids leaves an accumulation of the fat in the cells.

**101. Works of W. Ebstein.**—Eleven pages are devoted to the list of articles and monographs published by Ebstein, 1859-1906. They show an amazing range of themes as classified under 20 separate headings. Besides the strictly medical subjects, such as gout, diabetes and other disturbances in metabolism and affections of various viscera, infectious diseases, diagnostics and medical education, there are a number of works showing extensive historical research, "Linnaeus as Physician," "Medicine in the Bible and Talmud," "History of the Bubonic Plague," the "Plague of Ancient Greece," etc., and "Quackery in Germany" (1905), and "Medical Experiments and Vivisection" (1906).

#### Münchener medizinische Wochenschrift.

- 102 (LIII, No. 50, Pp. 2425-2472.) Experiences with Spinal Anesthesia. (Erfahrungen über Lumbalanästhesie mit Novocain.) R. Henking. Id. O. Steim.
- 103 Tests of New Formalin Disinfecting Process. (Bakt. Untersuchung über eine neue Formalin-Desinfektionsverfahren, das Autanverfahren.) Selter.
- 104 Technique of Local Anesthesia. (Zur Tech. der Lokalanästhesie mit bes. Berücksichtigung des Novokain-Suprarenins.) M. Dietze.
- 105 \*Bacteriologic Findings at Autopsy of Typhoid Bacilli Carrier. (Bakt. Bef. bei der Autopsie eines Typhusbazillenträgers.) E. Levy and H. Kayser.
- 106 Symptoms on Left Side in Appendicitis. (Entstehung linksseitiger Symptome bei Perityphlitis.) L. Burkhardt.
- 107 Electrotherapy in Circulatory Disturbances. (Elektrotherapie bei Kreislaufstörungen.) Hornung.
- 108 New Operative Treatment of Glaucoma. (Iridencleisis anti-glaucomatosa Holth.) Vollert.
- 109 Aid in Bacteriologic Examination with the Sedimentation Process. (Hilfsmittel bei Sedimentierungsverfahren.) Sachs-Mücke.
- 110 \*Results of Theoretical and Practical Research on Suture Material. (Theor. und Prakt. über unser Fadenmaterial.) Wederhake.
- 111 (No. 51, Pp. 2517-2564.) Appendicitis. (Zur chir. Behandlung der Perityphlitis und ihrer Folgezustände.) E. Franke.
- 112 \*Immunization of Mice Against Cancer. (Ueber Karzinomimmunität bei Mäusen.) G. Schöne.
- 113 \*Venous Thrombosis and Coagulability of Blood. (Venenthrombose und Gerinnbarkeit des Blutes.) M. Schwab.
- 114 \*Influence of Tropical Sun on Bacteria. (Einfluss der Tropensonne auf pathogene Bakt.) M. Martin.
- 115 \*Silk Ligaments or Arthrodesis in Treatment of Paralytic Flail Joints. (Behandlung paralytischer Schiottergelenke.) M. Herz.
- 116 Behavior of Agglutinins in Passively Immunized Organism. (Verhalten der Aggl. im passiv imm. Organismus.) E. Pribram.
- 117 \*Neuralgia of the Tongue. (3 Fälle von Zungenneuralgie.) L. Hoeslmayr.
- 118 Mirror Condenser to Render Ultramicroscopic Particles Visible. (Ueber einen neuen Spiegelkondensor zur Sichtbarmachung ultramikr. Teilchen.) C. Reichert.
- 119 Dangers of a Negative Diagnosis. (Negative Diagnosis.) G. Knauer.
- 120 Tulle in After-Treatment of Transplanted Flaps. (Tüll bei der Transplantation.) F. Kuhn.
- 121 Safety Pin for Dressings. (Neue Sicherheitsnadel für Verbandzwecke.) v. Stalewski.
- 122 Statistics of Gonorrhea. (Zur Statistik der Gonorrhoe.) C. Kopp. Id. R. Kossmann.
- 123 Infantile Scorbutus. (Möller-Barlowsche Krankheit.) W. Hoffmann and E. Fraenkel.
- 124 Importance and Application of Physical Methods in Medical Practice. (Physikalische Heilmethoden in der ärztl. Praxis.) O. Vierordt.

**105. Auto-reinfection with Typhoid.**—Levy and Kayser found that a certain insane woman was a "typhoid bacilli carrier," having had typhoid about three years before. She lived thereafter in an isolated apartment and again developed typhoid fever after three years without chance for contagion from without. No symptoms of cholelithiasis had been observed, but autopsy disclosed concretions in the gall bladder, containing numerous typhoid bacilli in their interior.

**110. Silver-Rubber Silk for Sutures.**—Wederhake's description of the suture material used at Witzel's clinic was summarized on page 1517 of the last volume of THE JOURNAL. He here confirms his previous announcements in regard to the superiority of suture material prepared according to the technique described. Tests have demonstrated, he states, that the silver-rubber silk is stronger and more durable than silver wire, while it was always found sterile when removed from the suture later. The finest silver wire is preferred for suturing the skin on account of its greater stiffness. An absorbable silk suture material is also prepared at the clinic, which, on account of its resemblance to parchment, is called parchment



silk. It is prepared by a tanning process, the silk being placed first in concentrated sulphuric acid for from 20 seconds to 4 minutes, then rinsed under running water or with addition of ammonia, then dehydrated in alcohol and placed in "tannin alcohol" for several hours, and then in alcohol for several days. Silk thus prepared is as stiff as fine silver wire, but softens completely when treated with glycerin, and is absorbed in animal tissues in the course of from 3 weeks to 3 months, according to its thickness. The advantages of absorbable silk of this kind are that it can be made from absolutely sterile material, can be sterilized dry at 100 C., or boiled for 10 minutes in a 1 per cent. solution of bichlorid of mercury. It can be kept ready for use in a 1 per thousand bichlorid solution, and has the advantage over catgut that it is more slowly absorbed by the tissues. The treatment with sulphuric acid renders the silk fibers soluble in water, but the tanning process afterward makes them more resistant, so that a longer time is required for their dissolution and absorption. In animal tissues the silk actually dissolves, instead of requiring the action of certain ferments, as is the case with catgut.

112. Immunization of Mice Against Cancer.—Schöne's communication issues from Ehrlich's experimental institute at Frankfurt. He announces that he has succeeded in rendering mice immune to epithelial mouse tumors by injecting them with tissues of mouse embryos. Bashford has succeeded in conferring immunity by repeated injection of normal blood and the immunity conferred in these experiments by repeated injection of normal mouse embryonal tissue testifies to the existence of an immunity to mouse carcinoma, which can not be called specific, and which can not be ascribed to the action of parasites or of the products of their metabolism.

113. Venous Thrombosis and Coagulability of the Blood.—Schwab states that at Menge's clinic at Erlangen 6 cases of fatal pulmonary embolism have occurred during the last three years, and, with one exception, in women with uterine myoma. The women had not suffered from preceding hemorrhages nor from cardiac defects, and in one case the fatal embolism occurred while the patient was being strengthened for the operation. In the others it occurred after total extirpation by the Doyen technic or by vaginal extirpation of a small myoma. The pulse and temperature charts are appended. They show that absolute bed rest for weeks in case of thrombosis is not an infallible preservative against embolism, and that the behavior of the pulse is not pathognomonic. Study of the coagulability of the blood in 30 patients failed to show any appreciable difference in the time required for the appearance of threads of fibrin in the hanging drop of blood. An interval of less than 4 minutes was never observed, the average being about 5. The longest interval—up to 6 minutes—was noted in patients debilitated by cancer or by thrombosis and long bed rest. The hemoglobin percentage had no influence on the coagulability.

114. Influence of Tropical Sun on Pathogenic Bacteria.—Martin relates experiences which demonstrate that most pathogenic varieties of bacteria seem to be destroyed by the bactericidal action of the tropical sun, but that certain non-pathogenic germs do not seem to be affected by it. The mechanical cleansing of the beach by the surf renders the surface of the sand sterile where the surf extends. His experiments did not include anthrax germs, and they were all made on the seacoast.

115. Surgical Treatment of Paralytic Flail Joints.—Herz refers to the success obtained by Lange and Reiner with silk ligaments for paralysis—tendon tissue forming around the silk to form a new, strong ligament—and then describes his attempts to apply the same technic in treatment of paralytic flail joints, relics of poliomyelitis. The silk ligatures stretched or worked loose, and in time the condition was nearly as bad as at first. To supplement the silk he therefore had to apply two silver clamps or a silver peg to hold the bones in place. Illustrated descriptions of certain cases thus treated show the details of the technic and the benefits of the metal fixation. Silk ligaments, he thinks, are a beautiful dream. The attempt to apply them in practice has resulted merely in

confirming anew the advantages of Albert's method of obliteration of totally paralyzed joints.

117. Neuralgia of the Tongue.—Hoeffmayr reports 3 cases and states that the severe neuralgic pains in the tongue were probably the result of chronic obstipation, as they subsided as the intestinal functions were regulated.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PRACTICAL DIETETICS, With Reference to Diet in Disease, by Alida Frances Patee, Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City. Fourth Edition. Cloth. Pp. 312. Price, \$1.00 net. New York: A. F. Pattee.

DIE SCHMERZPHÄNOMENE Bei Inneren Krankheiten ihre Pathogenese und Differentialdiagnose, by Dr. R. Schmidt, Assistent an der Klinik Hofrat v. Neusser, Wien. Paper. Pp. 332. Leipzig: Wilhelm Braumüller, 1906.

DIE LUNGENSCHWINDSUCHT ihre Ursachen und Bekämpfung. By Dr. O. Burwinkel. Zweite vermehrte und verbesserte Auflage. Paper. Pp. 48. Price, 1 mark. Munich: Aertzlichen Rundschau, 1907.

HAUTPFLEGE UND KOSMETIK, by Dr. G. Michel. Zweite vermehrte und verbesserte Auflage. Paper. Pp. 34. Price, .80 mk. Munich: Aertzlichen Rundschau, 1907.

TWENTIETH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF OHIO, For the Year Ending Dec. 31, 1905. Cloth. Pp. 501. Springfield: State Printers.

DIE WICHTIGSTEN GRUNDSÄTZE DER KRANKENERNÄHRUNG, by Dr. P. Rodari. Paper. Pp. 17. Price, .60 mk. Munich: Aertzlichen Rundschau, 1907.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. New Series. Vol. IX. No. 6. Paper. Pp. 161. Philadelphia, 1907.

DIE ENGLISCHE KRANKHEIT und ihre Behandlung, by Dr. W. Goebel. Paper. Pp. 19. Munich: Aertzlichen Rundschau, 1907.

## NEW PATENTS.

Recent patents of interest to physicians:

- 839267. Advertising device for trusses, etc. John W. Bunker, New York.
- 839268. Support for surgical needles. William R. Burch, Chicago.
- 839555. Bracing garment. Lula Crumbly, Fort Worth, Texas.
- 839569. Iodin preparation. Emil Flischer, Berlin, Germany.
- 839641. Curette. Ethelbert Reavley, Rosthern, Saskatchewan, Can.
- 839649. Massage and stimulating instrument. Henry J. Roth, New York.
- 839223. Ankle brace. Calvin M. Stevens, Wheeling, W. Va.
- 839232. Solution of ferric guinate and albumen. Isidor Traube and R. Wolfenstein, Berlin, Germany.
- 840285. Truss attachment for corsets. Isidor Baer, New York.
- 839926. Effecting the destruction of pathogenic organisms in water or other liquids. Patrick G. Griffith, London, England.
- 840326. Making a solution of oxyhemoglobin. W. J. J. Hendriks-zoon, The Hague, Netherlands.
- 839928. Electric heating attachment for hot-water bags. Charles V. Hill, St. Louis, Mo.
- 840060. Heating attachment for hot-water bags. Charles V. Hill, St. Louis.
- 840348. Specialists' chair. Charles N. Leonard, Indianapolis.
- 840391. Chemical apparatus. Horace B. Snell, Jacksonville, Fla.
- 840895. Shoulder braces. Charles C. Armstrong, Marysville, Ohio.
- 840472. Syringe. Robert C. Brookes, Waelder, Texas.
- 840756. Purifying air. John M. Dieterle, St. Louis.
- 840560. Vaginal irrigator. Charles O. Farrington and T. Watson, Sealy, Texas.
- 840931. Casein compound. Byron B. Goldsmith, New York.
- 840500. Homogenizing emulsions. George Kunick, London, Eng.
- 841024. Massage-vibrator. Charles N. Leonard, Indianapolis.
- 840787. Invalid bed. Edward C. Mead, Elkhart, Ind.
- 840710. Machine for applying capsules to bottles. Elijah W. Potts, Detroit.
- 840960. Regenerating pasteurizing system. Alban H. Reid, Philadelphia.
- 840961. Regenerative pasteurizing system. Charles W. Reid, Milford, Del.
- 840962. Making terpin hydrate. Ludwig H. Reuter, New York.
- 840868. Electrical distribution and control in body appliances for medical purposes. John F. Richardson, Montreal, Quebec, Can.
- 841057. Hair tonic. Edward N. Sheldon, Belleville, Kans.
- 841146. Pneumatic massage apparatus. Sayer Hasbrouck, Providence, R. I.
- 841190. Manufacture of purified soda-pine pulp. William H. Sharp, Philadelphia.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVIII.

CHICAGO, ILLINOIS, FEBRUARY 16, 1907.

No. 7.

## Original Articles

### LICHEN PLANUS OF THE ORAL MUCOSA.

WITH REPORT OF TWO CASES.\*

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In his work on "Differentialdiagnose von Dermatosen und Lues bei den Schleimhauerkrankungen der Mundhöhle, etc.," Trautmann gives a carefully prepared review of the 12 cases of lichen planus of the mucous membranes published up to 1903. There are other cases mentioned in literature, but very briefly. Considering the comparatively frequent occurrence of lichen planus of the skin, the localization of the process on the mucous membranes is rather rare, and it is interesting to note that this subject is rarely and only recently touched on in American literature. Among the cases cited by Trautmann none is from an American author. The importance of this affection is evidenced by the fact that it may easily be confounded with syphilis. There are cases of lichen planus which have a distribution limited to the palms of the hands or to the soles of the feet, or to the penis or to the scrotum, or to two, three or all of these localities which may show some resemblance to syphilitic manifestations. In some cases painless swelling of lymphatic glands is noted. Now if besides such cutaneous lesions and swelling of glands symptoms of lichen planus occur on the mucous membranes of the oral cavity, throat and lips, how easily may a misinterpretation take place and lead to most embarrassing situations.

#### DESCRIPTION OF DISEASE.

Lichen planus affects most frequently the mouth, rarer the anus and urethra, rarest the larynx. It begins either contemporaneously with the lesions on the skin or it may precede or follow them. In a number of cases the mucous manifestations are the only symptoms of the disease, in which instance, a mistake in the diagnosis may also be easily made. Just as the eruption of the skin is characterized by the development of typical papules from which other pictures are derived, so are the lesions of the mucous membranes resultant from elementary lesions, papules of which show quite different characters from those of the papules of the skin. The elementary lesion of the mucosa presents a punctate to pinhead size, rarely larger, white and glossy or grayish-white and dull (the latter if situated on the tongue) elevation, with a flat, hemispherical or conical top and a roundish or polygonal basis which as a rule is sharply defined, i. e., surrounded by perfectly normal mucous

membrane. It is hard and rough to the touch and causes no subjective symptoms. Such papules rarely remain solitary but coalesce and present various lesions, which show their origin from papules if in a recent stage of development.

On the cheeks, lichen planus as a rule affects that part which is just opposite the interdental space and presents papules, oval or circular plaques and most frequently streaks or linear projections with intervening furrows. These projections are arranged in different ways, parallel to each other, convergent or divergent, crossing each other in different directions and forming networks or stellar or brush-like formations. They all show the characters of the elementary papules. In other words, they are opaline, sharply defined and painless.

The lesions of the tongue differ somewhat. On the back, they present irregular, oval or circular plaques, while on the upper and lower surfaces of the margins solitary papules are found or, more frequently, irregular or band and streak-like plaques. All these differ from the lesions of the cheeks. They are as a rule not sharply defined. They are smooth, less hard, not raised above the level of the normal surface, not glossy, but dull and grayish-white. On the mucous membrane of the lips, the papules form irregular plaques and on the vermilion border groups or irregular plaques.

On the soft and hard palates and on the gums, solitary and aggregated papules are more frequent than plaques or networks. On the tonsils the more solitary lesion prevails. As mentioned, the older the process of the mucosa becomes, the more do the papules coalesce and lose their distinct outlines until the elementary lesions can not be recognized as such. The plaques and streaks lose to a great extent their roughness and hardness and at last they become so flat that there is no elevation present, but only the shiny white discoloration resembling a mucosa touched with silver nitrate (Thibierge).<sup>1</sup> These lesions show no tendency to degenerative changes; no erosion or ulceration occurs. The anatomy is similar to that of the lesions of the skin.

#### DIFFERENTIAL DIAGNOSIS.

Some difficulties are encountered in the differentiation between lichen, leukoplakia proper and syphilitic lesions. It can not be denied that there are striking similarities between the first two, but a number of points may be observed showing a difference. In leukoplakia the patient, as a rule, will consult the physician on account of subjective symptoms, of dryness, stiffness, more or less pain at the ingestion of hot or very cold liquids or spicy substances, while in lichen planus the lesions of the cheeks are rarely noticed by the patient and then only in rare instances when the tongue touching them perceives slight roughness, while those of the tongue may be felt as a slight stiffness in mastication. Leukoplakia

\* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. Annal. Derm. and Syph., 1885, p. 65.



never heals without local interference, while lichen planus may heal spontaneously or disappear by the administration of arsenic, while the cases calling for local treatment are in the minority.

The changes observed on inspection differ materially from those of lichen planus. Papular formations are rarely encountered and if plaques present themselves, they are, as a rule, thickened and hardened. If on the cheeks and of a recent stage of development, they affect in many instances the mucosa behind the angle of the mouth, while lichen frequently first develops on the posterior portion. If left untreated, leucoplakia shows



Fig. 1.—Lichen planus of the dorsa of the hands.

the tendency to increase in thickness with time, to become rough, rugged, and even exfoliating, while lichen planus becomes flatter and smoother continuously until at last it is level with the mucosa and represents only a discoloration such as is produced by the application of silver nitrate. This latter appearance is noted also in recurring lichen planus. In lichen planus the papillæ of the tongue are flattened while in leucoplakia they may be accentuated. Leucoplakia is infrequent in women while lichen planus is equally frequent in both sexes. At this juncture I call attention to the excellent editorial of Dr. J. N. Hyde,<sup>2</sup> "Lichen Planus and Leucoplasia of Mucous Surfaces."

The differential points between syphilis and lichen planus of the mucosa are: Syphilitic lesions of the mouth are painful (except plaques of the tonsils which in spite of their extensive development sometimes may be painless), lichen eruptions are painless. The syphilitic mucous plaques are situated within a highly reddened infiltrated area, lichen planus is surrounded by perfectly normal mucosa. The syphilitic manifestations show a tendency to progressive changes, viz., erosion, ulceration and proliferation; lichen planus, though also quite persistent—lasting sometimes for months—shows no such changes. These, together with the characteristics of lichen planus previously described may serve to differentiate these processes. In addition to these, the cutaneous lesions—if present and typical—and also the effect of specific treatment, will aid the practitioner to establish a diagnosis.

#### TREATMENT.

As regards the treatment, we must repeat what has been already mentioned, viz., that lichen planus will at times heal spontaneously. Some cases yield promptly to the administration of arsenic, the mucous lesions healing as readily as those on the skin. In other cases the mucosa heals later, while some do not even yield to arsenic nor any other systemic treatment. Tautou<sup>3</sup> recommends highly the local application of a 1 per cent. solution of bichlorid in alcohol. It is well to prevent all irritation from sharp substances and to instruct the patient as to all necessary hygienic care of the mouth. I am indebted to Trautmann's book for many details which are contained therein as collected from the literature of this subject.

#### CASE REPORTS.

I wish now to describe the cases which have come under my observation. The patient in Case 1, already reported,<sup>4</sup> was afflicted with lichen planus hypertrophicus, on whose buccal mucosa were found two typical planus papules in the course of his disease.

CASE 2.—Patient, aged 21, male, came under my observation in January, 1903.

*History.*—Family history was negative as to skin affections or syphilis. Outside of diseases of childhood he had passed through no serious illness. For the last four or five years he had used tobacco immoderately. He consulted me for a gonorrheal infection of the urethra and bladder.

*Examination.*—Examination also revealed tuberculosis of the apices of both lungs. The blood showed hemoglobin 75 per cent., red corpuscles a little over 4,000,000, leucocytes, 8,000. No other abnormal conditions were found except the affection of the skin and oral cavity which I detected at the examination. The manifestations of lichen planus were limited to the forearms, abdomen, penis, scrotum and buccal mucosa. On the lower surface of the penis and on the left side of the scrotum typical flat polygonal pinhead to pea-sized papules were noted, which were mostly arranged in ringed formations, and plaques up to the size of a dime with polygonal borders and all the other characteristics of the papules. They were dense, yellowish-red and of waxy appearance. On the flexor surfaces of the distal ends of the forearms were about half a dozen lesions, and below the umbilicus a group of five papules. All these showed the same characteristics as the lesions on the scrotum and penis



Fig. 2.—Lichen planus of the lip.

and were not larger than a split pea. The cutaneous eruption caused no inconvenience and he noticed it only at the time of infection with gonorrhea, one month before his first visit to my office. He denied noticing any sensations in the mouth. On inspection, I found on the posterior part of the mucous surface of both cheeks, opposite the interdental space white, glossy linear elevations, forming an irregular network and anteriorly to these

2. Jour. Cut. Dis., incl. Syph., 1903, p. 105.

3. Berlin. klin. Wochschr., 1886, No. 23.

4. THE JOURNAL A. M. A., Jan. 11, 1902.



a number of pinpoint to pinhead-size flat papules. The streaks forming the networks showed clearly their derivation from solitary papules and all the typical symptoms as previously described. They were hard and rough to the touch. No other parts of the mucous membrane were affected with lichen, but a pharyngitis sicca was present. The inguinal glands were slightly enlarged and painless, as also the cervical and submaxillary.

For various reasons I deferred the treatment of his lichen planus. The lesions of the skin did not increase in number nor in size, but, on the contrary, they gradually faded, until in April of the same year all had disappeared. The patient was under my care for three more months when he was discharged. At that time the mucous surface was as free from lesions as the skin, although no treatment had been employed.

*Further Examination.*—In April, 1906, he called on me for treatment of scabies. I interrogated him as to whether he had noticed any lesions in the mouth or on the skin during the last three years, but he had paid no attention to the matter. Besides the symptoms of scabies, I found the following: The penis and scrotum were free from lichen though the leucodermatic spots were still present and of the same size as three years ago, but now with a hyperpigmented area. An irregular leucodermatic spot was also seen on the radial side of the left forearm, the former seat of lichen lesions. There were four lichen lesions of pinhead to split-pea size on the flexor surface of the distal end of the right forearm, and three pinhead size on the corresponding part of the left forearm. On the lower part of the back, to the left of the spinal column, were three papules of pinhead size. All these papules were yellow and waxy.

On the left margin of the tongue were two plaques, one of the size of a pea, the other of a bean, and between these a dull,

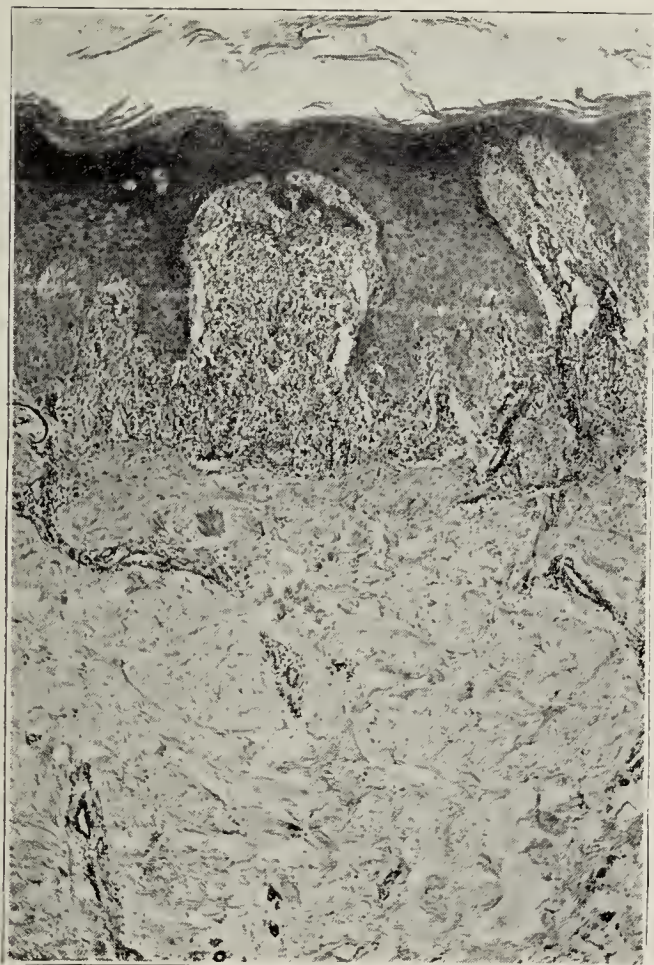


Fig. 3.—Microscopic section of lichen planus. Low power.

white streak. On the buccal mucosa of both sides were irregular plaques reaching up to the soft palate. On the gum of the lower jaw on both sides, around the molars, white streaks and irregular plaques were noted and on the uvula an irregular white spot. All of the last described lesions of the mouth were perfectly smooth, not elevated, opaline, most of them resembling a mucosa touched with silver nitrate.

At the April meeting of the Chicago Dermatological Society (1903), I demonstrated the patient at which time the mucous lesions were still present, but the

cutaneous surface was completely free except that those parts of the penis and scrotum which had previously been the seat of lesions, showed a total absence of pigment. In other words, there was a leucoderma or vitiligo, which differed from its normal appearance by the absence of the hyperpigmented zone. This case bears a striking resemblance to the cases of Pincus<sup>5</sup> and Danlos.<sup>6</sup>

*CASE 3.*—A girl, aged 18, consulted me for her ailment about the time I cared for Case 2. She was chiefly annoyed by the appearance of her hands and lower lip.

*History.*—In her family history I elicited nothing bearing on her case nor had she had any previous skin affection or other



Fig. 4.—Microscopic section of lichen planus. High power.

serious illness. She had always enjoyed good health. Her present condition dated back a month or two, beginning first on her hand and subsequently affecting her lip. She complained of itching of the scalp.

*Examination.*—Examination of the internal organs and urine was negative. The blood showed a decrease in hemoglobin to 70 per cent. The scalp revealed the presence of excoriations due to pediculosis. On the nape of the neck were excoriations and livid flat elevations varying in size from a pinhead to that of a bean. They showed the typical characteristics of lichen, some of them closely representing the former seat of excoriations. They were all irregular in outline and had a rather rough surface. The nuchal and cervical glands were enlarged and slightly painful. On the dorsum of the right hand were about 25 polygonal lesions, pinhead to pea size, of a pale yellowish-red color, flat, smooth and shiny, the larger ones showing distinctly their derivation from the coalescence of smaller papules (Fig. 1). Be-

5. *Dermat. Ztschr.*, 1903, p. 169.

6. *Annal. Derm. and Syph.*, 1904, p. 486. See also the articles of Riecke on "Lichen Planus," Mracek's *Handbuch der Hautkrankheiten*, 1905.



sides, in the larger ones, there was a perfect depression reaching to the level of the normal skin, the color of this central portion being yellowish-brown (*Lichen annularis*). In the right inguinal region there was a group of about ten papules of the same appearance as those on the dorsum of the right hand but without a central depression. On the dorsum of the left hand were a few typical papules, pinpoint to pinhead size. No other part of the cutaneous surface was affected.

The vermilion border of the lower lip showed a copious eruption consisting of groups of pinpoint to pinhead size opaque, white, polygonal and round papules, sharply defined and irregular as well as roundish white opaque plaques of various sizes, some of the round ones having a depressed center (Fig. 2). The margins of all these lesions were slightly raised above the level of the normal portions of the vermilion border, of which there was not much left unaffected. They felt dry and rough to the touch. On the upper and lateral surface of the left margin of the tongue and the lower surface of the right margin there were grayish-white, irregular and streak-like smooth plaques not sharply defined. On the back of the tongue in its posterior half were three slate-colored plaques arranged asymmetrically in the raphe in close proximity one behind another. Their size was about that of a dime, their surface smooth and dull and lacking the distinct papillae. Their consistence was not different from that of the surrounding normal mucosa. They were not raised. There was no hyperemia or infiltration zone around them. They were round and did not show any trace of their origin from typical mucous papules, while on the borders of the tongue and the vermilion border of the lower lip there were true papules and papular indications in the periphery of the plaques. The clinical symptoms justified the diagnosis of lichen planus.

Patient objected to an excision from the lip or tongue but a piece was excised from a larger lesion of the dorsum of the right hand. It was fixed in Zenker's solution. The paraffin sections were stained in hematoxylin and eosin, Unna's alkaline methylene blue, eosin and carmine and Weigert for elastic fiber.

*Microscopic Examination.*—(Figs. 3 and 4.) The epidermis as a whole is thickened. The horny layer consists of horny wavy lamellae and is loosely attached. It is thickened and does not show any nuclei. The granular layer is in places thickened. The stratum spinosum is also thickened and shows widened intercellular spaces especially in its lower portion. Some of the cells show vacuoles and between the lower rows of cells round infiltration cells penetrate from the papillary layer. The pigment is not increased. The epithelial projections are broadened and elongated. The papillae between these enlarged pegs are also hypertrophied and show a dense infiltration of small round cells which show a tendency to arrangement along the dilated blood and lymph vessels. Typical plasma cells or plasma mast-cells were not found. The subpapillary layer shows the same dense infiltration and beneath this all infiltration ceases abruptly. The reticular layer of the corium is perfectly normal excepting here and there a few rows of cells around blood vessels. The networks of elastic fibers are normal. Follicles and sebaceous glands were not found. Around the lichenoid structure the skin were perfectly normal (Figs. 3 and 4).

*Treatment.*—This consisted in the administration of pills of reduced iron, arsenious acid in increasing doses and a regulated diet. No local applications were made. The lesions of the skin and of the mucosa showed decided improvement after about three weeks when the patient disappeared from my care.

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[THE DISCUSSION ON DR. LIEBERTHAL'S PAPER IS IN THE BACK PART OF THE JOURNAL, UNDER "SECTION DISCUSSIONS."]

*The Medical Genius.*—The genius in the medical profession is rare. I can not remember that I ever met one, but I have met lots of great big fellows who possessed and made use of the average amount of brains which was theirs. One of the glories of our country is that they are to be found everywhere and in all lines of work.—James F. Percy, M.D., in the *Illinois Med. Jour.*

## MYOMATA CUTIS.\*

M. L. HEIDINGSFELD, M.D.

CINCINNATI.

Reduplication of the involuntary muscular fibers of the skin to the degree of tumor formation is probably one of the rarest conditions encountered in dermatology, if the limited number of accepted cases thus far reported in the literature is duly considered. It is more rarely encountered if Besnier's<sup>1</sup> commonly accepted classification is observed and those cases which primarily spring from subcutaneous muscular tissue, the dartos, labia, mamma, etc., the so-called dartoic myomata, which are essentially of surgical importance, are properly excluded. Radcliffe Crocker<sup>2</sup> states that his case is the eleventh clearly defined instance in the literature and accords value to the two additional cases of Wolters<sup>3</sup> doubtful classification. Leslie Roberts<sup>4</sup> asserts in 1900 that his additional case constitutes the fifteenth well defined instance. There have been but few cases reported in recent years, and Hnldschinsky<sup>5</sup> maintains that his constitutes the sixteenth additional case.

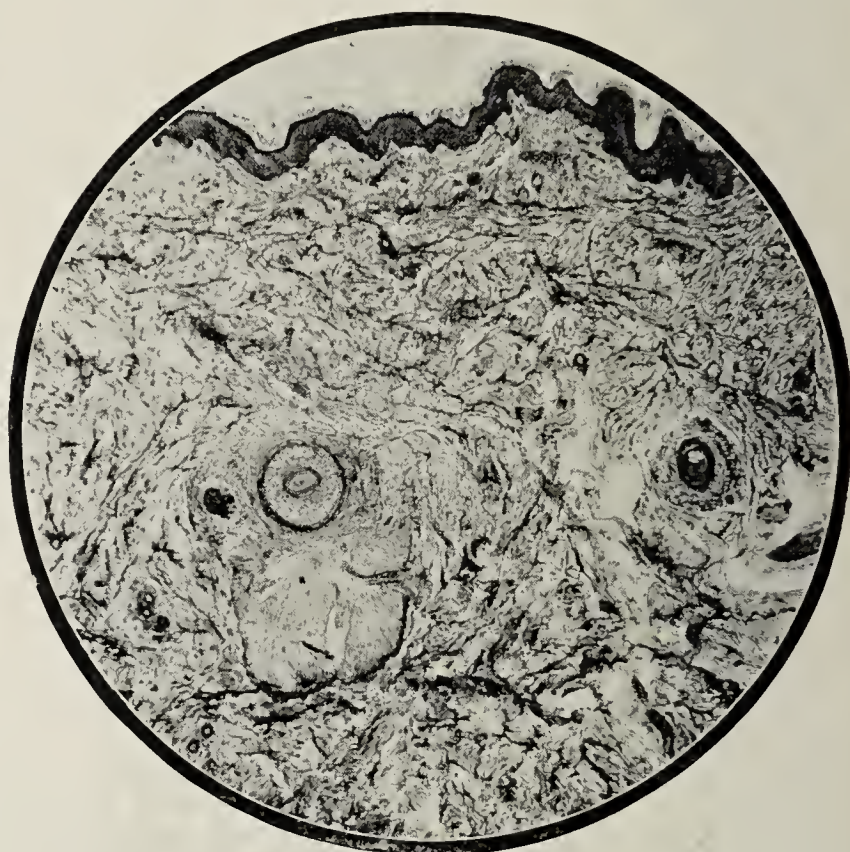


Fig. 1.—Case 1. Incipient growth of myomatous tissue, in proximity to their hair follicle and corresponding to the site of its arrector pili, from which it has probably taken its origin.

A casual survey of the literature reveals a somewhat larger number of cases of myoma cutis, than some of these reports indicate, and this disparity exists because many cases are not credited recognition, since they lack certain clinical characteristics. Myomata cutis present exceedingly varied clinical manifestations, but a fairly uniform, easily recognized, and somewhat characteristic histopathology.

In cutaneous affections it is essential to show a fair degree of consideration to the clinical aspects; it is equally important to give proper attention to the histopathology. It seems particularly unjust and unwarrant-

\* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. Ann. de Derm., 1880, p. 25; also p. 332.

2. Brit. Jour. Derm., 1897, pp. 1 to 48.

3. Wolters: Arch. f. Derm. u. Syph., 1893, xxv, p. 414.

4. Brit. Jour. Derm., 1900, xii, p. 116.

5. Inaug. Diss., 1901.



able, to ignore entirely the stable and easily recognized histopathology in behalf of a varied and indeterminate clinical character.

#### REVIEW OF LITERATURE.

The clinical characteristics as already stated are exceedingly varied. The lesions are single or multiple, congenital or acquired. Single lesions are reported by Förster,<sup>6</sup> Sokolow,<sup>7</sup> Axel-Key,<sup>8</sup> Audry,<sup>9</sup> Santesson,<sup>10</sup> Miglionini,<sup>11</sup> Herzog,<sup>12</sup> etc., and are generally excluded from general recognition. The multiple cases vary from a few to sixty or more as in the case of Lukasiewicz,<sup>13</sup> 100 or more as in Marshalko's<sup>14</sup> case or innumerable as in the cases of Verneuil<sup>15</sup> and Besnier.<sup>1</sup> Some develop in earliest infancy (Hess,<sup>16</sup> Jarisch<sup>17</sup>), the majority during adolescence, and not a few in advanced age. Unna,<sup>18</sup> Darier, Krzysztalowicz<sup>19</sup> and a few other observers attribute a congenital character to the affection, and hold it an additional confirmation of Cohnheim's theory of embryonic remains, puberty, stimulating the developmentally misplaced tissue to renewed activity. Wolters<sup>20</sup> third case, which occurred over a meningocele and

to six years' duration. Graham Little's<sup>23</sup> case occurred in a middle-aged woman and was scarcely of six months' duration. In White's<sup>24</sup> case the first lesion occurred four years prior in a man aged 45 years. A traumatic origin has been attributed to a few of the cases. Jadasohn's<sup>25</sup> second case, in a female aged 37, followed vaccination. Brigidi and Maracacci's<sup>26</sup> case in a man aged 54, was preceded by swelling of the dorsum of the right hand without cause, which was followed in three months with the appearance of the nodules, and deep wine stains of telangiectasis. This was followed in eighteen months by the formation of similar lesions on the left hand and feet. Whitfield's<sup>22</sup> case followed an eruption of blisters. The lesions vary in size from a millet seed to a hazel nut, or larger, and are distributed as a rule over limited areas, a portion of the trunk or face, or one of the extremities with no special area of predilection. The color of the lesions varies from red, brown, yellow, blue, purple dark-colored to translucent or colorless. Many are accompanied with marked dilatation of the superficial capillaries and veins of the immediate neighborhood, of sufficient degree to mask the clinical appear-

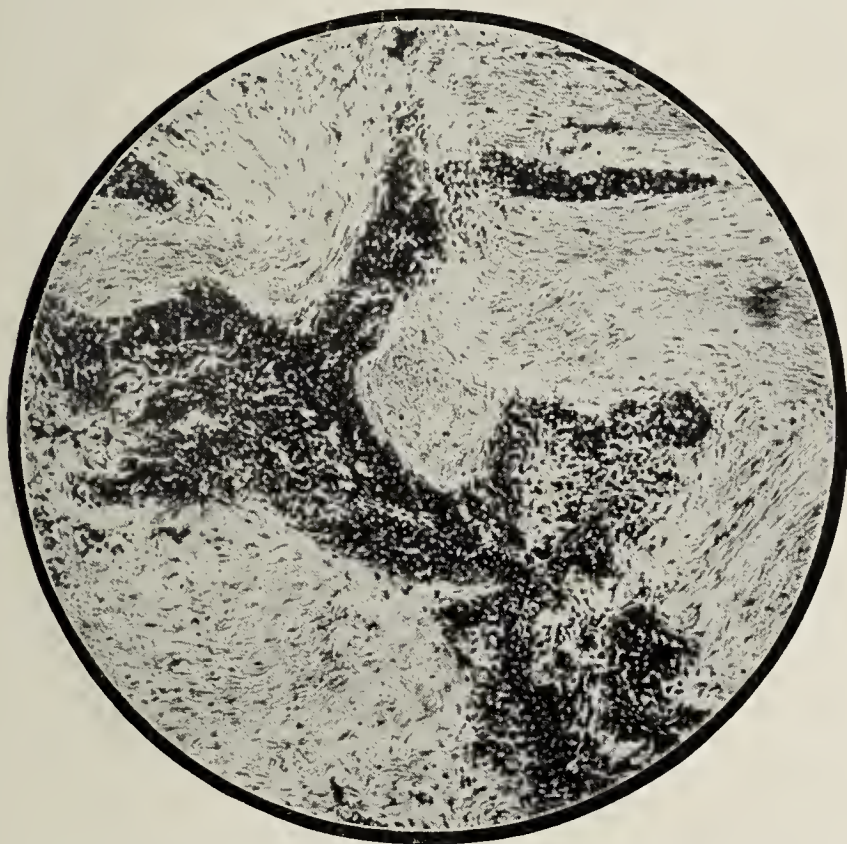


Fig. 2.—Case 1. Interlacing bundles of myomatous tissue and inflammatory exudate, taken from the center of the growth.



Fig. 3.—Case 1. Myomatous tissue and inflammatory exudate, containing cavernous dilated blood vessels in the superficial portion of the growth.

Dore's<sup>21</sup> case in a man of 29, whose father was also afflicted with the same condition, are important contributions to the congenital origin of at least some of the cases.

In a number of cases the lesions manifested themselves late in life, and were of short duration. Whitfield<sup>22</sup> reports a case in a man 47 years of age, of five

ance of the myomatous lesions so that the first diagnosis is often that of angioma, or cavernous angioma; for this reason Neumann<sup>27</sup> divides myomata into two classes, (1) pure myomata, tumors of involuntary muscular tissue with a small amount of fibrous and elastic tissue, and (2) cavernous myomata, which are also rich in vascular tissue and cavernous spaces. For the same reason Virchow<sup>28</sup> classes the affection with the erectile tumors under the head of myoma telangiectodes. Severe paroxysmal pain, sharp lancinating, vice-like in nature which may occur spontaneously at any period of the twenty-four hours, or be induced by physical exertion,

6. Wien. med. Wochschr., 1858, p. 130.  
7. Virchow's Archives, 1873, lviii, p. 316. Quoted by Neumann.  
8. Quoted by Neumann.  
9. Ann. de Derm. et de Syph., 1898, ix, p. 182.  
10. Quoted by Neumann.  
11. Giorn. ital. delle Mal. Ven. e della pelle, No. 1, 1905; abst. N.P.D., vol. xl, p. 610.  
12. Jour. Cut. Dis., 1898, xvi, p. 527.  
13. Arch. f. Derm. u. Syph., xxxiv, 1892, p. 33.  
14. Monatschr. f. prakt. Derm., 1900, xxxi, p. 317.  
15. Soc. Anat., 1858.  
16. Virchow's Archives, 1890, cxx, p. 321.  
17. Deutsch. Derm. Gesell., 1895, v, p. 360.  
18. Histopathologie der Haut, p. 863.  
19. Monatbl. f. prakt. Derm., 1906, xlii, p. 303.  
20. Derm. Ztschr., No. 7, 1905.  
21. Brit. Jour. Derm., 1902, p. 55.  
22. Brit. Jour. Derm., xvii, p. 267.

23. Derm. Soc., London, June 14, 1905; also Brit. Jour. Derm., xvii, p. 265.  
24. Jour. Cut. Dis., 1899, xvii, p. 266.  
25. Virchow's Archives, 1890, 71, p. 88.  
26. Imparziale, 1881. Quoted by Neumann.  
27. Arch. f. Derm. u. Syph., xxxix, p. 3; Ann. de Derm. et Syph., 1897, p. 93.  
28. Virchow's Archives, 1854, pp. 553-554. Die Krankhaften Geschwülste, vi.



temperature changes, or local pressure, is present in somewhat over one-half the cases. It is commonly regarded an important diagnostic symptom, but is entirely absent in a large per cent. of the cases. It occurs for the most part in the larger and longer standing lesions, and is explained on the basis of pressure of the muscular tissue on included nerves. Joseph<sup>29</sup> regards it as merely a coincident, without possessing special clinical significance.

The clinical features therefore are of such a varied and indefinite character that the diagnosis is a matter of conjecture in the most favored instances, and generally requires histologic confirmation to merit unqualified acceptance. In many of the cases the diagnosis was not made until the microscopic examination was completed, which resulted in not a few instances in a change from xanthoma, lymphangioma, epithelioma, keloid, adenoma sebaceum, etc., to myoma.

Herzog's<sup>12</sup> diagnosis was based purely on the histologic examination, the single slowly growing, rather painful lesion on the cheek, which was about two-fifths of an inch in diameter, was previously diagnosed epi-

the clinical features, neither in point of form, color, consistence, derivation, spontaneous paroxysmal and pressure pain, are not constant enough in themselves to assure a diagnosis, the biopsy, as Max Joseph<sup>29</sup> correctly states, will readily determine the character of the affection; and reduplication of involuntary muscular tissue to the degree of tumor formation, having its origin and development in the skin must be classed myomata cutis, irrespective of its congenital or acquired nature, its traumatic or idiopathic origin, its red, brown, yellow, pink, purplish, translucent or normal skin color, its soft, firm, or elastic consistence, its indolent or painful nature, associated or unassociated telangiectases, multiplicity, distribution, growth and development.

#### CASE REPORTS.

CASE 1.—*History*.—Nov. 18, 1904, J. R., tailor, aged 36, presented himself for a painful lesion over the left knee the size of a silver quarter. It followed a fall from a bicycle, which the patient received 9 years ago while trying simultaneously to avoid a wagon and a street car coming in opposite directions. He was thrown violently against the wagon and sustained a severe contusion of the left knee. The injured area was covered



Fig. 4.—Case 1. Vascular meshwork of dilated veins, partially occluded with inflammatory exudate; some completely, others incompletely filled with blood; taken from the deeper layers of the growth.



Fig. 5.—Case 1. Two large, thin-walled cavernous vessels, partially filled with blood and surrounded with inflammatory exudate; taken from the deeper layers of the growth.

thelioma, and excised for histologic examination. The prehistologic diagnosis in Krzysztalowicz's<sup>19</sup> case was adenoma sebaceum, with lesions on the ala, and septum of the nose and lip. The cases of Babes,<sup>30</sup> Brigidi and Maracacci<sup>26</sup> are probably derived from nevi and are generally discredited (Unna<sup>19</sup>). The material from Vernicuil's<sup>15</sup> case came from the dissecting room. The lesions in Whitfield's<sup>22</sup> case were so translucent that a lymphangioma was suspected, until fluid failed to exude on puncture, and the biopsy established the myomatous character of the lesion. Neumann<sup>27</sup> remarks the clinical resemblance of his case to xanthoma tuberosum, or urticaria papulosa. Wolters<sup>20</sup> second case bore a deceptive clinical resemblance to xanthoma diabeticorum, and he states that a case of Crocker's,<sup>2</sup> reported as xanthoma may be rather a case multiple myoma. If

with an ecchymosis the size of a silver dollar, and accompanied with extensive swelling, confining the patient to his bed for five days and inducing partial disability for almost a subsequent week. The ecchymosis underwent the characteristic changes from red to purple and brown, and the adjacent swelling disappeared. The central area, however, gradually took on a bluish red discoloration, and in the course of 6 months or a year became enlarged and painful, presenting as nearly as patient can determine its present characteristics.

*Examination*.—Over the external tuberosity of the tibia there was an irregular elliptical area about the size of a silver quarter, bluish red in color, and covered with four or five soft, easily compressible swellings, which presented all the clinical features of tortuous, dilated, superficial veins, and from their appearance prompted the diagnosis of a cavernous angioma of the skin. Closer examination also revealed five or six small, rounded, slightly elevated, smooth, glistening nodules, yellowish brown in color, varying from pinhead to a split pea. Patient stated that the lesion was the site of severe paroxysmal, lancinating pain, which was easily induced by pressure, but was often spontaneous and induced by such slight causes as the pressure of the undergarments or trouser leg. The excruciating

29. "Gutartige Neubildungen," Mrazek's Handb., 1904.

30. Wien. med. Wochschr., 1856, p. 130.



character of the pain induced the patient to seek attention, and the lesion was promptly excised under cocaine anesthesia. The pains persisted for a short period after the excision, but gradually disappeared, and there has been no recurrence, either of the tumor or pain after an interval of over one year.

*Histologic Examination.*—The growth was sectioned in serials and revealed two distinct types of pathologic change. Some of the areas presented dense masses of interwoven bundles of involuntary muscular fibers, distributed for the most part in the superficial layer of the cutis, extending to the epidermis, invading the papillae and entirely obliterating the latter over large areas by pressure atrophy. The nuclei of these muscular bundles preserved their characteristic rod shape appearance and were cut variously longitudinally, crosswise and obliquely in accordance with the interlaced distribution of the respective bundles. They were imbedded in finely fibrillated protoplasm, with no demarcation between the various cells. The general direction of the bundles was for the most part parallel to the surface of the skin. In the apparently older, denser and more central areas, they had replaced all other structures, save a few well-preserved capillaries, with a moderate amount of endothelial proliferation and perivascular inflammation, and lymph spaces which were widely distended and extensively surrounded with mononuclear lymphocytes. The muscular tissue was free from elastic fibers which were well preserved and

of the muscular coats of the blood vessels and the absence of any direct connection, as nearly as could be discerned between the muscularis vasorum and the tumor mass. There was no well defined muscular net around the free lying sweat glands, and the entire absence of sebaceous glands served to render these structures an improbable origin. The only additional pathologic change was a moderate amount of inflammatory infiltration between the muscular cells in limited areas of the tumor mass, consisting chiefly of the mononuclear lymphocytes and epithelioid cells.

*CASE 2.—History.*—H. C., aged 10, presented herself March 12, 1900, with a nevus situated over the left portion of the forehead, face, neck and left ear and encroaching to the median line anteriorly on the neck. It was present from birth and had undergone no material change.

*Examination.*—The lesions on the forehead were linear in form and grouped closely together into a yellowish, slightly elevated patch about the size of a postage stamp. The remainder consisted of rounded macules and papules, varying in size from a pinhead to a split pea. Some were elevated, rounded and glistening, yellowish and reddish brown in color, others darkly pigmented, firm in character and insensitive to touch. Some were soft, purplish or red in color and telangiectic in character. The remainder were flat and appeared to be pigmented macules, varying from black to light brown in color. The clinical diag-

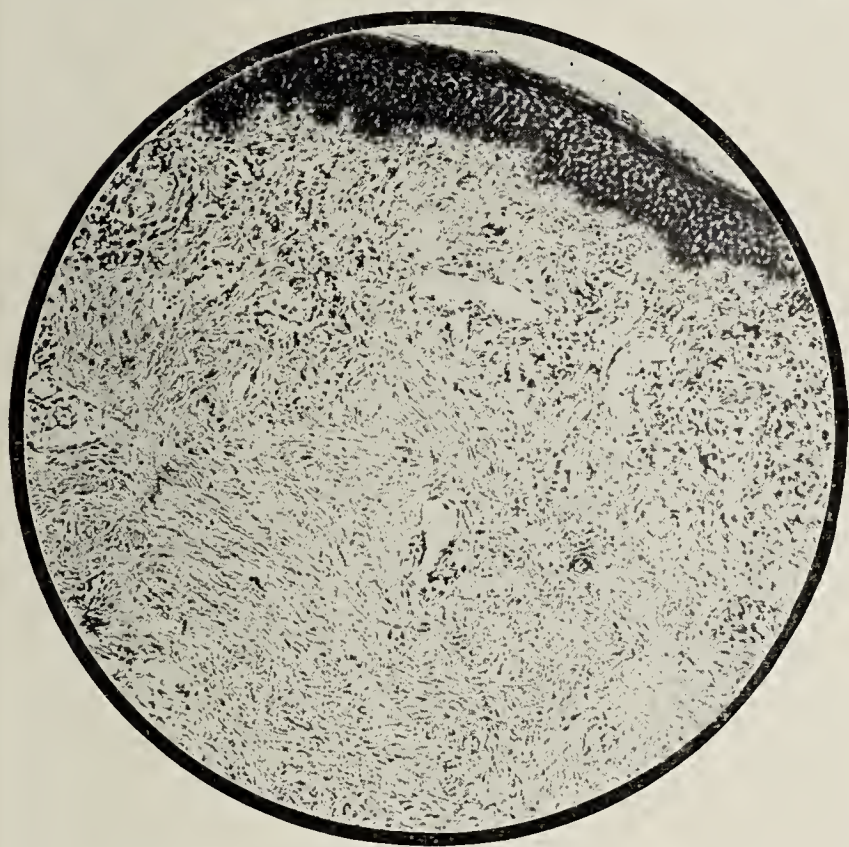


Fig. 6.—Case 2. Myomatous tissue taken from a mixed type of nevus linearis.



Fig. 7.—Hypertrophy of involuntary muscular tissue, taking its origin from an arrector pili in a case of pityriasis rubra pilaris.

abundantly present in the surrounding tissue as far as the confines of the tumor masses (Figs. 1 and 2).

Elsewhere in the deeper layers of the corium were areas which consisted of closely aggregated vessels, with their widely distended lumina surrounded by thin walls, filled with circulating blood, or walls thickened with extensive endothelial proliferation, having the character of well preserved mononuclear lymphocytes, until the lumen was partially or completely occluded. These intensely vascular areas, which had the appearance of pure venous angio-cavernous tissue, were also free from elastic fibers, and often merged with the masses of involuntary muscular tissue (Figs. 3-5).

Hair follicles were here and there well preserved in the muscular masses; sweat glands were well preserved, but there was no evidence of sebaceous glands. In the more normal appearing outlying areas of the specimen were numerous hair follicles, which on careful examination revealed arrectors pili in various stages of hypertrophy from a single thickened club shape strand to lobulated masses. Some of the tumor masses of muscular tissue could also be readily traced to the arrectors of hair follicles, which made it evident that they were the origin. This was further confirmed by the normal appearance

nosis was nevus linearis. Pain was constantly absent. On June 23, 1904, patient was seen the second time and the lesions had multiplied enormously in point of number, extending over the left shoulder and down the chest as far as the nipple. The appearance and character of the lesions remained the same. Pain was constantly absent.

*Histologic Examination.*—The lesion on the forehead was shown to be essentially an adenoma of the sebaceous glands. The smaller lesions, when examined histologically, revealed a great variety of pathologic change. The linear, yellowish, elevated lesions on the forehead bore the structure of an adenoma of the sebaceous glands. Pigmented lesions showed a vast amount of pigment in the lower layers of the rete and cells pregnant with same, in the stratum papillaris and a general structure similar to the common pigmented mole, with which it bore a deceptive clinical resemblance. Others showed larger masses of fibro-connective tissue in the corium, similar in structure and appearance to that of a true keloid. Others, the sarcomatous appearance that is not uncommonly encountered in the ordinary pigmented mole. A few lesions which were clinically somewhat warty in appearance bore the structure of a papilloma. The lesions which were clinically small rounded



firm, slightly elevated, reddish brown in color, and telangiectic in appearance, showed histologically dense masses of interwoven bundles of involuntary muscular fibers, distributed for the most part in the papillary portion of the cutis. The elongated nuclei, with rounded extremities were abundantly present and characteristic in appearance and imbedded in faintly-fibrillated cellular substance, which was moderately infiltrated with lymphocytes. The masses of muscular tissue were well supplied with small vessels, with rather thick muscular coats; the muscular tissue seemed to be distributed for the most part around the larger vessels, and a direct connection was apparently evident at some points, which permitted the origin of the muscular tumor to be attributed to the muscularis vasorum. Elastic fibers were well conserved around the mass of involuntary muscular tissue and extended themselves in well-defined septa between the interwoven muscular bundles; well preserved hair follicles were present in normal number and appearance and apparently did not share the muscular hypertrophy. The arrectors pili were not in evidence. Remnants of sebaceous glands were conserved in close proximity of the hair. Sweat glands were absent, and the only remaining pathologic change of any note was a moderate dilatation of a few deeper vessels of the cutis (Figs. 6 and 7).

These cases present the following clinical and pathologic characteristics: The chief clinical feature of Case 1, characteristic of myomata cutis, are the paroxysmal pain, which at times was spontaneous, at times induced by insignificant physical agencies: the yellowish red color, firm character, and rounded appearance of the myomatous lesions. The bluish red dilatation of the cutaneous vessels, which induced the pre-biopsical diagnosis of cavernous angioma, possesses some degree of confirmatory value, inasmuch as it is reported to accompany a considerable number of the cases thus far recorded. The unusual clinical features are the predisposing trauma; the localization of the lesions to a comparatively small area, without evidencing much tendency to multiply in number or increase in size. In Case 2 the individual lesions bear a clinical resemblance, in size, color and form, to most of the cases currently reported, and were multiplied materially in number; some of the lesions also showed characteristic telangiectases. Unquestionably, from a purely clinical standpoint, it can be grouped with the linear nevi, as evidenced by the clinical appearance, and the histopathology of a large majority of the lesions. The entire absence of pain also militated against the clinical diagnosis of myoma. Its early development and congenital nature can be regarded as evidence for as well as against its myomatous nature.

From a purely pathologic standpoint both cases were unquestionably myomata cutis. Both showed interlacing bundles of involuntary muscular fibers, situated for the most part in the upper layers of the cutis, reaching or invading the papillae and obliterating them by pressure atrophy. They contained the characteristic long rod shaped nuclei with rounded extremities, imbedded in a matrix of finely fibrillated protoplasm, with no line of distinct demarcation between the cells. The point of origin in the first case was apparently the arrector pili, in the second the muscularis vasorum. In other words there was a preponderating overgrowth of involuntary muscular fiber, originating and developing in the cutis, i. e., myomata cutis.

#### MICROSCOPIC EXAMINATION.

The diagnosis of myoma cutis in probably the vast majority of cases, one might say nearly all the cases, has been stumbled on with aid of the microscope. In some

no diagnosis was essayed until after the histologic examination was completed. In not a few the microscope effected a change of diagnosis, from keloid, xanthoma, angioma, zoster, lymphangioma, etc., to myoma, and doubtless *vice versa*, from myoma to other affections. Cases without histologic confirmation would doubtless be accorded doubtful classification value. Recently I saw a woman, with two small circumscribed patches, the size of a bean, on the lobe of the right ear, each containing a number of glistening, elevated, translucent papules, of two years' duration, which failed to exude any fluid on puncture. The affected ear was the site of severe paroxysmal pain, of spontaneous nature. My diagnosis wavered between myoma and lymphangioma, in favor of the former, until the latter diagnosis was confirmed by histologic examination.

In an affection of this character, in which the microscope plays the essential and important rôle in establishing the diagnosis beyond a question of mere conjecture, reduplication of involuntary muscular tissue to the degree of tumor formation must be classed myoma cutis, irrespective of its congenital or acquired nature, idiopathic or traumatic origin, its red, yellow, brown, pink, translucent or normal skin color, its firm, soft, or elastic consistence, its single or multiple character, its development from arrectors pili, tunica media vasorum, or glandular elements, its simple character or associated hypertrophy of blood or lymph vessels, or other elements. These associated conditions may be qualified by such attributive terms as solitary, multiple, congenital acquired, traumatic, idiopathic, lympho, angio, fibro, etc. If these considerations are properly observed, the total number of cases is materially increased, and the affection, though doubtless frequently overlooked, or mistaken for other cutaneous affections, is not as uncommon as certain well accepted reports indicate.

Simple hypertrophy of involuntary muscular fiber is by no means uncommon. It accompanies many of the chronic inflammations of the skin, particularly those which are accompanied with chronic cutis anserina, and creepy and chilly sensations. I have found it constantly associated with pityriasis rubra pilaris, and present in severe cases to an extreme degree. Likewise in porokeratosis, chronic dermatitis, and other chronic parathetic cutaneous affections. If its simple hypertrophy is easily affected by often slight and dissociated influences, its overgrowth from direct or special agencies is not unlikely.

Of special interest in this direction are the experiments of Vignolo Lutati<sup>31</sup> on animals in reference to the effect of intoxications of the general metabolism on the involuntary muscular fibers and their karyonetic response to stimulating influences. Many cases are reported in the literature without histologic examination, and reported under the head of lymphangioma, lymphangioma cysticum, angioma, xanthoma, keloid, etc., some with, some without histologic reports, that doubtless may have found a place for themselves, with careful and proper observation, under the classification of myomata. A very conservative estimate of well defined cases, worthy of general acceptance, will readily place the number of cases which can be enumerated at the present day, at thirty, and possibly forty.

From our present state of knowledge, the diagnosis must depend largely on the pathologic findings. At least this is the opinion which is most generally expressed, and which has received the most ready accept-

31. Arch. f. Derm. u. Syph., lviii, p. 323.



ance. Those who reserve for the affection a purely clinical classification, admit in a measure its shortcomings; one of the most representative of these, Crocker,<sup>2</sup> states:

With all these variations in symptomatology it is difficult to find any one symptom absolutely constant; but on the whole the most characteristic features are: The extremely slow and progressive development of the tumors in number and size, the tendency to group into close and semicoalescing patches, and their asymmetrical distributions; the moderate size attained by the tumors, which were seldom larger than a pea; the dull red color, and firm consistence of the tumors, with a normal epidermis over them, and their mobility over subjacent parts; their painless character at first with the subsequent strong tendency to most severe paroxysmal spontaneous and provoked pains; and finally they do not recur on removal.

These symptoms, singly and collectively, are not absolutely characteristic of the affection. Each occurs in other affections, and may be entirely absent in myoma; all collectively present, without a pathologic confirmation, could not establish beyond reasonable question the diagnosis. Pain is absent in probably one-half the cases, and when present may be attributed to neuromata or other forms of painful new growths. Wolters<sup>20</sup> second cases developed acutely and showed a symmetrical distribution. The lesion in Miglionini's<sup>11</sup> case was single, as large as a hazel-nut, and situated on the knuckle. Herzog's<sup>12</sup> was single, on the cheek; Förster,<sup>6</sup> Sokolow,<sup>7</sup> Santesson<sup>10</sup> and Axel-Key<sup>18</sup> were all solitary cases. Jarisch's<sup>17</sup> case was probably of congenital origin, and Wolter's<sup>20</sup> third case situated over a meningocele, can likewise be attributed a similar origin. The remaining clinical features are sufficiently varied to require no special comment.

The histogenesis of myomata cutis presents some features, which are scarcely less interesting, because of their varied character, than the clinical history. Those who have made histologic studies in this direction are about equally divided in their results: a fairly representative number express their conviction that the derivation of the muscular overgrowth can be traced to the muscular coats of the vessels of the skin, arrectors pili, or the muscular appendages of glandular elements: the remainder frankly admit that their painstaking efforts in establishing a true derivation have been negative in character or purely conjectural. Jadassohn,<sup>25</sup> in his second case, Roberts,<sup>4</sup> Nobl,<sup>32</sup> Neumann,<sup>27</sup> Marschalko,<sup>14</sup> Audry,<sup>9</sup> Broelemann<sup>33</sup> attribute the derivation to the arrectors pili; Crocker,<sup>2</sup> Jadassohn<sup>25</sup> in his first case, Hardaway<sup>34</sup> and Hess<sup>16</sup> to the muscular coats of capillaries; Wolters, Brigidi and Maracacci<sup>26</sup> to the involuntary muscular fibers of the glandular elements and hair follicles. Krzyształowicz<sup>19</sup> admits his inability to arrive at any definite opinion, but the peripheral portions bore evidence of arrector pili derivation. Jarisch<sup>17</sup> and Lukasiewicz<sup>13</sup> derivations are indeterminate as respects arrectors pili, glands, or blood vessels. Huld-schinsky<sup>5</sup> attributes to the blood vessels a probable derivation. Wolters<sup>20</sup> attributes the probable derivation of his third case to the capillaries, although glandular elements were sparingly in evidence, and a portion of the growth could be readily traced to arrectors pili. Interesting, if not amusing, is the latter's conjectural explanation of the growth and development of the myoma which was seated over a meningocele, on the basis of a compensatory hypertrophy, on the part of Nature to arrest the efforts of the pulsating meningocele to effect a

rupture. Personal observation leads me to suspect from the peripheral appearance that the arrectors pili fostered strongly the myomatous hypertrophy in the first case and the musculi vasorum in the second.

It is impossible to determine, however, beyond purely conjectural speculation, whether the muscular hypertrophy had its origin and development in these two respective areas, or whether these structural areas yielded to the general stimulus, which expended itself on all involuntary muscular tissue of the affected area, in degree proportionate to the amount of each present, and its more favored distribution. The latter explanation seems to be the more plausible one, and is analogous to the hypertrophy of all glandular and epithelial tissue in the immediate neighborhood of an epithelioma, which owes its overgrowth to a similar form of stimulating influence.

On this basis the diversified character of the histogenesis, from glands, arrectors pili, vessels, and all forms of involuntary muscular tissue, is readily explained. All the diversified clinical and physical phenomena find their best explanation on the basis of some such unknown influence, which stimulates the involuntary muscular tissue of the skin to a preponderating development and overgrowth, irrespective of age, area, predisposing causes, and similar inconstant conditions.

The tendency may be inherited, present from birth, and called into activity by the influences of puberty, trauma, etc. Inasmuch as all tissue in general is subject to similar changes, involuntary muscular tissue is probably no exception, and doubtless shares in all the variations of pathologic change, from single hypertrophy to preponderating and irregular conglomerate overgrowth, with all the corresponding gradations of clinical and physical change. In that event the microscope affords the easiest, best and most accurate determination as regards what constitutes, in a generally accepted sense, myomata cutis.<sup>35</sup>

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## LATE PHLEBITIS FOLLOWING CLEAN ABDOMINAL OPERATIONS.

W. W. GRANT, M.D.

DENVER.

Many surgeons have seen iliac and crural phlebitis develop from the tenth to the twentieth day (usually about two weeks) after abdominal operation which had been aseptic throughout and followed by prompt and perfect healing of the wound.

A disease which appears so unexpectedly and converts a simple operation, with the promise of speedy recovery, into one of suffering, inconvenience and prolonged confinement and disability, merits further study and consideration. Though seldom fatal, it is always a most unwelcome complication and a vexatious disappointment to both patient and surgeon.

The typical cases seem to occur after an interval operation, for example, a clean appendectomy.

In 1903 I expressed the opinion<sup>1</sup> that I had never seen

35. Arch. f. Derm. u. Syph., 1906. lxxix. p. 31.

32. Arch. f. Derm. u. Syph., 1904, p. 163.

34. Am. Jour. Med. Sci., April, 1886, p. 511; also Jour. Cut. Dis., 1904, p. 375.

35. For further literature the reader is referred to Arzovan and Vaillard: Ann. de Derm. et. Syph., 1881, p. 60; Fox: Brit. Jour. Derm., 1902, p. 56; Klob: "Path. Anat. d. Weibl. Sexualorg." 1864, p. 482; Vidal: Jour. Cut. Dis., 1885.

1. "The Sequels and Complications of Appendicitis," Colorado Medicine, April, 1903.



a case of iliac or femoral phlebitis after an abdominal, rectal or genitourinary operation that was not due to infection. Sepsis, I considered, the commonest cause, even if the operative field did not seem to justify it. Further observation and experience compels me to modify this opinion.

The manifest, acute, septic phlebitis, attending or soon following operations, is not considered in this paper.

I wish to discuss especially that form of phlebitis culminating in the veins of the legs and known to occur most frequently about two weeks after simple aseptic abdominal operations, without being preceded by fast pulse, elevation of temperature, pain or any indication of its advent. In the great majority of cases it culminates in the vessels of the left leg, no matter where incision is made.

Cordier<sup>2</sup> collected 232 cases; of these, about 200 were intra-abdominal operations and 166 clean cases, hysterectomy, for uterine fibroids leading in order of frequency with appendectomy next. While this form of phlebitis occurs occasionally in many other diseased conditions, it so far seems peculiarly incident to abdominal operations.

The cases of pulmonary embolism occurring soon after severe abdominal operations, usually hysterectomy for large uterine fibroids, are interesting and distressing, but are hardly to be considered in connection with femoral and saphenous phlebitis. In this class of cases pulmonary embolism is very rare.

Mr. Haward<sup>3</sup> presents statistics from five London hospitals of 3,334 operations for appendicitis, with 29 cases of phlebitis and 8 of pulmonary embolism, showing about 1 per cent. in this class of operations. In the last few years I have had two cases follow operations for appendicitis. In one acute case, in which the operation was clean because of early intervention, phlebitis of a mild character occurred in both legs three weeks later. The other case was one of chronic appendicitis, with the following history:

*History.*—Mrs. G., aged 37, married, had one child eight years old. Labor was natural and convalescence uneventful. She has not been pregnant since. She has always been thin and for the last year or two she has been anemic and neurasthenic. Her appetite is uncertain and she is troubled much with indigestion and flatulence. In the spring of 1905 she had occasional attacks of abdominal pain followed by tenderness over the appendix. These continued until she was examined by me in January, 1906, when a diagnosis of chronic appendicitis was made and I operated on her January 27. She also had retrodisplacement of the uterus, with no adhesions or discomfort; she never had inflammation of uterus or appendages.

*Operation.*—The appendix was removed through a short central incision, and at the same time I did a ventrofixation. Both were done quickly and without the least difficulty. There were no adhesions about the appendix. It was distended throughout with liquid fecal matter and was congested in the proximal half, but the tip was pale and almost bloodless. The appendix was ligated close to the cecum, the stump cleaned with peroxid of hydrogen and salt solution and pouched with one circular stitch. In fixing the anterior surface of the fundus uteri to the lower angle of the wound, care was used not to puncture the sheaths of the recti, the object being not to damage the epigastric veins which lie beneath the muscles; in fact, it was not necessary to ligate a single vein during the operation.

*Postoperative History.*—The wound healed promptly, per-

fectly and permanently. There was not the slightest interruption to a smooth and satisfactory convalescence. On the second day the temperature was 99.2; after this, from January 28 to February 8, it varied from 98.5 to 98.7 and the pulse was about 75. The kidneys were acting normally at all times, and constipation was prevented by enemas and an occasional simple laxative. There was indigestion during the first two or three days after operation. On February 8, twelve days after operation, the temperature in the evening was 99.2 and pulse 80. At same time she complained of tenderness and pain, which were quite severe in the left calf and under the instep, and lastly in the groin, showing unmistakable phlebitis. Next day the temperature and pulse were normal.

On February 10, temperature was 99.2 and pulse 80. After this date both continued practically normal, but the pain and swelling of the leg continued. The leg was treated by slight elevation, wrapped in cotton and loosely bandaged until the fourth week, when rubbing and gentle massage were commenced and continued daily until convalescence was well advanced. It was two months before the patient could use the leg with comfort. She has since worn an elastic stocking. The swelling of the entire leg was decided, but never extreme. The woman's general health has steadily improved and she walks without discomfort.

#### ETIOLOGY.

What caused the phlebitis in this and similar cases? The field of operation was clean throughout; the epigastric vessels were not injured; the wound was not stretched, and there was no undue or uncomfortable pressure of the abdomen by bandage. Traumatism, therefore, must be excluded. With our present knowledge, pathogenic bacteria, it seems to me, must be excluded. The phlebitis may have been caused by some albuminoid substance or toxin in the blood, as suggested by Welch and later by Meyer and others, but it would be exceedingly difficult to account for the presence of infective bacteria in such a case. It is admitted that whatever damages the endothelium of the veins, whether trauma or a morbid state of the blood, favors the formation of thrombi. In my experience the patients are usually anemic, with feeble circulation. I believe that a condition of the blood exists previous to operation which predisposes to thrombophlebitis. This blood state is not always apparent.

In the great majority of cases the veins of the left leg only are affected. Why should a clean operation in the right hypogastrium cause phlebitis in the left leg only? The anatomic arrangement of the blood vessels, I believe, offers the best solution.

Keen, in his "Surgery of Typhoid Fever," states that about three-fourths of the cases are in the left leg (other authorities give a larger proportion). He believes that it is due to feeble heart action and to the mechanical arrangement of the vessels—the passing of the left common iliac vein beneath the right common iliac artery. Haward adds the fact that the left common iliac vein also passes beneath the left internal iliac artery. The typhoid state, however, with its long period of recumbency, high temperature and marked debility is different from that under consideration, yet the peculiar arrangement of the vessels is doubtless a factor to be considered in the development of the disease. The thrombus may be the cause or result of the phlebitis.

It is also conceded by many that some cases are exceedingly difficult of explanation, and, I may add, with our present knowledge impossible of satisfactory explanation.

2. THE JOURNAL A. M. A., Dec. 9, 1905.

3. Hunterian Lectures, "Phlebitis and Thrombosis," Lancet, March 10 and 17, 1906.



## SUMMARY OF LITERATURE.

Witzel of Bonn<sup>4</sup> reports three cases that he could not account for following clean appendectomies. He now believes that the condition originates in the epigastric veins and is due to ligation of the epigastric vein and artery during the operation. He therefore would make a more perpendicular incision and would not open the sheath of the rectus muscle, nor ligate the epigastric vessels, nor suture *en masse*.

Stephen Hoffman,<sup>5</sup> in a paper on blood vessel complications in perityphlitis states that thrombosis and embolism are complications of appendicitis, and that thrombosis may be primary in the veins and is not very rare. He notes as a "singular fact" that it most frequently affects the veins of the left side, and suggests the anatomic arrangement of the vessels and pressure as the explanation.

Lenmander of Upsala,<sup>6</sup> had five cases following appendectomy. He considers the phlebitis of infectious origin, but states that it need not start from field of operation. He states that the compression by dressings, intestinal intoxication and feeble circulation may be factors.

Lockwood<sup>7</sup> states: "The prognosis of phlebitis is favorable when not complicated with septicemia and pyemia," an admission that some cases are not septic.

Coe<sup>8</sup> speaks of septic crural thrombosis following aseptic celiotomy.

Vander Veer<sup>9</sup> says regarding non-septic phlebitis following abdominal operations that the probable causes are: Traumatism, distribution of veins of left leg and bandage pressure.

Secord<sup>10</sup> of Ontario speaks of thrombosis of femoral veins following aseptic laparotomy.

He says that lessened vascular tension, retarded circulation and dressing pressure are causes. It is not due to infection.

Strauch, of Moscow, (quoted by Secord), says that ether and high pelvis position are causes of femoral thrombosis.

John G. Clark<sup>11</sup> speaks of this form of phlebitis occurring as a sequel to celiotomy. It originates, he says, from a primary thrombus of the deep epigastric vein which is slowly propagated along the vessel until it reaches the external iliac, where it gives rise to retrogressive thrombus of the femoral vein. It is non-infectious and non-traumatic.

Willy Meyer<sup>12</sup> mentions two cases following appendectomy. Both patients were anemic. Intestinal intoxication and sigmoid pressure, he says, may be contributory causes. The condition is of infectious origin, but not necessarily from the field of operation. A letter from Dr. Meyer in June, 1906, reaffirms his belief in infection as a cause.

Edwards<sup>13</sup> speaks of phlebitis, thrombosis and embolism following abdominal and pelvic operations. He declares that the condition is not septic. He believes that it is caused chiefly by suddenly formed clots becoming detached and causing pulmonary embolism and sudden death. It usually occurs in cases of hysterectomy from uterine fibroids.

Maurice Richardson,<sup>14</sup> of Boston, says that this thrombosis of the veins of the left calf may be the result of wound infection, but that such an explanation seems against common sense and experience. The common phlebitis, he believes, occurs most frequently in those patients whose wounds have pursued a uniformly favorable and aseptic course.

At the annual meeting of the American Gynecological Society,<sup>15</sup> May 22-24, 1906, Dr. Joseph Taber Johnson, Washington, D. C., read a paper entitled "Thrombosis and Embolism Following Abdominal Operations;" Dr. Eugene Boise, Grand Rapids, Mich., read a paper on "Postoperative Embolism." In the discussion following Noble, Philadelphia, said that he does

not think that sepsis has much to do with the condition; much is yet to be learned about it. There are many factors and trauma plays a part.

Reynolds, Boston, said that he thinks that congestion of pelvic viscera has much to do with thrombophlebitis after operations on these organs.

Currier, New York, declared that we are in the dark as to the exact cause, but believes that patients getting up too soon, say within a week, is dangerous and predisposes to thrombosis.

Watkins, Chicago, said that the evidence is much in favor of infection.

Dührssen, Berlin, thinks it is caused by a blood dyscrasia, not by sepsis.

Edebohls, New York, said that in ten cases none was septic.

Newman, Chicago, said that susceptibility from previous weakness and trauma figure as causes.

J. C. Munro<sup>16</sup> suggests that phlebitis is more common than postmortem statistics indicate. He believes that mild infections do take place from which the patient recovers spontaneously.

C. H. Goodrich,<sup>17</sup> among the causes of femoral phlebitis, mentions infection of the blood clot in or about the superficial or deep epigastric or circumflex iliac veins by attenuated forms of bacteria. In most cases, he says, some trauma to veins is probably a contributing factor. None will dispute that a blood clot, an ideal culture medium, can be infected by a smaller number and less active bacteria than tissues possessing resistive power.

Welch<sup>18</sup> says: "Many of these so-called marantic thrombi are unquestionably of infective origin, and while a more prominent place must be assigned to the action of micro-organisms in the etiology, yet recent attempts to refer all thromboses, formerly called marantic, to the direct invasion of micro-organisms and to phlebitis go beyond demonstrated facts."

Clark and Haward quote with favor von Recklinghausen's whirlpool theory or eddy of the blood as predisposing to blood clot, maintaining that this result is favored by the cross currents under varying pressure and at different angles. When at or near a common receptacle, the influence may be marked, and if the heart action is slow and feeble, it may be influential in the cause of thrombus. This is but another factor in the consideration of the anatomic plan of the vessels in influencing the formation of thrombi.

From the teachings of Virchow that the thrombosis was the primary essential condition and due to slow, feeble circulation, we have witnessed in more recent years the growth and ascendancy of the theory of infectious origin, due largely, as shown by Professor Welch, to the investigations of European pathologists.

Much has been written in the last few years about the blood plates, whether they were degenerated blood corpuscles or inherent constituent elements of the blood. In the Hunterian lectures on phlebitis and thrombosis, previously alluded to,<sup>2</sup> considerable space is given to this discussion. The investigations of Eberth and Schimmelbusch and others established their prominent influence in coagulation, while Bizzozero and Osler confirm their existence as independent elements in solution with the blood corpuscles.

According to different investigators, from Osler, Brodie and Russell, to Professor Kemp, they number from 250,000 to 778,000 to the cubic millimeter. Their marked influence in the formation of blood clot seems established. Whatever retards or slows the circulation, regardless of local and constitutional conditions, disturbs the normal relation of the elements to each other and

4. Centrbl. f. Chir., July 15, 1906.

5. Deutsch. Ztschr. f. Chir., vol. lxxxi.

6. Centrbl. f. Chir., 1899.

7. "Pathology and Surgery of Appendix," 1901.

8. Medical News, July 1, 1899.

9. American Medicine, July, 1901.

10. Secord: Amer. Gyn., October, 1903, p. 370.

11. "Etiology of Femoral Postoperative Thrombophlebitis," Univ. of Penn. Med. Bull., July, 1902.

12. Annals of Surgery, May, 1901.

13. International Clinics, vol. iv, Series 15, 1906.

14. "Certain Unavoidable Calamities Following Surgical Operations," Boston Med. and Surg. Jour., Dec. 1, 1904.

15. THE JOURNAL A. M. A., June 9, 1906, page 1791.

16. "Lymphatic and Hepatic Infections Secondary to Appendicitis," Annals of Surgery, November, 1905.

17. Brooklyn Med. Jour., June, 1905.

18. Allbutt's System of Medicine, vol. vi, page 173.



to the endothelium. In chlorosis and other conditions of deficient oxygen in the blood, the platelets increase, leave the center of the current and, with the corpuscles, collect in the periphery of the stream, and with their known property of agglutination, attach themselves to each other and to the endothelium and form the nucleus of a clot. Prof. James H. Wright,<sup>19</sup> of Boston, has discovered the origin of the blood plates in the giant cells of the bone marrow and of the spleen. Constitutional conditions affecting the chemistry of the blood and local condition of the vessels will produce the same results, especially with a feeble or retarded heart action. Under such conditions the fibrin ferment it is claimed, is evolved and the tendency to thrombus favored.

The calcium and sodium compounds and thyroid extract are administered to increase the agglutinative conditions of the blood and to shorten the period of coagulation in order to prevent hemorrhage during and after operation. This is perfectly consistent with Professor Wright's (London) observations that citric acid causes decalcification of the blood, and that the blood of the femoral veins, containing more carbonic acid, is more susceptible to coagulation than the sinuses, at the base of the brain.

With the foregoing data and general observations, we ought to be better prepared to form an intelligent opinion in a given case as to the causes and blood conditions which favor thrombophlebitis after operations. Because few patients die, the pathologist has not had a good opportunity to do his best work. The influence of trauma as a factor is emphasized by such men as Lennander, Witzel, Thienhaus, Vander Veer, Baldy, Goodrich, and most of them, at least, recommend the Trendelenburg position as a preventive measure in addition to precautions, which all prudent surgeons recognize, against the infliction of needless force and trauma during the operation.

#### OPINIONS OF SURGEONS AND PHYSICIANS.

In my examination of the subject I sent the following inquiry, in June and July, to about 30 distinguished surgeons and physicians: "What in your opinion is the chief cause of phlebitis following abnormal operations (occurring usually from the tenth to the twentieth day) with little or no fever, an aseptic field and prompt healing of the wound? Interval appendectomy is a good illustration," I quote from replies received:

Prof. W. H. Welch: "In my article on 'Thrombosis' in Allbutt's System of Medicine, (Vol. VI), I discuss the view which has many adherents, particularly in France, that many of the thrombi formerly regarded as marantic or bland are really instances of infective phlebitis, and the discussion applies to the class of thrombi following abdominal operations, to which you refer, although surgical thromboses, as such, are excluded from the scope of my article, which relates to internal medicine. The etiology of the class of thrombi which you are considering is not well understood. The opportunities to make bacteriologic examinations of such thrombi are infrequent, but, as I state in my article, in a number of cases bacteria have been found in such thrombi, and this raises some presumption in favor of their infective origin. Still, I do not consider such an origin as by any means established. The absence of evidences of infection in the seat of operation does not preclude the possibility of the infectious origin of the thrombi, nor does the bland course of the thrombotic process exclude this. The symptoms (fever, rapid pulse, etc.), in some of the cases are suggestive of infection, and on the whole, I incline to this hypothesis, which, in at least some instances, seems established.

J. C. Bloodgood, Baltimore, does not consider the causation definitely settled, but thinks the origin infectious. It is much more frequently observed in anemic and chlorotic individuals.

James M. Finney, Baltimore, believes that there is no one specific cause but several contributory causes, the most important of which is the condition and chemistry, of the blood itself. Add to this slight traumatism to the iliac vein, usually the left, through pressure from fecal impaction in rectum, metal retractors, rough use of the rectal tube, etc., and you have the factors necessary for its production. Infection may play a remote part, but the real change, whatever it may be, is, in his opinion, a chemical one, in the cases under consideration.

Robert Abbe, New York, says: "The cause of postoperative femoral phlebitis is probably not different from that following typhoid or other fevers—retarded current in the left femoral, which shows in three-fourths of the cases, due to pressure on the right common iliac artery on the vein which crosses beneath it at the pelvic brim. This, plus the bacterially infected blood, even in wounds healing by primary union without apparent infection, causes colonization on the vein wall when the current is slowed down."

Clement Cleveland, New York, formed the opinion long ago that even the mildest forms of phlebitis are due to slight sepsis, and later experience has confirmed this view. He is unable to account for it in any other way.

Robert T. Morris, New York, thinks that the phlebitis is due to infection by way of the peritoneal lymphatics, but none of the writers has given a very clear view of the process. The matter needs explanation. He has had two cases of left and two of right iliac and femoral phlebitis following appendectomy without other infection in the cases.

John B. Roberts, Philadelphia, is inclined to attribute the condition to a mild form of infection of the veins, and the same thing, he says, is probably the cause of venous thrombosis that occasionally occurs as a complication of typhoid fever.

John B. Deaver, Philadelphia, says: "Infection is the cause."

Joseph Price, Philadelphia, says: "Stump or pedicle operations and local infection. The appendix operation is the perfect type to demonstrate that it is septic, because nearly all are imperfect operations. A dead ligature in a dead space undermined, with one-sixth or one-eighth of the appendix not removed. Those who cut out the stump and close the hole never have phlebitis."

J. M. Baldy, Philadelphia, thinks that it is impossible to tell the chief cause. Sepsis is the cause in only a few cases. Traumatism is a factor. Pressure on vein by retractors may be a potent cause, and anemia due to loss of blood, and also to disorganized blood from other causes, are also factors.

L. S. McMurtry, Louisville, says that he has had three cases following nonseptic abdominal operations. In each case the left leg only was affected. He regards the etiology as probably a mild local infection causing inflammation of the vein, and formation of a clot, but is not clear as to the cause and pathology.

Maurice Richardson, Boston, says that he has seen a great many cases of the kind, and is strongly inclined to the view that this mild phlebitis is no evidence of sepsis. It occurs in the cleanest cases attended by a slight rise in temperature. Little, if any, disability follows. Sometimes he has thought the trouble came from keeping the patients very still. He has never seen pulmonary embolism in these cases. He has no idea as to the cause of the phlebitis.

Arthur T. Cabot, Boston, says that he has not been able to discover any explanation for the cases of phlebitis under consideration. He has several times seen cases of what seemed to be phlebitis in the deep veins of the calf of the leg after operations, and thought they might be in some way due to pressure of the calf from the Trendelenburg position, but confesses he has no very good reason for holding this opinion.

N. Senn, Chicago, says that his experiments on animals several years ago tended to show that thrombosis is not likely to occur without infection. Developing after an operation, it is

19. Boston Med. and Surg. Jour., June 7, 1906.



suggestive of a mild form of infection, or in consequence of an enfeebled circulation. He has not observed it in appendix operations.

J. B. Murphy, Chicago, does not believe that phlebitis is more common following abdominal than operations on other parts of the body. He thinks it is a stasis caused from placing the patient in the recumbent position.

A. J. Ochsner, Chicago, says that two explanations seem somewhat reasonable, though he is entirely unable to state the reasons for the occurrence of the disease. One is given by Witzel, and the other is that the disease usually occurs in patients whose blood is not quite normal.

W. J. Mayo, Rochester, Minn., believes that there are several factors in the etiology. Phlebitis does not occur as a rule unless the peritoneal cavity is opened, thus arousing a process which results in some blood change, and this is instrumental in causing phlebitis. The recumbent position is a factor. While formerly common in interval appendectomies, when patients were in bed two or three weeks, it is now uncommon since patients are allowed to get up in six days, and are instructed to move their limbs freely. On this account the Mayos aim in abdominal cases to get the patients up in ten or twelve days.

Roswell Park, Buffalo, N. Y., in the cases under consideration, thinks that the early condition is one of endophlebitis, which may be of toxic origin, or an indistinct mild form of sepsis. The handling of viscera or clamping of vessels by forceps may commence the thrombotic process. While micro-organisms are more or less at fault, it does not follow that the condition is necessarily other than thrombus produced by chemical rather than biochemical means. He believes that a mild type of thrombophlebitis is the not infrequent sequel of abdominal operations, and that it is due to chemical agencies in the blood rather than to active germ action, and that it is mildly, if at all, infective. The condition, at times, is most difficult of explanation.

Arpad G. Gerster, New York, states that the question is not so simple as many would imagine. Several factors are to be considered. In some faultless cases the thrombosis is due to a ligated pelvic vein, in which the thrombosis extends to the femoral; but the condition of the blood and the endothelium of the vessels has some direct influence on the thrombotic process. Another factor is inaction due to bed rest, and the low blood pressure due to lack of physiologic stimulus to the heart. The coagulability of the blood and the state of the endothelium he thinks are most important.

Joseph G. Blake, New York, believes that the condition is due to an extension of a phlebitis in the neighborhood of the wound across the abdomen through a transverse vein of the abdominal wall which empties directly into the external iliac vein. The original phlebitis he thinks is probably due to injury to the walls of the vein through traction.

A. W. Vander Veer, Albany, N. Y., says that he is not clear as to the pathology. In the plainest cases traumatism is produced which extends to the venous trunk. The clumsy use of retractors will produce injury which is reflected to the veins. Just why a case of appendicitis, complicated with a lesion of right ovary and tube, should cause a phlebitis of the left leg, he is at loss to explain.

#### CONCLUSION.

My belief is that the cause of phlebitis of the epigastric, iliac, femoral, saphenous and tibial vessels, occurring late after a perfectly aseptic operation, with prompt healing of the wound, is probably not septic.

We do not know the specific cause or causes. The causes, of which a good illustration is reported, with our present knowledge, are very difficult of satisfactory explanation.

In the absence of convincing or pathologic evidence, and in the face of profound surgical skepticism, it is not rational, in the best and cleanest days known to surgery, to assume an infection that is devoid of satisfactory evidence.

The condition which causes the thrombus, before the

inflammation, or of the phlebitis, preceding the thrombus, is the vital question. It is exceedingly difficult, in fact, quite impossible, to reconcile the facts with the recumbent position, the simple ligature or injury of small veins, in a distant field, often on the opposite side of the body, though admitting that infection need not come from the site of operation.

I believe that there is a general condition affecting the composition of the blood, that may, and often does, exist before operation, which is an essential factor in the cause of thrombophlebitis in these cases. A careful scrutiny of patients should be made before operation, and an examination of the blood should be made before and after operation. This on a fairly liberal scale, in my opinion, would reveal interesting and useful information, and shed some light on a puzzling subject.

If the patient is chlorotic and anemic, or if the conditions are not satisfactory, the health should be improved, if delay is permissible, by the administration of iron and acids, and metabolism improved by a suitable food supply, while specific or constitutional affections should, as usual, receive just consideration.

### A SERIES OF MEDICAL AND SURGICAL AFFECTIONS TREATED BY ARTIFICIAL AUTOINOCULATION

ACCORDING TO WRIGHT'S THEORY OF OPSONINS.\*

A. P. OHLMACHER, M.D.

DETROIT.

It is somewhat surprising, in view of the remarkable character of the results which have been obtained, that an appreciation of the full value of Sir A. E. Wright's theory and practice is not widely disseminated among the medical profession of the United States. Rarely, indeed, in these days of easy publicity, does a scientist effect an accomplishment of far-reaching humanitarian importance without its immediate and extensive proclamation throughout the civilized world. In fact, such proclamation, especially of discoveries in the healing art, is too often premature and over-colored, with the result that disappointment and pessimism are aroused and progress impeded. With Professor Wright, however, the situation is quite the opposite. He has for four or five years patiently worked along a new line in experimental medicine, has evolved an attractive working hypothesis, the application of which has performed veritable miracles in the cure of certain diseases, and all of this with scarcely a ripple of sensation and almost without the knowledge of the medical profession outside of the originator's immediate circle. For Wright is accomplishing results that are the surprise of those who have been so fortunate as to witness them, and the comparatively uncommon worker who is, by previous training, competent to apply Wright's methods in practice, and who has employed them, is also performing therapeutic feats of a most surprising kind. To a large degree this situation has resulted from the principal investigator's natural modesty, and in part has been due to the conservatism of the medical profession, representing the reaction after a number of sensational but unproductive announcements. But the day when Professor Wright's achievements are to remain hidden has passed in England, and in the United States we are on the verge of a similar

\* Read by invitation before the Chicago Medical Society, Jan. 16, 1907.



illumination, thanks largely to the visit which Wright recently paid to America and also to the remarkable eulogy accorded his work by our most distinguished medical scientist, Professor William H. Welch. It is, therefore, a pleasure of more than ordinary degree that I feel in bringing to the American medical profession an account of what it has been my lot to effect in applying, in a small way, the methods of Wright to the treatment of certain medical and surgical affections.

It is not my purpose to go into theoretic or technical details, for I am convinced that the appreciation of Wright's conquests has been retarded in the United States by the publication of several papers too severely and too needlessly abstruse, with the result that a comparatively simple theory and the excellent results of its application have been rendered confusing and unattractive to the average medical man. To the physician or surgeon whose interest lies in learning as speedily as possible what can be accomplished by Wright's methods in curing disease it matters not how opsonins may be related to agglutinins, bacteriolysins or precipitins, or whether Ehrlich's side chain hypothesis can be made elastic enough to reconcile opsonins with amboceptors, complements, complementoids, or what not. In fact, because of the industrious quest of Ehrlich's hypothesis by workers in all parts of the civilized world during the last six to eight years, with the voluminous and increasingly complex literature, and the failure to obtain out of all this work an additional remedy for a single infectious disease, the work-a-day physician has lost interest in the theoretic controversies of biologic medicine. But the fashion of theories and standards is on us, and to-day no one proposes a new kind of biologic therapy without formulating some theoretic basis as its foundation, or advocates a biologic remedy without proposing a method of standardizing it. Unfortunately, too, the theory and standard are often as fallacious as the treatment is inefficient. It may or may not have been some such consideration as this which led Wright to propound his theory of opsonins to explain the beneficial results following his use of small, infrequent bacterial inoculations to cure the corresponding subacute or chronic infection, and perhaps he may have laid more stress on the opsonic index and the exact enumeration of the bacteria in a given dose than further experience will warrant. Be that as it may, a most attractive theory has been propounded, an ingenious technic for testing this theory has been perfected, and with what has already been accomplished in successful therapy no intelligent physician will fail to acquaint himself. Accordingly, I shall digress sufficiently to lay before you a brief, and I hope comprehensible, outline of the theory of opsonins and of opsonic therapy.

#### THE OPSONIC METHOD.

By the ingenious methods of Wright and his associates, Leishman and Douglas, it is possible to study experimentally, outside of the living body, the action of the blood serum called opsonic. If one takes fresh blood of man or any other common mammal and washes the corpuscles free from serum, the polymorphonuclear leucocytes will not ingest such pathogenic bacteria as the pyogenic cocci, colon bacilli, or tubercle bacilli when these are mixed in the form of a fluid suspension with the washed corpuscles and incubated 15 to 30 minutes. If, however, to this mixture of washed corpuscles and bacteria blood serum be added, the phagocytic leucocytes at once begin to take up the bacteria, and, in proportion to the opsonic power of that particular serum against

that particular kind of bacterial parasite, the number of bacteria engulfed by a given number of leucocytes in a certain period of incubation will vary. In virtue of its opsonin, which sensitizes the bacteria so as to allow the white blood cells to take them up by phagocytosis, the blood serum produces the effect just described. Against a given pathogenic microbe, as, for example, the *Staphylococcus aureus*, the serum of one individual tested by a refinement of the method just outlined will permit the leucocytes to take up an average number of the cocci, the number representing this individual phagocytic index for staphylococcus. The relation which exists between the phagocytic index of one individual and that of others presumably normal constitutes the so-called opsonic index. This opsonic index assumes practical importance because it seems to bear a definite relation to an individual's resistance against a given disease-producing microbe. With subacute and chronic infections the opsonic index is usually low for the corresponding bacterial species.

In view of the practical feature of this report which aims to present the actual clinical results which I have obtained in applying Wright's principles to the treatment of certain diseases, it will not be possible to enter further into the matter of technic by which opsonic determinations are actually made. For information on this head and for much enlightenment concerning the treatment of certain infections on the basis of the opsonic theory the full and free publication which Wright and his associates have given, during the last three years, in the *Proceedings of the Royal Society*, the *London Lancet* and the *British Medical Journal* should be consulted.

I have said that the opsonic theory as a theory may, like other hypotheses in biologic science, be open to question, and it would be unwise to assert that it may not be considerably modified or even overthrown by accumulating experience. Had it been the promulgation of this theory of immunity alone, with its interesting laboratory test, that ended Wright's labors, there would be less excuse for bringing it to the attention of practicing physicians. In reality, however, the *practice* on which the theory of opsonins may be said to rest is the truly valuable contribution which Wright has given to the medical world. While it may still be too early to predict the ultimate bounds which will surround opsonic therapy, there is evidence that we have come into possession of a method of treatment which opens another of the several important eras in the conquest of human disease by medical science.

#### OPSONIC THERAPY.

Wright has shown that by artificial bacterial autoinoculation one may increase resistance against the corresponding organism to a point at which healing of infectious processes occurs. The bare fact that immunity could be induced or heightened by the use of pathogenic bacteria or their products had been established and extended from the day of Pasteur's epoch-making studies in the bacteriology of infectious diseases; and from Buchner's day it was shown that the blood serum bore an important part in the body's combat against micro-parasites; while the rôle of the living body cell was demonstrated by the brilliant Metchnikoff. But figuratively it remained for Wright to so modify the vaccine of Pasteur as to arouse in the serum of Buchner a substance which prepared the disease-producing microbe for destruction by the phagocyte of Metchnikoff; thus



bringing to practical humanitarian usefulness the laboriously studied theories of three pioneers in biologic therapy.

In practice Wright employs small, infrequent injections of what he calls by the rather unfortunate name "vaccine," to treat the corresponding bacterial disease. His vaccines consist of an ascertained number of a suspension of bacteria which have been heated just sufficiently to kill them, and which are preserved by a chemical germicide. The vaccines are "corresponding," that is, they consist of a germ similar in species to the one exciting the disease, as *Staphylococcus pyogenes aureus* for furuncle; or, better still, they are autogenous, that is, prepared from the patient's own lesion; hence it will be seen that the practice is really a kind of artificial autoinoculation by which the microbe causing the disease is reintroduced by laboratory art. Compared with all similar essays in the direction of artificial bacterial inoculation two features of Wright's methods are prominent—the comparatively small dose and the long interval between inoculations. This may be illustrated in the case of tuberculous affections where the standard vaccine is Koch's new tuberculin (T. R.) consisting of the suspended, triturated bodies of the tubercle bacilli, the average dose 1/1000 mg., and the ordinary interval between treatments 7 days. Compare this with the gigantic dose of previous tuberculin inoculations and their daily or twice daily repetition and you will see the radical and seemingly very fundamental nature of Wright's departure.

Now by following the events subsequent to the introduction of a bacterial vaccine by opsonic evaluations, Wright and his associates show that at first a fall of opsonic index, or so-called "negative phase," ensues; to be followed by a rise, the "positive phase," generally lasting 5 to 7 days; then comes another gradual recession in the opsonic index. Symptomatically these fluctuations are also demonstrable in the constitutional depression and the aggravation of the local lesion during the negative phase, and the improved general tone and healing in the local lesion of the positive phase. An imperative rule in opsonic therapy is to not reinoculate during the negative phase, and the time of election for a new treatment is just after the positive phase begins to fall. The harm of tuberculin injections of previous practice is explained by Wright as the production of a marked negative phase by too large a dose, and its continuous aggravation by too rapid a repetition. One can verify this, and often to his sorrow, in other infectious conditions by giving too large a dose of the bacterial vaccine or by pushing a small dose too rapidly.

With this much by way of imperfect introduction to the principles and technic of opsonic therapy, I shall endeavor to elucidate further points by illustrations in actual cases treated by me or by those with whom I am associated in private or hospital practice.

#### PERSONAL CLINICAL EXPERIENCE.

A recital of the practical therapeutic results which have followed in various cases that I have personally treated by bacterial inoculation must necessarily take the nature of a summary, as the detailed description of any one of the more interesting cases would make a report of considerable length. Before discussing the groups into which, for convenience, I have assigned the cases, I wish to say that, while the taking of the opsonic index has not been neglected, it has not been carried out in any case with the regularity that would obtain

were my situation more favorable and assistance in this tedious work available. As a matter of fact I have had to rely quite largely on the clinical manifestations as a guide to the repetition and size of dose. With the control afforded by the more systematic opsonic determinations by which a falling of resistance is often shown before symptoms indicate it, I believe the good effects of this treatment could be increased.

#### STAPHYLOCOCCUS INFECTIONS.

*Acne and Furunculosis.*—In the first group I shall include the diseases caused by pyogenic staphylococci and mention primarily acne. In my own practice I have treated two aggravated cases of acne vulgaris of one and two years' duration, respectively, in young men. In each the staphylo-opsonic index was low at the outset of treatment and was progressively raised by the injection at intervals of 7 to 10 days of staphylococcus vaccine, in one case being the *Staphylococcus pyogenes albus* from the patient's own lesion, to be followed later by a mixture of the *albus* and *citreus*, and in the other the mixture of *albus* and *citreus* also from the individual's own pustules. In the first patient eight injections have been given and a steady improvement amounting to almost complete cessation of the acne has resulted. All the old brawny, sluggish, indurated nodules have ceased to appear, the seborrhea has given way to a smooth, soft, pliable, non-oily skin, and with these local changes the patient's tone has improved, an excellent appetite has replaced a capricious one, and a gain of five pounds in weight in six weeks has followed, all of this with no other local or general measures. In the second case six treatments have changed a most repulsive case of indurated acne of the face into one with sparing superficial pimples, with a disappearance of black-heads and grease, to be replaced with a soft, clear skin, giving the whole face a new and clean complexion. This patient now seems to have reached Wright's "high tide of immunity," for improvement has been steady since the last injection, three weeks ago, and the previously fluctuating opsonic index now has a high and sustained point. Several patients with acne, including one with an obstinate acne rosacea, have been treated with vaccines of my preparation, and under my direction, by a prominent local dermatologist, with complete recovery or very marked improvement in all. It was this specialist who first called my attention to the simultaneous improvement in the seborrhea during the progress of the acute treatment, a most surprising feature of which is the spontaneous bodily extension of the comedones after an inoculation.

*Impetigo.*—In one case of obstinate impetigo the *Staphylococcus pyogenes aureus* and a streptococcus were obtained by culture from one of the pustular lesions. The staphylo-opsonic index was low, that for the streptococcus was the same as of a control serum. One dose of the staphylococcus vaccine brought the pustules to a standstill, a dose of streptococcus vaccine was given at the end of a week, with the result that the impetigo absolutely ceased. In a second case of recurring impetigo contagiosa of 14 months' duration, two injections of the autogenous *Staphylococcus pyogenes aureus* have brought the pustules to an end.

*Chronic Furunculosis.*—My first patient with furunculosis was my 2-year-old baby girl in whom a staphylococcus infection of mosquito bites on the scalp produced a series of large pustules, one after another of which I incised until the procedure became a severe trial for the patient and myself. For six weeks these boils continued to appear on the scalp, and when I finally concluded to



use the vaccine which had been prepared from the *Staphylococcus pyogenes aureus* isolated from one of the early furuncles, one large boil was present on the side of the head, two on the abdomen in sites not previously the seat of mosquito bites, and one very large so-called "blind boil" on the pudendum. All these were incised and the first and only dose of vaccine injected. The incised boils suppurated freely the next day and the child was quite indisposed, but on the second day the suppuration ceased. On this day, too, a bright lively revival of spirits and improved appetite appeared and continued, and from that day, last midsummer, to the present the child has had no sign of a furuncle.

Another case of chronic generalized furunculosis of two years' duration has been brought under control by three weekly doses of *Staphylococcus pyogenes aureus* vaccine, the first from a stock vaccine and the two later of autogenous origin. The disappearance of the last boil has now occurred and I predict that one or two more injections will effectually and finally rid this man of his trying affliction. Similarly a case of recurring furunculosis in a physician has been brought to a standstill by two artificial autoinoculations of the *Staphylococcus pyogenes aureus*.

*Furunculosis and Axillary Adenitis.*—Another of my early staphylococcus cases was one in which a boil appeared on the anterior border of the left armpit, and was fully developed when I first saw the patient, an adult man. Incision and careful antiseptic dressing were practiced, but in two days a second boil appeared in the lower portion of the axilla, accompanied by an enlargement of several contiguous axillary glands. In spite of careful surgical treatment, the infection of the glands progressed until two had suppurated and had been incised; then a well-developed axillary adenitis with the usual mass of tender, indurated, confluent glands, developed, and it was clear that the issue was a total extirpation of the infected mass or intervention with inoculation. The first dose of a stock *Staphylococcus pyogenes aureus* vaccine brought the adenitis to a check and three glands hastened to suppuration, became superficial, fluctuated, and were easily evacuated. A second dose after six days, this time of the autogenous aureus vaccine, promoted the resolution of the infected glands, and at the end of the second week, when the third and last dose was given, the whole indurated mass had melted away and a complete and perfect recovery was effected—all of this with the patient reporting personally for treatment and losing but three days in his employment.

*Palmar Abscess.*—Closely allied to the foregoing in its surgical significance was a case of palmar abscess in a man who reported to his physician with the hand and forearm greatly swollen; a deep abscess in the center of the palm and much constitutional disturbance. Two injections of antistreptococcic serum had produced no further effect than to lower the temperature, and the attending physician made a small incision in the palm and brought me some of the pus in a sterile syringe. Immediate smears from the pus showed staphylococci, and the first dose of stock *Staphylococcus pyogenes aureus* vaccine was given to the medical attendant who injected it. A halt in the process began in 24 hours, and in three days the improved general condition was accompanied by a reduction in the swelling. From the pus *Staphylococcus pyogenes albus* in pure culture was obtained and a vaccine prepared; on the fourth day a dose of this was injected. The improvement became more pronounced, the suppuration more superficial, and an incision 1½

inches in length, extending the original one, was all that was required. Two more doses of the autogenous vaccine at intervals of a week completed the perfect cure of this infection, with solid closure of the incision, a hand of its original functional perfection, and a splendid gain in general health and spirits. The full significance of this and the preceding result will be best appreciated by the surgeon of large experience who knows palmar abscess and axillary adenitis of the type I have described from the standpoint even of the best aggressive surgery.

*Staphylococcic "Psoriasis."*—Before dismissing this necessarily hurried account of staphylococcic infections I wish to recount one of my latest experiences which is so unusual in its results as to call for a special and detailed account, although it comes in a group of results, all of which are truly astonishing, judged by any previous therapeutic standard. I refer to a case of what was designated by a prominent Detroit dermatologist, who had the woman under treatment twelve of the eighteen months of the disease, as psoriasis, but which I am now prepared to pronounce a most extraordinary staphylococcic dermatosis. At the time I first saw the patient, some five weeks ago, at least one-third of the entire cutaneous surface of the body was involved and of so aggravated a type as to make her a physical and nervous wreck. The immense confluent lesions on the arms, legs, breast, back, sides and buttocks were slightly raised above the unaffected skin, of a dull red color, and covered with large thick scales reminding one of a piece of plate gelatin. Each night, and often twice daily, the woman anointed herself with olive oil and went through the trying operation of pulling off these scales, which, she asserted, would cover a newspaper, and which often left bloody, denuded surfaces exposed. A constant sensation as of a flame against the skin was suffered, and often an intolerable itching, so that sleep of more than an hour's duration had not been possible for months; and with no relief during the day it is little wonder that the victim was on the verge of complete collapse when I first saw her. Movement of the arms or walking were most painful because of the cracking and erosion of the crusted limbs. Besides these confluent areas there were numerous discrete lesions on the limbs, trunk, face, and scalp. The remaining skin was dry and harsh and did not perspire. The hair was coarse, dry and lusterless.

With the evident subacute inflammatory nature of the affection as a ray of hope, I excised completely, with aseptic precautions, one of the discrete lesions on the arm and planted it on glycerin agar. The next day I was rewarded with a pure culture of *Staphylococcus pyogenes aureus* against which I found the patient's opsonic index low. A vaccine from this culture was at once prepared and injected. That same night the patient slept two hours consecutively and the skin broke out in a mild perspiration. The next day the burning abated at intervals and the itching lessened. At the end of the first week a remarkable improvement in the diseased skin was apparent and the physical and mental status of the woman greatly bettered. On the occasion of the last treatment, just six weeks from the time of the first examination and the event of the fifth injection of the staphylococcus vaccine, both the confluent and discrete lesions of the arms and legs had given way to a normal-looking skin covered with delicate fluffy scales, and the only evidence of the original fearful condition were two narrow, slightly elevated, reddened crescents under the breasts. The woman, whose appetite had at once improved, had been placed on a generous mixed diet to



replace the restricted one previously prescribed, she had gained five pounds in weight, her strength and spirits had revived, she slept comfortably all night, her skin had become moist, soft and pliable, and her hair soft and oily and with renewed luster. One additional point of interest was elicited in the previous history—that is, that the forerunners of the dermatosis were a boil on the wrist, one behind the ear, then a crop about the genitals, to be followed first by the discrete and later by the confluent dermatosis.

#### COLON BACILLUS INFECTION.

*Cystitis and Pyelonephrosis.*—My primary experience in treating a colon bacillus infection by artificial auto-inoculation has been most satisfactory. The patient was a retired physician afflicted with a chronic tabetic neurosis and consequent palsy of the bladder, followed by infection of the bladder and the usual ascending urinary infection, producing a cystitis and pyelonephrosis of three months' duration. The ordinary lines of medical treatment had failed to bring relief, and the patient was bedridden, emaciated and profoundly septic, with the usual train of anorexia, constipation, vomiting and prostration. The urine was foul in odor and loaded with thick, greenish-yellow, gelatinous pus. Chills, a daily temperature of 103 F. and profuse night sweats were established. The right kidney was plainly palpable and on its ventral surface one could feel a mass as large as a lemon, tender and apparently representing the dilated urinary pelvis. According to precedent, such a case would, of course, be pronounced as incurable, and except from the standpoint of endeavoring to make the remaining existence endurable would be abandoned. From the pus in the urine I obtained abundant bacilli in smears and a pure culture of what was identified as colon bacilli of the usual type. Against this bacillus the patient's phagocytic index was one-third less than that of the phagocytic index of a normal person's serum; that is to say, his opsonic index was about two-thirds the normal. The usual preparation was made from the bacillus obtained from the urine, and artificial autoinoculation at intervals of five to ten days, five doses in all, increasing in size, was practiced. The opsonic index rose in a pronounced manner, but as a strongly agglutinative effect also developed in the patient's serum I am inclined to question the validity of some of the later opsonic determinations, for it was quite impossible to check the rapid clumping of the bacilli by the serum and their consequent ingestion *en masse* in the leucocytes. This, however, is less significant than the improved local and constitutional conditions of the patient. After the first inoculation his temperature never rose above 100 F. After three days his chills and night sweats ceased, not to reappear. The character of the urine changed during these first few days, the pus became less abundant, thinner and not so coherent, and the foul odor disappeared. From the first injection the improvement has been progressive except for several gushes of putrid pus, evidently representing the emptying of pyelonphric abscesses. The right kidney speedily lost its tenderness and the tumor on its surface disappeared. It is now seven weeks since the last treatment. The patient is about the house, his appetite is excellent and he has gained in weight, strength and spirits. The urine at the worst contains but a small amount of thin pus, and ordinarily is clear. Indeed, were it not for his neurosis with its painful crises he would be pronounced as practically recovered. We have stood in readiness to give

additional inoculation, but since the last one the gain has been so steady as to make further treatment superfluous. Evidently what Wright calls the "high tide of immunity" has been established.

*Mastoid Fistula.*—In a case of mastoid fistula of three months' duration, a single injection of a vaccine from a colon-like bacillus isolated from the pus effected complete and permanent closure of the fistula in a week.

#### PNEUMOCOCCUS EMPYEMA.

A single example of empyema is all that I have thus far had opportunity of treating, and were it not that the result duplicates those reported by Wright and his followers in a number of similar cases, including some advanced to the chronic unhealing stage, I would not at present report it. The patient was a 7-year-old girl who had a severe atypical pneumonia, with lysis at the end of a week. For ten days after the temperature remained between 99 and 100 F. and then rose to 102 F., accompanied with some dyspnea and pain in the right chest. Three days after this rise in temperature the attending physician found dulness in the right lower chest and on exploratory aspiration obtained a thick pus in a sterile glass syringe. On my suggestion the poor practice of making a very small intercostal incision and inserting a very small drainage tube was at once instituted, with the evacuation of some eight ounces of thick pus, but no expansion of the lung, evidently indicating a sacculated empyema. The next morning the pus was brought to the laboratory, smears showed a diplococcus, and by the following day I had isolated the pneumococcus, from which a vaccine was prepared. Three days after obtaining the pus I visited the patient and gave the first inoculation of the autogenous vaccine. I found her much emaciated, weak, fretful, with a hectic look, a temperature of 100 F., pulse 120, and a profuse discharge of thick pus into the voluminous dressing. Four days later the attending physician reported a pronounced improvement, the appetite had returned, strength increased, the discharge steadily diminished until it was scanty and thin, sero-purulent in character, and the small drainage tube had been pushed out by the expanding lung and could not be re-inserted. On the fifth day only a small quantity of serum oozed from the opening against which the pleura had appeared. A second inoculation was then made. On the seventh day the wound had entirely closed, the little girl was eating splendidly and had gained in flesh and strength, with no pain or fever. That gain has been uninterrupted to the present time, five weeks since the second treatment. In other words, a perfect recovery of a sacculated empyema was effected in seven days by small puncture, evacuation of the bulk of pus, small drainage, and artificial autoinoculation with the infecting pathogenic bacterium. And from what I saw of this case I am of the opinion that the still more unwarrantable practice (according to previous standards) of aspiration of the pus would have been fully effective when reinforced by opsonic therapy.

#### TUBERCULOSIS.

Because of some delay in obtaining Koch's tuberculin R., which at present forms the standard vaccine for treating tuberculous diseases, my efforts in this direction have not yet progressed to a point at which more than a preliminary report can be made. In fact, it has been impossible, from lack of time and the opportunity of making the proper opsonic tests, for me to go extensively into this very inviting field. In two cases negative results



followed my use of tuberculin injection after Wright's dosage; one of advanced pulmonary tuberculosis and extensive intestinal ulceration where, after a gain in appetite and improvement in the febrile curve following the first injection, the patient progressively declined to the end, with no gain from the following two injections. Another case diagnosed as probable abdominal tuberculosis, but more likely an example of a malignant abdominal neoplasm, was, because of the low tuberculo-opsonic index, tentatively treated with a combination of tuberculin and colon bacillus vaccine. A short and very surprising gain in general and local conditions gave way and death followed in a month.

*Urinary Tuberculosis.*—A case of urinary tuberculosis in which the pneumococci and tubercle bacilli are present in the pus has been treated with mixed tuberculin and pneumococcus vaccine for some two months. with progressive betterment, a gain in weight and lessened pyuria.

#### GONORRHEAL AFFECTIONS.

With one class of diseases I believe, from all I can learn, that my experience has been unique, that is, with the affections caused by the gonococcus. If my information is correct Wright has steadily predicted that gonorrheal infection would yield to opsonic therapy, but because of the difficulty in making a suitable vaccine he had not, at least to last midsummer, advanced in this line of work. Perhaps, with some element of chance, it has been my fortune to obtain a strain of gonococcus from which a standard or stock vaccine was prepared which has given some very encouraging results in the treatment of certain forms of gonorrheal infection. I say particular strain because several other strains rendered available to me on account of my special work on the gonococcus, including in two cases the autogenous ones, that is, those from the patients' own secretions, have failed to give the satisfactory results obtained by the one I am using.

*Balanoposthitis.*—My first test was made early last summer in a case of balanoposthitis and gonorrheal urethritis of eight months' duration, with the usual picture of an immensely swollen and phimosed foreskin and a thick scar-like preputial orifice. On the second day following an injection of the gonococcus preparation the swelling began rapidly to subside and by afternoon the patient reported with the foreskin retreated, the glans clean and free from redness or pus, and the urethral discharge much diminished. He stated that this was the first glimpse of the glans penis that he had had for eight months. Four succeeding injections brought a check to the urethritis and at last account the patient was well.

*Double Epididymitis and Perineal Fistula.*—Another example of the rapid, specific action of the gonococcus vaccine on the inflammatory complications of gonorrhea was a case of urethritis of six weeks' duration, complicated with a proctitis of three weeks' standing, a double epididymitis for eight days and a forming periurethral abscess. A more miserable individual than the young man with these lesions and a two hours' torture after each urination, a severe backache and general depression would be hard to find. Within twenty-four hours from the first injection of the gonococcus preparation all pain on urination and all backache had left, the swelling in the epididymal tissues had subsided so rapidly as to cause a "crawling sensation" from the retracting dartos. the periurethral abscess had broken, leaving a perineal urinary fistula. Following these events the patient's

appetite returned and became insistent and he began a gain in flesh that has to the present time increased his weight beyond anything heretofore normal, amounting to 9 pounds since the inoculations were begun. Four subsequent injections at weekly intervals have been given, and no other treatment; the proctitis disappeared during the first week, absolutely no induration remains in either epididymis, the perineal induration has disappeared; the urinary fistula has closed, and the urethral discharge has almost completely subsided.

*Subacute Epididymitis.*—Within the week I have treated by the same method a left-sided gonorrheal epididymitis of a month's duration, as large as a hen's egg, much indurated and exceedingly tender. In twenty-four hours after inoculation the mass had begun to reduce in size, was softer and much less tender. In forty-eight hours all the swelling of the epididymis had subsided except an induration limited to the caput, and by the third day this had departed and the patient's general condition was so excellent that he was discharged from the hospital and will report personally for further inoculation.

As to the significance of these results which I believe are but typical of what can be accomplished in subacute and chronic gonorrheal inflammations by the use of an effective gonococcus vaccine, comment is unnecessary among physicians who have handled these complications by any previous method, including even the use of passive hyperemia or puncture in the treatment of gonorrheal epididymitis.

*Gonorrheal Rheumatism.*—That a further field of great usefulness is in store for opsonic therapy in gonorrhea is my belief from my experience in treating two cases of gonorrheal polyarthritis, or so-called gonorrheal rheumatism. In one of these patients the infection had existed four months and involved several joints. Progressive betterment of the arthritis with departure of the swelling, pain and immobility was effected by four injections when the patient considered himself cured and has no longer reported. In another instance the man was almost a helpless cripple with a gonorrheal arthritis of four years' duration involving both wrists, both shoulders, one elbow and one knee, all the affected joints being immovable or of very restricted mobility. The usual symptoms of pain, sleeplessness, cold sensation, cold sweats and physical and mental depression were in evidence. Five injections at weekly intervals have worked a most surprising improvement in this man's condition. Practically all swelling and thickening of the joints have subsided, and all are now freely movable, the range being normal except for the left wrist. Along with the gratifying local improvement there has been a practical cessation of joint pain, good restful sleep undisturbed by chilly sensations or sweats, a progressive improvement in appetite and a steady gain in weight, and with all this a revival of spirits and a physical activity very pleasant to witness.

*Gleet.*—In one case of long-standing gleet the discharge ceased apparently permanently after three injections; in another after four weekly doses the diffusely purulent urine has cleared, the threads have almost vanished, and in both these patients a greatly improved general tone with increased appetite and weight has followed the treatment. In my only case of subacute uncomplicated urethritis I have not succeeded in entirely checking the discharge, though this patient, too, has gained in flesh to exceed his usual weight in health.



*Ophthalmia, Conjunctivitis, and Vaginitis.*—In two cases of gonorrheal ophthalmia, two inoculations in each instance sufficed, with the coincident local treatment, to effect a perfect recovery, which was hastened in a manner very surprising to those who witnessed it. So also an example of gonorrheal conjunctivitis of several months' duration has responded with complete disappearance of all conjunctival injection during the positive phase, to reappear as soon as this stage subsides, making the case one of the most striking symptomatic demonstrations of opsonic fluctuation that I have seen. Gonorrheal vaginitis in two little girls yielded to two inoculations each which reinforced the irrigation treatment.

In emphasizing my unusual experience in handling gonorrheal diseases I would lay particular stress on the fact that no other therapeutic measure was used in any of my personally treated cases except the stretching of a stricture in the worst example of gonorrheal arthritis. Because of my inconvenient situation it has not been possible to bring to the aid of the inoculation such other procedures as irrigation, sounding or what not, commonly practiced in the treatment of gonorrhea, and, of course, for the best results, particularly for handling the urethral discharge, such measures probably should be used in conjunction with the gonococcus vaccine. Nor have I been able to make a sufficient number of opsonic indices to furnish this additional guide in opsonic therapy. Still it is clear that therapeutic effects have been obtained entirely beyond anything heretofore possible, and these by the use of small, non-painful, simple subcutaneous injections at weekly intervals.

#### CONCLUSION.

In dismissing this account of my personal experience with Wright's method of treatment I will say that if the therapeutic results which have been presented were based solely on my own work I would not have the courage to make them public at this time, when but six months have elapsed since my first clinical experiments began. But because they duplicate the published reports made by Wright and his followers in England in connection with the various groups of infections except the gonorrheal, and since they correspond with the reports brought to the United States by those who have visited Wright's laboratory, I am somewhat less diffident.

Moreover, I believe the adoption of opsonic therapy in this country depends on the promulgation among practicing physicians of the actual clinical achievements, and this as speedily as accurate observation shall warrant; and it is my conviction that a method of practice with such vast humanitarian possibilities should be brought into the possession of the medical profession without delay.

Finally, from what I have already seen, which is tempered by a rather extensive experience in private and institutional medical work, I am prepared to assert that with the proper artificial autoinoculation we can obtain constitutional and local improvement in many subacute and chronic infections entirely beyond anything previously possible in medicine. And I am personally assured that in these bacterial inoculations we possess therapeutic agents of a specificity and potency exceeding anything heretofore employed in the treatment of disease except possibly the antitoxin of diphtheria.

#### ACCURATE MODIFICATION OF MILK, SIMPLE AND PRACTICABLE.\*

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Accurate modification of milk involves the calculation of definite percentages of fat, mixed proteids, caseinogen, etc., for mixtures of cream and milk and of cream and milk and whey. The necessary operations are expressed most conveniently in algebraic equations.

Of the merits of percentage modification, the American method of preparing cow's milk for the infant, it is sufficient to say that it provides the instrument of precision; for this reason alone, if there were none others, it is desirable that it should be established on the mathematical principles which it involves and on which it depends. If formulas are employed to determine the required quantities of materials, they should accord with these principles and with the chemical facts; they should be accurate, also, and adequate. None of the published formulas meets these requirements; and generally accepted statements on the subject of the calculation and the preparation of percentage mixtures are, in certain important respects—practically important—misleading: As the formulas to be presented conflict with, or disregarded some of them, their integrity can not be established without reference thereto; moreover, in the absence of error or misconception, there would be no reason—no excuse—for further contribution to this part of the subject.

It is generally understood, for example, that a variety of creams, creams of different strengths, is essential to accurate and adequate modification of milk. What are known, respectively, as 8 per cent., 10 per cent., 12 per cent., 16 per cent. and 20 per cent. cream are commonly employed; directions are given, accordingly, for obtaining these creams by gravity, together with tables that show their proteid and sugar percentages, which are different for each variety of cream, and are differently given by different authors; other tables that show the limitations in the percentages of fat and of proteids that are obtainable by the use of creams of different strengths; others that show the percentages of the food-elements that are reciprocally obtainable, and still others by which the choice of the creams to be employed for particular modifications is directed. Under these conditions, confronted at the outset by these tables, the apparent necessity for the use of a variety of creams, ranging from 8 per cent. to 32 per cent., of which each must be computed by a slightly different equation, it is not surprising that one unfamiliar with the percentage method and mathematical formulas, should find accurate modification impracticable in advance.

But while all these factors may be employed very few of them are essential, either to the statement of the problem, or to its solution. A variety of creams is not only unnecessary, but undesirable, because of the confusion to which it gives rise; and of all the facts recorded in these tables, as factors, knowledge of two only is required, for practical purposes: (1) the analysis (the fat, proteid and sugar percentages) of cow's milk, (2) how to obtain adequate cream, a single variety of adequate cream, by gravity.

Of the published formulas, the series proposed by Dr. Westcott<sup>1</sup> in his admirable monograph are the only ones

\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.  
1. Scientific Milk Modification, Internat. Clinics, Series 10, vol. iii.



for which accuracy and completeness are claimed. But in the derivation of these formulas the principle on which the calculation depends is not recognized, or is not regarded; and the assumptions on which the working equations are based are untenable. The formulas are inadequate also: Westcott's equations for combining cream and whole milk depend on equality of the fat and proteid percentages of the milk; but, according to recent analyses, the mixed milk from a herd of cows contains 3.50 per cent. proteids and 4 per cent. fat; these equations fail accordingly for standard milk; and, of course, for all milk of which the fat and proteid percentages are not precisely equal. In the equations for cream and fat-free milk it is assumed that the proteid percentages of whole and fat-free milk are equal, which, since cream has a lower proteid percentage than milk, is mathematically impossible. His formulas for computing whey-cream mixtures are based on the proposition that the proteid percentage (?) of a mixture of cream and whey is equal to the proteid percentage of the cream plus proteid percentage of whey employed; but the former refers to mixed proteids, the latter refers to whey proteids alone. While together they make up the percentage of proteids in a mixture, they can not be added together to make a "proteid percentage." No provision is made for the computation of definite percentages both of fat and of (mixed) proteids; except for the small percentage of fat that may be contributed by the whey, the percentages of each that may be obtained depend on the strength of the cream employed, which is computed for a definite percentage of fat, or for a definite percentage of proteids (?). The number of modifications obtainable is limited, therefore, according to these formulas, by the number of creams available, and the equations are inadequate.

The formulas for combining cream and whole milk first proposed by Dr. Westcott "depended on the calculation of the amount of combined cream and milk required to give the desired proteid percentage of the mixture," the factor assumed to represent the "average proteid percentage of mixed cream and milk" depending on the strength (fat percentage) of the cream employed. These equations also are at fault; as will be shown in the succeeding analysis, the proteid percentage of the mixed, or mixture of, cream and milk required to yield a particular modification does not depend at all on the fat percentage of the cream, but is the same always, whatever the strength of the cream employed may be.

In the following analyses, and in the equations derived therefrom, it is assumed that whole milk contains 3.50 per cent. of proteids, 4 per cent. of fat, and 4.50 per cent. of sugar, unless otherwise specified. As far as common factors are employed, the usual symbols and equivalents have been adopted, with certain additions:

Q = quantity of food desired.

F = desired percentage of fat.

P = desired percentage of proteids.

S = desired percentage of sugar.

a = the fat percentage of cream.

b = the proteid percentage of cream.

c = the sugar percentage of cream and of milk.

a' and b' denote, respectively, the fat and the proteid percentage of the milk employed.

X = *appropriate cream*.

B = the proteid percentage of *appropriate cream*.

R = the ratio  $\frac{F}{P}$ .

The formulas herein presented are based on four especial considerations or propositions:

1. Since cream has a lower proteid percentage than milk, fat-free milk must have a higher proteid percentage than milk, which is essentially 4 per cent. cream; and on chemical analysis it appears, accordingly, that whole (4 per cent.) milk having a proteid percentage of 3.50 the fat-free milk has proteid percentage of 3.60. The loss of 4 per cent. fat, therefore, involves the gain of one-tenth of 1 per cent. of proteids, and, of course, conversely; whence the principle may be deduced that for each 4 per cent. gained in fat-value, cream loses one-tenth of 1 per cent. in proteid-value; or, for each gain of 1 per cent. in fat, loses .025 per cent. in proteid-value (and in sugar-value<sup>2</sup>).

2. The ratio of the fat percentage to the proteid percentage of a particular cream is the ratio of fat percentage to proteid percentage that is obtained by diluting the cream with water; thus, the fat percentage of 16 per cent. cream is 16; the proteid percentage is 3.20; the ratio, 16 to 3.20 is 5 to 1; if 16 per cent. cream is mixed (diluted) with an equal part of water, the mixture will contain 8 per cent. fat, 1.60 per cent. proteids; the ratio, 8 to 1.60 is 5 to 1.

3. A cream of which the ratio of fat percentage to the proteid percentage (a to b) is precisely the ratio of the desired fat percentage to the desired proteid percentage (F to P) is what may be termed the *appropriate cream* in each case, since by itself, without the addition of milk, it is capable of furnishing both the required quantity of fat and the required quantity of proteids. The ratio, F to P, therefore, indicates the *appropriate cream* in each case; thus, for a 20 oz. mixture to contain 4 per cent. F and .80 per cent. P, 16 per cent. cream is *appropriate*, because the ratio, 16 to 3.20 is the same as .80 the ratio of 4 to .80 and 5 oz. of 16 per cent. cream will supply both the .8 oz. of fat and the .16 oz. of proteids desired. Thus:

$$5 \times 16 \text{ per cent.} = .80 \text{ oz. fat.}$$

$$5 \times 3.20 \text{ per cent.} = .16 \text{ oz. proteids.}$$

The ratio 4 to .8 or 5 to 1 indicates 16 per cent. cream.

4. Theoretically, there is an infinite number of creams and an infinite number of ratios of fat to proteids; theoretically, therefore, there is *appropriate cream* for every ratio F to P that is attainable; but practically it is impossible to obtain directly, either by the centrifuge or by gravity, *appropriate cream* for all these ratios; it is necessary, therefore, to mix cream of known percentages with milk of known percentages, but in each case the mixture of cream and milk that is capable of furnishing the required percentages represents, is, essentially, *appropriate cream* and has the same fat, the same proteid and the same sugar percentages:

For example:

	Fat percentage.	Proteid percentage.
1 oz. cream.....	16	3.20
1 oz. of milk.....	4	3.50
Together are equal to 2 ounces of 10 per cent. cream:		
16 + 4		
———— = 10 per cent. F.		
2		
3.20 + 3.50		
———— = 3.35 per cent. P per cent. cream).		
2		

2. The sugar percentages of cream and milk obey the same laws that govern the proteid percentages.



In the application of these principles, two sets of formulas have been derived: General formulas of universal application and working formulas which provide specifically for the use of materials that are generally available for purposes of home modification.

#### SERIES I. GENERAL FORMULAS. MIXTURES OF CREAM AND MILK.

Modified milk is always diluted milk; rather, diluted cream, and, as we have seen, the ratio F to P indicates the cream to be employed—the *appropriate cream* in each case.

In the computation of percentage mixtures it is necessary to determine in the first place the quantity of *appropriate cream* that is required to obtain the desired mixture; either the fat percentage, or the proteid percentage may be taken as the basis for this calculation. The latter has been preferred, because the proteid percentages of the creams ordinarily indicated do not differ very much. Obviously, the proteids in the *appropriate cream* ( $B \times X$ , or  $B X$ ) must equal the whole quantity of proteids desired ( $Q \times P$ , or  $Q P$ ); that is,  $Q P = B X$ ; and the quantity  $X$  required must depend on its proteid percentage,  $B$ . When cream is *appropriate*, the ratio  $a$  to  $b$  equals the ratio  $F$  to  $P$ ; that is,

$\frac{a}{b} = \frac{F}{P} = R$ : whence  $a = b R$ . In creams of which the

ratio  $\frac{a}{b}$  is below 7.50 (creams below 23 per cent. about),

the proteid percentage decreases with the increase in the fat percentage in such proportion that three times the

ratio  $\frac{a}{b}$ , plus 1 is in some cases precisely and in all other cases almost precisely equal to  $b$  times the ratio;

that is,  $\frac{3a}{b} + 1 = \frac{ba}{b}$ ; and, since cream loses .025 per

cent. of proteids for each 1 per cent. gained in fat, .025

$\left[ \frac{3a}{b} + 1 \right]$  equals the proteid percentage lost in each

case, which, deducted from the proteid percentage of fat-free milk, would equal the proteid percentage of the

cream; but the proteid percentage of fat-free milk represents the loss of 4 per cent. of fat; wherefore, taking

the proteid percentage of whole milk as the basis for the calculation, .025  $\left( \frac{3a}{b} + 1 - 4 \right)$  deducted from the lat-

ter equals the proteid percentage of the cream in each

case; that is,  $3.50 - .025 \left[ \frac{3a}{b} + 1 - 4 \right]$ ,

or,  $3.50 - .025 \left[ \frac{3a}{b} - 3 \right] = b$ ; whence, since  $\frac{a}{b} = R$  when

cream is *appropriate*: (B)  $3.50 - .025 (3R - 3) = B$ .<sup>3</sup>

3. When  $R$  (the ratio  $F$  to  $P$ ) exceeds 7.50, the equation must be modified:

$3.50 - .025 (3R - 4) = B$ , when  $R$  is between 7.50 and 9.

$3.50 - .025 (2R \times 5) = B$ , when  $R$  exceeds 9.

Practically, a ratio  $F$  to  $P$  as high as 7.50 is never indicated in mixtures of cream and milk; equation B, therefore, meets every requirement in practice, and is employed accordingly in the general formulas, subject to the exceptions noted. The same remarks apply to the equation for finding the sugar-percentage of *appropriate cream*. For certain ratios the percentage  $B$  thus determined is absolutely accurate; and in any case the error is very small, seldom more than a few thousandths of 1 per cent.

The fat and proteid percentages of *appropriate cream* ( $A$  and  $B$ ) for all attainable ratios may be arrived at with absolute accuracy by the following calculations,  $B$  having been determined approximately:

$B R = a$   
(C)  $3.50 - .025 (a - 4) = b$   
 $b R = A$   
 $3.50 - .025 (A - 4) = B$

These operations are repeated until the desired ratio is estab-

lished; that is, until  $\frac{a}{b} = R$ . Many ratios are practically unattainable on account of the decimals involved. The general equations (in which  $p$  = the coefficient of proteid loss) are:  $BR = a$ ;  $b' - p(a - a') = b$ , etc.

\* When  $R$  exceeds 7.50 the equation is modified.  
4. When  $R$  exceeds 8,  $2R + 9 = a$ .

The proteid percentage of each variety of cream may be determined in the same way; that is, since cream loses .025 per cent. of proteids for each 1 per cent. gained in fat; and, since the proteid percentage of whole milk represents the gain of 4 per cent. of fat:  $3.50 - .025 (a - 4) = b$ .

But in order to obtain *appropriate cream*, it is usually necessary to combine cream of known percentage with milk of known percentages;  $X$ , therefore, must be equal to the quantity of cream and milk required; that is,

$X = C + M$ , whence  $X - C = M$ . Any variety of cream that is adequate and any adequate milk may be employed; but in all cases, the cream and milk together must supply both the required quantity of fat and the required quantity of proteids; that is,

(1.)  $a C + a' M = Q F$ , and  
(2.)  $b C + b' M = Q P$ ; by substituting for  $M$  its equivalent  $X - C$ , and transposing, equation (1) becomes

$Q F = a C + a' (X - C)$ , or  
 $Q F = a C + a' X - a' C =$   
 $Q F - a' X = (a - a') C$ , whence

$\frac{Q F - a' X}{a - a'} = C$  (cream)

By transposition equation 2 becomes:  $Q P = b C + b' M =$   
 $Q P - b C$   
 $\frac{\quad}{b'} = M$ .

Five per cent. of lime water is required to make the mixture alkaline in reaction:

$\frac{Q \times 5}{100} = \text{Lime water}$ .

Since the sugar percentages obey the same laws that govern the proteid percentages, they may be computed in the same way—taking the sugar percentage of whole milk as the basis for the calculation; accordingly, (E)

$4.50 - .025 (3R - 3) = C$ . In the case of cream and milk of the standard analysis, the sugar percentage equals the proteid percentage plus 1; that is,  $B + 1 = C$ .\*

It may be desirable to know the strength of cream that is necessary in order to obtain a particular modification (percentages). *Appropriate cream* is always the weakest adequate cream; that is, the weakest cream that may be employed in combination with milk to obtain the desired percentages in each case. As we have seen,

$\frac{3a}{b} + 1 = b R = a$ ; when cream is *appropriate*  $\frac{a}{b} = R$ ,

wherefore, (A)  $3R + 1 = a$  (adequate cream).<sup>4</sup>

The *limitations* in the percentages of fat and of proteids obtainable by the use of a particular variety of cream are shown by the ratio  $a$  to  $b$  in each case; thus, when cream is diluted with water, the ratio  $a$  to  $b$  determines the ratio  $F$  to  $P$ ; that is,

$\frac{F}{P} = \frac{a}{b} = R$ , whence,  $R P = F$  and  $\frac{F}{R} = P$ ; any ratio  $\frac{F}{P}$  below the ratio  $\frac{a}{b}$  may be obtained by combining the cream with milk.

If the milk in use is of other than the standard analysis, the coefficient of proteid loss, and the ratio  $\frac{a}{b}$  must be determined, and the working equations modified accordingly. The proteid and sugar percentages of cream in each case depend, of course, on the analysis

lished; that is, until  $\frac{a}{b} = R$ . Many ratios are practically unattainable on account of the decimals involved. The general equations (in which  $p$  = the coefficient of proteid loss) are:  $BR = a$ ;  $b' - p(a - a') = b$ , etc.

\* When  $R$  exceeds 7.50 the equation is modified.  
4. When  $R$  exceeds 8,  $2R + 9 = a$ .



of the milk from which it is derived; but, in some of the published tables of analyses, these percentages are given apparently without reference to the analysis of the milk in use; for example, 12 per cent. cream from 4 per cent. milk (4 per cent. P) may be grouped with 16 per cent. cream from 3.50 per cent. milk. The tables of different authors do not agree, therefore, and for purposes of computation are unreliable for the most part. If the milk in use is deficient in fat, the strength of gravity cream therefrom is reduced in each case. In these cases, the coefficient of proteid loss is increased.

The fat and proteid percentages of the milk and the proteid percentages of a single variety of cream being known, other values (as factors) may be computed. The general equations are:

$$\frac{b' - b}{a - a'} = P$$

$$(C) \quad b' - p(a - a') = b$$

$$(D) \quad \frac{b' + a'p - b}{p} = a$$

The accuracy of the working formulas to be derived for the use of milk and cream of other than the standard analysis depends on the accuracy of the percentage B; for the ratios commonly required, this factor may be determined, approximately, by the formula

$$b' - p(3R - 2) = B; \text{ or}$$

$$b' - p(3R - 3) = B$$

(depending on the value of p); and accurately for all ratios by the calculations that have been indicated.<sup>3</sup> For practical purposes an "average" percentage may be used.

Equations that provide for the use of whole milk containing 4 per cent. of proteids, and of milk deficient in fat are included in the series of working formulas (Series iv, B).

*Mixtures in Which P Equals, or Exceeds F.*—*Appropriate cream* for these modifications is, of course, separated milk, since there is no cream of which the proteid percentage equals, or exceeds the fat percentage. Any separated milk in which the ratio of fat to proteids is

not above the ratio  $\frac{F}{P}$  is adequate; and cream of any

strength, even 4 per cent. milk, may be combined with it.

The use of fat-free milk simplifies the computation of these mixtures, which, in this case, may be made by the special formulas for cream and fat-free milk. If separated milk is employed, its fat percentage should be computed (preferably), and the required quantities of cream and milk determined by the general formulas (Series 1). In these cases it is unnecessary to compute the percentage B, which, for standard milk, must always be between 3.50 and 3.60; the mean percentage 3.55 may be assumed accordingly.

#### SERIES II. SPECIAL FORMULAS. CREAM AND FAT-FREE MILK.

These equations depend on the same principles and are derived in the same way as the equations in the general formulas, but in this case it is unnecessary to find the quantity X, or the percentage B, since all the fat is supplied by cream, which is computed directly. Thus:

$$1. \quad \frac{QF}{a} = C \text{ Cream.}$$

$$QP = bc + b'M \text{ whence}$$

$$2. \quad \frac{Q(P - bc)}{b'} = M \text{ (Milk).}$$

$$3. \quad \frac{QS - c(C + M)}{100} = S \text{ (Sugar).}$$

All mixtures to be prepared with cream and fat-free milk may be computed by these equations, if preferred.

#### SERIES III. GENERAL FORMULAS. WHEY-CREAM MIXTURES.

Three varieties of whey are recognized, depending on its source and the way it is prepared: 1. Whey from whole milk, separated with the least possible disturbance of the curd. 2. Whey from whole milk, separated after "thorough agitation" of the curd and whey. 3. Whey from fat-free milk.

In the text these varieties of whey are referred to, respectively, as, (1) Whole whey (which contains .32 per cent. F, .86 per cent. P, 4.80 per cent. S). (2) Two per cent. whey (which contains 2 per cent. F, .97 per cent. P, 4.80 (?) per cent. S). (3) Fat-free whey (which contains trace of F, 1 per cent. P, 5.00 per cent. S).

By the use of the whey-cream mixtures very low percentages of caseinogen with relatively high percentages of whey-proteids and of fat may be given. With low percentages of caseinogen, not above .50, a maximum percentage of whey-proteids of from .75 to .90, depending on the variety of whey employed, may be obtained. In the succeeding analysis, and in the equations derived therefrom, additional symbols and equivalents are employed as follows:

cas = desired percentage of caseinogen.

WhP = desired percentage of whey-proteids.

a" b" e" = respectively, the fat, proteid and sugar percentages of the whey in use.

F' = fat percentage supplied by cream (and milk).

P' = proteid percentage supplied by whey.

The calculation of whey-cream mixtures requires division of the proteids into caseinogen and whey-proteids, of which the former is furnished by the cream (and milk) alone. Each must be computed separately. The computation in detail may be made in different ways; the simplest, on the whole, requires the conversion of the desired percentage of caseinogen (cas) into the percentage of mixed proteids which it represents, at the outset.

According to chemical analysis, the percentage of whey-proteids in cream and milk is equal to one-fifth of the percentage of caseinogen (about); a given percentage of caseinogen (cas), therefore, represents a percentage of mixed proteids one-fifth greater, that is cas.

$+ \frac{\text{cas}}{5} = P$ . This simple calculation having been made, the equations for finding the required quantities of cream and milk are substantially the same as the corresponding equations in the general formulas (Series 1), and are derived in the same way.

The ratio F' to P indicates *appropriate cream* in each case, and the percentage F' depends, of course, on the kind of whey employed. The fat percentage of whole whey is equal to 37 per cent. of its proteid percentage (.32/.86). The fat percentage of 2 per cent. whey is equal to twice its proteid percentage (about) 2x.97; accordingly,

$$F - .37 P' = F' \text{ when whole whey is used.}$$

$$F - 2 P' = F' \text{ when 2 per cent. whey is used.}$$

$$F = F' \text{ when fat-free whey is used.}$$

The percentage of proteids furnished by the whey (P') must be equal to the desired percentage of whey-proteids less that contributed by the cream (and milk); that is,  $\text{WhP} - \frac{\text{cas}}{5} = P'$ .



The necessary operations are expressed in equations as follows:

$$1. \text{Whp} - \frac{\text{cas}}{5} = P'$$

$$2. \frac{QP'}{.86} = \text{whole whey}; \quad \frac{QP'}{1} = \text{fat-free whey, or 2 per cent. whey.}$$

The required quantity of whey having been computed, it is simpler to determine the percentage  $F'$  by the following equation, which expresses the fact that the required quantity of fat is equal to the fat in the cream and milk plus the fat in the whey employed; that is,

$$QF = QF' + a'' \text{ whey, whence } \frac{QF - a'' \text{ whey}}{Q} = F';$$

$$\text{the ratio } \frac{F'}{P} \text{ indicates appropriate cream } \frac{F'}{P} = R$$

The equations for cream and milk, respectively, are the same as the corresponding equations in the general formulas (Series 1), except that the former provides for the use of whey containing fat:

$$QF = aC + a'M + a'' \text{ whey, whence, since } X - C = M, \\ QF - (a'X + a'' \text{ whey}) = \text{Cream.}$$

$$\frac{QS - (cX + c'' \text{ whey})}{100} = \text{Sugar}$$

#### RECAPITULATION.

#### SERIES I.—MIXTURES OF CREAM AND MILK. GENERAL FORMULAS.

$$1. \frac{F}{P} = R$$

$$2. 350 - .025 (3R - 3) = B$$

$$3. \frac{QP}{B} = X$$

$$4. \frac{QF - 4}{a - 4} = \text{Cream}^5$$

$$5. (a) X - C = M. \quad (b) \frac{QP - bC}{3.50} = M^6$$

$$6. \frac{Q \times 5}{100} = \text{Lime water}$$

$$7. \frac{QS - cX}{100} = \text{Sugar}$$

#### SERIES II.—CREAM AND FAT-FREE MILK. SPECIAL FORMULAS.

$$1. \frac{QF}{a} = \text{Cream}$$

$$2. \frac{QF - bC}{b'} = \text{Milk}$$

$$3. \frac{QS - (cC + aM)}{100} = \text{Sugar}$$

#### SERIES III.—WHEY-CREAM MIXTURES. GENERAL FORMULAS.

$$1. \text{cas} + \frac{\text{cas}}{5} = P$$

5. If other than 4 per cent. (F) milk is in use, substitute its fat percentage for the factors 4 and its proteid percentage for the factor 3.50.

6. When the percentage B is computed accurately the equations (a) and (b) in No. 5 for finding the required quantity of milk are precisely equal.

$$Q \left( \text{WhP} - \frac{\text{cas}}{5} \right)$$

$$2. \frac{\text{b''}}{QF - a'' \text{ Whey}} = \text{Whey}$$

$$3. \frac{F'}{Q} = F'$$

$$4. \frac{P}{P} = R$$

$$5. 3.50 - .025 (3R - 3) = B$$

$$6. \frac{QP}{B} = X$$

$$7. \frac{QF - (a'X + a'' \text{ Whey})}{a - a'} = \text{Cream}$$

$$8. \frac{QP - bC}{b'} = \text{Milk}$$

$$9. \frac{QS - (cX + c'' \text{ Whey})}{100} = \text{Sugar}$$

#### SERIES IV.—WORKING FORMULAS.

In practice, the use of the general formulas is very seldom necessary; every mixture of cream and milk, and, with very few if any exceptions, every whey-cream mixture that is indicated may be computed with substantial accuracy by the working formulas.

For the mixtures commonly required, the maximum error in the results obtained by these equations is five one-hundredths of 1 per cent. of fat, or of proteids (according to the equation employed for finding the required milk) and for the greater number of modifications required it is between one and two hundredth of 1 per cent.

Any varieties of cream and of milk that are adequate may be employed. Of the creams generally in use and readily obtainable by gravity, both 16 per cent. and 20 per cent. cream are adequate: every mixture of cream and milk, with a few possible exceptions, and there are very few, if any, every "whey-cream" mixture that is indicated, may be obtained by combining 16 per cent. or 20 per cent. cream<sup>7</sup> with milk, or with whey, or with milk and whey. Both of these varieties of cream are well adapted for purposes of home modification. The former has the special advantage that it is always readily available in sufficient quantity.<sup>8</sup> On the whole, it is probably the best selection that can be made. The use of whole milk simplifies the preparation of the food; and it is more constant in composition (percentages) than that separated, or fat-free milk obtained by gravity. The working formulas provide accordingly for the use of 16 per cent. cream and whole milk.

Whatever variety of cream is employed, the full quantity obtainable by gravity from a given quantity of milk should be removed (preferably the separated milk should be discharged by a siphon) and well mixed before any part of it is used in the preparation of the food,

7. A mixture of the top 6 oz. of a quart of 4 per cent. milk, "set" 8 hours or longer, represents 16 per cent. cream, of which the top 4 oz. (mixed) is 20 per cent. cream. Four (4) ounces of 20 per cent. cream may be obtained from a quart of 4 per cent. milk "set" 4 hours (Rotch).

8. Six ounces of 16 per cent. cream in combination with whole (4 per cent.) milk will furnish sufficient fat for the daily ration of the infant at all ages, presuming that the usual, or "average" mixtures are employed. This statement is based on the feeding-chart issued by the Walker-Gordon Milk Laboratory.



as the surface cream is always very much richer than other portions of it.

The working equations are based on the consideration that *appropriate cream* for the mixtures (ratios) usually to be employed is between 5 + per cent. and 10 per cent. cream, of which the proteid percentage is between 3.46 + per cent. and 3.35 per cent.; the mean percentage, 3.40 is taken accordingly to represent the "average" percentage B for these ratios, and the general equation

$\frac{Q P}{B} = X$  becomes  $\frac{Q P}{3.40} = X$ . Sixteen per cent. cream has a proteid percentage of 3.20.

3.50 per cent. — .025 (16-4) = 3.20 per cent. (b).

The fat in the cream (16 C) plus the fat in the milk (4 M) must equal the required quantity of fat (Q F); and the proteids in the cream (3.20 C) plus the proteids in the milk (3.50 M) must equal the required quantity of proteids; that is,

(1)  $Q F = 16 C + 4 M$ ; and

(2)  $Q P = 3.20 C + 3.50 M$

Substituting the value  $X = C$  for M in equation (1), it becomes  $Q F = 16 C + 4 X - 4 C$ , whence

$$\frac{Q F - 4 X}{16 - 4} = \text{Cream.}$$

(a)  $X - C = \text{Milk}$ , and, since  $Q P = 3.20 b + 3.50 M$ ,

$$(b) \frac{Q P - 3.20 C}{3.50} = \text{Milk.}$$

When the percentage B is accurately determined, equations (a) and (b) for finding the required quantity of milk are precisely equal. The error involved in the use of an "average" factor B affects either the fat percentage alone, or the proteid percentage alone, according to the equation employed for milk; equation (a) ( $X - C$ ) determines the fat percentage of the mixture accurately; by the use of equation (b) the proteid percentage is correctly obtained. Generally the latter is the more important; but for the mixtures commonly required the error is so small that the simpler equation  $X - C$  yields satisfactory results.

The sugar percentage of cream and milk is equal to the proteid percentage plus 1; accordingly  $C = 3.40 + 1$ , or 4.40 per cent.; and  $\frac{Q S - 4.40(C + M)}{100} = \text{Sugar}$ ,

The quantity of sugar to be added is usually very nearly equal to 5 per cent. of the quantity of food to be prepared. The fat percentage of mixtures of 16 per cent. cream and whole milk may be decreased, or increased, without materially affecting the proteid and sugar percentages, simply by changing the relative qualities of the cream and milk employed. Of the mixtures ordinarily prescribed (quantities and percentages) each ounce of cream and milk exchanged decreases (or increases) the fat percentage from .40 to .60 per cent.

Denoting the quantity (in ounces) of cream and milk exchanged by the symbol y, the fat percentage obtained is determined by the equation:  $\frac{Q F \pm 12 y}{Q} = F$ .

#### SERIES V. WORKING FORMULAS. WHEY-CREAM MIXTURES.

These formulas are for mixtures of 16 per cent. cream, whole milk and fat-free (or 2 per cent.) whey. The ratio of fat to caseinogen in 16 per cent. cream is a little above 6 to 1; 16 per cent. cream, therefore, in combination with fat-free whey is adequate for the greater number of whey-cream mixtures required. The

use of 2 per cent. whey as a diluent increases the ratio F to cas obtainable with 16 per cent. cream from 6 to the 1 to 12.8 to 1—with low percentage of caseinogen—not exceeding .50 per cent. While, of course, a larger number of modifications may be made with *appropriate cream* and fat-free whey, the number obtainable with 16 per cent. cream and 2 per cent. whey is large enough to warrant the statement made as to the adequacy of 16 per cent. cream for the preparation of these mixtures. Usually, with low percentages of caseinogen, it is desirable, and, except for the youngest infants, essential (in order to provide for nutrition) to give the highest possible percentage of whey-proteids, which is obtained, of course, by the use of whey as a diluent in place of water. In these cases it is not necessary to compute the whey at all. By the use of fat-free or 2 per cent. whey as a diluent, from .75 per cent. to .90 per cent. of whey-proteids is obtained with low percentages of caseinogen (not exceeding .50).

Since the ratio F to cas in the whey-cream mixtures ordinarily indicated is considerably higher than the corresponding ratio  $\frac{F}{P}$  in mixtures of cream and milk,

richer creams are required, and the average percentage B is correspondingly lower; but to avoid confusion the factor 3.40 is retained to represent *appropriate cream*. Moreover, the slightly increased error affects only the fat percentage of the mixture, which is comparatively unimportant. For home modification it is probably most convenient to obtain whey from the separated milk (after the removal of the 16 per cent. cream); or to use 2 per cent. whey from whole milk. The former may be regarded as fat-free for purposes of computation.

The equations for finding the required cream and milk, respectively, are the same as the equations therefor in Series iv, except that the equation for cream, No. 4 (b), provides for the use of 2 per cent. whey.

#### SERIES VI.

This series is for mixtures of 16 per cent. cream and its separated milk, containing 1.23 per cent. F, 3.57 per cent. P, and 4.57 per cent. S.

The term "separated milk" as here employed refers to the milk that remains after the removal of the full quantity of 16 per cent. cream obtainable by gravity from a quart of 4 per cent. milk. This milk, in combination with cream, is adequate for the preparation of all mixtures of which P exceeds, or equals, F, provided the ratio P to F is not above 2.90 (3.57 to 1.23)—practically all mixtures that are indicated; but, except for young infants and for infants with deficient digestive power, is inadequate for the mixtures ordinarily to be employed, for the reason that a sufficient quantity of fat for the daily ration can not be obtained. Equations for the computation of mixtures of which P exceeds (or equals) F are included in the series of working formulas.

#### SERIES IV (A)—WORKING FORMULAS.

For the use of milk of the standard analysis—16 per cent. cream and whole milk.

QP

$$1. \frac{\text{---}}{3.40} = X$$

3.40

QF — 4X

$$2. \frac{\text{---}}{16 - 4} = \text{Cream}$$

16 — 4



$$\begin{aligned}
 & \text{(a) } X - C \\
 3. & \quad QP - 3.20C = \text{Milk}^9 \\
 & \quad \text{(b) } \frac{3.50}{QS - 4.40(C + M)} = \text{Sugar}
 \end{aligned}$$

For cream and milk of the standard analysis equations (A), (B), (C), (D), (E), respectively, are:

$$\begin{aligned}
 \text{(A)} & \quad 3R + 1 = a \text{ (adequate cream)} \\
 \text{(B)} & \quad 3.50 - .025(3R - 3) = B \\
 \text{(C)} & \quad 3.50 - .025(a - 4) = b \\
 & \quad 3.50 + 4(.025) - b \\
 \text{(D)} & \quad \frac{.025}{4.50 - .025 - (3R - 3)} = a \\
 \text{(E)} & \quad 4.50 - .025 - (3R - 3) = C; \text{ or, } B + 1 = C
 \end{aligned}$$

SERIES IV (B).

For the use of milk and cream of other than standard analysis.

For milk containing 4.00 F per cent., 4.00 P per cent., 4.50 per cent. S—16 per cent. cream and milk—(p = .03).<sup>10</sup>

$$\begin{aligned}
 & QP \\
 1. & \quad \frac{QP}{3.85} = X \\
 & \quad QF - 4X \\
 2. & \quad \frac{QF - 4X}{16 - 4} = \text{Cream} \\
 & \quad \text{(a) } X - C \\
 3. & \quad QP - 3.64C \\
 & \quad \text{(b) } \frac{4}{QS - 4.35(C + M)} = \text{Milk} \\
 4. & \quad \frac{4}{QS - 4.35(C + M)} = \text{Sugar}
 \end{aligned}$$

For cream and milk of other than the standard analysis equations (A), (B), (C), (D), (E), respectively, are:

$$\begin{aligned}
 \text{(A)} & \quad 3R + 2 = a \text{ (adequate cream)} \\
 \text{(B)} & \quad 4.00 - .03(3R - 2) = B \\
 \text{(C)} & \quad 4.00 - .03(a - 4) = b \\
 & \quad 4.00 + 4(.03) - b \\
 \text{(D)} & \quad \frac{.03}{4.50 - .03(3R - 2)} = a \\
 \text{(E)} & \quad 4.50 - .03(3R - 2) = C; \text{ or, } B + .50 = C
 \end{aligned}$$

SERIES V. WHEY-CREAM MIXTURES.

Working Formulas.

For combining 16 per cent. cream, whole milk, fat-free, or 2 per cent. whey.

$$\begin{aligned}
 1. & \quad \text{cas} + \frac{\text{cas}}{5} = P \\
 & \quad Q \left( \text{WhP} - \frac{\text{cas}}{5} \right) \\
 2. & \quad \frac{Q \left( \text{WhP} - \frac{\text{cas}}{5} \right)}{1} = \text{Whey} \\
 & \quad QP \\
 3. & \quad \frac{QP}{3.40} = X
 \end{aligned}$$

9. By the use of equation (a) for milk, the fat-percentage of the mixture is obtained accurately; by the use of equation (b) for milk the proteid-percentage is accurately obtained.

10. According to published analyses the coefficient of proteid-loss increases with increase of the proteid percentage of the milk.

11. If the ratio  $\frac{P}{F}$  exceeds 4, employ  $\frac{QP}{3.20} = X$ .

$$\begin{aligned}
 & \quad QF - 4X \\
 4. & \quad \left\{ \begin{array}{l} \text{(a) } \frac{QF - 4X}{16 - 4} = \text{Cream, (with fat-free whey)} \\ \text{(b) } \frac{QF - (4X + 2 \text{ Whey})}{16 - 4} = \text{Cream (with 2\% W)} \end{array} \right.
 \end{aligned}$$

$$\begin{aligned}
 5. & \quad \frac{QP - 3.20C}{3.50} = \text{Milk} \\
 6. & \quad \frac{QS - 4.40(C + M) + 4.80 \text{ whey}}{100} = \text{Sugar}
 \end{aligned}$$

SERIES VI (A).

For mixtures in which P equals or exceeds F (16 per cent. cream and its separated milk containing 1.23 per cent. F, 3.57 per cent. P, and 4.57 per cent. S).

$$\begin{aligned}
 & QP \\
 1. & \quad \frac{QP}{3.55} = X \\
 & \quad QF - 1.23X \\
 2. & \quad \frac{QF - 1.23X}{16 - 1.23} = \text{Cream} \\
 & \quad \left\{ \begin{array}{l} \text{(a) } X - C \\ \text{(b) } \frac{QP - 3.20C}{3.57} = \text{Milk} \end{array} \right. \\
 3. & \quad \frac{QS - 4.57(C + M)}{100} = \text{Sugar}
 \end{aligned}$$

SERIES VI (B).

These mixtures may be obtained also by combining whole milk (4 per cent. cream) with fat-free milk. The equations are:

$$\begin{aligned}
 & QP \\
 1. & \quad \frac{QP}{3.55} = X \\
 & \quad QF \\
 2. & \quad \frac{QF}{4} = \text{Cream (whole milk)} \\
 & \quad X - C = \text{Milk (fat-free)} \\
 & \quad QS - 4.57X \\
 4. & \quad \frac{QS - 4.57X}{100} = \text{Sugar}
 \end{aligned}$$

PERCENTAGE MODIFICATION IN PRACTICE.

The practical objections to this method for home modification may be grouped under three heads: 1. The number of creams required and the consequent confusion both in the computation and in the preparation of percentage mixtures, since each cream must be computed by a slightly different equation, and different instructions must be given in each case for obtaining by gravity the cream to be employed. 2. The difficulty of keeping in mind the percentages that are indicated for the infant at different ages. 3. The number of modifications to be made, and the time and care that must be given in the case of the normal infant in order to meet the requirements according to the feeding charts.

Occasionally objection is made on the ground of expense. None of these objections is valid; and they rest for the most part on difficulties that do not present themselves in practice. As we have seen, a variety of creams is not necessary; 16 per cent. cream (or any



richer cream) is adequate for all mixtures of cream and milk, and, probably, for all whey-cream mixtures that are indicated; the directions for obtaining by gravity the cream to be employed may be the same always, therefore to be followed throughout the period of substitute feeding; and all mixtures may be computed by a single series of formulas. With a little "practice," the calculation takes hardly more time and less effort than are required to compute a mixture of drugs.

As to the difficulty of remembering the "percentages" that are indicated at different ages, it is not necessary to remember them. Until the child is 10 or 11 months old, at any rate, the ratio of fat to proteids in the mixtures ordinarily to be employed is somewhere between 3 and  $1\frac{1}{2}$  to 1; that is, the fat percentage is not more than 3, nor less than  $1\frac{1}{2}$  times the proteid percentage (or, the proteid percentage is not less than one-third, nor more than two-thirds the fat percentage). A fat percentage above 4 is not indicated. Since the ratio F to P decreases as the age increases, from 3 to  $1\frac{1}{2}$  to 1, one should never be at a loss as to the suitable modification for the infant at any age.

The impression that frequent changes must be made in the quantities of food and in the percentages prescribed is a mistaken one.<sup>12</sup> To be sure, the infant can not be fed properly, as Japan fought her battles in the recent war, by "previous arrangement;" and the physician can not direct the feeding by this, or by any method, without some effort. But, while in the case of the infant with feeble powers of digestion percentage modification gives opportunity for the exercise of great skill in adapting the food to the needs of the individual and to particular conditions, it permits, also, in the case of the healthy child, a considerable degree of routine practice. For example, assuming that the physician directs the feeding from the beginning, the first prescription may call for 16 ounces, 2 per cent. F, 0.70 per cent. P, ten days later the percentages are advanced to 2.50 per cent. F and .85 per cent. P; between the third and fourth weeks, the preparation of 24 ounces, 3 to 3.25 per cent. F and 1 to 1.10 per cent. P, is directed, and at the end of six weeks 32 ounces, 4 per cent. F and 1.50 per cent. P, is ordered. No further changes may be made until the child is four months old, when 40 ounces, 4 per cent. F and 2 per cent. P, may be prescribed. At the end of the eighth month the quantity of food and the percentages are increased to 48 ounces, 4 per cent. F and 2.50 per cent. P, respectively. In this assumed case, six mixtures have been prescribed, two of them within the puerperal two weeks, another two within the next four or five weeks; the increase in the quantity of food required has been provided for in each instance by the addition of 8 ounces to the quantity previously prescribed, the number of ounces to be prepared having been increased successively from 16 to 24, to 32, to 40, to 48. While each of these quantities is larger than the infant requires at the beginning of the period for which it is employed, the excess represents so little value in cream and milk that the actual waste is very small.

Very little saving is made by the use of fat-free or of separated milk, except for the preparation of whey, since materials sufficient for the preparation of the mixtures ordinarily required for infants above the age of 4 or 5 weeks can not be obtained from a quart of milk. Generally it is best that two quarts of milk

should be provided from the outset, one for the supply of the required cream, the other for the supply of the whole milk. Up to the age of 6 or 8 months a pint of milk will furnish a sufficient quantity of the latter. Two quarts of milk a day will not only provide for the infant throughout the period of substitute feeding, but for the infant's family also; that is, the "modified milk" having been prepared, there will be left of the two quarts from 58 ounces (about) of milk, containing 3.33 per cent. of fat, when the child is a month old, to (about) 30 ounces, containing 2 per cent. of fat, when the child has reached the age of 11 months. With milk at 10 cents a quart, the daily cost of the cream and milk consumed by the infant up to the age of about 11 months, ranges from 2 cents at the beginning to 12 cents at the end of the period.

In the use of the percentage method, both in the case of the normal infant in health and of the infant with less than the normal powers of digestion, the limitations in the ratios of fat to proteids compatible with the maintenance of nutrition must be kept constantly in mind. While the infant can not be fed properly by rules, the principle may be laid down that except in certain abnormal, or diseased conditions, mixtures of which the ratio of the fat percentage to the proteid percentage, that is, to the percentage of total proteids, exceeds 3, should not be employed continuously for any length of time at any period, since they do not contain food enough; on the other hand, the use of mixtures of cream and milk of which this ratio is below  $1\frac{1}{2}$  taxes the digestive organs needlessly and invites digestive disorders. In whey-cream mixtures containing high percentages of whey-proteids, lower ratios may be employed, though they are seldom indicated.

Substantially every mixture that is required may be obtained by combining 16 per cent. cream, whole milk, fat-free, or 2 per cent. whey; and in practice it is best to make use of these materials only. Whey that is practically fat-free, however carelessly prepared, may be obtained from the milk from which the 16 per cent. cream has been removed. Twenty-six ounces of this milk will yield about 20 ounces of whey, a quantity sufficient for the preparation of any of the whey-cream mixtures that ordinarily are required.

In practice it is seldom necessary to carry the percentage of caseinogen above 1 per cent.; that is, if the infant is able to digest 1 per cent. of caseinogen, together with the associated percentage of whey—proteids, further division of the proteids is not required as a rule.

The fat percentage of the top milk (cream) does not increase materially even if the milk is allowed to "set" long after the cream has risen; the top 6 ounces of a quart of 4 per cent. milk which represents 16 per cent. cream at the end of 8 hours (and the top 4 ounces, which is 20 per cent. cream) will not have increased in fat-value materially at the end of 12 or 14 hours. In the case of 20 per cent. cream the fat percentage increases but 2.5 per cent. in 24 hours.<sup>13</sup> The thickening of the cream is due almost altogether to the growth of bacteria.

If, therefore, a quart of milk is "set" at 7 o'clock in the morning, 6 ounces of 16 per cent. cream,<sup>14</sup> (or 4 ounces of 20 per cent. cream), may be taken therefrom

13. Holt: "Diseases of Children."

12. This statement refers to the feeding of the normal infant in health.

14. The mnemonic "16"—"2" may assist the remembrance of the instructions to be given for obtaining 16 per cent. cream by gravity; thus, 1 quart of milk yields 6 oz. of 16 per cent. cream at the end of  $16 \div 2$  (8) hours; its proteid percentage is  $16 \div 2$  (3.2 per cent.)



at any time after 3 o'clock in the afternoon, and preferably before 9 o'clock in the evening. But, of course, the sooner the cream is removed after the full quantity obtainable by gravity has arisen, the more closely it will represent the desired fat percentage in each case. It appears, therefore, that a single variety of cream, which may be 16 per cent. or 20 per cent. cream, serves every purpose; that the required quantities of cream and milk for all the mixtures ordinarily required may be computed by a single series of equations; that for the normal infant but few modifications need be made, the percentages that are indicated at different ages being readily determined by the ratios of fat to proteids required, without having reference to the feeding chart; that the simple instructions to be given for obtaining by gravity the cream to be employed are the same in all cases, to be followed throughout the period of substitute feeding; that the preparation of mixtures of cream and milk presents no difficulties and that even at an advanced price for suitable milk the necessary materials cost very little.

The complexity, and therefore the perplexities, of percentage modifications depend altogether on the use of a variety of creams and of milk of different analyses; if suitable milk is in use, or if the analysis of the milk to be employed is known, the mixtures usually required, at any rate, may be computed by the working equations with substantial accuracy and as readily as mixtures of drugs. If, therefore, modified milk is to be employed as a substitute food for the infant, under the immediate direction of the physician, as all artificial feeding should be, percentage modification furnishes a very simple and a very practicable method for its preparation and its use.

The real difficulty in the way of the scientific method, and of other methods as well, is the lack of suitable milk for the preparation of infant food; and until suitable milk is generally available, the milk-laboratory offers the best solution of the problem. Here and there "baby-milk" is furnished; and always, it is understood, the supply, at largely increased prices, is unequal to the demand that has been quickly created—among the laity; the family physician appears to be content to leave the matter of the milk supply to the average milkman, and the feeding of the infant to the enterprising and insistent manufacturers of patent foods; and the records of infant mortality, ill development, malnutrition and disease, the direct results of imperfect or improper food and feeding, continue to be written.

It is true that the great majority of bottle-fed babies live, and the greater number of them thrive, apparently, in spite of dietetic adversity. They live because they were born to live. Infant mortality is unnatural. And it is not less true that many of these fair, fat babies—all of them are fat—have less than the normal powers of resistance and recuperation; while the less vigorous, or the imperfectly developed, are subject to disorders and diseases which the well-fed infant escapes. The strong survive, for precisely the same reason that the Scotchman survives his diet of oatmeal. But in the case of the feeble infant, and of the dyspeptic infant in particular, health and growth and life, it may be, depend on its having the right food, which is suitable milk, suitably modified.

The production of suitable milk is perfectly practicable; and the effort, even the organized effort, of physicians may well be directed to this end. In view of the diminished and diminishing birth rate in American

families, and of the growing indisposition and inability of the American mother to nurse the baby, the question of artificial feeding has become of vital importance to the community. There is no subject within the domain of medicine, not even the control of tuberculosis, that concerns common interests and the common welfare more intimately. Indeed, tuberculosis is in itself a disease of imperfect nutrition, and to provide for the nutrition of the infant may well be among effective measures for its prevention. It is not unreasonable to believe that the constitution of the individual may be affected in some manner, to some degree, by the character of the food during the period when, normally, the physical development is most rapid.

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### SIMPLICITY IN INFANT FEEDING.\*

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The average physician is generally appalled by the mathematics which play so important a part in present-day papers on infant feeding. He either comes to look on infant feeding as in the highest degree a difficult problem, and babies' digestions habitually delicate, requiring complicated formulæ and frequent minute changes in percentages, or he discards all theories in disgust and leaves the feeding of the baby to the mother or nurse, or even resorts to the wares and printed directions of the advertising food manufacturers. Both of these extremes are undesirable.

While there is no doubt that a fairly accurate idea of percentages is of great value in infant feeding, and that the difficult cases can be managed best by keeping these well in view, yet it is perfectly possible for a physician to feed babies successfully without this expert knowledge and to give simple directions for the preparation of the food without the use of formula lists or patent foods.

#### NEED OF SIMPLE RULES.

It is evident that the simpler the rules and formulæ for making up the daily food of the baby, the less liability will there be for error on the part of the mother or nurse and the easier it will be for the physician to prescribe. It is also reasonable to suppose that the less the milk is manipulated in order to obtain the desired formula the more easily will it be digested by the infant.

The physician who looks on the baby's stomach as a test tube and on the food merely as so much per cent. of different ingredients is apt to disregard every factor but the percentages and to blame the baby and not the food if the former does not thrive. Theoretically the food is right and the baby at fault.

#### NEED OF STUDYING CASES INDIVIDUALLY.

Some infants thrive on mixtures made up of centrifugal cream and fat-free milk recombined so as to give the theoretical percentages required. But the fact that others do not, and yet will thrive on similar percentages made up of gravity cream, shows that there is something besides chemical percentages that must be considered—some vital characteristic as yet but little understood. In the same way the fact that while many infants thrive on Pasteurized or even sterilized mixtures, yet others grow pale, lose their appetite and develop scurvy, shows that certain characteristics of the milk destroyed or

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\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



altered by heat must be considered as well as its chemical composition.

Another fact is brought out by these observations, namely, that infants are not machines and that they can not all be treated alike. It is evident that we should avoid, if possible, what is harmful to some infants even if others are not disturbed thereby. Because an infant of a year appears to thrive and be in robust health on a diet which includes tea and cabbage, no argument should be adduced in favor of tea and cabbage.

#### NEED OF SPECIAL BREED OF COWS.

The basis of infant feeding is the milk of some animal, and for practical purposes we are limited to the cow. When one considers what great modification in external forms has been accomplished by artificial selection in the case of dogs and pigeons, for example, it is not, I hope, idle to expect that some day a race of cows will be developed by careful breeding and selection whose milk shall approximate very closely in chemical analysis the milk of woman. The difficulties in the way of artificial feeding would then be less, although the differences in the vital characteristics of the two milks can never, of course, be eliminated. At present we must take cows' milk as we find it and modify it to suit the infant's digestion.

#### NEED OF MILK INSPECTION.

When milk commissioners give their seal of approval the responsibility of the physician is much lightened. Certified milk means cleanliness in the cows, barns, utensils and milkers, freedom from disease in the cows and consequently a clean, safe milk. In the absence of a milk commission it is incumbent on the physician to look into these matters as closely as may be, visiting the dairies if possible. It is far better to use a raw, dirt-free and therefore germ-free milk than to take a dirty milk and destroy its vitality in endeavoring to cleanse it by centrifugal force or by Pasteurization. Both processes are undesirable. The latter process does not destroy the dangerous butyric acid and peptonizing bacteria, but it does affect the lactic acid group, which, when active, serve to check the more dangerous bacteria.

#### CENTRIFUGAL CREAM AND GRAVITY CREAM.

As the dilution of whole milk in order to diminish the percentage of albuminoids will cut down the fat too low, it is necessary to begin with a cream as the basis of our modifications. By the dilution of a 10 or 12 per cent. cream and the addition of sugar of milk we can make up a mixture fairly comparable to woman's milk. To obtain the cream several practical methods are open to us. Centrifugal cream can be obtained at dairies, but it is undesirable owing to the changes that have taken place in its physical or vital characteristics. This cream, as sold at most dairies, does not have even the merit of accuracy of percentage. Gravity cream may be obtained by siphonage. This is rather a complicated and delicate process and the siphon is a difficult instrument to clean. Dipping off the top milk with Chapin's dipper is a good method, but here also is an instrument to be kept clean. Pouring off the top milk is the simplest method and is perhaps looked down on by some on account of its very simplicity. There are no instruments to be kept clean. The results by this method are very uniform, as I have shown by numerous analyses.<sup>1</sup>

#### DILUTIONS.

The richness of the cream can easily be varied by pouring off more or less of the top milk. Although the exact amount of fat can not be told without analysis, the latter is rarely necessary, as a certain amount of experimentation is required for every infant. As a rough rule, one may remember that the upper eight ounces poured from a quart of milk after it has stood at least four hours contains about 10 per cent. of fat; the upper twelve ounces about 8 per cent., the upper sixteen ounces about 6 per cent. and the upper six ounces about 14 per cent.

The physician must be guided by symptoms and the appearance of the stools and regulate the amount of fat accordingly. It is easier and better, as there is less manipulation required, to dilute this top milk with water than to combine a rich cream, a lower or fat-free milk and water. This latter method involves an unnecessary splitting up and recombination of ingredients.

Instead of using water as a diluent or modifier, a cereal water—barley, oats, rice or wheat—can be used even in the youngest infants. There is no doubt that the cereal renders the milk more digestible by lessening the size of the clots, and also that a small amount of starch is digested even by the newly born. This return to an older method, used empirically for ages, has now a scientific foundation. Most babies do perfectly well with water as a diluent, but some have difficulty in digestion unless a cereal is used. After the age of six months all babies, with but few exceptions, are better with cereal modifications.

#### HOW TO FEED AN INFANT.

In beginning to feed an infant, whether it be a newborn or an older one that has suffered from improper feeding, the safest rule is to begin with a mixture weak in all its ingredients, and by slow degrees gradually increase the strength. The mistake is often made of beginning too strong and in making frequent and purposeless changes. Thus a new-born baby can be put on a mixture in which there are only three ounces of the upper eight ounces of top milk in twenty ounces, and the strength gradually increased by the addition every second day of half an ounce more top milk and the subtraction of half an ounce of water until eight ounces of top milk are given in a twenty-ounce mixture.

It is gratifying to find that many infants who have struggled unsuccessfully on much modified milk mixtures will often respond at once when these simple, but, it seems to me, all important principles are borne in mind.

NOTE.—In this article I have purposely avoided all reference to the calculation of percentages, knowing by experience what a paralyzing effect such reference has on most physicians' minds. For those who care to venture on this subject, which is not necessarily difficult, the following simple rule will be found easy of application:

Rule.—Each ounce of 10 per cent. cream in a 20-ounce mixture represents .50 per cent. of fat, .20 per cent. of albuminoids and .20 per cent. of sugar, and each even tablespoonful of sugar of milk added to this mixture raises the percentage of sugar 2.

In the example given above, in which the infant is started on 3 ounces of the upper 8-ounce top milk in a 20-ounce mixture, the formula would be written as follows:

Top milk .....	3 ounces
Water .....	16 ounces
Limewater .....	1 ounce
Sugar of milk.....	2½ even tablespoonfuls

Assuming that the top milk contained 10 per cent. of fat,

1. "Cream for the Home Modification of Milk," Boston Med. and Surg. Jour., vol. cxlviii, 1903, p. 414.



this would mean, approximately: Fat, 1.50; sugar, 5.60; albuminoids, .60.

The final formula of

Top milk .....	8 ounces
Water .....	11 ounces
Limewater .....	1 ounce
Sugar of milk.....	2½ level tablespoonfuls

would mean, approximately: Fat, 4.00; sugar, 6.60; albuminoids, 1.60.

The percentage of fat in the top milk can be gradually diminished by pouring off more of this top milk from day to day. In this way the strength of the albuminoids can be gradually increased in the mixture without increasing the fat beyond 4 per cent. When a cereal water is used in place of water, only one-half as much sugar of milk is necessary and no limewater is needed. The value of limewater in the water mixture is somewhat doubtful.

### CERTIFIED MILK IN SMALL CITIES.\*

C. W. M. BROWN, M.D.

ELMIRA, N. Y.

Forty-nine states and territories have laws applying to the production and care of milk and its products, while a large number of municipalities have ordinances governing its quality, transit, care and sale. All these laws and ordinances, with possibly one exception, apply chiefly to the amount of butter-fat and total solids the milk must contain and not to the quantity of extraneous matters or to the bacterial count.

Interest in and knowledge of milk and foods is increasing both in the medical profession and among the laity, if the numerous articles of scientific and popular interest in the medical and lay journals can be adduced as evidence. But in spite of this interest and increase of knowledge, the fact remains that ordinary milk, while of almost universal use, is the most uncleanly article of food on our tables.

#### STERILIZATION AND PASTEURIZATION.

That the average milk is unclean and many times unfit for food, especially for infants, has long been known and has given rise to its heating or cooking in order to lessen its unfitness and lengthen its keeping quality. This process we call sterilization.

A few years later it was found that this process was fraught with danger and that practically a lower degree of heat and a shorter period of heating served as well. Pasteurization was then the vogue for a time. Now it is safe to estimate "that all forms of sterilization do impair, although possibly to a slight degree, the nutritive properties" of milk. That commercially Pasteurized milk is more unsafe and less to be trusted than ordinary milk is abundantly proven by the investigations of Pennington and McClintock, of Philadelphia. What is true in Philadelphia is probably true of Pasteurized milk sold in other cities.

We would naturally anticipate that hospitals would be furnished with good milk, yet Edsall found many of them in Philadelphia served with milk of "shocking quality," some of it containing millions of bacteria to the cubic centimeter.

I need not say that when it can be obtained the desideratum is fresh, clean milk, so fresh and clean that it can be safely used raw, either for the food of infants or sick adults. The best milk can now be procured

chiefly in the large cities. The Walker-Gordon Laboratory Company, a commercial enterprise, supplies a high-grade milk to eleven of the largest cities in the United States and two in Canada.

#### MILK COMMISSIONS.

The first medical milk commission was that of Essex County, N. J., formed and pushed to success by Dr. Henry L. Coit, of Newark. It issued its first certificate in 1893, only thirteen years ago. Others which have started since are the Milk Commission of the Medical Society of the County of New York, the Milk Commission of the County of Kings, New York, the Milk Commission of the Philadelphia Pediatric Society, the Milk Commission of the Children's Hospital Society of Chicago, the Milk Commission of the Milwaukee Medical Society, the Milk Commission of the Rochester Academy of Medicine, the Milk Commission of Cleveland, Ohio, the Milk Commission of the Syracuse Academy of Medicine, Syracuse, N. Y., the Milk Commission of the Medical Society of the District of Columbia, the Milk Commission of the Medical Society of St. Louis, Mo., and the Milk Commission of the Elmira Academy of Medicine, Elmira, N. Y. One or two others have been started, but have been discontinued. All of these milk commissions are in cities of the first and second class except the last one, Elmira, which has a population of about 35,000.

#### THE ELMIRA MILK COMMISSION.

In the list of 136 cities in the United States having a population of 30,000 or over, Elmira stands one hundred and thirty-third. Because of the successful accomplishment of the work of our commission in a small city, an ex-president of this Section suggested that its story be told here, and that is why I presume to stand before you to-day that others among the smaller cities may be stimulated to begin to secure the production of clean milk.

Six years ago an eminent pediatricist of New York City said, in a clinical lecture, "that if five or six physicians in any town wanted clean milk it could be had." That was a suggestion. In due time a paper was read before the Elmira Academy of Medicine on "Clinical Milk: What It Is and What It Should Be." Much interest was aroused. Six men who were interested in the subject were selected and later were appointed the Milk Commission of the Elmira Academy of Medicine. Then the search for the farmer began. A circular letter was sent by the commission to about half of the ninety milk dealers of the city, those who either produced their own milk or were responsible, calling a joint meeting of the dealers and the commission. Not more than twenty responded. They listened curiously, respectfully, but that was all.

We next began to visit the better class of dealers at their farms, with negative results, until we found one who was already trying to do better than the average milk dealer as to cleanliness and good fat content. This one, a woman, had visited near one of the most famous milk farms in the country and had already a general knowledge of the benefit of clean milk and the requirements to produce it. After consideration she took up the work, built a new barn, had her herd tested for tuberculosis, the commission selected its experts and we issued our first certificate April 15, 1903. We established as our standard a 10,000 bacterial count. This has been exceeded but twice in three years. Butter-fat,

\* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



3.5 per cent. to 4.5 per cent., and other usual conditions were imposed. The milk is cooled and bottled within a few minutes after it is drawn, put in the crate, the top of which is filled with cracked ice, whence it is delivered to the consumers. Because of the nearness of the farm to the city, less than three miles, the night and morning milk is delivered, reaching the consumer not more than nineteen hours from the time the oldest of it was drawn the night before. This has not been accomplished with the aid of an agricultural college graduate, or even an up-to-date farmer, but simply by using the means at hand. Our farmer employed the same foreman she had before, guided, of course, by the commission and its experts.

In spite of the fact that our farmer will not allow the slightest bit of commercialism in its sale, not even the sending of the commission's certificate to physicians in the patronizing territory, the output is slowly but satisfactorily increasing and Quarry Farm milk has grown in favor with laymen as well as physicians. Besides supplying local consumers, it is shipped daily to Binghamton, N. Y., and New York City. It sells at 8 cents per quart, ordinary milk at 6 cents during the cold months and 5 cents during the warm months.

Another dealer, also a woman, sells a high-grade milk exclusively in bottles.

Besides the direct benefit to the immediate consumer, there has been a general improvement in the whole city milk supply. Our health officer is a member of the milk commission and through his influence the board of health has passed an excellent ordinance governing the sale of milk. The milk inspector of the local board of health has been made a state deputy health officer, thereby empowering him to enter on the premises of the producer. All the dealers will now, on request, supply milk bottled at the farm. In former days I have not infrequently seen them bottle the milk as they drove along the dusty streets.

#### A PRACTICAL CONCLUSION.

Elmira is not especially wealthy, nor are its inhabitants remarkably intelligent, nor are its physicians greatly more learned and skillful than those of other cities of similar size, yet here the time seemed ripe and the "five or six" were at hand when needed for the establishment and oversight of a successful certified milk plant. What we have done in Elmira I am sure can be done inside the next twelve months in a score of the other 124 cities of the United States containing 30,000 or more inhabitants which are now unsupplied with clean milk.

There are two great hindrances, it seems to me, to the rapid and successful progress of right infant feeding in cities. First, there is the difficulty in most of them in securing fresh, clean milk; partly for this reason we note the immense sale of artificial foods. Second, there is the widespread and lamentable lack of knowledge among physicians how properly to modify or adapt cow's milk to the infant. The responsibility for the first is on the physicians themselves in each town, for the second on the men who are teaching pediatrics in medical colleges and postgraduate schools. There may be some difficulty in finding the right man for producer. It may take considerable time and pains. It did in our case, but near each city is some farmer who is longing to do his work better than his neighbors and who is only waiting for you to show him the way. So Dr. Coit found Francisco and we found Mrs. Crane.

## WHY PERCENTAGE FEEDING FAILS.

A PLEA FOR ITS MORE FREQUENT ADOPTION BY THE  
GENERAL PRACTITIONER.\*

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The subject of feeding infants under 1 year of age artificially has occupied some of the brightest and best minds of the profession. Among these authorities it has been clearly established that the best substitute for human milk is cow's milk so modified that it shall resemble the former in its essential chemical, physical and biologic characteristics and that these shall be adapted to the individual infant.

While it is true, and must be considered clinically, that the most accurate quantitative modification of bovine milk can not transform it into human milk, pediatricists are agreed that the best results are obtained by the so-called fractional or percentage method of feeding, however they may differ as to the best method of modification. Percentage feeding, not unlike most valuable medical facts, is a product of evolution and of many minds. It follows, therefore, that its history contains much that is indispensable and much that is useless. Many of the latest text-books have thus far failed to eliminate the latter from their pages. Many teachers fail to impress students with the essential facts with the result that they enter practice regarding infant feeding as a Chinese puzzle, unsolved and unsolvable.

Apparently contrary to its absolute scientific and practical worth, failures are numerous and this system of feeding is not only brought into disrepute, but is even ridiculed by many general practitioners of large experience. Recognizing the existence of these failures, a study of the causes that are operative in their production becomes essential to their prevention and to emphasize the simplicity of percentage feeding when once mastered and shorn of its mystery.

#### BEWILDERING MULTIPLICITY OF METHODS OF MODIFICATION PROPOSED.

The number of methods of modifying bovine milk is almost innumerable. One very recent text-book describes thirteen. The majority of others detail about six. Of these the major portion consists of rows on rows of figures which, even if valuable, can not be committed to memory, but must be consulted each time a formula is prescribed. These authorities err in presenting a method worked out instead of detailing its principles. If principles are taught and mastered, their application becomes a matter of ease. The multiplicity of methods proposed causes confusion and excites suspicion that none is accurate or reliable; that the whole subject is simply the algebraic product of some mathematical brain and of no practical worth. Herein lies the cause why so many practitioners refuse to consider the matter further and consign it to the consideration of the pediatricist alone. What is necessary is that the physician should select one method of modification and master it in all its details. He can thus become familiar with every phase of it and in a brief space of time it will dawn on him what a simple matter percentage feeding is after all. Of the many methods of home modification

\* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.



proposed, Holt's top-milk method appears the most rational and the easiest of application: It takes nothing for granted and permits the physician to arrange almost any combination of proteid, sugar and fat. Next to this Bauer's method would probably stand.

#### METHODS ARE NOT INTELLIGENTLY APPLIED.

It matters not how well one may learn any single method of modifying milk, if he fails to apply it intelligently his efforts will be for naught. He must realize that he is dealing with an individual whose digestive apparatus is his own. Formulas are arranged to meet symptoms, and changes must be made as they become necessary. It must be clearly understood that our object is not to supply a percentage composition identical to the accepted analysis of human milk, but to adjust the quantities of proteid, fat and sugar to the infant's digestive powers. It must ever be remembered that we are feeding to human beings a fluid that Nature intended for calves. Consequently we must begin with weak mixtures and gradually increase the strength as the infant's digestive and assimilative powers are slowly unfolded. It is usually wise to start a newborn infant on 1 per cent. of fat and .33 per cent. of protein. These quantities are increased until at about 6 months the fat has reached 4 per cent. and the proteins 2 per cent. It is never safe to give more than 4 per cent. of fat at any age and a more conservative and wiser practice would never exceed 3.5 per cent. Young and sick infants tolerate comparatively high percentages of sugar, from 5 to 6 per cent. at birth. This is rapidly increased to 7 per cent. At 9 months it is diminished, and at 1 year the healthy infant is receiving 4 per cent. of sugar and a similar quantity of protein, or, in other words, undiluted cow's milk. Sick infants are to be fed formulas which are one-half or one-fourth the strength of those fed to well children of the same age. The same is true of the amounts and the interval of feeding. These must be carefully adjusted to the infant's stomach capacity and its appetite.

#### THE WRITTEN FORMULA NEED NOT REPRESENT THE ACTUAL PERCENTAGES.

While it is desirable that the finished milk mixture should correspond in strength to the percentages represented by the written formula, practically it is almost impossible to secure this by any method of modification. Nor is it essential to a successful result. Whether modified at home or in the laboratory, the first formula is an experiment. The actual quantities must approximate the desired percentages. It matters not whether the finished formula contains, e. g., 1.5 per cent. or 1.75 per cent. of fat or .5 per cent. or .6 per cent. of protein, the essential thing is whether or not the infant can digest it. Then, as the indications direct, the amount of any or all the ingredients may be changed. With this in mind the physician is at once less confused. Otherwise he loses sight of the individual in his zeal to secure absolutely accurate percentages. Finally realizing that he is striving after the impossible, he discards the whole matter as useless and impractical.

#### PHYSICIANS AND PARENTS EXPECT GAIN IN WEIGHT TOO SOON.

An infant, newborn or older, or an infant suffering from chronic gastrointestinal catarrh, placed on percentage feeding, will not commence to gain at once, but may even lose a few ounces. Especially if he has attempted percentage feeding as a last resort, this often

causes the practitioner keen disappointment. A gain in weight should not be looked for too early. In fact, it is clearly erroneous to expect it. Attention should first be directed to the infant's stools, to its general well-being and to the disappearance of all untoward symptoms. If the stools lose their green character, if the number of curds and the quantity of mucus are gradually diminishing, if colic disappears, if fat is no longer present in the evacuations, if diarrhea or constipation is replaced by one or two golden-yellow, well-digested movements a day, if vomiting ceases and the infant sleeps the greater part of 24 hours, a gain in weight will be inaugurated and will be continuous, especially as the strength and quantity can be increased. Newborn and sick infants do not gain in the beginning because they are placed on formulas which are deficient in quantity and quality. The physician must, therefore, wait until he learns the infant's digestive powers or until digestive disturbances cease before he should expect a gain in weight.

#### PHYSICAL AND BIOLOGIC DIFFERENCES BETWEEN COW'S AND HUMAN MILK NOT SUFFICIENTLY RECOGNIZED.

While it is important to recognize that bovine and human milk differ quantitatively as to their protein and sugar content, it is more necessary, clinically, to consider their physical and biologic differences. It follows, therefore, unless these differences are overcome, our formula will fail in spite of the most accurate adjustment of percentages to the nutritional demands of the infant. In the presence of rennin and dilute hydrochloric acid the calcium casein of milk is changed to calcium paracasein. This is commonly called the curd. That of cow's milk is thick, dense and tough; that of human milk is soft, feathery and flocculent. It has been clearly demonstrated by the brilliant work of Chapin that the character of the calcium paracasein (curd) influences largely the subsequent development of the intestinal tube of the mammal for which it was intended. Therefore, human sucklings can not digest the curd of bovine milk with any degree of satisfaction. In fact, this physical difference between the curds of these two milks is the crux of the whole problem of infant feeding. Failure to recognize it is the cause of 90 per cent. of the failures of percentage feeding. It is the rock on which the majority of artificially reared infants are wrecked. The physician must, therefore, attempt to transform the physical characteristics of the cow's calcium paracasein into those of human calcium paracasein. This can be accomplished, to a certain extent, by the use of plain or dextrinized cereal gruels or waters, by decalcification with sodium citrate, as first described by E. A. Wright and recently emphasized by Poynton, of London. In special cases the curd may be entirely eliminated by the use of whey or it may be peptonized temporarily.

Bovine milk contains germs. Human milk is practically sterile. Insensibility to this well-known difference frequently results in disaster. The sources of germ contamination should be recognized. They are many and varied. Probably the most important source of initial contamination is the air of the stable. This fact has received recent and positive emphasis from the work of A. H. Stewart, of Philadelphia. The physician should have a thorough knowledge of the milk supply, the method of milking, the care of the cows, the cans, bottles and the stable, the handling of the milk on the farm, the shipping and the icing of the cans and the care of the milk



in the shops. The contamination with and the subsequent growth of micro-organisms should be prevented in every possible way. It has been well stated the time between the cow and the baby should be shortened. When the milk diluent is water the latter should be boiled. Cane sugar is preferable to milk sugar because it is cleaner. Bottles and nipples should be sterile. In cities home Pasteurization of milk is advisable. Clean milk is an essential absolutely necessary to successful infant feeding. The gastrointestinal disturbances, especially infantile dysentery, that are responsible for over half of the morbidity and mortality of infant life, have their origin in infected milk. Therefore, while Pasteurization is recommended, it is more rational, and decidedly more safe, to prevent the initial contamination on the farm.

#### PHYSICIANS DO NOT DIAGNOSE THE VARIETY OF INDIGESTION.

A potent and frequent factor of failure is that physicians do not recognize which particular element of the food is at fault. Milk, in this connection, is erroneously regarded as a simple substance instead of a complex mixture of fat, sugar and protein, any one of which may be the cause of trouble. The symptoms of indigestion vary as the cause. A careful history as to vomiting and a thorough inspection of the stools will usually permit of a correct deduction. It is, therefore, necessary to designate "fat" indigestion, "protein" indigestion or "sugar" indigestion, as the case may be, in order that the amount of the offending ingredient may be changed or temporarily eliminated.

#### PHYSICIANS DO NOT THINK IN PERCENTAGES.

One common cause of failure is that the practitioner will not or can not learn to think in percentages. The indiscriminate mixing of so many ounces of milk, water, cream, lime water and sugar is irrational, unscientific and pernicious. If percentages are prescribed the ounces will take care of themselves when the former are applied to some simple method of modification. To be able to exhibit the proteins, fat and sugar of cow's milk in approximately definite percentages is not only a source of comfort and satisfaction, but is productive of the best results, especially when these may be varied at will according to the indications to be met.

#### MOTHERS AND NURSES ARE NOT EDUCATED IN PEDIATRIC HYGIENE.

Physicians fail to teach the mother or the untrained nurse the details of mixing the various ingredients of the milk formula, for the reason that they assume that their orders will not be carried out. That this assumption is correct, in most instances, can readily be proven by any one who has had much experience in feeding the infants of the poor. The physician need but lead in enthusiasm and the mother will be most eager to follow. Personally I have attained some of my best results in the homes of the poor with large families and with dispensary patients. Let a mother but understand that you are interested in the welfare of her infant, both present and future, and no sacrifice will be too great. It is the physician's duty, nay, his privilege, to go into the kitchen to demonstrate to the mother how to secure top-milk, what is meant by ounces, how to make cereal waters, how to prepare whey, how to peptonize, how to make lime water, how to mix the food, how to divide it up into bottles, how to Pasteurize, how to ice the milk and how to take care of the bottles and the nipples. The

mother can be taught these hygienic details at the expense of very little time. They soon become a habit and the success of the modified formula is assured.

#### LACK OF PROFESSIONAL SUPERVISION.

Feeding cases should be carefully watched. During the first month, at least, they should be seen once a week. When expense is no desideratum this weekly inspection should be continued longer. When it does exist nothing will be lost by making the visit gratis. One is well repaid by the satisfaction of seeing the infant grow fat. This inspection should not be confined to the infant but should extend to its food and the hygiene of the entire nursery. Only in this way can the physician keep in touch with his charge, detect and correct errors, educate the most ignorant mother, little by little, and himself learn more about infants and infant feeding than by months of reading. Weekly weighings should be made and recorded on a weight chart if possible. By this means the physician is furnished with an index as to the nutritional qualities of the food and also as to whether the strength and quantity are to be increased.

The food should be exhibited in definite amounts at designated hours. Neglect in this respect may be disastrous. It is better to underfeed than to overfeed. Most examples of starvation are examples of overfeeding. The quantity of a feeding can represent the infant's age in months. After six months this progression is somewhat slower, a child of one year receiving about 10 ounces. This applies only to healthy infants. In increasing the amount, the increment should not exceed one-half an ounce at a feeding. In many cases it is unwise to exceed a quarter of an ounce.

Professional supervision includes an inquiry as to the character and frequency of the stools, as to vomiting and the time of its occurrence, the number of hours the infant sleeps, its manner while awake and as to the color of its urine. Failure to attend to these details may invite failure of the formula notwithstanding its accurate composition.

#### PHYSICIANS AND PARENTS DELUDED BY PATENT FOODS.

The ease with which proprietary foods are prepared is one reason why physicians and parents are so eager to feed them to the infant. Their large sugar content often causes the infant to fatten rapidly. Their preparation is made more easy by the directions plainly printed on the label. They require little thought from the mother and less from the physician. The latter at once feels relieved of all responsibility. What a delusion! How many babies are made chronic dyspeptics and suffer from chronic skin eruptions? How many fat anemic infants have rickets, scurvy, club-feet, bow-leg, knock-knee, spinal scoliosis and a resistance so weakened that they can not withstand the acute infections? Their number can alone be appreciated by the pediatricist who receives them after they have passed the gamut of patent foods and through the hands of many physicians. As a makeshift, as a temporary food while on a journey or when cow's milk can not be obtained, these foods are of service. As a permanent infant food they are a delusion and a snare.

[FOR THE DISCUSSION ON THIS SYMPOSIUM ON MILK FEEDING, SEE PAGE 641.]

**Fever in Tuberculosis.**—L. Sexton, New Orleans, states that fever in tuberculosis produced by exercise or exertion does not occur immediately, but follows in about five or six hours, the same as from a tuberculin reaction.



## THE ALCOHOL QUESTION IN THE NAVY.

WITH SUGGESTIONS AS TO ITS RESTRICTION.\*

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The remarks I shall make to you will be mainly confined to the problem as it affects the personnel of the Navy. After a service of over thirty years in all parts of the world, under the varying conditions of peace and war, I am convinced that the use of spirituous drinks should be discouraged and limited as far as possible, and yet I recognize that laws to prohibit their sale *in toto* can not be enforced and, as a rule, have proved of doubtful value. During my naval service the necessity for temperance has increased very greatly. As the huge floating machines of war have grown in force, they require more intelligent and skillful handling to keep them effective. There is no place on a man-of-war for one whose brains are dulled and whose hands are tremulous from drinking. Even those filling very subordinate positions may readily hazard the safety of the ship and the lives of the crew by thoughtlessly leaving a valve open or an uncovered light near explosives.

It is difficult to ascertain the amount of intemperance in the navy, but I have thought that the admissions to the sick list for "alcoholism" would be as correct an index as is available. In the United States Navy in the last three years there were 753 cases of alcoholism or 251 a year for an average force of 36,347 men, and during this period there have been 13 deaths from this cause. The admissions have been nearly 7 for 1,000 men (6.9).

I have taken for comparison the English and the German navies, as their reports are fuller and the personnel is essentially of the same race as our Navy.

In the German Navy, with an average force of 31,000 men, there were in 3½ years sixteen cases of alcoholism admitted to the sick list, less than 5 a year.

In the English Navy in the last three years there were 251 admissions for alcoholism, an average of 84 a year, and the average strength of the navy was 104,000 men.

The ratio of admissions in the three navies is:

United States Navy.....	6.95	per 1,000 men.
English Navy .....	.77	per 1,000 men.
German Navy .....	.14	per 1,000 men.

There are nearly ten times as many admissions for alcoholism in the United States Navy as in the English Navy, and nearly 50 times as many as in the German Navy. Our Navy makes a very poor showing in comparison with those of England and Germany. But the admissions for alcoholism indicate only partially the amount of sickness due to drinking, and very imperfectly the amount of drinking. Only those cases appear in the medical reports which require treatment for several days. This is shown by the fact that the 260 cases treated in 1904 account for 1,345 sick days, or, in other words, the average patient was ill for a little over five days. The majority of the cases of drunkenness do not appear on the medical reports and are not seen by the medical officers. Intoxication in the sailor is looked on as a pardonable offense, and if he is quiet and orderly he is allowed to go forward and sleep off the effects of his carouse. If noisy and troublesome, he is placed under charge of a sentry and when he is again sober he is released and returns to duty. It is only in the exceptional cases when after the lapse of 12 or 24 hours he remains

unfit for duty that the medical officer sees him. Injuries received while drunk and diseases contracted from carelessness while intoxicated appear under their appropriate headings and not under alcoholism.

We see that from the medical records alone we can form but an imperfect estimate of the amount of intemperance in the Navy. It is very difficult to estimate even approximately the number of men who return from liberty unfit for duty from drinking, and on asking an old medical officer what his opinion was he placed his estimate at about 2 per cent. of those going on leave. This, I believe, is very conservative and well inside of the actual number.

Beside the phases of the alcohol question which I have spoken of, there is another which is of the greatest importance for the health of the sailor and the efficiency of the Navy. This is the very close connection between alcohol and venereal disease. It is difficult for a person living on land to realize the very great importance of venereal diseases in the Navy—where over 25 per cent. of the whole time lost through sickness and injury is due to venereal affections. Very many of these diseases are contracted when the sailor is heated by alcohol and commits excesses he would not if sober. Again, it is well recognized that the drinking man is more liable to contract other diseases than the temperate man; this is particularly true of the various tropical diseases to which the sailor is more exposed than other men and probably true, also, of pneumonia and tuberculosis. We can not fail to realize the very great importance of the drinking habit and how through injuring a man both mentally and physically it renders him a less valuable servant to the government. Before we consider the means for restraining this habit and diminishing the evils resulting from it, I think we should try to ascertain why drinking is so general in our Navy and why it is apparently so much more prevalent among our sailors than it is among the men in the English and German navies. I believe that the American people are quite as temperate as the English and German, but the same is not true of our sailors. There are several reasons why the sailor is more liable to indulge in the use of stimulants than his fellow who lives on land.

A young man—for the large majority of sailors are young men—when he goes on board a man-of-war, finds that, while he is subjected to many new restrictions, he is, also, freed from many of the restraints which surrounded him on land. He finds himself in an atmosphere where drinking is popular and where occasional drunkenness is regarded with indulgence. He sees that the majority of his associates drink, and that most of the officers take their daily beer if nothing stronger. He may hear the chaplain and a few others advocate total abstinence, but the practice of the majority weighs down the precept of the few. He sees, too, that the ordinary lapses from temperance are not severely punished and that the temperate man is not rewarded or preferred. When he goes ashore in a foreign port, and also in many of our own, what are the places which welcome him? In many places the only houses where he is received hospitably and where he is treated as the equal of any man is the saloon. And the saloon is only too common. Visit any of our navy yards and see what are the buildings which cluster around the entrance or line the opposite side of the street. Again, visit one of our largest seaports and go along the water front, the famous Barbary coast, and what are the shops that outnumber all the others? The saloons, some fairly respectable but too

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



often low dives, in which whoever enters after nightfall truly leaves hope behind.

The water fronts of most ports are much the same whether in Asia or America, lined with saloons which live off the sailor, where the rapacious man and lowest harlots join efforts to allure and fleece the man perhaps now ashore for the first time in months. In these places he is fortunate if he loses only his money and does not carry back to his ship disease which may last him for years.

But the leading motives which lead the young sailor to drink are those of good fellowship and the example of the older men. When after a stay on board of a ship lasting very likely several weeks he steps ashore with a party of his shipmates in Manila, Nagasaki, or any other foreign port, there is always some one who will propose a drink and perhaps take the party to an old acquaintance who receives the boys only too cordially, and round after round of drinks follow in quick succession. The young man can not be much blamed for staying with his mates, for if he left them he would be looked on as churlish and very probably become the object of their witticisms. Then, too, a person landing for the first time in a strange place does not know where to go. If he falls into the hands of a resident touter who is only too ready to make friends with him and show him the town, he will probably fare worse than if he had stayed with his mates who would look out for him and, at all events, see that he got safely back to his ship.

From all these motives the young sailor only too soon acquires a taste for drink, and he is fortunate if he does not become addicted to whisky and other spirits. The worst fate which can befall him is to fall a victim to the cheap native spirits such as the vino of the Philippines, whose use is more dangerous than opium.

There remains for our inquiry the question why alcoholism, and presumably the drink habit, is so much more frequent in the United States Navy than it is in the British or the German. As I mentioned a short while ago, there are nearly ten times as many admissions per 1,000 men for alcoholism in our service as in the English Navy and nearly fifty times as many as in the German Navy. The United States Navy, too, is the only one of the three navies where there is a total prohibition of all alcoholic beverages. In the English Navy a ration of rum is issued every day, and in the German Navy, while there is no regular issue of spirits, the sailors are allowed to buy beer from the canteen.

During the Civil War the grog ration was abolished by act of Congress and there has been none issued for over 40 years. During the ten years between 1890 and 1899 the sailor was, on some ships, allowed to buy beer from the bumboat, but this privilege was abolished and for six or seven years the sailor has not been allowed to have any stimulants. We may say that for the greater part of forty years the United States Navy has lived under laws of total prohibition which are better enforced than such laws generally are, for there are no convenient drug stores where bitters containing a large percentage of alcohol can be bought, nor fruit stands where soft drinks are sold which can hardly be distinguished from lager, and where there is cider which has been fortified to preserve it.

It seems strange that the only one of the three navies where prohibitory laws have been in force for over a generation is the very one where alcoholism is most common, but I believe that prohibition, instead of favoring the cause of temperance, injures it. Not on board ship

alone, but on land also, prohibitory laws are often poor agents in securing temperance. I never could see that sailors were more temperate in the ports of Maine than in New York, and quite as many returned from liberty who had evidently been indulging in stimulants. The majority of young men who go to sea drink more or less, and I think that the number of total abstainers is very small. It is difficult to ascertain the figures accurately, but I remember several occasions, as Christmas and Fourth of July, when the men were allowed to have beer with their dinner, and there were very few who refused it. The majority of the men who drink prefer beer, a much smaller number drink whisky and a small percentage drink to excess. And in coming to a consideration of the means by which we can limit the evils of drinking I wish to emphasize that we are considering the problem as it affects men who very generally drink, mostly in moderation.

In studying the means we can employ to diminish the evils resulting from alcohol I would place much reliance on the education of the sailor. He should be shown that the use of alcohol is injurious both mentally and physically, and that even a small amount of spirit, when taken regularly, will eventually injure his health, render him more liable to disease, and almost certainly shorten his days, and this, too, when the quantity taken is too small to cause intoxication. The steady drinker who takes a few drinks of spirit every day is more certain to suffer from it in the long run than the man who gets intoxicated once in two or three months, as the old-time sailors did. I believe he should be taught the great difference in the effects caused by spirits produced through distillation and those from the light wines and malt liquors where the alcohol is produced by natural processes of fermentation. In wine-growing countries there is little drunkenness and few of the diseased conditions so often caused by spirit drinking. The Italians are a striking example of a hard working people who habitually drink wine and rarely become intoxicated. In California, where I have lived for several years, they are very industrious and successful and they all drink claret freely.

I believe that we should labor earnestly in the navy to elevate the prevailing opinion on the question of temperance. This feeling is much feebler than it should be. We all admit that temperance is desirable, but we do not reward it practically. We look with altogether too much leniency on overindulgence in stimulants. Provided a drinking man is quiet and does not commit any overt act, his weakness is overlooked or he is so lightly punished that he feels he has been guilty of a very pardonable offense.

When any one on a ship is unfit for duty, if only for a few hours, from the effects of drink, he should at once be made to feel that he is a man who can not be trusted, and that the man who is always fit for duty will be preferred over him. It should be clearly understood that the rewards are for the temperate alone, and that he who lapses even rarely, must be contented with a subordinate position. This is only justice for the temperate man and for the government, too, for in a responsible position no amount of brilliancy can palliate or counterbalance a possible unfitness for duty when caused by alcohol.

Beside promotion and consequent increase in pay there should be other privileges, as more frequent and extended leave, given to the man who is always ready for duty and has proved himself worthy of trust. When this is once clearly understood in the Navy I believe that there will



be a powerful incentive to temperance, that public sentiment will be strongly influenced for the better, and it is really on this sentiment that we must rely more than on any other one agent. If we can make it the fashion in the Navy to be temperate, whether this comes from moral conviction or from self-interest, we shall have gained much of the battle.

As another means of lessening the evils of spirit drinking and encouraging true temperance in the Navy, I think we should consider the advisability of allowing, under proper restrictions and supervision, the sale of malt liquors and light wines at the canteens on board ship and at navy yards. The subordinate officers on a ship, the warrant officers, machinists, gunners, electricians, and others, are men of intelligence and education. Under the direction of the commissioned officers they are entrusted with the performance of the most important duties on the ship. They are intelligent, self-respecting men, who behave themselves as well as, if not better, than the average citizen on land, and they are not allowed to have any light wine and beer. I believe that these men who have shown themselves fit for the most important positions on the ship, might be safely allowed a glass of beer or claret.

Life on a modern man-of-war is arduous and trying and there are scarcely any means of diversion. I have been on ships where even card-playing was forbidden. It is absolutely necessary for a man living under these conditions to have recreation and amusement when off duty. When he goes ashore at a navy yard there is no place where he can pass an hour or two pleasantly and innocently. As soon as he passes through the gates he sees only too many places inviting him to enter. These places, with few exceptions, are poor saloons frequented by the lowest of both sexes who gain their livelihood by corrupting the sailor. The quality of the stimulants sold is very poor and often drugged. To reach another part of the town he has to run the gauntlet of many such places. I have known of men going on liberty who have never got a hundred yards away from the gate and who have returned without a cent. There is now on our men-of-war a store or canteen where some articles commonly used by sailors can be bought. Paper, soap, and in some cases candy and delicacies in the way of food are sold at a small advance above wholesale prices. This store resembles somewhat the canteen at army posts, but the stock is more limited and should be much increased. In foreign navies, particularly the English and German, the canteens offer a large variety of articles of food, and in the German navy malt liquors are freely sold.

I think that the store on our naval vessels should be conducted on as liberal rules, and I believe that articles of food, soft drinks and malt liquors should be kept for sale. Beer should be sold under suitable regulations as to hours of sale and the quantity that each person can buy. A glass of beer at dinner and supper and at night when the day's work is over could be allowed with advantage. The firemen, electricians and others coming off an arduous watch might be allowed the same privilege. I remember that on the cruise of the Oregon around from San Francisco, Captain Clark every day at his own expense furnished the firemen coming off the afternoon watch with a drink of spirits. It encouraged the men, did good, and I was very glad that I could recommend it as a beneficial measure. On long voyages, which now rarely occur, the lack of space might not permit much beer to be carried, but in port, where supplies can be obtained daily, there would be no trouble on this score.

In every navy yard there should be a club-house where men could go for an hour or two, play billiards, cards, or other games, and have their beer and tobacco. The profits of the club, which can not be large, for everything should be sold at a small advance above cost, can well be devoted to pay for music and other entertainments. Clubs have become a necessity for those who live on land and are certainly equally desirable for those living on a ship, where the average man has scarcely room to sit down and write a letter or play a game of checkers, and where he has to be in bed at nine.

In foreign navies at all their naval stations at home and abroad such club-houses are generally found and serve a very useful purpose.

I was convinced of the need of such a club-house during a recent tour of duty at Cavite. There are always several ships in port and sailors varying in number from six or eight hundred to two or three thousand. When men come ashore on leave there were but two respectable places open to them, the post exchange of the marine corps and the Young Men's Christian Association, both excellent institutions, but limited in capacity and, of course, furnishing only soft drinks. There were saloons in abundance so located that the sailor could hardly pass them by without being tempted to enter, and when a man was ashore for a few hours there was really no other place for him to go. If Cavite had been an English or German naval station, instead of an American, there would have been a canteen where a man could have got his glass of beer at about one-half the price charged in the saloons, and under much better surroundings.

I believe that the evils from drinking can be materially lessened by improving the character of the public places where liquor is sold. I know that it is the belief of many of our people that a place where liquor is sold is necessarily bad and should be abolished. I can not agree with this belief and I think the beer gardens and similar resorts which every year are becoming more common in our larger towns are a benefit to a very large class. For the dwellers in the narrow quarters of a crowded tenement house or flat it is a great boon to have a cool, brightly lighted garden or hall with music where a family can pass the evening at no greater cost than the price of a few glasses of beer. These resorts have been introduced by our fellow-countrymen of German origin. In their native country these gardens are universal and I think no one can regard the Germans as an intemperate people or one whose manhood and intelligence has been sapped by the use of liquor.

While these resorts have their evil side, it is small in comparison with that inseparably connected with the low groggery which is so common in our larger towns. The larger the saloon the better conducted it will be. The owner will have too much at stake to permit disorderly conduct, and will not allow it to become the resort of thieves and pimps. He can, also, supply a better quality of drink and food and can offer such attractions as music which the smaller place can not afford. I believe that the number of drinking places should be very much reduced and that the character of those left would naturally be much higher.

All that I have said about the benefit of a well-managed resort for the town dweller applies with still greater force in the case of the sailor. There is no tenement house where the occupants are so crowded as in a battleship, and none where is so little light and air. It is absolutely necessary for the mental and physical health of the sailor that he have an opportunity for recreation



which he can not get on a ship and which are not supplied to him by the existing sailors' homes, excellent as they are.

In conclusion I would say that in our Navy, after a trial of prohibition for over forty years, we still have a personnel which very generally uses stimulants. In spite of the persistent efforts of sincere workers the number of total abstainers is comparatively small, the general sentiment in favor of temperance is very lukewarm, and the feeling toward intemperance is indulgent. And judging from the medical reports alcoholism is much more prevalent in our Navy where prohibition is the law than it is in foreign services where the milder stimulants are permitted.

### THE ARMY CANTEEN AS A MEANS OF REDUCING INTemperance.\*

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Nearly everything which has been published on the subject of the army canteen has been written by strong opponents or advocates. The inevitable consequence of such partisan discussion is that people who have little knowledge of the matter and less interest in it have not had access to any judicial summing up of the good and evil, so that their judgment has been biased by the tenor of the particular literature which has fallen into their hands. What is far worse, the subject has become a political one, so that it is now practically impossible to discuss it without being suspected of partisanship, bias or worse.

Having been an advocate of the canteen for twenty years, I, therefore, must necessarily condemn my own paper in advance, for I can not ignore my long experience, and must remain a partisan. I can nevertheless bespeak a respectful hearing from opponents by stating that there is a common ground on which we all can stand—and that is the one undoubted fact that the beer feature of the canteen is an evil thing. No army officer desires to be a beer seller, and yet he must be if he managed the old canteen. It is doubly repugnant to all of us to see the government engaged in this traffic.

In addition to this, we all know that drunkenness is an evil which has affected mankind for many ages, and its harm, though yearly diminishing, is yet so stupendous that every sensible person wishes it entirely eliminated. Army officers are human, after all, possessed of the ordinary attributes of human beings, and are as vitally interested in the elimination of drunkenness as every other class of good citizens. A few opponents of the canteen have very unwisely accused army officers of desiring to increase drunkenness—an inhuman charge which is difficult to explain. On this common ground we stand unfortunately, back to back, looking in different directions. If we could only induce ourselves to turn around and look at the scene on which the other side had riveted its eyes perhaps we might come to a fair agreement. Every shield has two sides, as the fabled knights found to their sorrow.

In the first place, there is one popular misconception which stands greatly in the way of mutual understanding, and that is the prevalent idea that a soldier is necessarily an immoderate drinker—a being different from the

usual run of humanity and requiring extraordinary restraints and safeguards. This idea is an inheritance from the time when every man, in or out of the Army, drank to excess—a time when even the clergy considered it improper for a gentleman to go to bed sober. The civilian population has been so engrossed with the remarkable change in its own drinking habits that it has failed to note that the Army, being yearly recruited from civilians, has undergone the same change. It is no doubt true that a large proportion of civilian young men still drink alcoholic beverages, yet the proportion of abstainers is gradually increasing decade to decade as the result of the necessities of civilization. There are now many kinds of labor which can not be performed except by abstainers with clear heads never befuddled with liquor. By the ordinary laws of natural selection the drinkers are being weeded out, and in time the race must be very largely temperate or perhaps abstainers. Otherwise our complex civilization could not continue. Lives are in jeopardy many times every day, and should an engineer, pilot or motorman be drunk or even slightly influenced by liquor, we might be destroyed. Consequently populations are becoming more sober every generation. One has only to read the accounts of the drinking of past ages and even of a century ago to be convinced of the remarkable advance we have made. I have scant sympathy for those "muck-rakers" who see only the remaining drunkenness and can not realize the present rapid evolution toward universal temperance, with its marked number of abstainers.

Now these laws are operative in the Army too. Perhaps as large a number of soldiers drink alcoholic liquors moderately as among the same class in civil life, though I sometimes doubt even that. The number of abstainers is surely as high, and the number who never do get drunk is very gratifying. Soldiers are normal average men in perfect health, few being neurotics, and there is then no nervous basis for drunkenness. It can safely be asserted that inebriety is a result of some peculiar condition of the nervous system. It is a symptom of a disease and not a mere habit. It shows itself before 30 years of age and generally before 20. Drunkards always present other evidences of nervous defects or even disease. It stands to reason, then, that there should be less tendency in the Army that out of it—and that is a fact. I defy any one present to show me a mixed body of 1,000 laboring men and mechanics in any part of this country who show less drunkenness than in 1,000 soldiers of our Army. All statements to the effect that soldiers are more drunken than civilians are products of an uninformed imagination.

In the next place soldiering is quickly joining the ranks of those professions which demand sobriety. There are a host of reasons why the Japanese defeated the Russians. Among them is one which has not escaped serious attention from the civilized world—and that one is the drunkenness of the Russian and the sobriety of the Jap. For a long time now we have adopted the plan of getting rid of the young soldier who shows a tendency toward excessive drinking. He generally eliminates himself, to be sure, by court-martial, for offences growing out of drinking, but the officers now show a gratifying desire to eliminate the drunkard whether he commits himself in other ways or not. As a pure matter of selection, then, the Army is more sober than the civilian population from which it is drawn. It is high time that we resent the accusations so recklessly made by those who do not know the facts. They forget that one

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



drunken soldier in uniform creates more comment than ten civilians guzzling in a near-by saloon, and it is very human to believe that every one in uniform acts the same. As for the officers, it has long been the will of the people that an officer found drunk on duty shall be dismissed as too dangerous to be trusted with great responsibility. But we have gone a step further, for we have recognized that an officer is really on duty at all times, in that he is liable to be called on in an emergency at any hour of the day or night. It would be dreadful if any of a defending party in a fort were drunk at the critical time. Consequently, officers who occasionally get drunk are not as fit for the services as the abstainers. The heavy drinkers may occasionally be men of tremendous ability, and, no matter how much we may have depended on them fifty years ago, we are learning that in the long run sobriety counts.

Finally, we are finding that many years of drinking bring on the inevitable dementia in which the victim acts like a mere automaton who can not be depended on, because his brain cells have atrophied. The policy now growing up is the fruit of a very bitter experience with these degenerates. They ruin discipline, destroy regiments and create anarchy when the strongest government is needed. Their moral sense has been destroyed, of course, so that they are unable to see the gravity of the misconduct of others. Grave crimes are not only excused, but honorable effort to improve matters are bitterly resented to the point of preferring false charges, denying facts and abusing their authority. Such regiments have a low moral tone which sometimes sticks to them for many years, causes the best men to avoid service with it, and leads its officers to do things which show they have been morally injured. Drunkards thus set a low standard, so that it can be accepted as a fact that in regiments long under the command of inebriates the decent element is suppressed and the very worst cluster around the drunken colonel. The better people of the surrounding civil community withdraw from intercourse, and the young officer, fresh from home, finds himself thrust into a lower social layer to his own injury. In addition, the example of the authorities over him not only teaches him deplorable habits, but gives him the impression that dishonorable and degrading conduct is expected of an officer and gentleman. Young officers trained in such an environment can not avoid some injury, and a few of them become too dangerous to be trusted with future responsibilities requiring a high standard of morality and honor.

As a matter of public necessity and military efficiency, then, the drunkards must be eliminated. They are dead wood, often retained because of past services of inestimable value to the nation, but, as a rule, they are quietly shelved as in civil life, on account of their lost moral sense. The nation is waking up to the fact that when it employs men to do brain work they must possess the brains to work with, and that when the brain atrophies the officer is demented. In one case of this kind I have seen the medical officer's diagnosis impudently denied by some ignorant laymen who wished the dement to be retained in service for their own selfish ends, but the general policy is to rid the Army of all the victims of alcohol and also eject the men who think that drunkards are desirable in command of Army posts.

These are the facts which show that the best officers are vitally interested in the reduction or total elimination of alcoholism. It is strange that any one in his senses should accuse them of the inhuman desire to in-

crease drunkenness, and yet men, otherwise possessed of sense, do make the assertion. We will later discuss the great problem as to whether moderate drinking is harmless. Doctors, scientists, clergymen and laymen are all divided in opinion and each side has much data on which to base a good conclusion. We must first give attention to a topic on which all agree, and that is the one great fact that drunkenness must be eliminated from civilization in the quickest and easiest way.

In the solution of this great problem there is an unhappy division of opinion as to the means to be employed, and it is much to be feared that the views now held can not be reconciled. The workers for temperance divide naturally into two great classes—the idealists, who wish to accomplish the reform at once and who will not compromise with vice, and the practical reformers, who think that the desired end can be obtained by slow degrees only and that we must be content with small gains each generation in the manner which Nature devises in all her great works. Both sets of temperance workers are necessary, the one fixes an ideal toward which the others must direct their energies. The practical men point out the respective steps leading to the ideal. Each school is necessary to the other. The unaided idealists always fail, for their measures are impractical, and the others fail unless they have behind them the firm public opinion aroused by the idealists. Temperance workers outside of the Army are mostly interested in the ideal and have no concern with the practical affairs of police duties. Those in the Army have a sacred trust confided to them by the people—the welfare of the soldier individually and collectively. Whether we like it or not, we are forced by our daily work to join the ranks of those who are trying to minimize that which can not be eliminated for many generations. We would like to put an end to drunkenness among soldiers at once, but we can not; we have hit on a plan of diminishing it, and our opinions at least deserve a hearing. It is not a theory, but a very real condition which confronts us in the Army, and a sad one at that. Men are not perfect and never will be. The ideal in armies can never be obtained, but we must strive after it. I am wholly convinced that the Army owes all its advance to the crusade of the great temperance idealists, but it would have accomplished nothing without practical measures, so let us not stand back to back, but hand in hand and look at the following facts and work together:

Immediately outside of Army posts are collections of small houses and shanties used as saloons and worse. The proprietors lure young soldiers into these dens and exert all their arts to sell whisky. It is a money-making business, no matter what damage is done. It was such a blot on our civilization that many years ago steps were taken to provide means of weaning the soldiers from their tempters. It is found as a matter of experience that reading and amusement rooms do not attract them. At one post I have in mind there is the finest kind of a gymnasium and yet scarcely 5 per cent. of the soldiers enter it voluntarily. They all dislike reading as much as laborers everywhere. They do like to sit at a table with a little beer and growl over their hardships. I do not know what man would do if he did not have opportunities to complain now and then of his hard luck.

In view of the difference of opinion as to the harmfulness of this matter our opponents should be generous enough to concede the point, but I will meet them more than half way and say that it is harmful to place beer where young men can get it easily. What we contend is



this, the canteen system drove out a far greater evil—the low dives around Army posts. It made a remarkable reduction in drunkenness after 1890, when the system became established, as shown in the table of admissions to sick report for alcoholism. The statistics are backed up by reports from every source, certifying to the great reduction of cases of alcoholism admitted to sick report.<sup>1</sup> Add to this the consequent reduction of the number of courts-martial, of cases of venereal disease and the general increase of morality, we have proved conclusively that the beer feature of the canteen was an instrument for the reduction of drunkenness.

Now, what is the objection which overwhelmed this practical temperance reform and caused us to revert to the old conditions? Under the persuasion of the W. C. T. U., Congress was induced to forbid the sale of beer and wine in the canteen, the old rum shops sprang up like mushrooms, drunkenness immediately increased and there is no way we can combat the present evil. It is useless to supply reading rooms to men who won't read—we have tried it. We have tried amusement rooms and gymnasia, too. The saloon is an attraction we can not overcome.

The chief objection was, of course, the ethical one, that beer should not be sold on government reservations, but is that a sufficient reason for increasing the drunkenness outside the gate?

Principles are all right to live up to, but must be modified as soon as we find that they do evil. In no way we look at the matter is it justifiable to continue the old objection—laudable though it may seem to a superficial view.

The beer feature of the canteen might be described as fighting the devil with fire—a good doctrine, by the way, in the minds of many, if not most, devout Christians. Nevertheless, it can be denied that it is fighting with fire, for, though we acknowledge that it was a minor evil replacing a greater one, there are many honest men who do not see evil in it at all except as below mentioned.

When the canteens were in full blast we were frequently regaled in the daily press, with accounts of debauchery. It should not be necessary to deny this. After pay-day, it is a pretty noisy place, but young men are not happy unless they are making a noise. Occasionally a man will take too much—a matter which we try to prevent. It would be wrong to conceal this fact, for this is an honest effort to present the evil as well as the good.

Now let us ask ourselves, if there is any danger in the small amounts of beer and wine usually consumed by the average man. Literature is crowded with descriptions of experiments in which large quantities of alcohol are used. The evidence, of course, is all on one side. Yet there is astonishingly little as to the effects of minute quantities and opinions as before stated are at wide variance. There is, indeed, a growing mass of evidence, that all carbohydrates are first oxidized into alcohol before any cell—animal or vegetable—can utilize them as foods for energy. That is, the main energy food of the living world is alcohol manufactured by the enzymes produced by the cells themselves. The long discussion as to whether or not alcohol is a food is settled, though it will not be acknowledged as settled for another fifty years. Of course, we must allow nature to produce alcohol in our bodies in her own way. So we stand on very firm ground in the opinion that the alcohol introduced into the stomach is an unnatural way of taking it into the

cells, and can safely be omitted. That is far different from saying that it is a harmful way in moderation. Indeed, the use of a small amount may actually relieve the tissues of the work of preparing it and may tend to survival. This is the manner in which we became dependent on starch in the place of cellulose. Likewise we once used raw starch, but the weaklings who used cooked starch had the advantage and survived in greater numbers, so that we are dependent on it now. Likewise we are undergoing a still further evolution. Starches are manufactured into sugar in our bodies, so that if we eat a little sugar we save the organism that much trouble. There is a natural selection of types able to do this, and the natural result is that mankind is already partly dependent on sugar manufactured outside our bodies. Human evolution is going on all the time—it is not ended, as a few men assert. A tremendous selection is now going on in many directions. It is quite possible that future man may be dependent on both sugar and alcohol in moderation. This, too, is far from saying that we are dependent on them now or ever will need large amounts to the total exclusion of cooked starch.

The use of beer in the canteen can not then be attacked on the scientific plea that it is harmful or useless. We must attack it on ethical grounds. It is acknowledged that it is bad ethics to allow a young person to use alcohol. At present we must keep it from them until full maturity if we can. Young soldiers are the very ones we would like to guard if we could, and if we can not do so absolutely, we must be allowed to do the best we can. We must protect them from the grog shops around Army posts and the canteen has proved itself able to do this with a minimum of harm. It is, therefore, good ethics.

In addition to all this, the profits from the sale of beer belong to the soldier himself, instead of the saloon-keeper. They are used to improve his table fare. It is currently believed that the ration is sufficient, and so it is in a sense, but it is very plain, simple and unvaried. The soldier, like every other human being, needs an occasional change, a little feast now and then. He hungers for it, and spends a great deal of his pay for extra food in every army in the world. Restaurants or sutler's stores are a necessary adjunct to armies and follow them even into battle. They sell some harmful things, and it is our desire to reduce this harm by increasing the attractiveness of the table. There is a growing opinion that the company should have a few cents daily per man for this one purpose of buying extras whenever possible, depending on the commissary for the staples. We could do this fairly well when we had large canteen profits and big gardens, but now we can not. We keenly feel the deprivation. The breaking-up of the canteen has actually interfered with feeding the soldier, and has caused him unnecessary expense. For those who are not acquainted with this matter, I may explain that the canteen is a co-operative store, whose profits are divided up among the companies and spent for the soldiers' food and amusement. It is always managed by an officer in their interests.

The sooner it is restored the better, and it is hoped that our opponents who are engaged like ourselves in the crusade for temperance, will join us in re-establishing this practical instrument for good. It is a step toward temperance. I do not quote authorities or reports because they are practically all of one tenor, that the abolition of the beer feature of the canteen was a disaster. The opponents are the rare exceptions. Surely the pub-

1. Dr. Geo. W. Kober, *American Medicine*, Dec. 5, 1903, and reports of the Surgeon General and Secretary of War.



lie should credit these experts with unbiased knowledge of the facts at first hand. It is a notorious fact that the establishment of the canteen was violently opposed by very many officers, but as soon as it proved its usefulness, the opposition disappeared. Surely such men should not be accused of ignorance of the matter, and least of all, of viciousness. I am quite sure that every one who investigates the matter impartially will advocate the old system which proved to be so efficient and which is now desired by practically all officers, by both the abstainers and those who use alcohol themselves.

### MEDICAL CARE OF INEBRIATES.\*

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Inebriates rarely ever appeal to physicians for help, unless intoxicated, or in the remorseful period, when recovering from the toxic effects. The moderate drinker never considers the need of medical help. The periodic drinker may seek advice on the eve of an outbreak, but never after, until the storm is over, and he is suffering from the effects of the excess.

The friends of patients frequently ask physicians about these conditions, and sometimes bring the patient with them, who is always skeptical of the need of help. As a rule, physicians look on inebriety as a moral condition of half vice, with mental indolence and feeble will.

The first impression is to alarm the patient and to try to impress on him a fear and horror of his condition, and in this way to rouse up an antagonism to the drink impulse, or the quack method may be tried, of drugging the liquor, causing it to produce nausea and mental disgust for its taste and effects.

The quack depends on chemical restraint and the unpleasant effects from the use of spirits either by being drugged or by medicines taken immediately before or after its use, sustaining the statements that spirits are poisonous and dangerous.

There is a form of suggestion by which new thought is impressed on the mind so powerfully as to overcome the morbid impulse for drink in the future. While this is possible in a certain number of cases, it depends on so many complex conditions that its reality is very uncertain.

The patient who is impressed with the statement that alcohol is poisonous and can not be taken in the future without most revulsive effects discovers that this is a delusion, and his skepticism of relief increases, hence the last state is worse than the first.

One fact should always be considered, that the drink craze or symptom dies out from some unknown constitutional change in the organism, but when this will occur is unknown. A great many instances of reported cures from drugs or mental and moral means are simply constitutional changes, and in no way connected with the use of these means.

The treatment given in institutions or in private practice should have this one object prominent, namely, to remove the exciting causes and restore the nutrition and integrity of the organism, and in this way to promote a tendency toward a constitutional change in which the drink craze disappears.

As an office patient the inebriate should be given very

exact instructions concerning the use of drugs and his conduct and surroundings. If the case is a periodic, great attention should be paid to the premonitory symptoms, and apomorphia should be given with circumspection and exactness as to time and place. Where the nutrition is greatly disturbed, phosphate of sodium combined with daily baths has a particularly valuable effect.

States of poisoning and starvation should always be recognized and considered in the treatment. Poisons introduced from without and poisons formed within are present in all cases. Low resisting pain-centers with defective nutrition, causing starvation and feeble organic activities, are also present universally. The heart is defective in action and the circulation of the blood is impaired in rhythm and uniformity. As a result there are almost innumerable signs of functional disturbances and vasomotor palsies, defective co-ordination, with faulty judgment and lowered conceptions of right and wrong.

Evidently, from this, moral treatment can have little or no effect. Each case presents a problem for itself. A certain proportion of all inebriates, particularly in the early stages, can be treated at home successfully, but each one should be made the subject of frequent visits, study and examination. Psychic treatment is of equal value with the physical. Exact duties and obligations should be put on the patient every day, and the mind should never be allowed to consider these measures of small interest. The more chronic cases should go under hospital care, where the surroundings with enforced brain and nerve rest could be made exact and continuous for a time.

The inebriate does not need diversion or change like the neurasthenic; he requires nerve rest, removal of all exciting causes and eliminative measures to correct the waste of the body. The subsidence of the drink craze is not the cure, but only a small beginning.

Most radical changes in the nutrition of conditions provoking brain strain and tension are essential. The removal of the exciting causes followed by nerve rest will enable the system to restore exhausted nerve centers and improve the metabolism of digestion. It is from steady, persistent effort to give brain and cell rest that the exhaustive conditions and psychic pain which calls for relief and finds it in alcohol and drugs can be removed. The alcoholic impulse is a sign of central nerve exhaustion and derangement and irritability of the pain centers and an unconscious call for help.

There is no doubt, in all persons who have used alcohol, a nerve tension and degree of irritation which can only be concealed or covered up by spirits and drugs. It would be apparent from this that the means of treatment must embrace a very wide range of measures that will restore the lost balance of the organism. Very interesting questions occur in every case as to the best means of giving relief and neutralizing the toxic states. The psychic treatment alone covers a very wide field, including climate, occupation, excitement, nerve rest and exhaustion.

In the physical treatment, a still wider range of means and measures suggest themselves, particularly of means to remove the exciting causes and to determine how far the brain has become deranged and the organism perverted below the health limits.

Removal of the poisons is another therapeutic measure that requires a great variety of appliances, particularly baths and measures to stimulate the elimination. Perhaps no remedies have a wider application in the treatment of inebriety than baths, vibration and massage.

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



In my experience the radiant light bath is the most powerful eliminative and restorer of the circulation of the blood to the surface. The vasomotor paralysis so common in all these cases is more thoroughly antagonized by electric light applied to the surface than by any other means known. To relieve brain tension and reduce states of excitement, atropia, combined with strychnin or lupulin, is an equally valuable combination for a large number of these cases. Bitter tonics have a great power in many cases of overcoming the derangement of nerve centers and neutralizing its functional explosions of energy.

The drink paroxysms are often prevented by these bitter tonics of which large doses of the infusion of quassia is the most valuable. The question of using these drugs with the needle is often a very serious one and involves the consideration of a great many conditions.

Questions of occupation and surroundings are equally important and essential in the treatment. As a rule, most patients should begin the treatment at home, under the care of the family physician, and if this does not produce good results it should be followed by institutional treatment, and when this terminates he may go back to the family physician and home treatment.

The inebriate is not curable by institutional treatment alone; he should be under medical care for a very long period, not to take drugs continuously, but to have the advice and counsel of the family physician.

He is practically in a more serious condition than the syphilitic. States of poisoning and exhaustion may occur at any time, unknown to him, that will again bring on the drink impulse, and unless he is in touch with his family physician escape is difficult. No physician should ever minimize the gravity of the condition of an inebriate, but should make him understand the serious disability and degeneration from this source. He is to be regarded not always as a chronic drinker, dying from delirium tremens, or premature old age, but as one who is constantly destroying his vitality and weakening the resisting powers of Nature, inviting pneumonia, or acute inflammatory diseases of any kind, and furnishing a favorable soil for the development and growth of germ diseases. He should be made to realize that the ordinary strains and drains of life and the shocks and traumatism are made more fatal, and that he is feebler and has lower vitality than the normal man.

There is very little danger of the physician becoming an alarmist and giving an extravagant prognosis of the danger in persons who have used alcohol to intoxication and who are practically inebriates. On the other hand, a pessimistic view of the incurability of such persons is not warranted. Clinical experience and rational study both in institutions and in private practice indicate the curability of inebriety and the degree of the permanency is proportional to the accuracy of the study and the application of exact means. The great fault of the present is that the rational therapeutics of means and measures of treatment are in a very infantile stage. The moral treatment and the quack treatment predominate everything, and the rationalist, who would study and apply exact measures, is not looked on with favor. As office patients the inebriates are regarded with disgust by the physician. The seriousness of the inebriate's condition is unrecognized, as when suffering from coma and delirium, the physician treats him as responsible for this condition and deserving of suffering, which might possibly restrain him in the future, and when delirious and delusional on the street he is considered the proper subject for the policeman. His credulity in accepting the

statements of quacks and attempting through their extravagant claims to escape still further increases the disgust of the physician, and yet in all this there is a field of practice which should be occupied by the regular profession everywhere.

Inebriety is a modern disease in one sense, and in another it is a very old one, but the conditions which it presents in our modern life demand study and treatment as much as typhoid fever or any other well-marked disease. There is no theory about the degeneration of an inebriate, there should be no sentiment in his medical study and care. The same causes and the same effects exist here as elsewhere. We have now come to a point in medical history when the phenomena of brain and nerve disorder can be studied and measured with comparative exactness and it is our duty to recognize its physical character and study it, not as a theory, but as a condition, which will give way to the proper means and measures. Preventive medicine in this direction is destined to occupy a very large place in medical history.

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[THIS SYMPOSIUM ON ALCOHOL, BEGUN TWO WEEKS AGO, WILL BE CONTINUED NEXT WEEK.]

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## SOME PROFESSIONAL REMINISCENCES.\*

GEORGE F. SHRADY, M.D.

NEW YORK CITY.

Every one who travels even an ordinary road has experiences of his own. If he can apply them to the good of any of his fellow-creatures he is serving in a very general way the common interests of humanity. There is always something, if he only turns his head in the right direction, that he may see in a new light.

At certain times we react more sharply to the controlling circumstances of environment than ordinarily. It is the question of the man, the gun, the aim and the game being in proper line. Too often, alas! we not only miss the mark, but get kicked by the recoil. Thus the physician, by virtue of his judicial office, soon learns not only to think before he speaks, but oftentimes not to say what he thinks. His face must never be the mirror of his soul. To manifest surprise at any unexpected change in the illness of a patient is to confess ignorance. Even death itself must always be viewed in the light of any other accident. To the one seeking advice it is always a comfort to know that his physician has well grounded and positive opinions. In fact, he can the better trust him when he is sure that his faithful adviser is never wrong. If it were otherwise, there would be no need for doctors. Filled with such heretical thoughts, I am tempted to relate some personal experiences substantiating them.

After finishing my hospital internship and imagining that I was well prepared for the practice of the noble art, I was summoned to a sick child in a tenement. The little one was lying in a cradle, playing quite unconcernedly with a rag doll. "Not very sick," I thought; "but what can be the matter with her?" I certainly had never seen the like symptoms before. There was a general spotted eruption over the face and other exposed places, a rasping cough, bleared, lachrymose eyes and a profuse coryza. Not smallpox, I was sure, nor its reputed relation, as I had seen much of both.

"An ex-house surgeon of New York Hospital must not be worsted by such a case as this. There is one

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\* Read before the Charaka Club, N. Y.



thing," said I to myself, "she is not going to die in any event." Just then the grandmother of the child came from a washtub in an adjoining corner of the room and seriously added to my embarrassment by squarely, and rather disrespectfully, I thought, plumping out the question: "Docther, what is the mather with the choild?"

For self-protection I gathered my consciousness within myself, dropped my countenance curtain, and manifested a duly abstracted air, and unconcerned manner, while I took out my prescription book and pretended to be writing. I found it very convenient at that time not to hear her question. Still she stood there defiantly, with arms akimbo, with smell of suds and look of scorn, and repeated her patronizingly insistent demand. No washerwoman had ever dared do so before.

It was nevertheless trimming to a cross sea with set sails and a gathering storm. After all, she was only repeating my query. There was one other in that room that looked for the answer more eagerly than she could imagine. To gain time he took refuge in dazed and abstracted thought, adjusted his stethoscope and mutely motioned the clamorous interloper to be silent.

The bared chest showed more spots. The patient cried in fear, and due time was consumed in quieting her. The responsibility of the situation became more and more oppressive. The sonorous grunts of my critic overwhelmed any possibly abnormal auscultatory signs. The only urgent thing was the diagnosis. The last resource was in subterfuge and hypocrisy; anything but a humiliating acknowledgment of ignorance.

Again: "Docther, why don't you tell me what is the mather with the choild?"

"O yes," said I; "the fact is you would not understand it if I gave the name for the disease. The Latin term is *conjunctivitis*, and, of course, that would mean nothing to you."

Her supercilious and incredulous smile I shall never forget. Her rejoinder was electric. A new light dispelled the fog. "And is that the Latin name for *measles*?" said she.

I could have hugged the woman, suds and all, but my studied professional reserve came to my relief. "No, not the name for the *measles*, but I thought you wanted to know what ailed her eyes." Still the old woman unconsciously saved me from utter defeat and gave me my first clinical demonstration of the disease. Since then it has always been my religious duty to treat the grandmother in the sick room with becoming consideration.

Inasmuch as the patient is always the uncertain factor in the equation of chances in making a prognosis, it is always safe to be on the qualifying side of possible antagonistic conditions. Thus we all learn never to be surprised at anything that may happen.

Many years ago I was treating a young lady for typhoid fever. While she was convalescing I had been absent from town for a day or two. On my return by an evening train I called to see her on my way home. It was a casual visit, and anything unusual was far from my expectation. On attempting to ring the door bell in a dimly-lighted street my hand grasped an ominous fold of crape. I looked at the number to be sure I was at the right place. "Dead! What could have happened during my absence? Possibly perforation of the bowel or internal hemorrhage. I have been away and some other man has been called in the emergency. In any event now is the time to say little and listen."

When admitted I went at once to the room, stood on the landing for a moment and heard various voices with-

in. "They are laying out the corpse," thought I, "and my call will be a consolatory function."

In response to my knock the door was opened by the sister, who surprised me with a smiling welcome. I walked to the center of the room and saw my patient sitting by her bed!

"Oh! doctor, we are so glad you called. Josie has been longing for you for days. She wishes to ask," continued her sister, "if she can eat some oysters."

As for the astonished physician, no actual surprise must be shown. Oysters on ice instead of my patient!

"How many oysters will satisfy you?" was my question.

"Can I have six on the half shell?"

"Yes, order eight, with crackers and lemon."

Then, taking her hand in mine and patting it encouragingly, I found myself saying: "Josie, I am so glad, so glad——"

"Glad for what?" inquired she.

"Glad that you like oysters, as I was afraid that you might not be able to eat them to-night." Here truth hypocritically shook hands with policy.

When in the hall again the sister asked me if I had not been taken aback at finding crape on the bell, at the same time explaining that an old boarder had died in the room above. The dart had simply shied a little.

"Surprised? Why, no. I knew it could not have been Josie. Why should she die now when she is recovering?" Yet for the time being I was seemingly nearer to a corpse than I cared to be again. Of course, the patient never heard of the circumstance until long afterward, and luckily for her is still able to enjoy her oysters.

In my earlier journalistic experience I conceived the possibility of giving due variety to editorial functions by contributing an anonymous criticism on a paper that had been read before the New York State Medical Society at Albany. The tone of the communication was as respectful and courteous as could be made by one who disputed the conclusions of the author, and asked for more light. The writer of the original article was, besides, a personal acquaintance who had an abundant ability to make a suitable reply.

As no answer came for a fortnight or more, I was somewhat chagrined by imagining that I had merely fired a blank cartridge thought on a half-rock calculation. This illusion, however, vanished in due time by the appearance of my opponent, who came specially from Albany to consult me on the propriety of his answering his critic. He was extremely anxious to know who had the temerity to differ with him, but in his excited state of mind I concluded that any direct statement to that effect should be a matter of subsequent and deliberate reflection. In any event, he wished me to help him make his arguments as striking as possible. There was, indeed, a ludicrously pathetic side of the situation that appealed to me, and I did my friendly duty by making several suggestions which he accepted with extreme satisfaction, and at the same time assuring him that he would effectually silence his presumptuous assailant.

The reply was duly published and I took occasion to congratulate him on his victory. It so happened that, his paper having received so much well-merited recognition, he was invited to elaborate it and present it to the Academy of Medicine. On that occasion a member who was always ready to discuss any subject rose and, to my great surprise, used all the points of argument



contained in the anonymous attack. This was enough for the author of the paper. Turning to me with smiling satisfaction, he whispered: "At last I've found the fellow. Now watch while I wind him up."

The unconscious victim little imagined that he had short-circuited a live wire that had been charging itself for months. The result was startling and overwhelming. The Academy was spell-bound at the vehemence of the author's invective sarcasm, and when the excited speaker took his seat it was plain that the victory was entirely on his side. The only comfort for the vanished one was complacently to blow and cool the finger that he had so foolishly put in the fire.

But this was not the end of the matter. For a long time afterward, whenever the volunteer critic appeared at the state meeting with a paper, he was sure to have one, at least, who would take issue with him. Nor did they ever after exchange views other than at a safe and respectful distance in the debating arena. The explosion of mutual antagonism had blown them so far apart that each was on the opposite side of any possible reconciliation. Nobody, however, knew better than I that both were at fault for meddling with somebody else's fireworks; and so at one of the meetings, I, with an innocence I could not feel, asked my Albany friend, "Why do you always worry Dr. G.?"

"Do you not remember his published criticism of my paper on fractures?" replied he.

"But he did not write it," was the rejoinder.

"Who then?"

"It was I."

"How absurd it was," he laughingly said, "that I should have come to you, of all others, for help under the circumstances."

"Yes! But didn't I do my best to help you silence the real man?" was the only excuse I could offer.

And so in my conscience-stricken way I satisfactorily untangled a ludicrous snarl of misdirected purposes.

## THE ULTIMATE RESULT OF THE ROENTGEN TREATMENT OF CARCINOMA OF THE BREAST.

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A review of the literature of carcinoma of the breast during the last year reveals but little from the pens of those operators whose experience in the use of the Roentgen ray is great enough to entitle their utterances to respect and attention.

On the other hand a number of articles have appeared in the various journals which, on their face, betray ignorance and inexperience. The writer of one of these after relating a deplorable series of surgical mishaps arising during an attempt to operate on a breast which had been rayed by another operator, accuses this preliminary treatment of a number of unpleasant things and ends with a denial of the ability of the ray to produce any tissue changes whatever beyond a dermatitis, basing these sweeping assertions on an extended experience of 6 cases.

Such articles as this, which is merely an example of a number of others to which my attention has been drawn during the year, are not entirely worthless since they serve to produce a thrill of amusement and compassion in the minds of those who have sufficient expe-

rience to enable them to judge correctly of the value or otherwise of this agent in the treatment of the condition noted, but unfortunately the widespread dissemination given such misleading statements by the various journals is liable to lead to a misapprehension on the part of the profession at large who have but little time to investigate such matters and are apt to give most attention to the loudest noise.

In one such article a technic was employed for deep-seated carcinoma which was exactly suited for the treatment of lupus or superficial epithelioma and diametrically opposed to those principles enunciated repeatedly by the men who have announced certain degrees of success in the treatment of deep-seated carcinoma, primary or recurrent.

In apparent ignorance of the fact that *x*-ray possesses no power of independent judgment, the author, after using a ray which is absorbed by the skin, boldly states that from his extensive experience of 6 cases, he has proven that the radiation from an excited Crookes tube produces superficial effects only and is incapable of effecting tissue changes at a depth greater than  $\frac{1}{4}$  inch below the surface.

I do not believe that any false modesty should be allowed to prevent the challenging and direct controversion of such palpable misstatements. It has been repeatedly demonstrated that a capable apparatus in the hands of a competent operator can be made to produce radiations so penetrating that they may be absorbed and rendered effective therapeutically at any depth in the body, in fact, the skin of the back may be affected even to the production of a marked dermatitis by radiation directed toward the front of the chest, thus passing entirely through the body. I do not know of any way by which those members of the profession may be taught who persistently ignore and disregard the repeated statements of those physicians who have devoted years to this work and have freely formulated and disseminated exact and explicit directions whereby any other physician of intelligence can reproduce their technic. There are none so blind as those who will not see, and the only defense seems to be the exposure of the dangerous ignorance of such writers who make up for paucity of ideas with a deluge of words and who base sweeping generalities on individual observations.

## SUCCESS OF RADIOTHERAPY.

The power of the *x*-ray to effect distinct cellular change on normal or pathologic tissue is in evidence this year as it was last, with the difference that in the hands of qualified men these effects are produced with a certainty, directness and ease which is the natural result of another year's observation and experience.

At the meeting of this society one year ago, I made the strongest plea in my power for the wider adoption of anti-operative and postoperative treatment of carcinoma. The ensuing year has not convinced me of the error of the position then taken but has only served to strengthen it, and to ground the conviction more firmly that in such anti-operative and postoperative treatment in conjunction with bold and skillful surgery lies the salvation of this class of patients.

During the year some disappointments have appeared. Two cases are to be recorded as ultimate failures inasmuch as deep-seated internal recurrence has manifested itself and will probably progress to a fatal termination. Each of those two patients, however, was suffering from recurrent inoperable carcinoma which, under the influ-



ence of the ray alone, disappeared completely giving the patient over three years of health and happiness.

While it is necessary to class these cases as ultimate failures yet I think that the results obtained more than compensated both physician and patient for the trouble of taking a few painless treatments. A number of other similar cases have shown no tendency to recurrence. Neither of the cases which recurred was subjected to anti-operative treatments. In both, postoperative radiation was begun only when the appearance of marked recurrence forced the adoption of some method of treatment whereon the surgeons announced their inability to confer any further benefit by operative procedure.

If the *x*-ray is to be employed in a manner to cast credit on it as an aid in the treatment of this class of cases, anti-operative radiation must be insisted on, but if refused, postoperative radiation must be begun coincident with the beginning of recurrence at the latest, and, when the surgeon will consent, should be employed before recurrence has manifested itself, preferably the tenth day after operation. In every such case the mediastinum as well as the site of operation must be rayed.

In no case of primary carcinoma submitted to radiation without operation has recurrence manifested itself, but it must be remembered that in every such case the primary growth had advanced so little that the patient was unwilling to admit the necessity of operation. I am unwilling to believe that the satisfactory result in these cases was due to the absence of operative procedure but attribute it to the primary nature of the growth and the absence of metastasis at the time of the institution of Roentgen treatment.

During the year repeated and renewed evidence has appeared of the actual value of the ray in producing retrograde change in carcinomatous tissue. The adoption of the method of filtration founded on principles established by Roentgen and Walter applied first as a therapeutic aid and its value, proven clinically and experimentally by Pfahler of Philadelphia, has resulted, in simplifying the technic and permitting the administration of much heavier doses with consequent increase in the quickness of response of the disease to the ray. The experience of the past year has been thoroughly satisfactory.

#### GROWING INTEREST IN RADIOTHERAPY.

The incredulity and antagonism of certain members of the profession in spite of the misleading contradictory reports circulated by the class of observers referred to has shown a marked decrease. The profession in general are manifesting a healthy interest in the possibilities of Roentgen therapy and are beginning to ask intelligent questions thereby making the opportunity for explanation and conviction. It should be the duty during the next year, of every Roentgenologist to perfect himself in the technic of the treatment of carcinoma; to satisfy himself as to the exact value to be given the method as practiced by himself. Extreme conservatism combined with healthy investigation and repeated observation is necessary in order that we may arrive at a true determination of the exact value of this agent in this disease.

Primary carcinoma of the breast should be treated by the ray alone only when the condition or age of the patient presents a strong argument against preliminary operation. The inherent fear of surgery which so many of these patients present must not be permitted to act on our sympathies or bias our judgment but the treat-

ment of primary cases must only be undertaken for good and sufficient reasons.

Free discussion of these problems with the surgeons when the Roentgenologist shows his freedom from prejudice is usually productive of good since when the surgeons become convinced of the actual value of the ray in preventing or retarding metastasis, they will insist that their operation be aided by such prophylactic measure.

Bold assertions of the ability of the ray to cure carcinoma wherever situated without recourse to surgery carry not conviction but contempt to the majority of the hearers and it must be remembered that an assertion of fact and a demonstration of fact are two widely different things.

While I am daily more convinced of the actual assistance which the ray is capable of affording in the treatment of carcinoma I am also more than ever certain that extreme conservatism of statement combined with practical demonstration of actual result is the best way to convince the profession of the ultimate value of radiotherapy intelligently administered as an aid to surgery, not a substitute in the treatment of carcinoma.

#### CONCLUSIONS.

1. Results are better and more permanent, the earlier treatment is instituted.
2. The value of postoperative radiation has become more and more apparent.
3. Mediastinal recurrence while grave is not a death warrant.
4. Technic is not an accomplishment but an absolute necessity.
5. No tube is too good to use for treatment.
6. Filters are a necessity in the treatment of cancer of the breast.
7. Treat no case that you know can be cured surgically.

611 Fulton Building.

## MISTAKES IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.\*

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WALLUM LAKE, R. I.

The possibility of limiting tuberculosis rests on our ability either to cure those infected or to prevent the infection of others. What we accomplish in both these fields depends very largely on an early diagnosis of the disease. That persons having pulmonary tuberculosis frequently fail to consult a physician in an early stage of the disease and that physicians frequently fail to diagnose early cases that are presented are well-known facts. How often and for how long a period patients are negligent of their symptoms and how often and for what reasons physicians actually fail to diagnose their cases are not so well understood. Among English writers who have recently called attention to the mistakes tabulated in this article are:

BRONCHITIS: Trudeau,<sup>1</sup> Butler,<sup>2</sup> Miner,<sup>3</sup> Landis,<sup>4</sup> Norris,<sup>5</sup> Mohr,<sup>6</sup> Pryor.<sup>7</sup>

\* Read before the Rhode Island Medical Society, Sept. 6, 1906.

1. Trans. Association American Physicians, 1901.

2. "Diagnosis of Internal Medicine," 1902, pp. 709 and 837.

3. Penna. Med. Jour., July, 1903.

4. Med. News, Sept. 17, 1904.

5. Med. News, Sept. 17, 1904.

6. Mobile Med. and Surg. Jour., October, 1904.

7. Med. Record, Nov. 25, 1905.



GRIPPE: Bonney,<sup>8</sup> Trudeau,<sup>1</sup> Koch,<sup>9</sup> Hatfield,<sup>10</sup> Norris,<sup>5</sup> Pryor,<sup>7</sup>  
HEMOPTYSIS: Wells<sup>11</sup> Barbour,<sup>12</sup> Whittaker,<sup>13</sup> von Ruck,<sup>14</sup>  
Trudeau,<sup>1</sup> Bonney,<sup>8</sup> Loomis,<sup>15</sup> Thompson,<sup>16</sup> Janeway,<sup>17</sup> Cattle,<sup>18</sup>  
Norris,<sup>5</sup> Cheney,<sup>19</sup> and Pryor.<sup>7</sup>

LARYNGITIS: Chappell,<sup>20</sup> and Harland.<sup>21</sup>

MALARIA: Tyson,<sup>22</sup> von Ruck,<sup>14</sup> Trudeau,<sup>1</sup> Butler,<sup>2</sup> Miner,<sup>3</sup>  
Hatfield,<sup>10</sup> Norris,<sup>5</sup> and Pryor.<sup>7</sup>

MITRAL STENOSIS: Barbour,<sup>12</sup> Landis,<sup>4</sup> and Norris.<sup>5</sup>

PNEUMONIA: Bergtold,<sup>23</sup> Janeway,<sup>24</sup> and Norris.<sup>5</sup>

The statistical material which forms the basis of this article was derived from the histories of 200 consecutive cases of pulmonary tuberculosis admitted to the State Sanatorium for Consumptives during the past year. The histories of 27 were excluded because for various reasons the patients' statements were considered unreliable. Eight other histories were excluded because they were incomplete, leaving 165 histories available. Of these 165 cases, tubercle bacilli were present in the sputum in 146. Of 19 cases in which the bacilli were not found, ten reacted to tuberculin, and in the remaining nine the physical signs were held to be sufficient for diagnosis without the tuberculin test. The following questions were asked:

1. When did you have your first lung symptom?
2. When did you first visit a physician?
3. When did you have your first hemorrhage, if any?
4. Were your lungs examined, and when?
5. Was your sputum examined, and when?
6. What diagnosis was given you at this first visit?
7. When did the physician inform you that you had consumption or tuberculosis?
8. When did you commence to have frequent expectoration?

The dates recorded were the year and calendar month and the evidence was carefully sifted to make sure that tuberculosis existed at the first visit to the physician, and the physicians were in all cases given the full benefit of any doubt in the matter of dates. In all diseases part of the responsibility of an early diagnosis is borne by the patient, but in pulmonary tuberculosis this responsibility is particularly heavy. Unless patients go to the physician early they can not receive an early diagnosis.

TABLE 1.

Delay of the Patient. Period Elapsed from the First Symptom to First Consultation of Physician.

Of 165 cases there was delay in 84 cases, or 50.9 per cent.

Period of delay was:

2 to 6 months in 60 cases, or 71.4 per cent.  
6 to 12 months in 7 cases, or 8.3 per cent.  
Over 12 months in 17 cases, or 20.2 per cent.  
The longest delay was.....72 months.  
The shortest delay was.....1 month.  
The average delay was.....7.9 months.

These figures emphasize the need of an organized method of informing all the people of the symptoms of early tuberculosis, the methods of preventing infection and of the insidious advance of tuberculous disease in apparently healthy people. It is doubtful whether this work will ever be well done unless it can be made a part

of the instruction in hygiene in the public schools. I turn now from mistakes of patients to mistakes of physicians.

TABLE 2.

Cases diagnosed throat trouble.

Of 165 cases this mistake occurred in 4, or 2.4 per cent.

Resulting delay in correct diagnosis was:

2 to 6 months in.....1 case.  
6 to 12 months in.....1 case.  
Over 12 months in.....2 cases.  
The longest delay was.....24 months.  
The shortest delay was.....3 months.  
The average delay was.....11.5 months.

In two cases the uvulas were amputated, and in one case the tonsils were excised after the onset of continuous lung symptoms. In these three cases last named, the cough was evidently supposed to be the result of pharyngeal irritation.

TABLE 3.

Cases diagnosed malaria.

Of 165 cases this mistake occurred in 5, or 3 per cent.

Resulting delay in correct diagnosis was:

2 to 6 months in.....3 cases.  
6 to 12 months in.....1 case.  
Over 12 months in.....1 case.  
The longest delay was.....18 months.  
The shortest delay was.....3 months.  
The average delay was.....7 months.

No blood examinations had been made in these cases.

TABLE 4.

Showing Frequency of Chills and Sweats Previous to Admission. Of 165 cases the patients in

22, or 13.3 per cent., had sweats alone.  
11, or 6.6 per cent., had chills alone.  
69, or 41.8 per cent., had both chills and sweats.  
62, or 37 per cent., had neither chills nor sweats.

Of 165 cases, 35 (21.2 per cent.) patients claimed to have had malaria previous to the onset of tuberculosis. The great majority of these attacks were probably tuberculous, but the cases in Table 3 were the only ones that had been diagnosed malaria by a physician after the onset of continuous lung symptoms. Chills, fever and sweats occasionally occur in tuberculosis with sufficient regularity to suggest malaria, and so long as malaria is diagnosed without blood examinations it seems inevitable that some cases of tuberculosis will be called malaria, the number of these mistakes varying in different localities, their frequency depending largely on the prevalence of true malaria.

TABLE 5.

Failure of Diagnosis. Lungs not Examined.

Of 66 cases this mistake occurred in 8, or 12.1 per cent.

The delay in correct diagnosis was:

2 to 6 months in.....7 cases.  
6 to 12 months in.....0 cases.  
Over 12 months in.....1 case.  
The longest delay was.....20 months.  
The shortest delay was.....2 months.  
The average delay was.....5.1 months.

The above table is probably made up largely of cases in which the physician was deceived by the healthy appearance of the patient.

TABLE 6.

Lungs Examined and Pronounced Sound.

Of 165 cases this mistake occurred in 30, or 18.1 per cent.

Resulting delay in correct diagnosis was:

2 to 6 months in.....13 cases.  
6 to 12 months in.....7 cases.  
Over 12 months in.....10 cases.  
The longest delay was.....96 months.  
The shortest delay was.....2 months.  
The average delay was.....9.3 months.

In twelve of these thirty cases there was a history of consumption in the family. Careful histories are scarcely second in diagnostic importance to careful physical examinations. Those who have had relatives die of consumption often furnish the best opportunity for early diagnosis, as they are suspicious of their symptoms and come to the physician early. A small lesion in so large an organ as the lung can readily be missed by the most expert examiner, especially if such lesion be deeply seated. In 5 per cent. of all patients admitted to the sanatorium, tuberculosis could not be positively demonstrated by physical examination alone. In a patient

8. Boston Med. and Surg. Jour., Sept. 16, 1897.
9. Trans. British Congress on Tuberculosis, III, p. 94.
10. Med. News, Sept. 17, 1904.
11. Medical News, Sept. 21, 1895.
12. Med. Record, 1896, pp. 829-833.
13. Trans. Association of American Physicians, 1897.
14. Virginia Medical Monthly, July 23, 1897.
15. Med. Record, May 21, 1898.
16. Lancet, London, Jan. 24, 1903.
17. Med. Record, April 25, 1903.
18. The Practitioner, London, February, 1904.
19. Am. Medicine, Oct. 22, 1904.
20. THE JOURNAL A. M. A., Feb. 21, 1903.
21. Am. Medicine, June 25, 1904.
22. "Practice of Medicine," 1896, p. 66.
23. Am. Medicine, June 22, 1901.
24. Trans. British Congress on Tuberculosis, III, p. 213.



who has lung symptoms, with or without physical signs, no physician, however skilful, is warranted in stating that the lungs are free from tuberculosis, unless the patient fails to react to tuberculin.

TABLE 7.

Cases with Expectoration at the Time of First Consulting the Physician in which there was a Failure in Diagnosis Accompanied by a Failure to Examine the Sputum.

Of 165 cases this mistake occurred in 31, or 18.7 per cent.

The delay in correct diagnosis was:

2 to 6 months in.....	18 cases.
6 to 12 months in.....	7 cases.
Over 12 months in.....	6 cases.
The longest delay was.....	96 months.
The shortest delay was.....	2 months.
The average delay was.....	10.3 months.

If sputum examinations were made as a routine in all patients whose sputum could be obtained, many unsuspected cases of tuberculosis would doubtless be discovered.

TABLE 8.

Cases Diagnosed Grippe.

Of 165 cases this mistake occurred in 24, or 14.5 per cent.

Resulting delay in correct diagnosis was:

2 to 6 months in.....	14 cases.
6 to 12 months in.....	5 cases.
Over 12 months in.....	5 cases.
The longest delay was.....	120 months.
The shortest delay was.....	2 months.
The average delay was.....	10.8 months.

Of all cases, the patients in 25 per cent. had had grippe previous to the onset of tuberculosis. The physicians were credited with a mistake only in those cases in which they had diagnosed grippe after the onset of continuous lung symptoms. Tubercle bacilli were found in the sputum of all these cases. The possibility that some of these patients may really have had grippe in addition to tuberculosis at the time of visiting the physician is remote. Such a question is not likely to be raised by one accustomed to take tuberculous histories.

If it were better understood that patients with early tuberculosis in apparent good health are subject to febrile attacks closely simulating grippe or bronchitis many cases of tuberculosis masquerading as grippe would be detected by the history alone. Many more cases would doubtless be detected if sputum examinations were made whenever possible in supposedly grippe cases. It is characteristic of grippe to occur in epidemics and isolated cases should be viewed with suspicion. Finally, the tuberculin test must be appealed to in doubtful cases.

TABLE 9.

Cases Diagnosed Bronchitis.

Of 165 cases this mistake occurred in 24, or 14.5 per cent.

Resulting delay in correct diagnosis was:

2 to 6 months in.....	15 cases.
6 to 12 months in.....	5 cases.
Over 12 months in.....	4 cases.
The longest delay was.....	96 months.
The shortest delay was.....	2 months.
The average delay was.....	10.6 months.

It has been a far too frequent practice to assume bronchitis to be non-tuberculous as long as the patient's general health remains good. It has also been customary in many doubtful cases to keep the patient under observation until repeated examinations should settle the diagnosis, but the diagnosis should not be delayed until made possible by the appearance of pronounced signs. Waiting for diagnostic signs to appear is usually equivalent to waiting for the disease to progress and is not sound medical policy when other means are at hand.

Chronic non-tuberculous bronchitis occurs frequently at the two extremes of life, in asthmatics, in alcoholics, and in those whose occupations are etiologic factors, but chronic bronchitis when occurring in a young or middle-aged adult without a definite cause should be considered tuberculous unless proven otherwise. In any supposed

case of chronic non-tuberculous bronchitis in which the diagnosis appears doubtful after one month's observation by a physician, the tuberculin test should be resorted to.

TABLE 10.

Failure of Diagnosis in Patients Who Spat Blood Previous to or During the First Visit of a Physician.

Of 165 cases this mistake occurred in 21, or 12.7 per cent.

Resulting delay in correct diagnosis was:

2 to 6 months in.....	8 cases.
6 to 12 months in.....	4 cases.
Over 12 months in.....	9 cases.
The longest delay was.....	96 months.
The shortest delay was.....	2 months.
The average delay was.....	17.7 months.

The probability that the blood came from the lungs in all these cases is so great that no other supposition can be seriously considered. In many cases of pulmonary tuberculosis, hemoptysis is the first symptom. This was true of 25 cases (15.1 per cent.) of the total number considered. To fail to diagnose tuberculosis after hemoptysis is an error which occurs with surprising frequency, as shown in Table 10. It is a particularly costly error because many of these cases are at such an early period of the disease that tuberculosis would not otherwise be suspected. In several of these cases the patients were told that the blood came from the throat or stomach; some do not cough before, during or immediately after the hemorrhage, the blood simply "comes in the mouth," to use the patient's expression, without other symptoms. In but four cases could a history of thorough examination of the upper air passages be obtained, although it was sought for in all cases.

Hemoptysis from heart lesions or from lung lesions, other than tuberculosis, is so comparatively rare that all pulmonary hemorrhages should be assumed to be tuberculous until proven otherwise. This rule holds good even after an injury. In two cases in Table 10 an injury to the chest was the immediate cause of the hemorrhage. Loomis<sup>15</sup> quotes Stricker (900 cases of hemoptysis in the German army), who shows that 50 per cent. of all cases of hemoptysis following injury are succeeded by tuberculosis. If uncompensated organic valve lesion be absent, the lungs apparently clear on physical examination and the upper air passages free from bleeding points, the case should be considered pulmonary tuberculosis unless it fails to react to tuberculin. To wait for physical signs or additional symptoms to appear is disastrous, as they frequently do not develop for many months, during which time the patient's chances of a cure will diminish or disappear.

TABLE 11.

Patients Kept in Ignorance of the Correct Diagnosis, which is Made by the Physician at Once.

Of 165 cases this mistake occurred in 4, or 2.4 per cent.

Resulting delay in correct diagnosis was:

2 to 6 months in.....	2 cases.
6 to 12 months in.....	1 case.
Over 12 months in.....	1 case.
The longest delay was.....	24 months.
The shortest delay was.....	2 months.
The average delay was.....	9 months.

It is to be regretted that the practice of keeping consumptives in ignorance of their true condition has not entirely disappeared. As a patient can be kept from infecting others only when he understands the nature of his disease, it is not right to deprive the community of the protection thus afforded. When consumptives were considered incurable the policy of deceiving the patient could be partially justified on the ground that if the person was doomed it could be of no advantage to learn of it a long time beforehand. Now that consumption is known to be curable, to withhold the diagnosis is to deliberately sacrifice chances of recovery, and it is difficult to speak of such a practice without showing some of that



bitterness which patients themselves feel who have been thus deceived. Two prominent excuses are:

First.—It is said that a person is poor, has a family to support, can not make those changes in his life which a proper treatment necessitates and that, therefore, if he must succumb he had better do it undiscouraged by a gloomy diagnosis. These patients, however hopeless because of poverty, family responsibilities and unfavorable environment, if informed of their disease, often receive, in addition to free treatment in a sanatorium, unlooked for aid from friends and charitable organizations and are thus saved from what seemed the inevitable.

Second.—It is said the diagnosis results in a shock to the patient which injures the health. Of 161 cases in which the mental effect of the diagnosis of pulmonary tuberculosis was recorded 82 patients (50.9 per cent.) were unaffected, 72 (44.7 per cent.) were temporarily depressed and 7 (4.2 per cent.) were continuously depressed after the diagnosis. It goes without saying that of the unaffected patients a large proportion considered the diagnosis unpleasant, but it was received philosophically. The cases recorded "depressed" were those in which the patients evinced some emotional disturbance, weeping, lack of sleep, or sufficient worry to annoy the patient temporarily. Seven (4.2 per cent.) were continuously depressed after learning the diagnosis. Five of these were far advanced. They failed rapidly and seemed to have so much insight into their condition that their depression was logical. The remaining two were advanced, and they gained as rapidly as could be expected from their condition. Of the four cases in which the diagnosis was withheld for fear of a shock and injury to the patients' health, no appreciable depression resulted from the diagnosis. To sum it all up, there is no evidence to show that there is any risk whatever in informing tuberculous patients of the nature of their disease.

TABLE 12.  
Miscellaneous Mistakes.

Of 165 cases there were 9, or 5.4 per cent.  
Out of these 9

5 were given no opinion.  
2 were diagnosed "cold."  
2 were told to "build up."

Resulting delay in correct diagnosis was:

2 to 6 months in..... 5 cases.  
6 to 12 months in..... 2 cases.  
Over 12 months in..... 2 cases.  
The longest delay was..... 18 months.  
The shortest delay was..... 2 months.  
The average delay was..... 6.6 months.

It is probable that the relative proportion of the different mistakes varies in different localities, depending somewhat on the prevalence of those diseases which tuberculosis simulates and somewhat on local custom in the diagnosis of doubtful cases. In many cases diagnosed pleurisy the lung is doubtless invaded. Of 165 cases, 18 (10.9 per cent.) gave a history of pleurisy previous to the development of continuous lung symptoms. Thompson obtained a history of pleurisy in 25 per cent. of 170 cases. Febrile attacks in tuberculous individuals are too frequently diagnosed pneumonia. Of 165 cases, 14 (8.4 per cent.) gave a history of pneumonia averaging 11.8 years before the recognized onset of tuberculosis. Seven additional cases (4.2 per cent.) were diagnosed pneumonia at the onset of continuous lung symptoms. Bergtold<sup>23</sup> obtained a history of pneumonia of a suspicious type at the onset of tuberculosis in 13 per cent. of 193 cases. Most of these so-called pneumonias are undoubtedly tuberculous, although there is a possibility that non-tuberculous pneumonia may have immediately

preceded the tuberculous infection. Finally, a non-tuberculous bronchopneumonia occasionally coexists with tuberculosis, as has been pointed out by Janeway.

TABLE 13.  
Total Number of Cases in which Mistakes were Made and Resulting Delay in Months.

Of 165 cases there were  
89 cases, or 53.9 per cent. correctly diagnosed.  
76 cases, or 46 per cent. incorrectly diagnosed.  
Of the 76 cases the resulting delay in correct diagnosis was:  
2 to 6 months in..... 41 cases.  
6 to 12 months in..... 15 cases.  
Over 12 months in..... 20 cases.  
The longest delay was..... 120 months.  
The shortest delay was..... 2 months.  
The average delay was ..... 11.3 months.

TABLE 14.  
Physical Condition on Admission of Patients Whose Cases Were Correctly Diagnosed, Classified According to the Plan Adopted by the National Association for the Study and Prevention of Tuberculosis.

Incipient cases, 15, or 16.8 per cent.  
Advanced cases, 60, or 67.4 per cent.  
Far advanced cases, 14, or 15.7 per cent.

TABLE 15.  
Physical Condition on Admission of Patients Whose Cases Were Incorrectly Diagnosed.

Incipient cases, 6, or 7.8 per cent.  
Advanced cases, 58, or 76.3 per cent.  
Far advanced cases, 12, or 15.7 per cent.

In the majority of the 76 cases in the incorrect column more than one mistake had been made, so that the total number of mistakes greatly exceeded the number of cases. From the above tables it appears that only half as many incipient cases are obtained from the patients on whom mistakes in diagnosis have been made as from those patients who have been diagnosed at once. The inference that, because of the 11 months' delay in diagnosis on patients in Table 13 some of the incipient cases have become advanced, seems warranted.

Some of the mistakes recorded in the foregoing tables are best described as carelessness, yet it seemed probable that a large number of mistakes on early cases were due to the physician being taken off his guard by the healthy appearance of the patients. The typical appearance of advanced consumptives is so deeply impressed on both physician and layman that they are slow to suspect tuberculosis in any one of robust appearance. Patients with early and curable lesions frequently look a little tired or worn, but very rarely "consumptive." In Table 16 the physical appearance on admission of 191 patients has been classified as "healthy," "worn" or "consumptive." In those classified as "healthy" one would not have suspected ill-health from the appearance. Those classified as "worn" had a tired look about the face as though they were overworked or had not been sleeping well, and those classified as "consumptive" had sufficient pallor or emaciation to suggest consumption, although in many cases the picture was by no means typical.

TABLE 16.  
Showing Appearance of Patients on Admission, Whether Healthy or not, Classified According to Physical Condition.

Of 21 incipient cases the appearance was:  
Healthy in 14 cases, or 66.6 per cent.  
Worn in 6 cases, or 28.5 per cent.  
Consumptive in 1 case, or 4.7 per cent.  
Of 134 advanced cases the appearance was:  
Healthy in 36 cases, or 26.8 per cent.  
Worn in 50 cases, or 37.3 per cent.  
Consumptive in 48 cases, or 35.8 per cent.  
Of 36 far advanced cases the appearance was:  
Healthy in 1 case, or 2.7 per cent.  
Worn in 1 case, or 2.7 per cent.  
Consumptive in 34 cases, or 94.4 per cent.  
Summary of patients' appearance:  
Of 191 cases the appearance was:  
Healthy in 50 cases, or 26.1 per cent.  
Worn in 56 cases, or 29.3 per cent.  
Consumptive in 85 cases, or 44.5 per cent.



The diagnosis of pulmonary tuberculosis in people who look well or a little worn, rather than in those people whose physical appearance would indicate consumption, is the diagnosis of most value both to the patient and the community. In cases in which the diagnosis is in doubt it is sometimes possible to institute an open-air régime during the period of uncertainty, in the hope that if the case is finally found to be tuberculous no time will be lost. It so rarely happens, however, that a patient will take treatment conscientiously until a positive diagnosis is made that this method of temporizing is impracticable. It is not usually necessary for the specialist to use tuberculin, because he sees few cases that have not been subjected to the waiting policy either of the patient or physician, but if we are to abandon this waiting policy then tuberculin is at present essential, because without its use many incipient cases of pulmonary tuberculosis can not be promptly diagnosed. In a patient who has symptoms or signs of pulmonary disease the possibility that a tuberculin reaction may be due to an extra-pulmonary lesion is so remote that it may safely be disregarded.

That there is sometimes difficulty in having the temperature taken every three or four hours for the tuberculin test is appreciated; in those who can afford a nurse for a few days this difficulty is easily disposed of. The taking of the temperature in test cases might properly be made a part of the duties of district nurses. Sanatoriums are only too glad to test doubtful cases which can not be diagnosed at home. Patients who refuse the test relieve the physician of further responsibility. In judging of the accuracy of diagnosis from the above tables it may occur to any one that some patients may have purposely been given an incorrect diagnosis (grippe, bronchitis, etc.) to reassure them. This possibility may be admitted without affecting the general result, as it is only the correct diagnosis given the patient that is of value. Again, some patients do not return to the physician after the first visit, so that the latter does not have a fair opportunity to correct errors. In order to make full allowance for this possibility, 24 cases which had been given an incorrect diagnosis were struck out from the column of mistakes, because the mistakes were discovered within two months after the first visit to the physician. Some of these 24 cases thus placed in the correct column were of patients who had been given an incorrect diagnosis without an examination of the lungs. To place such cases in the correct column merely because the mistakes were discovered by some one else within two months seems very liberal, yet it was thought best to err on the safe side. The excluding of all mistakes, causing a delay of less than two months, allows sufficient time to diagnose doubtful cases and also a margin for slight inaccuracy of dates.

In regard to the reliability of patients' statements, it has been assumed that intelligent patients are competent to give evidence on prominent facts about their illness, concerning which there is no motive for misrepresentation. The opportunity of testing the accuracy of the statements of these patients has been afforded by the records of sputum examinations of the State Board of Health. Of 55 cases in which the dates of sputum examinations as given by the patients could be compared with the records of the State Board of Health, the year and month were given correctly in 46 cases. There was a variation of one month in 7 cases and a variation of more than one month in 2 cases. Since in these statistics all mistakes of less than two months have been ex-

cluded, 53 of the 55 patients were correct in their statements according to the standard employed, giving a percentage accuracy of 96.3.

#### CONCLUSION.

There can be no certainty that the patients admitted to the sanatorium fairly represent the whole number of tuberculous patients in the community in regard to their delay in consulting the physician or to the physician's delay in diagnosis. Inasmuch as the sanatorium does not accept the worst cases, it seems possible that it receives those who have been more wisely handled than the average of all tuberculous patients in the community. Whether or not histories of sanatorium patients, however accurate, can be a safe index of the mistakes in diagnosis in the community, the following summary of patients thus far admitted to the State Sanatorium is suggestive:

1. The presumable duration of the disease before admission averaged 15.4 months.
2. 50.9 per cent. have delayed consulting a physician, such delay averaging 7.9 months.
3. 2.4 per cent. have been diagnosed "throat trouble."
4. 3 per cent. have been diagnosed malaria.
5. 12.1 per cent. have been incorrectly diagnosed without an examination of the lungs.
6. 18.1 per cent. have had their lungs examined and pronounced sound.
7. 18.7 per cent. have been incorrectly diagnosed without an examination of the sputum (sputum being present).
8. 14.5 per cent. have been diagnosed grippe.
9. 14.5 per cent. have been diagnosed bronchitis.
10. 12.7 per cent. have not been correctly diagnosed after hemoptysis.
11. 2.4 per cent. have had the correct diagnosis purposely withheld from them by the physicians.
12. 5.4 per cent. have had unclassified mistakes in the diagnosis.
13. 46 per cent. have been incorrectly diagnosed, the resulting delay in correct diagnosis averaging 11.3 months.

This optimistic and fatal waiting policy should be sharply abandoned. The significance of hemoptysis should be appreciated. A tuberculous history should be sought for in all lung diseases, and in atypical and doubtful cases of grippe, bronchitis and malaria the diagnosis should be promptly made by tuberculin when other means fail. If the number of curable cases which a sanatorium receives is small, its usefulness is correspondingly limited, and our professional pride should not allow the willingness of the state to finance the treatment of curable cases to surpass our ability to furnish the cases.

### Clinical Notes

#### THE DEMONSTRATION OF SPIROCHÆTA PALLIDA IN LESIONS OF ACQUIRED SYPHILIS.\*

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Of the various methods employed to establish the etiologic relation of *Spirochæta pallida* to syphilis, those concerned with its demonstration in syphilitic tissue have received comparatively little attention.

The first positive findings are reported by Berterelli and Volpinio,<sup>1</sup> who examined the liver and spleen of children dying of hereditary syphilis. It was not until Levaditi, by modifying the Ramon y Cajal method for

\*Paper read and sections demonstrated before the Pathological Society of Philadelphia, Jan. 10, 1907.

1. Finger: Wiener Klin. Wochschr., 1906, vi.



nerve fibers, formulated an exact staining method, that spirochetes were demonstrated in sufficient quantities to make it a valuable means of studying the organism within the tissue. His method is as follows: Small pieces of tissue about 2 mm. in thickness are hardened in formalin 10 per cent. for twenty-four hours, and then alcohol for the same period and subsequently washed in water for a short time. They are stained in a freshly made solution of silver nitrate 1.5 per cent. for three successive days, changing the solution each day, maintaining a blood temperature and excluding light. The tissue is then placed in a 2 per cent. solution of pyrogalllic acid with the addition of 5 per cent. of formalin. After remaining in this for twenty-four hours, light being excluded, they are passed through 85 per cent., 95 per cent. and absolute alcohol, respectively, imbedded in paraffin and cut at about 5 microns.

By this means A. Buschke and W. Fischer<sup>2</sup> demonstrated spirochetes in a chancre, secondary papules and in the heart muscle of a child dying of congenital syphilis, and Levaditi and Manouelian<sup>3</sup> report positive findings in two chancres and secondary papules, as well as in syphilitic tissue from apes artificially inoculated with syphilis. Finger<sup>1</sup> describes the organism in two chancres, one being of the gangrenous type, and Ehrmann<sup>4</sup> found the organism in the epithelium covering non-ulcerated secondary lesions. Buret and Vincent<sup>5</sup> and Veiklon and Girard<sup>3</sup> report positive findings in chancres and in the secondary roseola. A. Blaschko<sup>5</sup> examined four chancres and one condyloma, and Rueter<sup>6</sup> found *Spirochæta pallida* in a gumma of the lung and in an interstitial pancreatitis, the lesions being of congenital syphilis. He also found them in the wall of the aorta, the patient having a sclerosis of the Dohle-Hellerschem type. From his studies he concludes that *Spirochæta pallida* is not to be demonstrated after mercury has been ingested for a short time.

We were unable to find reports of the presence of *Spirochæta* in tertiary lesions of acquired syphilis.

#### PERSONAL OBSERVATIONS.

During the past four months we have been engaged in the study of syphilitic tissue, with the object of determining the presence or absence of *Spirochæta pallida* in the lesions of acquired syphilis. In selecting the specimens care was taken to include with preference only non-ulcerated and non-eroded lesions. This was possible with the majority of papular syphilides, and to a limited extent with the chancres. In tubercular lesions the periphery was selected, at a point showing the least ulceration, the object being to avoid contaminations of spiral organisms. The method of Levaditi has been employed, and we believe it to be the best method for staining the tissue *in toto*.

The specimens were removed from twenty-four patients suffering with acquired syphilis, the lesions including chancres, various papular lesions, tubercular syphilides and one gumma. As controls, lesions of chancroids, chancroidal bubo, psoriasis, scabies, acne vulgaris, varicella and venereal vegetations were studied. Normal skin taken from individuals was stained in the same manner and studied. The following is a report of the findings in each case:

CASE 1.—J. D. Syphilis of five months' duration. Was

taking potassium iodid for 2 months prior to examination. There was still induration present at the site of the chancre. No syphilitic lesions present. Has an iodid acne on the back, one being removed from the back and examined. No spirochetes were found.

CASE 2.—W. U. Chancre in sulcus. Fading, slightly pigmented macular eruption on back and chest. Macule removed from back. No spirochetes found.

CASE 3.—A. H. Chancre three months previously. Profuse general eruption of large papulo-squamous syphilides. No treatment. Epithelium intact, a few spirochetes were found in the cellular infiltrates.

CASE 4.—H. P. Eruption of five days' duration. History of sore on penis four weeks ago. Profuse maculo-papular syphilide. Marked round cell infiltration; no spirochetes found.

CASE 5.—H. T. Chancre in sulcus. Discrete papular syphilide. No treatment. *Spirochæta pallida* were found in moderate numbers in the papillæ and in the connective tissue lymph spaces. After five weeks' treatment of mercury in pill form, 1 gr. daily, no spirochetes were found in a pigmented portion of skin removed from the back, marking the site of a syphilitic papule.

CASE 6.—W. H. A. History of chancre 7 months ago. Was treated at once for two months with pills, and then irregularly until five weeks ago. For the past five weeks had no treatment. Now has a discrete papular syphilide on the back and mucous patches on the tongue and lip. Papule removed from back. No spirochetes were found.

CASE 7.—A. H. Syphilis of 18 months' duration. Has been taking mercury and potassium iodid. Has an iodid acne, one lesion of which was removed. No spirochetes were found.

CASE 8.—J. C. Chancre and general syphilitic macular eruption. Was circumcised and part of the chancre, the skin of the prepuce, together with a mucous patch from the scrotum and a macule from the leg were examined. *Spirochæta pallida* were found in moderate quantities, in the chancre, mucous patch and macule. Were not found in the skin of the prepuce.

CASE 9.—G. A. Syphilis of 3 months' duration. Had neglected treatment. Took eight mercurial inunctions and then discontinued treatment until eighteen days ago when he began to take mercury in pill form. A fading, maculo-papular eruption is still present, a papule being removed. No spirochetes were found and very slight round cell infiltration.

CASE 10.—J. Mc. Had been admitted to the Philadelphia General Hospital three times in the past eight years, for the treatment of recurrent tubercular syphilides. Has a large lesion on the left arm, a piece of which together with the healthy adjacent skin were removed. He has taken no treatment for the past four years. Spirochetes were present in moderate numbers. They occurred in the deeper connective tissue, some distance from the ulcerated surface, and lying free in the lymph spaces. The adjacent skin contained no spirochetes.

CASE 11.—W. G. Chancre was removed by circumcision, and a syphilitic papule removed from the back. *Spirochæta pallida* were present in the chancre. In the papule the epithelium was intact, *Spirochæta pallida* were found in the papillæ and in the lymph spaces of the corium. A pigmented portion of skin marking the site of a papule was removed after the patient had taken mercury in pill form for 9 weeks. Examination showed no spirochetes or cellular infiltration, the section appearing as normal skin.

CASE 12.—J. W. Syphilitic papule removed from back. Had been taking mercury in pill form for three days. Spirochetes were present in small numbers between the cellular infiltrate and within the lymph spaces.

CASE 13.—P. Mc. Chancre obtained by circumcision. A maculo-papular syphilide removed from the back and from the arm. No treatment. Chancre shows pronounced round cell infiltration. No spirochetes found in epithelium. The blood vessel walls were thickened, especially the media and adventitia. A number of spirochetes were found diffusely in the tissue of the chancre and the papule of the arm, but none were found in that removed from the back.

CASE 14.—J. F. Chancre removed by circumcision and syphilitic papule removed from the back. No treatment. Chancre

2. Deutsch. Med. Wochschr., 1906, xxxii, p. 752.

3. C. R. Soc. d. Biol., Paris, 1906.

4. Dermat. Ztschr., Berlin, June, 1906, xlii, 393.

5. Med. Klin., Berlin, April, 1906.

6. Zeit. f. Hyg. u. Infect. Krank., 1906, 49.



showed marked round cell infiltration and a moderate number of spirochetes. The papule from the back showed but slight round cell infiltration and spirochetes were demonstrated only after a most diligent examination.

CASE 15.—Syphilis of several years' duration. Portion of periphery of tubercular syphilide removed from leg. No spirochetes were found.

CASE 16.—Syphilis of 9 months' duration. Neglected treatment. Recurrent eruption, mucous patches in mouth and anal condyloma. Was circumcised and a portion of the skin of the prepuce, together with a condyloma of the anal region examined. Spirochetes were found in the condyloma but not in the skin of the prepuce.

CASE 17.—B. R. Treated for syphilis by mercury in pill form for eight days. Prepuce removed by circumcision and a mucous patch on it and a condyloma of the anus examined. Spirochetes were found in the mucous patch of the prepuce but not in the condyloma.

CASE 18.—Chancre removed by circumcision and a syphilitic papule taken from the buttocks. No treatment. No spirochetes were found in the chancre and the sections of the papule were also negative.

CASE 19.—J. B. Profuse maculo-papular eruption present over entire body. No treatment. *Spirochætæ pallidæ* were found in large numbers in a papule removed from the back. A great number were present in the skin papillæ, and some sections show similar organisms between the epithelial cells.

CASE 20.—J. K. Syphilis of fourteen months' duration. Has a large tubercular syphilide on the right leg, a portion at the periphery of the lesion and the adjacent healthy skin were examined. In one section a few spirochetes were found lying free in the lymph spaces, and in another after a careful search they were demonstrated in the depth of the tissue.

CASE 21. J. R. Chancre removed by circumcision and a papule taken from the side of the chest. Section of the chancre showed pronounced round cell infiltration and a moderate number of spirochetes, lying between the cells. The epithelium of the papule is intact, no spirochetes between the cells. There is a moderate infiltration of round cells and a small number of spirochetes diffusely distributed between the cells, a few occurring around the capillaries of the papillæ.

CASE 22.—Syphilis of 4 years' duration. Portion of tubercular syphilide removed from the leg. Specimen showed connective tissue hyperplasia and moderate amount of cellular infiltrate. No spirochetes were demonstrable.

CASE 23.—H. P. Had two well defined indurated ulcers on the reflected layer of the prepuce. Patient was observed for ten weeks and is still under observation but shows no evidence of a secondary eruption on the body. At the end of ten weeks distinct mucous patches occurred on the glans penis. Prepuce was removed by circumcision and a piece of normal skin from the back. No spirochetes were found in the sections of the chancre, the skin of the prepuce or back.

CASE 24.—Through the kindness of Dr. A. O. J. Kelly a specimen of gumma of the brain was obtained directly from the autopsy table. A history of this patient states that he was unaware of a syphilitic infection and had never taken anti-syphilitic treatment to his knowledge. A portion of the gumma removed from the periphery shows spirochetes identical with those found in primary and secondary lesions of syphilis. They are present in large numbers at the periphery, the remaining tissue is necrotic.

Four lesions of psoriasis, from different patients, showed hyperplasia of the connective tissue, but nothing resembling the spirochete. Tissue from six cases of scabies showed only a slight degree of cellular infiltration and separation of the connective tissue due to serous exudation. Three lesions of varicella from one patient showed necrotic epithelium and serous exudation. A short organism, resembling a bacillus about 4 microns in length, was found lying between the connective tissue bundles. Nothing resembling the spirochete was found. Venereal vegetations from three patients showed marked papillary and connective tissue hyperplasia, but no

spirochetes. Fifteen sections of normal skin from different individuals were examined with negative results. Nine chancroids and two chancroidal buboes were submitted to a careful examination with negative results.

It will be seen that observations were made on 24 patients, subjects of acquired syphilis, from whom 34 pieces of tissue were examined. They include 7 chancres, 19 cutaneous secondary lesions, together with 3 pieces of healthy looking skin from patients with lesions of syphilis, 4 tubercular syphilides and 1 gumma.

In these 24 cases positive findings were obtained in 14 and negative in 10. In the patients giving a negative result, 7 had received antisyphilitic treatment and 3 had not. It is the consensus of opinion that *Spirochætæ pallidæ* are not found after mercury has been taken for some time. This has been the case with the patients we have examined, the organism disappearing before the cutaneous manifestations. The time of the disappearance of the organism after the ingestion of mercury is not known. In two cases in which spirochetes were found before the taking of mercury, none could be demonstrated after five and nine weeks of mercurial treatment. They were found in one patient after taking mercury for three days, and in another after eight days. In the seven patients where the examinations were negative, they had been taking treatment from seventeen days to eighteen months.

With a few exceptions it required a careful and diligent search to determine the presence of this organism. One is very likely, at times, to be confused by the similar, but not identical, appearance of elastic tissue, and we are led to believe that observers who report the finding of large numbers of spirochetes in the wall of blood vessels may have made this mistake.

*Spirochætæ pallidæ* are always the same, no matter in what tissue they may be found, but the morphology may vary somewhat, depending on the character and age of the lesion. Staining of tissue *in toto* is not the best means of demonstrating the morphology of the organism and in estimating its length the cutting of the section must always be considered.

In recent lesions the organisms are distinctly spiral, taking a black stain, showing from four to twelve curves, and are clear cut. In tertiary lesions they seem to lose some of their distinctness of outline and assume a more wavy appearance. They may be found isolated or grouped in small or large numbers, and as a rule, occur in largest numbers in the lymph spaces. They are also to be demonstrated in the epithelium, but not constantly.

From the findings one must consider all lesions of syphilis contagious, and handle them with due care. Spirochetes have never been demonstrated in the healthy skin, even where this was taken directly adjoining a syphilitic lesion. As far as our observations go, we have been unable to demonstrate spirochetes in other than syphilitic eruptions, occurring in subjects of syphilis.

In conclusion, we may say that the frequency with which this organism has been demonstrated in syphilitic lesions, by numerous observers, the results of inoculation experiments on apes and the relation which this organism bears to mercury, all speak in no uncertain terms for its specificity in the causation of syphilis.

We desire to thank Dr. A. O. J. Kelly for extending to us the facilities of the German Hospital Laboratory and for many courtesies extended in the preparation of this paper. We are greatly indebted to Mr. Karl Becker for valuable assistance in preparation of the specimens.



## RECOVERY FROM LEUKANEMIA.\*

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NEWARK, N. J.

*Patient.*—The case here reported is that of a child, aged 6, youngest of seven children, two of whom died during early life of scarlet fever. The parents are both healthy and there is no specific taint.

*History.*—This child was always well, was a breast-fed infant, and the only illness from which she had suffered was an attack of measles two or three years ago. She never had malaria, rheumatism, or influenza. Her color was always good, she was not short of breath, and could run and play as well as any other child of her age.

Wednesday, May 3, 1905: She went to school and seemed in her usual health.

Thursday, May 4: She was taken sick with general malaise, nausea, headache, no chill; temperature in the afternoon was 101 F. Thursday night she began to vomit, and Friday the vomiting was incessant; she was very restless, tossing about the bed continuously; the evening temperature reached 103. Her bowels were not loose, nor had there been anything in the diet which might suggest a cause for the vomiting.

Saturday, May 6: The vomiting ceased, she was very restless; during the day she passed about one pint of bloody urine, there was no bleeding from the bowel. About this time it was noticed that she was becoming very pale, she appeared pallid with a slight icteric tint. Her evening temperature rose to 103.

Sunday evening, May 7: Temperature was 104.5, pulse 160.

*Examination.*—There was a double pericardial friction sound heard at the base of the heart, and a venous hum heard in the vessels of the neck and over the pulmonary cartilage. Lungs were negative. Liver was somewhat enlarged. The spleen extended two finger's breadth below the free border of the ribs and was easily palpable. The child was very restless and delirious; there was no vomiting. Urine was negative, no blood and no bile.

*Blood Examination.*—A blood examination and count made on this day, gave 1,530,000 red blood corpuscles; 132,800 white blood corpuscles; 20 per cent. hemoglobin (Fig. 1).

Polynuclear neutrophils	58.75	per cent.
Lymphocytes, large and small	19.50	per cent.
Unclassified	6.00	per cent.
Mononuclears and transitional	4.25	per cent.
Basophils	.50	per cent.
Myelocytes	10.75	per cent.
Turke's cells	.25	per cent.

There were 20,000 nucleated red cells per c. mm.

Megaloblasts	10	per cent.
Normoblasts	68	per cent.
Metrocytes	19	per cent.
Microblasts	1	per cent.

Urine: Specific gravity was 1020, no albumin, no sugar. Microscopic examination showed uric acid crystals, no blood, no pus cells.

*Course of Disease.*—Tuesday, May 8: The temperature ranged from 101.2 to 102.4, respiration was 30, pulse varied from 140 to 148.

Wednesday, May 9: Temperature ranged from 101 to 103, pulse, 146; respiration 30.

Thursday, May 10: Temperature ranged from 101 to 101.2; pulse from 132 to 144; respiration, 30.

The child's condition was much improved; the pericardial friction sound was less distinct. The area of precordial dullness extended one inch to the right of the border of the sternum; spleen and liver were still palpable and the anemia and pallor were still pronounced.

Blood examination: 1,000,000 red blood corpuscles, 132,000 white blood corpuscles, 20 per cent. of hemoglobin.

Friday, May 11: Condition was about the same.

Saturday, May 12: Temperature ranged from 98 to 100, pulse from 118 to 120, respiration from 24 to 28. Area of pericardial dullness extended two fingers' breadth to the right of the sternal edge. The double pericardial friction sound had disappeared; the systolic murmur over pulmonic interspace

and the venous hum in the vessels of the neck were still present. The spleen could be palpated two inches below the free border of the ribs.

Blood count: 1,500,000 red blood corpuscles, 36,000 white blood corpuscles, hemoglobin, 20 per cent.

## Differential count:

Polynuclear neutrophils	56	per cent.
Lymphocytes, large and small	20	per cent.
Mononuclear and transitional cells	14	per cent.
Unclassified	4	per cent.
Eosinophiles	1	per cent.
Myelocytes	5	per cent.
Nucleated red cells	10,800	per cubic mm.
Megaloblasts	3	per cent.
Normoblasts	94	per cent.
Metrocytes	3	per cent.

Sunday, May 13: Temperature, 99.3; pulse, 112; respiration, 24.

Monday, May 14: Temperature, 99; pulse, 112; respiration, 24.

Tuesday, May 15: Blood count: 2,335,000 red blood corpuscles, 14,400 white blood corpuscles, hemoglobin, 40 per cent. (Fig. 2).

The venous hum was still present in the vessels of the neck. The spleen and liver were not palpable; pallor was less marked. Urine was negative. The area of pericardial dullness was less and the pericardial friction murmur could again be heard.

From this time on the improvement was quite rapid and



Fig. 1.—Enormous increase in leucocytes on May 7.

progressive, the hemoglobin registering 60, 70 and 90 per cent., and finally, in three months, 100 per cent.

The child was then up and about and seemed normal in every respect.

This appears to be a case of toxemia of unknown origin, but producing a rapid destruction of red cells, with marked stimulation of the bone marrow and spleen, so that all the cells characteristic of leukemia appeared in large numbers in the circulation. The destruction of the red cells was so pronounced that the blood findings also resembled those of a pernicious anemia.

The blood contained many macrocytes, showed granular degeneration, polychromatophilia, relatively little poikilocytosis, showed endoglobular changes, megaloblasts, marked anisocytosis, pyknotic changes in the nuclei of the red blood corpuscles, and the average red cell not lacking in hemoglobin.

Perhaps in that it is not unusual in children, during the initial rise of a severe leucocytosis, to find immature leucocyte forms in the circulation, including myelocytes and nucleated red cells, this case is one of an unusually

\*Read before the Society of the Alumni of Bellevue Hospital.



high count accompanying a severe infection with an enormous erythrocyte destruction.

von Leube in 1901 described a somewhat similar case. The patient was a boy, aged 10, who suffered apparently from a combination of myelogenous leukemia and pernicious anemia running a very acute course of about three weeks, with clinical symptoms of an acute infectious disease with hemorrhages. The red cells were reduced to 266,000; numerous nucleated reds were present, of which 70 per cent. were megaloblasts. The white cells numbered 10,000.

Differential count showed: Lymphocytes, 40 per cent.; polynuclear leucocytes, 44 per cent.; neutrophilic myelocytes, 13 per cent.; large mononuclear leucocytes, 2 per cent. The bone marrow was hyperplastic and red, and there were myeloid changes in the spleen and liver. The name of leukanemia was suggested by von Leube for this condition.

Luce in 1903 described another case in which the white cells were at no time increased over 81,000; the red cells were 1,200,000, and hemoglobin 30 per cent.

Differential count showed: Polynuclear neutrophiles,

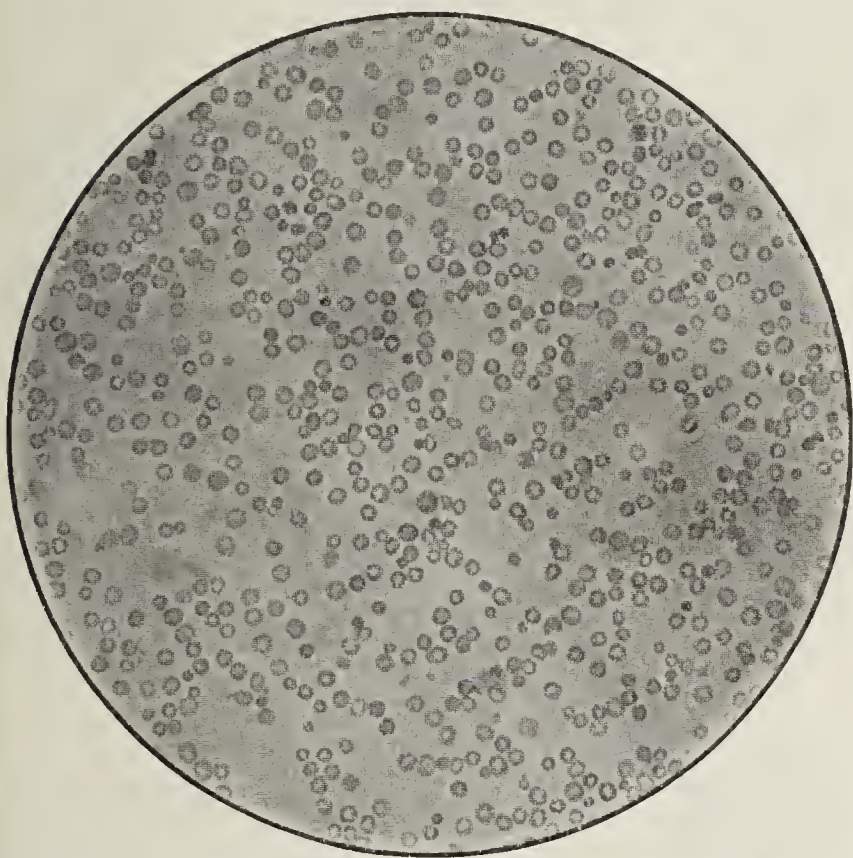


Fig. 2.—Return to practically normal blood in 8 days, May 15. Contrast with Fig. 1.

46 per cent.; large lymphocytes and non-granular myelocytes, 49 per cent.; small lymphocytes, 4 per cent. The autopsy showed leukemic infiltration of the liver and kidneys.

A case of von Jaksch seems related on the one hand to acute myelogenous leukemia, and on the other hand to an acute infectious process. The patient had marked anemia with multiple areas of periostitis and enlargement of the spleen, liver and lymph nodes. The leucocytes varied between 10,000 and 70,000, from 4 to 30 per cent of neutrophilic myelocytes being present. There is no evidence that this case could not be considered an irregular type of myelogenous leukemia, the blood picture being altered by the acute periostitis, a phenomenon often observed when leukemia is complicated by an acute infectious process.

I have yet to find in the literature a case with such enormous blood changes, as the one which I report, terminating favorably.

In conclusion I desire to thank Mr. L. B. Goldhorn for checking some of the blood counts, also Dr. L. Emmett Holt, whose assistant confirmed some of the differential counts.

## A RAPID AND SIMPLE METHOD OF STAINING SPIROCHÆTA PALLIDA.\*

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In a former paper<sup>1</sup> I pointed out that a solution of methylene violet (Bernthsen's), methylene blue and eosin in methyl alcohol makes an excellent stain for blood films, and suggested the use of such a solution for staining *Spirochæta pallida*. With the very limited number of film preparations then at hand, some fair results were obtained by this method. Recently it has been possible to get a large number of films from a case of primary syphilis and to test more thoroughly this stain. The result has been so good that it seems the method may be of value in diagnosis.

The case occurred in the practice of Dr. Simpson, and he has very kindly furnished the following history:

*Patient*.—Male, aged 21, presented himself Jan. 2, 1902, on account of a sore on penis.

*History*.—Father living and well; mother dead of tuberculosis; one brother and one sister living and well. He gave a personal history of venereal disease, otherwise negative. He had had no previous venereal disease.

*Present Illness*.—Patient was exposed in intercourse Nov. 21, 1906. About December 1, three sores appeared on penis, one on the right side near the corona glandis, one on the dorsum and one near the frenum. These were treated locally and healed December 18. About December 24 patient noticed a new lesion on the left side; this started as a small elevation which later ulcerated. It was hard and painless. He did not notice any other sores.

*Examination*.—Patient was well developed and well nourished. Penis showed three ulcers, one on dorsum just back of the glans, about the size of a coffee bean, one on the left side slightly larger, and one near the frenum somewhat smaller. All were very hard, cartilaginous and insensitive. Left inguinal lymph glands were enlarged but not painful. The ulcers were touched with carbolic acid and a dusting powder applied; the skin over the swollen glands was painted with iodine. On January 6 smears were made from one of the ulcers and stained, with negative results. On January 8, fluid was withdrawn from the swollen inguinal gland by needle puncture; coverglass films from this showed *Spirochæta pallida* in every preparation.

### METHOD OF STAINING.

The staining solution requires the following: Pure absolute methyl alcohol, medicinally pure methylene blue, and a good yellowish eosin and methylene violet (Bernthsen's, insoluble in water). The last-named substance is easily made from methylene blue by heating with alkali in very dilute solution. The raw product, which I have designated as crude methylene violet, may be used. The stain is a saturated solution of methylene violet in methyl alcohol, to each one thousand parts of which, one part of methylene blue and two parts of eosin are added. The following formula is one I have used:

\*From the Bacteriological Laboratory, University of West Virginia, Morgantown, W. Va.

1. Jour. of Infect. Dis., 1906, iii, 422. Full directions for making methylene violet are there given.



Methylene violet (crude).....	25
Methylene blue (med. pur.).....	10
Eosin (yellowish) .....	20
Methyl alcohol (pure).....	100

The dyes are dissolved in the warm alcohol by repeated shaking and then allowed to stand at room temperature for twenty-four hours before using. A bottle with a well-fitting ground glass stopper should be used.

The staining technic is in principle that of Leishman. The cover-glass is held in a suitable forcep and covered with the staining solution. This is allowed to act undiluted for forty-five to sixty seconds. By this means the specimen is fixed and thoroughly permeated with the alcoholic solution at the same time. The preparation, with the alcoholic dye still on it, is now quickly immersed in about 10 c.c. of a 1:20,000 solution of sodium carbonate, and the mixture stirred by tilting the dish. The dilute alkaline solution is conveniently prepared immediately before use by adding one drop of a 1 per cent solution sodium carbonate to 10 cubic centimeters of distilled water in an Esmarch dish. By this means the alcoholic stain is suddenly greatly diluted by the alkaline water, and in this dilute watery mixture the staining rapidly completed. After one or two minutes the cover-glass is removed, washed in distilled water, the back carefully cleaned and dried on blotting paper, and the preparation mounted in water and examined with the oil immersion objective.

The leucocyte protoplasm should be blue, the nuclei purple, erythrocytes grayish blue or pink according to the amount of washing with water. The plasma film should contain a fine granular deposit all through, giving it a reddish tint. This should not appreciably obscure the field. If this finely granular background is absent the preparation is probably insufficiently stained. It may be dried between filter papers and stained again in the same way. Weak staining indicates, as a rule, that the methyl alcohol is not saturated with the methylene violet.

The examination of the preparation is best undertaken in the water mount. With a little care one can use the oil immersion objective very satisfactorily. A mechanical stage is a great convenience in thoroughly searching the preparation.

The *Spirochæta pallida* is intensely stained by this method, and readily catches the eye as the field moves under the microscope. It is characterized by its *regular, smooth* and *narrow* corkscrew windings, and, as a rule, is easily distinguished from bits of chromatin threads or other similar pictures found in these preparations. An inexperienced observer might, however, mistake some of these for it, but hardly after a previous careful study of a good specimen of the organism. To make a permanent mount the preparation should be blotted, allowed to dry several hours at room temperature, and finally mounted in rectified balsam. Fading is then very slight.

#### PRECAUTIONS.

In order to find the spirochetes in a case of syphilis, films should be made before treatment is instituted, as their number is greatly reduced by the use of mercury, and the difficulty of finding them correspondingly increased. In the above case it was not possible to find them in the primary lesions, probably because of the previous cauterization and other local treatment. The lymph gland puncture revealed the organism at the first trial. The films should be made as thin as possible, using the edge of the cover-glass or slide to spread the material. The examination of the stained specimen must

be made with a good light and a wide iris diaphragm, and with clean lenses of good defining power. The preparation must be thoroughly gone over. Failure to find the spirochete means little or nothing as regards diagnosis, but the discovery of this extremely slender spiral in the primary sore, or better in the swollen lymph glands, is of about the same value in the diagnosis of syphilis as the finding of acid-fast bacilli in the skin nodules of leprosy, or of similarly acid-fast bacilli in the sputum of pulmonary tuberculosis. In the case from which the films for this work were obtained the diagnosis was somewhat obscure until the spirochete was found. The patient presented three primary lesions equally hard, and he was very doubtful about the history of them. Record of the previous treatment, which had included cauterization, was not obtainable.

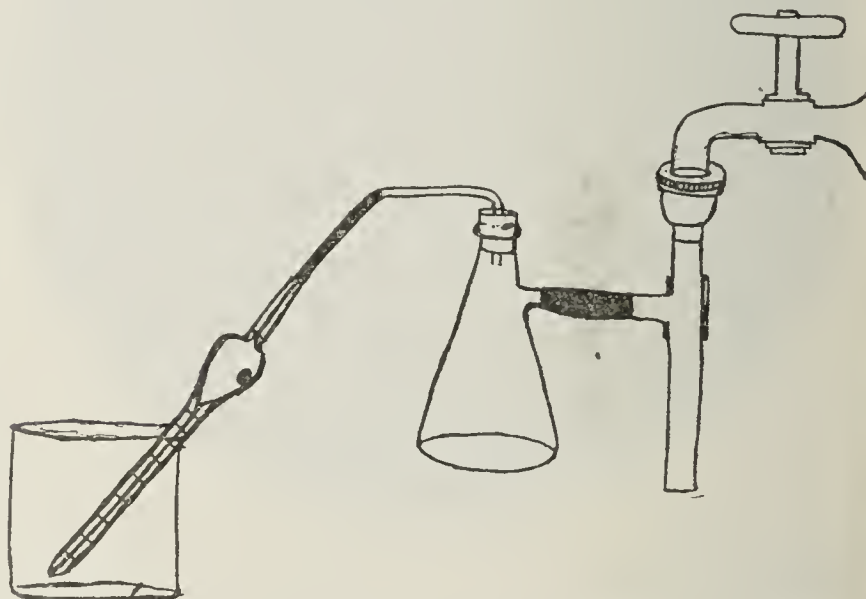
In conclusion, I wish to acknowledge my obligation to Professor Simpson for his cordial coöperation in furnishing the material for examination.

#### METHOD OF CLEANSING BLOOD PIPETTES.

ALBERT ROBIN, M.D.

WILMINGTON, DEL.

I have used for years the following simple method for cleaning blood pipettes. The suction end of an ordinary air-pump (Chapman's), with a coupling for a smooth faucet is connected with a filter flask. Through the rubber stopper of the latter is inserted a bent glass tube, which is connected with the rubber tube of the blood



Apparatus for cleansing the blood pipette.

pipette. The end of the pipette is immersed in a beaker containing distilled water and the pump started. When the pipette is thoroughly washed, alcohol, ether and air are allowed, in turn, to pass through the pipette. The entire operation requires but slight attention and no effort whatever.

1223 Market Street.

**Man With Two Fathers.**—French historians mention that the bishop of Lucon, Jacquemet-Gauthier, was officially recognized in 1773, as having two fathers. His mother, three months after the death of her first husband, Jacquemet, married Gauthier, and seven months after this second marriage the child was born. On the advice of the medical faculties of Paris and Montpellier, parliament officially recognized him as the son of the two husbands, conferring the name of each on him and entitling him to inherit from each. (*Gaz. Méd. Belge*, xix, No. 17.)



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 523.)

(A list of all accepted articles is published on one of the advertising pages of *The Journal* in the first issue of each month.)

### NOVARGAN.

#### SILVER PROTEINATE.

Novargan is an organic silver-albumin compound containing 10 per cent. of silver.

It is a fine yellow powder, soluble in water, forming a practically neutral solution, from which it is not precipitated by sodium chloride, nor affected by the usual reagents for silver salts. Solutions must not be heated and must be protected from the light.

The solution is darkened by hydrogen sulphide or ammonium sulphide, but no precipitate is produced.

**Actions and Uses.**—Novargan is a bactericide; it is claimed to be more effective and less irritating than other protein-silver compounds.

It is said to be useful for the treatment of gonorrhea, especially as an abortive in the first stage.

**Dosage.**—0.5 Cc. (8 minims) of a 15 per cent. solution, by instillation on the anterior surface of the urethra, through a catheter (23 Cm. (9 in.) long, No. 13 French scale) as an abortive.

Manufactured by The Heyden Chemical Works, Radebeul, Germany, and Garfield, N. J. U. S. trademark.

### ORGANIC IRON PREPARATIONS.

#### "MASKED" OR "NON-IONIC" IRON.

The term "organic iron" is confined by modern usage to those organic compounds of iron which do not give the chemical tests of this metal (blue color with potassium ferrocyanide, blue-black color with hematoxylin, etc.) until the structure of the molecule has been destroyed by reagents. The resistance to this destruction varies greatly; some (such as hemoglobin) require incineration or the action of concentrated acids; while others give the iron-tests after treatment with even fairly dilute acids. The organic iron compounds occurring naturally in animal and vegetable tissues (which are often termed "food-irons") belong generally to the more resistant class, while the iron of the synthetic preparations is usually liberated fairly readily. This does not, however, constitute a sharp line of distinction between the two classes, nor is there any good evidence that they differ in therapeutic action. Until this difference is established all organic iron preparations, whatever their source, may be placed in a single class. It is evident, however, that an organic iron (chemically) which is destroyed by 0.2 per cent. hydrochloric acid at the body temperature, can not be classed as an organic iron in the therapeutic sense. It should also be emphasized that salts of iron (which give the iron tests directly) are classed as inorganic iron,

whatever the acid radicle. True albuminates, peptonates, etc., of iron are, therefore, inorganic.

**Actions and Uses.**—Organic iron preparations are used to increase the hemoglobin in conditions of anemia. Bunge supposed that only organic iron could be absorbed and assimilated by the body, the reputed action of inorganic iron being altogether indirect, and due to its local effects on the alimentary canal. This theory was modified by Abderhalden, to the effect that inorganic iron, while it could not be converted into hemoglobin, nevertheless stimulated the assimilation and conversion of organic iron. The latest work, however (Tartakowski) seems to prove conclusively that inorganic iron is assimilated and converted into hemoglobin, and is in so far therapeutically, fully equal to organic iron. Many authors, however, still adhere to the theories of Bunge and Abderhalden. At all events, a real difference exists between the organic and most of the inorganic preparations, namely, in the local irritant and astringent action of the latter, and the absence of these effects in the organic compounds. These actions may be desirable in some cases, and undesirable in others. It should also be remembered that organic iron may often be administered in sufficient amount, and most economically, by selecting a dietary rich in iron, such as red meats, egg-yolks, green vegetables, whole wheat, etc.

### PROTARGOL.

#### PROTEIN SILVER SALT.

Protargol is a compound of albumin and silver, containing 8.3 per cent. of silver in organic combination.

According to the patent specification insoluble protein silver compounds, obtained by treating protein bodies with silver salt, are rendered soluble by treatment with a solution of albumoses.

It is an impalpable, yellow powder, soluble in twice its weight of cold water, producing a solution which is not affected by the ordinary precipitants of silver salts, such as alkalies, sulphides, chlorides, bromides, iodides, nor by heat.

Ammonium sulphide gives a dark color to the solution without precipitation. Addition of strong hydrochloric acid produces a precipitate of unchanged protargol, soluble in a large quantity of water. A solution containing sulphuric acid is not colored blue by diphenylamine. It is compatible with picric acid and picrates and with most metallic salts. It should not be exposed to light. It is precipitated by cocaine hydrochloride, but this is prevented by addition of boric acid.

**Actions and Uses.**—Protargol is a non-irritant bactericide and antiseptic. It is being recommended in acute and chronic gonorrhea as a non-irritant substitute for silver nitrate and in diseases of the mucous membranes of the eye, ear, nose and throat, particularly for the treatment of conjunctivitis.

**Dosage.**—From 0.25 or 1 per cent. solutions in acute gonorrhea, to 5 or 10 per cent. instillations in chronic cases, in cystitis and urethritis; in solutions of 1:1000 to 1:200 as irrigations. Used also in form of bougies and tampons (5 to 10 per cent.). Its solutions in water are made by pouring on the protargol a little cold water, stirring into a thick paste, and gradually adding the remainder of the water under stirring; or by sprinkling the protargol on the surface of the whole of the water (cold) and setting it aside until solution occurs.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 615,970. U. S. trademark No. 30,882.

(To be continued.)

**Naming of Carbon Compounds.**—Ene: the suffix en or ene generally indicates the unsaturated group C:C, thus CH<sub>2</sub>:CH, is ethene (eth-ene). Exceptions: terpene, naphthalene, anthracene, etc. Enol: The suffix enol (en + ol) indicates an unsaturated alcohol, thus CH<sub>2</sub>:CHOH is ethenol.—*Pharm. Rev.*, August, 1906.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, FEBRUARY 16, 1907.

## SCARLET FEVER AND MILK.

There can be no question that scarlet fever is commonly spread by what is more or less loosely denominated "contact," a term applied to fairly close proximity to persons suffering from the infection, or to clothing and other articles handled by or brought into the neighborhood of the patient or convalescent. Other modes of dissemination, however, must not be overlooked. It has been asserted by the daily press of Chicago that the recent extension of scarlet fever in that city has been due, in part at least, to infected milk, especially in the suburb of Evanston, where it is claimed that a fairly direct connection has been shown between the use of milk distributed by a particular company and the appearance of cases of scarlet fever. We have not ourselves made any investigation of this epidemic, and so far as known an official public report has not yet been published. Since the possibility that scarlet fever can be conveyed by milk has been called in question in some quarters, however, it seems worth while to consider briefly what the evidence really is that scarlet fever can be transmitted in this way.

Even a partial survey of the literature on this subject shows that sanitary authorities are unanimous in attributing certain outbreaks of scarlet fever to milk infection. Swithinbank and Newman, in their comprehensive treatise on the "Bacteriology of Milk," have tabulated, with references and abstracts, some 40 different epidemics of scarlet fever comprising over 3,400 cases that have been traced by competent investigators to the use of milk from infected dairies. A typical instance or two may be cited. In one outbreak occurring in Upper Clapton, England, in 1892, 178 cases of scarlet fever appeared suddenly in a localized area among houses of good class supplied by a particular milkman. Most cases occurred where most milk was consumed, and the houses supplied by the particular milkman had twelve times as many cases as all of the other households supplied by all the other milkmen in this district. It was found that a child in the family of one of the men engaged in handling the milk had suffered with scarlet fever, and the outbreak was not unreasonably attributed to infection of the milk from this source.

Another important instance of milk infection was investigated under the auspices of the Massachusetts State

Board of Health.<sup>1</sup> This outbreak occurred in the cities of Beverly and Salem and on a neighboring island—Baker's Island. In Beverly, out of twenty-one patients with scarlet fever, nineteen used milk supplied by one dealer. Every one of the twelve patients on Baker's Island had used milk supplied by this milkman, while others on the island who had obtained milk from other sources had not been taken ill. On the first suspicion that the milk supply was the probable source of infection, the Boards of Health of Beverly and Salem ordered the dealer to discontinue distributing milk in these cities. This occurred on July 8; and, allowing for patients already infected to become ill with the disease, only five additional cases developed after the infection had been stopped, although in the first half of the month there were fifty-five cases, not including those on Baker's Island. On visiting the three farms from which the milk dealer obtained his supply it was found that on one of them three children had been sick during the preceding month with what was considered undoubtedly a mild form of scarlet fever. One of these children, a boy fourteen years of age, assisted in the handling of the milk. The sudden outbreak of this epidemic and the equally sudden cessation, after the source had been determined and the distribution of the milk discontinued, are especially significant.

It is by a detailed study of epidemics of this character that health authorities have become convinced that it is possible for milk to serve as a vehicle of infection in scarlet fever. Objection has been made that, since the germ of scarlet fever is not known, the mode of spread of the disease is also conjectural. This position is quite untenable. We know that hydrophobia can be communicated by the bite of a rabid dog, although the germ of hydrophobia is still unknown. No one can believe that our knowledge of the mode of spread of smallpox would be materially more complete than it is if the parasite of the disease were known to us. The fact that typhoid fever can be spread by infected milk is universally recognized, and the evidence in case of scarlet fever is of exactly the same character and is quite as conclusive. As a matter of fact, the typhoid bacillus has never been found in milk suspected of having caused an outbreak of typhoid fever, and from the standpoint of scientific evidence the finding of either typhoid bacilli or scarlet fever germs in milk would not in any wise strengthen the case for milk infection. It may be pointed out that long before the germs of Asiatic cholera or typhoid fever were discovered the evidence that these infections were commonly water-borne was overwhelming and was accepted by all clear-thinking investigators. While it seems clear that scarlet fever is less commonly spread by milk than is typhoid, there is no doubt that the danger exists and should be guarded against. If a particular epidemic is proved to have some other source, this does not invalidate the general proposition.

1. Report of Mass. State Board of Health, 1901, p. 561.



## EXPERIMENTAL SYPHILIS.

Although it was claimed by Klebs as long ago as 1879 that syphilis could be artificially produced in apes, the subject did not receive much attention till a few years ago, when Metchnikoff and Roux took up the work afresh at the Pasteur Institute. The success of these investigators led to further research, in which a prominent part has been taken by Neisser of Breslau and Finger of Vienna.

The researches of Metchnikoff and Roux were carried out on the higher anthropoid apes, the chimpanzee especially being used. It was shown that syphilis could be inoculated into these animals with the production of a primary lesion, after a period of incubation, followed later by secondary manifestations. Metchnikoff and Roux laid stress on the fact that anthropoid apes were necessary, but later experiment has shown that some varieties whose relationship to man, as shown by the precipitin test, is remote, may contract syphilis. In the more remote species of ape, however, the disease is not so typical, the incubation period is usually shorter, and the secondary manifestations are abortive or even lacking, according to the nearness in blood relationship to man.

The revival of the experimental work on apes has led to a similar revival on rabbits. It is not generally known that in 1881 Haensell claimed that he was able to produce inoculation syphilis of the iris and cornea in rabbits. In one animal he even described gummata in the liver. Schucht,<sup>1</sup> working with Neisser, has repeated these experiments, and has been able to confirm them. Using an emulsion of inguinal glands from fresh cases of lues, which he inoculated into the anterior chamber of the vitreous, he was able to produce in some instances a parenchymatous keratitis, in others a lesion which resembled a gummatous iritis. The lesion appeared only after a long period of incubation, was not at all comparable to an ordinary infectious eye process, and was always accompanied by the *Spirochæta pallida* in large numbers. In no animal did Schucht find evidences of generalization of the process, none showed lesions of the internal organs, and in none did an examination of the blood serum show evidences of the disease.

It is evident from these researches that syphilis is more or less transmissible to the lower animals, and that, although the best chances of success are gained by using animals closely allied to man, some remote from him in blood are also susceptible. This experimental work has thrown some light on aspects of the problem of syphilis which were, at best, poorly illuminated by clinical experience. It has been shown many times in the experiments on monkeys that the organism of syphilis belongs to those which must enter the body in a particular way, in this instance through an abrasion. If the virus be introduced into the blood, into the peritoneal cavity, or subcutaneously it fails not only to produce the

disease, but also to produce any protection against a later inoculation of the surface. The period of incubation of the disease, as shown by the experiments, corresponds very closely, both in monkeys and in rabbits, to that which clinical experience had laid down as the period in man. In rabbits the average period of incubation is about twenty-nine days; in apes the average is a little lower, and, as a rule, the disease seems least virulent in them when the incubation is short. The question of the infectiveness of the blood has also been cleared up to some extent, and it has been shown that even six months after the onset of the disease it still contains the causal parasite.

The infectiousness of the tertiary lesions has been proved both by Finger and Landsteiner and by Neisser, though it is not claimed that all tertiary lesions are equally infective, and many of the experiments were failures. The infection of the spermatic fluid has likewise been demonstrated, though here, again, the percentage of cases in which such infectiveness could be shown was small. In many ways the work has led to valuable discoveries, and more will probably follow.

## HOSPITAL AND DISPENSARY ABUSE.

It is strange that the hospitals and dispensaries of this country should be so shamelessly flooded with pseudo-charity patients, having no claim whatever to gratuitous service. It can be explained only on two hypotheses: First, the working of that innate trait of human nature which prompts to obtain something for nothing, and, second, the lack of good business discrimination on the part of the institutions whose benefits are thus abused.

From the point of view of the profession the abuse is a serious one. Many a struggling young city physician is deprived of the opportunity of earning a living because patients, who are amply able to pay ordinary fees, stultify themselves by accepting hospital alms. The value, too, of medical service, in the eyes of the laity, is much depreciated; as, indeed, is always the case when things can be obtained without effort or sacrifice. The individual who, at a dispensary, has received careful treatment at the hands of one of the leading specialists of the city at no greater outlay than the time and trouble he took to present himself at the clinic, will hesitate a long time before paying from one to five dollars for the same service at the hands of one of the rank and file of the profession.

But from a humanitarian standpoint, one important reason why this abuse should be remedied is that the worthy poor, the class for which such institutions are supposed to exist, are deprived of the opportunity of using them. Every year hundreds of the sick and needy, in the large centers of population, are unable to get free medical service from the hospitals and dispensaries because these institutions are already overcrowded and worked beyond their capacity. This, of necessity, in-

1. Münch. med. Wochschr., Jan. 15, 1907.



creases the gratuitous work of which the general practitioner, under the most favorable circumstances, has so much to do. And all this because well-to-do individuals, who would be righteously indignant if accused of stealing, are filching from the needy the attention and service which state and individual enterprise have provided.

To such an extent has this abuse spread that in some places active measures have been taken to check it. In Europe, where the hospitals are so largely supported by voluntary contributions, the abuse has become a menace to their continued existence. Only recently in London an important conference was held to consider ways and means of checking the evil, while the Vienna hospitals now demand a "testimonial of poverty," signed either by the landlord of the tenement in which the applicant lives or by specially appointed guardians of the poor. In this country some of the medical societies have passed resolutions decrying the abuse, but so far as we know no active measures have been taken to check it.

#### MRS. MARY BAKER EDDY'S CASE OF HYSTERIA.

No one more than the writer of the serial articles on the Christian Science cult appearing in the current numbers of *McClure's Magazine* is likely to approach the life history of Mary Baker Eddy with the same regard for accuracy, the same respect for truth, and to bring to the laborious task the same indefatigable energy so necessary for an enduring type of biographic research. Indeed, as a contribution to our knowledge of the woman and her creed, it is so singularly free from invective and irreverence as to compel admiration and challenge inquiry. Discrediting all that has been said or written of "Mother" Eddy by penny-liners and pamphleteers and submitting as evidence only the testimony set forth in *McClure's*, how much appears there in support of the fact, not the theory, that Mrs. Eddy always has been, is, and always will be, the pitiable victim of the grand neurosis, better called grand psychosis—hysteria?

Mrs. Eddy, it can not be denied, is a religious type; Mrs. Eddy, it will not be denied by those qualified to say, is a pathologic type and, if you please, a clinical entity. How shall she be classified? Relieved of the glamor of deification, stripped of her self-endowed sanctity, the founder of the Christian Science church has her counterpart in many of the types of psycho-neurotics and hysterics studied and grouped by Charcot, Briquet, Guinon, Colin, Freud, Moebius, Janet and Mitchell.

The rôle of heredity is manifest in Mrs. Eddy's family history, although its pathologic proportion, so far as we are privileged to know, is not great. On the paternal side, the high temper of the father rose to uncontrolled acts of destructiveness. The mother, we are told, was an ardent reader of the Bible and believer in miracles. Whether the "ghostly visitations" which came to the daughter Mary at the tender age of eight years are to be interpreted as hysterical hallucinations of an auditory or

visual type, it is, in the spirit of fairness, difficult to say. The Shaker cult and the pervasive influence of its religious mysticism on the community for miles around the Baker home, together with early and intensely religious training, would tend to make the youth of that period impressionable and visionary. It should also be remembered that the Samuel-like experience of "being called" is not without a parallel in the life of that other sanctified personage, Ann Lee, "Mother Ann" of Shaker fame. In the abstract, all autosuggestion of this order must be construed as hysterical, but, as a sign of the times, it is robbed of some of its prestige in Mrs. Eddy's own case.

Following the recital of many and diverse spiritual events, her biographer points out the chronic state of her physical ills, and one is impressed with Mrs. Eddy's easy transition from psychologic to pathologic premises. The leniently disposed of her friends called the girl Mary "different" from the rest of the family. Others, more critical, referred to her "tantrums" and the ever amiable, yet outspoken, Dr. Ladd unhesitatingly pronounced her case as one of "hysteria mingled with bad temper." From her girlhood days, until "the patient" attained the age of 40, hysteric episodes, fits, seizures, trance-states, and nervous invalidism abound. To the precocity of Mary Baker's childhood, the brooding and spiritual unrest of her adolescence, it is pertinent to add the disastrous effect of two disappointing marriages, which, together with other overwhelming domestic infelicities, established a deep-rooted neural instability, fraught with obsessions, phobias, imperative ideas, catalepsies and well-poised megalomania.

From a neurologic viewpoint, no great power of discernment is necessary to see, in Mrs. Eddy's early abandonment of her son, an act betokening profound psychic anesthesia, which condition is not at all uncommon in the mental state of hysterics. And all the apologies sung by her in poetry or prose will not suffice to explain away this act except as a phenomenon of a morbid mind. Adhering still more closely to an analysis of the mental state, what psychologist will fail to take cognizance of Mrs. Eddy's irrepressible, colossal egoism, by virtue of which she calmly appropriated all of her benefactor Quimby's "Art of Mind-Healing" and erected his doctrines into a creed which utterly offends through its immature logic and immodest use of I's? "*I* called it *Christian* because it is compassionate, helpful and spiritual. God *I* called *Immortal Mind*. The physical senses, or sensuous nature, *I* called *error* and *shadow*. Soul *I* denominated *substance* because soul alone is truly substantial. God *I* characterized as individual entity, but his corporality *I* denied. The real *I* claimed as eternal, and its antipodes, or the temporal, *I* described as unreal. Spirit *I* called the *reality* and matter the *unreality*." Just where the morbidly conscious "ego" retires, to let rank plagiarism sit in its place, may be seen in Mrs. Eddy's successful effort at emulating Shakerism.



Mother Lee is the God-anointed woman; Mother Eddy, the woman God crowned; Mother Lee's Church is the Church of Christ; Mother Eddy's Church, the Church of Christ, Scientist. (Note further parallelisms in *McClure's* of February.) All of this and much more is so expressive of the hysteric "ego" as to merit prominence in any estimate of Mrs. Eddy's psychopathic state.

The history of an initial injury to the back from a fall on the sidewalk, the subsequent avowal of an incurable spinal trouble, the years of total disability in the legs, the vague and experimental treatment with its failures, the appeal to Quimby in such phraseology as "and only you can save me"—the arrival at Quimby's "without sinking from the effects of the journey"—the cure so suddenly wrought that, "in less than one week, I climbed 182 steps to the Dome of the Portland City Hall, and in three weeks a spinal trouble of years' duration entirely disappeared"—what else is all this but the familiar picture of a classic hysterical paraplegia?

Therefore, be it said in justice to the founder of this twentieth century cult that, from a specialistic viewpoint, Mrs. Eddy is the victim of a mental malady, in which hereditary influence, provocative agents, motor accidents, physical and moral shocks, painful emotions and mental disintegration are so strangely mixed and yet so obviously present that the diagnosis of hysteria is at once easy and convincing.

#### ALCOHOL IN THE NAVY.

The article of Dr. Lovering in this issue raises certain questions which are worthy of serious consideration. If, after forty years of prohibition, the disability from alcoholism in our Navy is seven or eight times greater than in the British and German navies, it might not seem so illogical to advocate the reintroduction of the grog ration or, at least, and probably much better, the beer-selling canteen. When, however, as Lovering says, the sentiment in favor of temperance is weak, the officers discourage it by their example and by neglecting to discriminate in matters of promotion and privileges between the man who has proved himself untrustworthy by disabling habits of alcoholism and the temperate man, there would seem to be possibly another remedy to be first tried. If officers themselves are not temperate examples, we have in this alone a serious handicap to any temperance regulations for those below them. Objections might easily be made to giving up the use of wines and liquors on account of the alleged necessity for entertaining in foreign ports, etc., but if the absence of liquor was a government regulation the officers themselves could not be blamed and the parties higher up could stand it. It would probably have as a compensation a considerable economy in the mess bills, and it is going a long way to urge that there is any necessity on their own account for even moderate drinking by naval officers. How many disasters and how much money lost are due to drinking habits of American naval officers no one could positively say, but that there have been such disasters and losses in navies no one can deny, and there

is an ever-present possibility of such in the existing state of affairs. In former times the idea was that the fighting men in the navies did better for stimulation, and the serving of grog was a regular preliminary to an engagement. At the present day "the man behind the gun" needs all his nervous power at its best. He works with instruments of precision at long range, instead of the old fashion of yard-arm-to-yard-arm gunnery methods, in which the reckless valor induced by alcoholic stimulation seemed to short-sighted officers to be an advantage.

#### GASTROSTAXIS.

Hematemesis may be the result of a variety of conditions, the most common of which is gastric ulcer. In a certain number of cases of profuse hemorrhage from the stomach no lesion is discoverable at operation or at autopsy. By some this form of bleeding has been supposed to be vicarious, at times taking the place of menstruation or of hemorrhoidal discharge. In the opinion of Dr. W. Hale White,<sup>1</sup> who discusses the entire question at considerable length, the hemorrhage under the circumstances mentioned is due to the oozing of blood from the mucous membrane of the stomach or duodenum. He has adopted the term gastrostaxis as descriptive of the disorder, in analogy with epistaxis. White has succeeded in collecting twenty-two cases of the kind from the literature, including two of his own, and to these he adds reports of seven previously unpublished cases. Only such cases are included as exhibited after death or on inspection of the interior of the stomach during life an absence of ulceration or of other recognizable cause for hemorrhage. Twenty-seven of the patients were women and only two men. The vast majority of the cases—twenty-three—were observed between the ages of 21 and 39 years—twelve between 21 and 29 and eleven between 30 and 39. The youngest patient was 18, the oldest 54. The essential symptom of the disorder is the hematemesis, but in addition there are vomiting and pain in the epigastrium. The bleeding varies within wide limits, at times being rather profuse. It may be repeated frequently over a long period of time. No cause for the disorder has yet been discovered. The affection is uncommon, having been observed but three times among 7,500 autopsies at Guy's Hospital out of a total of 32,000 cases. Recovery appears to be the almost invariable outcome. The condition can, as a rule, be readily differentiated from other forms of gastric hemorrhage with the exception of gastric ulcer. In the last-named disorder, however, the vomiting is likely to be greater and the remaining symptoms more pronounced and more unyielding or more persistent. In the way of treatment the patient should be kept quiet in bed for some time after the bleeding has ceased. He may be permitted to suck bits of ice, but for a time he should have no food. From five to ten minims of a solution of adrenalin hydrochlorid, 1 to 1,000, may be given by the mouth; also a solution of ferric chlorid, half a dram, with an equal amount of glycerin; and twenty grains of cal-

1. *Lancet*, Nov. 3, 1906, p. 1189.



cium chlorid may be given thrice daily. Surgical intervention is definitely contraindicated. Three or four days after the bleeding has ceased milk may be given in rather generous amounts, and the diet thereafter may be gradually and progressively increased.

#### ANOTHER MEDICOLEGAL POINT SETTLED.

An English physician was recently sued by a patient for a betrayal of professional confidence. The remarkable thing about the case was that the confidential information was not communicated to a third person, but to the physician himself. It appeared that the physician's chauffeur was taken ill and entered an infirmary, in which place he came under his employer's care. Examination revealed the fact that the man was suffering from aortic disease and was evidently unfit to have charge of an automobile. On the chauffeur's recovery (the physician having meantime betrayed the professional secret to his business self), he received two weeks' advance salary and was discharged. Thus arose the question whether the employer, coming into possession of confidential information in his professional capacity, might use that knowledge to determine his actions in a business capacity to the detriment of the employé. All right-minded men must admit that it was a shameful abuse of a privileged communication. There was but one course open to the employer as a physician. That was to continue to ride behind the chauffeur, keeping inviolate his professional secret, until the aortic lesion resulted in a broken neck for the medical man, at which time he might with perfect propriety discharge his employé for evident incapacity. The court, however, persisted in looking at the matter from a purely common-sense standpoint and refused to grant a judgment in favor of the victim of misplaced confidence.

#### ANTHROPOID APES AND EXPERIMENTAL MEDICINE.

Darwin has often been misquoted as stating that the human race sprung from the monkey tribe, when what he really said was that man and the monkeys probably came from a common ape-like ancestor. The work of the past five or six years with the precipitin test, and more especially the investigations of Nuttall, have in part substantiated Darwin's views, showing a close blood relationship between man and the higher apes. As showing the value which an apparently abstract piece of knowledge may have when applied to practical uses, the effect of this discovery on the investigation of infectious diseases may be cited. It is, of course, well known that a few years ago there were, and are still, a number of diseases which we regarded as undoubtedly infectious, in which absolute proof of their infectivity was lacking because the lower animals were not susceptible to infection with the supposed causal agent. This was true of syphilis, of typhoid fever, of leprosy, and of yellow fever. The successful transmission of syphilis to apes is now well known, but it is probably not such common knowledge that typhoid fever and leprosy have also been reproduced in apes. Recently Thomas<sup>1</sup> has repeated the

classical experiments of Reed and his confrères on yellow fever, using the chimpanzee for the subject of the experiment. He has been able to produce in this animal a typical attack of mild yellow fever with bile in the urine, albuminuria, and the usual febrile course. Doubtless other infectious diseases will be attacked along these lines in the near future.

## Medical News

### ILLINOIS.

**Communicable Diseases**—Smallpox is reported from Bradford and Osceola township, Stark County.—The State Training School for Girls, Geneva, is reported to have 13 cases of scarlet fever.—For the second time this winter the public schools of Humboldt have been closed on account of scarlet fever.

**Personal**—Dr. Elmer M. Eckard, health commissioner of Peoria, has recovered after a long illness.—Dr. Henry Richings, Rockford, is seriously ill with inflammatory rheumatism.—Dr. Joseph De Silva has been appointed president, and Dr. J. W. Stewart, vice-president, of the Rock Island County Humane Society.—Dr. William C. Spannagel, East St. Louis, has been appointed deputy coroner, vice Dr. Henry G. Hertel, who left for San Antonio, Tex., February 1.—Dr. and Mrs. Noel R. Gordon, Springfield, have gone to San Antonio, Tex., for a month.

**State Health Board Issues Circulars**—During the last few weeks the State Board of Health has issued three circulars, which are just now of more than ordinary import, on the prevention, restriction and suppression of scarlet fever, diphtheria and typhoid fever. Thousands of copies of these circulars are being sent to infected municipalities. In the circulars have been incorporated the most recent facts regarding practical disinfection. The method of formaldehyd-potassium-permanganate disinfection is described in detail. The board has in preparation revised circulars on infant feeding and tuberculosis. The combined edition of these circulars will amount to more than 150,000 copies.

### Chicago.

**Personal**—Dr. Charles S. Bacon sailed for a two months' visit to Europe, February 13.—Dr. Jacob Frank has returned from a trip to the West Indies.

**Endow Bed in Hospital**—The Polyclinic Nurses' Alumni Association held its first annual reception and ball February 7. The proceeds, which amounted to about \$500, were devoted to the endowment of a bed in the new Henrotin Memorial Hospital now being erected at Oak Street and La Salle Avenue.

**Epidemic Diseases**—The number of cases of scarlet fever and diphtheria have markedly decreased. On February 10, 43 cases of scarlet fever and 23 cases of diphtheria were reported, and on February 11, 32 cases of scarlet fever and 20 cases of diphtheria. The health department warns the public that an epidemic of influenza is impending.

**Guthrie Boulder Must be Removed**—Judge McEwen, on February 7, gave a decision regarding the boulder placed in Lake Front Park in memory of the late Dr. Samuel Guthrie, in which he denied the writ of injunction by which the Chicago Medical Society sought to restrain the park commissioners from interfering with the boulder.

**Anatomy Museum Proprietor Arrested**—Dr. J. W. H. Camp was arrested January 31, on the charge of obtaining money under false pretenses, made by a 16-year-old boy, who stated that he went into the museum of anatomy of the accused, and was there told that he was suffering from an incurable disease and would die in three days unless he took treatment. In his alarm the boy gave the proprietor \$125, but soon found that he had been deceived. On February 6 Dr. Camp is reported to have been fined \$200 and costs and ordered to return \$100 of the money said to have been obtained under false pretenses.

**Mortality of Week**—During the week ended February 7, 783 deaths were reported, equivalent to an annual mortality of 19.38 per 1,000, an increase of 42 over the previous week, and of 217 over the corresponding week of 1906. The chief death causes were: Pneumonia, 153; consumption, 70; heart disease, 56; nephritis, 52; scarlet fever, 44; violence (including suicide), 36; nervous diseases, 30; bronchitis and acute intestinal diseases, each 28. Diphtheria caused 15 deaths; measles, 11; typhoid fever and whooping-cough, each 9, and influenza, 8.

1. British Med. Jour., Jan. 19, 1907.



**Cocain Shop Closed.**—A drug store which has been most noted for its illegal sale of cocain, and against which the crusade has been especially directed, has been closed by its proprietor, who says he will not reopen it.—Dr. Alfred Dahlberg, convicted of selling cocain, who disappeared from Chicago and whose bond was ordered forfeited, returned to the city February 11 and, in default of bail, was committed to the county jail.

**Instructions to Medical Inspectors.**—The department of health has issued rules for medical inspectors of schools which state that medical inspectors should familiarize themselves with the city health ordinances; that inspectors should be governed by the Principles of Medical Ethics of the American Medical Association; that inspectors should call daily at the schools assigned to them and request the principals to furnish the names and addresses of all pupils absent from school without known cause for four consecutive days; that principals should not let such an absentee re-enter school without a certificate from the medical inspectors; that inspectors should go to the homes and determine if pupils can safely return to school; that pupils suspected to be suffering from infectious diseases should be reported by the principal to the inspector. The circular gives in detail the duties of the inspector in cases of various communicable diseases. Inspectors are forbidden to make suggestions as to treatment or management of pupils who are ill.

#### INDIANA.

**Banquet to Staff.**—In accordance with their annual custom, the Sisters of St. Francis, Lafayette, served a banquet in honor of the staff of St. Elizabeth's Hospital, January 15. Covers were laid for 46 guests.

**Unlicensed Physician Fined.**—O. C. Brown, Martinsville, is reported to have been fined \$25 and costs, January 16, on the charge of practicing medicine without a license. He appealed to the Circuit Court. The prosecutor was assisted by Attorney Gavin, representing the state medical board.

#### INDIAN TERRITORY.

**Medical Society Meets.**—The Medical Society of the Fifth Recording District met recently at Pryor Creek, three new members being admitted: Dr. J. H. Todd, Kansas; Dr. J. E. Bristow and Dr. F. M. Jones, each of Pryor Creek. The society's name was changed to the Mayes County Medical Society. At this meeting a paper was read by Dr. U. T. Tilly of Pryor Creek on "Pelvic Inflammation." Dr. Tilly, who is president of the Northern District Medical Society, called attention to the great responsibility resting on the general practitioner in correctly diagnosing and treating this condition. He deprecated both the excessive local treatment given by some and the insufficient examinations made by others. He considered prophylaxis of the greatest importance. A patient requiring surgical treatment, he believed, should not be treated expectantly, as no cases of true ovaritis can be cured by hot-water douches or tampons. Dr. Tilly's paper was freely discussed and aroused much interest.

#### MARYLAND.

**Unregistered Physicians Fined.**—"Dr." Oscar W. Baysan, an "herb doctor" of Talbot County, was fined \$50 and costs February 4 for practicing medicine without first having been registered.—On the same day John A. Watson is said to have been fined \$200 on the same charge. He is said to be the head of a private sanitarium at Frostburg. It is reported that he will appeal on the ground that the law is unconstitutional.

**Laxness in Insane Commitments.**—Dr. George J. Preston, secretary of the State Lunacy Commission, in his report points to the laxness with which the insane are committed to asylums in the state. It is possible to commit an individual without further inquiry, simply on a certificate signed by two physicians. Thus, if relatives wish to put a person away, great injustice might be done, especially with connivance on the part of officials of the institution. While Dr. Preston believes that this never has happened, he thinks it should be made legally impossible. He believes that the present law deprives a man of his liberty without opportunity to protest. He suggests that the papers should be signed by the judge of a court of record, before whom the alleged insane person and his friends should also have the right to appear with witnesses and counsel. Publicity need not be necessary for the proceedings, as the judge could sign papers in chambers.

#### Baltimore.

**Accidents and Suicides.**—During January, 11 suicides were reported in the city and in addition 12 unsuccessful attempts. There were also 34 fatal accidents and 236 minor accidents reported.

**Dispensary Report for 1906.**—The Northeastern Dispensary reports 18,953 patients treated during the year, 1,041 being visited at their homes; 1,491 operations were performed. Dr. Arthur Wegefarrh was elected president, and Dr. A. D. McConachie, secretary.

**Personal.**—Dr. Clarence B. Farrar, of the Shepard and Pratt Hospital is giving a course of six lectures on physiological psychology in connection with the Psychologic Department of Johns Hopkins University.—Dr. Thomas L. Sheaver, known as the "hatless" man, has introduced the custom of going about without a hat.

**Acquitted.**—Dr. Daniel W. Smith, who was tried in the Criminal Court February 1 on the charge of failure to report to the health officer a case of typhoid fever which he was treating during the epidemic last spring, was acquitted, as he stated that he reported the case as soon as he was satisfied that it was typhoid fever.

#### NEW YORK.

**New Building for Children's Hospital.**—Through the generosity of Mrs. Charles W. Pardee the Children's Hospital, Buffalo, is to have a new fire-proof building, to cost about \$100,000.

**Staff Elected.**—At a meeting of the Samaritan Hospital staff Troy, Dr. William L. Hogeboom was elected chairman; Dr. Herman C. Gordinier secretary and Dr. Thurman A. Hull, radiographer.

**Report of State Hospital.**—The sixth annual report of the State Hospital for the Cure of Crippled and Deformed Children at Treason Hill, near Haverstraw, for the year ended September, 1906, shows that on October 1 there were 45 patients receiving treatment in the hospital. During the year 24 new patients were received, making a total of 69 patients treated.

**Long Island Physicians Meet.**—At the ninth annual meeting of the Associated Physicians of Long Island, held January 19 in Brooklyn, Dr. Arthur H. Terry, Patchogue, was elected president; Drs. Frank Overton, Patchogue, H. Beckman, Delatour, Brooklyn and George K. Meynen, Jamaica, vice-presidents; Dr. James C. Hancock, Brooklyn, secretary (re-elected); and Dr. Charles B. Bacon, Brooklyn, treasurer (re-elected).

**Coroner's Report.**—During 1906, 5,890 deaths were reported to the coroner's office of New York County, of which 2,160 were due to violence. There were 549 felonious assaults causing death. Surface cars caused 97 deaths, elevated trains 14, tunnel trains 17 and automobiles 24. The suicides of the year numbered 398, of which 110 were due to gunshot wounds, 21 to incised wounds of the throat, 51 to poison, 124 to gas asphyxiation, 27 to strangulation, 27 to jumping from windows or roofs, 4 to jumping in front of trains, and 34 to drowning. The total number of deaths from accidents was 684. Alcoholism caused 115 deaths.

**Insanity on the Increase.**—The eighteenth annual report of the state commission on lunacy indicates a steady increase in insanity in the state. The net increase in all institutions during the past year was 839. The whole number of new cases during the year was 5,761, slightly more than during the preceding year. The total number of insane in all institutions at the close of the year was 28,302, of whom 960 were classed as criminals, and during the year 1,468 were discharged as cured. The commission makes a plea for nurses' homes on the grounds of the hospitals at Middletown, Binghamton and Poughkeepsie. An appropriation is asked for a site for a new hospital to replace that one on Ward's Island as the state's lease expires in six years. Alien insane deported to Europe during the year were 169 in number. The report favors the extension of the farm colonies in connection with existing hospitals.

**Personal.**—Dr. James W. Putnam, Lyons, has been designated local surgeon for the New York Central lines and Rochester, Syracuse & Eastern Railroad.—Drs. Henry D. White, Albert E. Dietrich, Samuel Millington, Howard J. Teller, Dwight C. Broga, Nelson C. Scudder and J. Orley Stranahan have been appointed ward physicians of Rome.—Dr. Charles E. Low, Pulaski, has retired from the practice of medicine to accept a position as heating and ventilating engineer and sanitary expert.—Dr. Allen T. Leonard has been appointed city physician and Dr. Frederick W. Bentley a member of the Board of Health of North Tonawanda.—Dr. James E. Walker, Hornell, sailed for Europe January 6.—Dr. James G. Hunt, Utica, has been reappointed local surgeon of the New York, Ontario and Western Railroad for the twenty-third



consecutive year.—Dr. John Van Duyn, Syracuse, has been elected a director of the Onondaga Historical Association.—Dr. William C. Doane, Elmira, has recovered after a severe illness.—Dr. John L. Bishop, Niagara Falls, has gone to New York City for treatment at the Pasteur Institute.—Dr. C. Floyd Burrows will succeed Dr. Henry B. Pratt as physician at the Syracuse City Hospital.—Dr. Charles Haase, Bath, will sail for Europe about April 1.—Dr. William W. Hewlett, Babylon, who was operated on for nephritis January 30, at the Presbyterian Hospital is reported to be in a critical condition.

**San Francisco Relief Committee's Report.**—The Relief Committee of the New York Academy of Medicine and the medical societies of the counties of New York and of Richmond was organized April 26, 1906 and elected Dr. Charles L. Dana chairman; Dr. John H. Huddleston, secretary and Dr. Charles H. Richardson treasurer. It issued appeals to the medical profession and was early aided by a gift of \$5,000 from the New York Chamber of Commerce. Aside from this gift 440 individual subscribers contributed \$5,661.10 and 14 societies \$2,040. The societies which contributed were as follows: The Women's Medical Association of New York City, Quiz Medical Society, Metropolitan Medical Society, New York Society of Dermatology and Genitourinary Surgery, Harlem Medical Association, Medical Society of the County of New York, New York Academy of Medicine, German Medical Society of New York City, Eastern Medical Society of the City of New York, New York Society of Internal Medicine, Alumni Association of New York Hospital, Alumni Association of St. Luke's Hospital, Yonkers' Practitioners Society and Medical Union Society. The total disbursements were \$226.52. The amount from medical sources sent to San Francisco was \$7,474.58.

**The Legislature.**—Dr. Alvah H. Doty has again been appointed health officer of the port of New York by Governor Hughes. In making the appointment the governor issued a statement showing how efficiently Dr. Doty had discharged his duty and what valuable service he had rendered New York City and the entire country. Dr. Doty's appointment is for a term of four years.—Two anti-"patent-medicine" bills have been introduced into the legislature. One prohibits practicing physicians from prescribing "patent medicines;" the other requires "patent-medicine" manufacturers to file with the state commissioner of health a statement of the name under which the medicine is sold and a formula specifying the ingredients, and to print such formula on the labels of bottles.—At a hearing on the osteopathy bill on February 7, Dr. A. F. Bristol of Brooklyn, Dr. Arthur S. Root and Dr. H. L. K. Shaw of Albany, appeared before the senate and assembly committee on public health and explained why the state medical society opposed the bill.—Assemblyman Stern has introduced a bill compelling employers who conduct factories or shops in which machinery is used for manufacturing purposes to keep at all times medical and surgical chests for the use of employes.—A pure food bill has been introduced which is the most comprehensive of its kind yet proposed. It covers all food articles manufactured in the state. Delegates and representatives from all the pharmaceutical organizations and schools of the state met and discussed the subject of pure food legislation. It was decided to support vigorously the measure prohibiting the sale of cocaine in any compound or form except on the prescription of a physician.—The assembly passed the G. H. Whitney bill prohibiting the sale of cocaine and eucaine, except on the prescription of a physician.

#### Buffalo.

**Cold-Storage Food.**—It has developed through correspondence carried on by Health Commissioner Wende with the health departments of other cities that no city has a cold-storage ordinance stating the length of time that food may be held in cold storage and be fit to be sold for food. The corporation counsel recently drafted an ordinance bearing on this most important question, but Dr. Wende has thus far withheld approving it until he has made a thorough investigation of the cold-storage business. He has appointed City Bacteriologist Bissell to proceed with the investigation. If true it is surprising, notwithstanding the immense amount of capital invested in cold-storage plants, and the large amount of foodstuffs, meat, poultry, eggs, etc., which are stored for varying lengths of time before their consumption, that no ordinances in any city are in effect governing the storage warehouses.

#### New York City.

**Smallpox on Steamer.**—The Fabre steamer, *Gallia*, which arrived January 26 from Mediterranean ports, was detained at quarantine because of a case of smallpox on board.

**Ball for Benefit of Hospital.**—The annual charity ball, which was given at the Waldorf-Astoria on February 4 for the benefit of the Nursery and Child's Hospital, realized several thousand dollars for the institutions.

**More Medical Inspectors.**—The health department has appointed 20 new medical inspectors of schools; 11 will be assigned to Brooklyn, 5 to Manhattan, 2 to the Bronx, and one each to Richmond and Queens.

**Personal.**—Dr. Henry C. Coe has been appointed consulting surgeon to the Woman's Hospital in the City of New York.—Dr. Julius Jareho was seriously injured January 20 by being struck in the eye with a snowball. He is in grave danger of losing the sight of one eye.

**Money for Beth Israel Hospital.**—At a dinner given by the board of directors and the medical staff of this institution it was announced that \$21,000 had been contributed toward the hospital by guests, and it is expected that the annual Purim ball will net at least \$20,000.

**Election.**—The Brooklyn Medical Society has elected the following officers: President, Dr. Hugh Edward Rogers; vice-president, Dr. William H. Rankin; recording secretary, Dr. Alfred E. Shipley; corresponding secretary, Dr. Edward W. Wright; treasurer, Dr. Edwin A. Hatch, and librarian, Dr. Lewis E. Meeker.

**Conference on Blindness.**—The second conference of local charities, to be held on February 19, will be in the interests of the blind. There will be an exhibit of the variety of products of the industries of the blind, and Eben P. Murford will speak on the industrial and educational training and employment for the blind.

**Alumni Meeting.**—At the annual meeting and banquet of the Greater New York Alumni Association of the Albany Medical College, which was held January 24, Dr. Walter C. Gilday was elected president; Dr. Frederick W. Loughran, vice-president; Dr. Flavius Packer, secretary, and Dr. George F. Morris, treasurer.

**Problems of Insanity.**—The third of a series of public lectures, arranged for by the Psychiatric Society, at the Academy of Medicine was delivered by Dr. Charles L. Dana, on "The Facts of Heredity and Their Relation to Mental Disorders." These lectures aim at placing before the medical profession and the general public facts with regard to mental disorders, which indicate the possibility and duty of initiating a movement towards general preventive measures.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended February 2, 354 cases of tuberculosis, with 206 deaths; 325 cases of scarlet fever, with 15 deaths; 315 cases of diphtheria, with 46 deaths; 138 cases of measles, with 5 deaths; 75 cases of whooping-cough, with 13 deaths; 35 cases of typhoid fever, with 9 deaths; 20 cases of cerebrospinal meningitis, with 17 deaths; one case of smallpox, with one death, and 122 cases of varicella, a total of 1,385 cases and 312 deaths.

**To Instruct Teachers.**—The Jewish Hospital for Deformities and Joint Diseases has just been opened under the direction of Dr. Henry W. Frauenthal. The hospital is non-sectarian and Dr. Frauenthal plans in connection with the regular hospital work for a course of lectures to teachers, instructing them in the causes of this class of diseases, such as bad positions in school, the carrying of too many books, etc. He would also teach them to recognize the early symptoms of disease, so that the children may receive treatment during the early stages of the disease.

**Sale of Cocain.**—On January 29 three men were fined in the Court of Special Sessions on the charge of violating the pharmaceutical law, by failing to put poison labels on bottles containing cocaine. Two of them were fined \$100 each and the third \$50.—At a meeting of the Board of Health, January 30, the following important addition was made to the Sanitary Code: "No cocaine or salt of cocaine, either alone or in combination with other substances, shall be sold at retail by any person in the City of New York except upon the prescription of a physician."

**Increase in Mortality.**—The mortality for the week ended February 2 was considerably higher than for the corresponding week of last year. For this year the number of deaths was 1,612, and for the preceding year 1,434. This increase was confined to adults. The death rate for children under 5 years of age was lower than for last year. The chief cause of the increased mortality was the presence of influenza in a more fatal form than last year, affecting principally those of advanced years. Pneumonia caused 49 more deaths than in the corresponding week of last year, Bright's disease 14, and tuberculosis 28.



**To Suppress Noise.**—At the first meeting of the board of directors of the newly formed Society for the Suppression of Unnecessary Noise it was decided that the first work of the society would be to suppress unnecessary noises in the vicinity of the local hospitals. Word is to be sent to officials of car lines asking that the ringing of bells in the vicinity of hospitals be omitted. Notices will be posted in the different automobile clubs asking the members to go at half speed and to refrain from the use of horns and siren whistles while passing hospitals. An effort will also be made to do away with cobblestone pavements in front of hospitals.

**Demand Pasteurized Milk.**—Since the report of the Royal Commission on Tuberculosis has announced that human and bovine tuberculosis are reciprocally communicable diseases, and that milk containing tubercle bacilli is frequently the cause of tuberculosis in man, public interest in the subject of pasteurization of milk has been reawakened. The daily papers criticize the health commissioner for not taking more interest in securing a larger supply of pasteurized milk instead of endeavoring to purify the supply by inspecting dairies throughout the state. This inspection must necessarily be ineffectual, and again, a large part of the supply of milk of this city comes from other states, over which our inspectors could have no authority. It has been announced that about one-half the cattle in this state, or about 300,000, are tuberculous. The cost to the state of killing these cows is prohibitive and hence the only safe thing to do is to pasteurize the milk. The department of parks took up this question last year and asked for \$20,000 for the purpose of establishing pasteurized milk bureaus in the public parks. They did not get the appropriation, though two booths were erected and supplied with pasteurized milk by private individuals. As a result of the conference on the milk question held in this city last November, a permanent milk committee has been appointed for the purpose of assisting the health department. This committee consists of 38 members, all of whom took part in the conference last fall. It has announced its plans and seems to favor an increase in the number of milk inspectors, and an effort to secure clean milk rather than an attempt to pasteurize the entire supply. It will endeavor to have the number of inspectors for the country increased to 80 and the number in the city increased by 50. It will also ask for more milk stations where pasteurized milk in bottles for babies may be distributed.

#### OHIO.

**Portrait of Kinsman Presented.**—On January 30 Dr. David N. Kinsman gave an address before the entire student body of the Ohio Medical University on "The True Physician." Dr. Josiah Medberry, on behalf of the faculty, presented to the Y. M. C. A. of the institution a portrait of Dr. Kinsman.

**Society Meeting.**—At the meeting of the Academy of Medicine of Toledo and Lucas County, held January 11, the following officers were elected: President, Dr. Walter H. Snyder; vice-president, Dr. Sidney D. Foster; financial secretary, Dr. Edwin D. Tucker; corresponding secretary, Dr. Nathan W. Brown; treasurer, Dr. John G. Kellar, and censor, Dr. Herbert E. Smead.

**Postgraduate Course.**—The Logan County Medical Society at its annual meeting, January 3, decided to establish a postgraduate course in accordance with the plan suggested by Dr. J. N. McCormack. The first meeting was held January 17, for the report of cases and presentation of patients and pathologic specimens. The following officers were elected at the annual meeting of the society: Dr. Warren W. Hamer, Bellefontaine, president, Dr. John S. Montgomery, Huntsville, vice-president, and Dr. Arthur J. McCracken, Bellefontaine, secretary.

**Personal.**—Dr. Louis Feid, Cineinnati, has been appointed jail physician.—Dr. Charles O. Dunlap, McArthur, has been appointed district surgeon of the Hocking Valley Railroad.—Dr. John B. Ury, Defiance, has resigned as clerk of the board of public safety.—Dr. Elmer G. Horton, Columbus, has been appointed city health officer.—Dr. Mary L. Austin has been placed in charge of the female department of the Ohio Home for Epileptics, Gallipolis.—Dr. Charles Wittenmyer, Arcanum, has been succeeded as coroner of Darke County by Dr. John E. Monger, Gettysburg.—Dr. George R. Schuster, Dayton, has succeeded Dr. Walter L. Kline as coroner of Montgomery County.—Dr. and Mrs. Henry F. Weis, Dayton, celebrated their golden wedding anniversary January 8.—Dr. John D. Westrick has been elected health officer of Defiance.—Dr. William H. Taylor, for 40 years obstetrician to the Cincinnati Hospital, has resigned and Dr. William D. Porter has been appointed as his successor.—Dr. Henry J. Austin, Geneva, has succeeded Dr. George E. Webster, Kingsville, as coroner of Ashtabula County.—Dr. Julius H. Jacobson has been reap-

pointed surgeon in charge of the Infirmary Hospital, Toledo.—Dr. Elmer S. Protzman, Kenton, has succeeded Dr. Frank D. Bain as surgeon for the Toledo & Ohio Central Railroad.—Dr. and Mrs. Charles F. Cushing, Elyria, have gone to Florida for the remainder of the winter.—Dr. Morton W. Bland, Bellevue, has been sworn in as coroner of Huron County.—Dr. Herbert R. Pearson and family, West Milton, have gone to Port Orange, Fla., for the winter.—Dr. Charles W. Stoughton, Croton, has been appointed postmaster of that place.—Dr. Milo Wilson, assistant physician at the Athens State Hospital, has resigned and will enter private practice.—Dr. Joseph P. Baker has been elected president, and Dr. Charles W. Benedict, clerk, of the Findlay board of health.—Dr. Jacob A. Stout has been appointed a member of the board of health of Columbus, to succeed Dr. James U. Barnhill, term expired.—Dr. A. Per Lee Pease, Massillon, who is taking a trip to the Pacific Islands, was at Pago Pago January 12.—Dr. William Graefe has been appointed examining surgeon by the civil service commission for the Sandusky district.

#### PENNSYLVANIA.

**Academy Election.**—At the annual meeting of the Harrisburg Academy of Medicine, January 25, the following officers were elected: President, Dr. John F. Culp; vice-president, Dr. William E. Wright; secretary, Dr. Clarence R. Phillips; treasurer, Dr. Harvey F. Smith; librarian, Dr. Thomas S. Blair, and trustee, Dr. David S. Funk.

**Communicable Diseases.**—Scarlet fever of mild type is reported to be prevalent at the Pennsylvania Military College, Chester.—Scarlet fever is reported to be epidemic at Roaring Spring, where 12 cases have been reported.—The board of health of Kittanning has issued a proclamation advising citizens to boil all water for drinking and domestic purposes, on account of the prevalence of scarlet fever and other ailments.

**Vaccination.**—A bill has been introduced in the legislature which provides that the school boards shall have the exclusive right to determine whether or not children qualified for admission to schools in the district shall be vaccinated before being enrolled. No board, however, shall require vaccination of any pupil, should such pupil present a physician's certificate that the physical condition of said pupil will not permit the procedure. Should there be a smallpox epidemic, or danger of one, the school board may adopt such preventive measures as to compulsory vaccination, as it may deem fit. Any school director, parent, guardian or person violating any of the provision of the act shall be liable to a fine of from \$5 to \$1,000, provided that vaccination of children whose parents can not pay for the same, must be performed at the expense of the school district.

**School for Feeble-Minded Overcrowded.**—The legislative lunacy commission visited the Pennsylvania Training School for Feeble-minded Children, Elwyn, last week. The members learned that the institution is overcrowded and that there is need of a hospital to treat a large percentage of inmates who are incurable consumptives. Many additions to the present buildings will be required if the number of patients is not lessened. Dr. Martin W. Barr, the superintendent, conducted the commission through the buildings, pointing out the improvements needed. He said that of the 1,088 inmates 75 per cent. suffer with tuberculosis in some form, and that he has absolutely no place to treat 60 patients who are incurable; that it would cost about \$35,000 to construct such a hospital, and he pleaded for the appropriation of such a sum. He also said that the institution is being crowded with criminal insane, who should not be sent there.

**Personal.**—Drs. Franklin Massey and Franklin L. Sallade have been appointed members of the board of health of Womelsdorf.—Dr. Isaac S. Graves, Jermyn, slipped and fell January 13, breaking his wrist.—Dr. John H. Twitmeyer, Sharpsville, slipped and fell at Shenango Furnaces January 17, breaking his nose.—Dr. Thomas M. Livingstone has been elected president of the Columbia College of Physicians and Surgeons, vice Dr. Jacob L. Ziegler, Mount Joy, deceased.—Dr. Haines L. Crothers, Chester, who has been ill, has recovered.—Dr. Frank B. Statler, Johnstown, has been appointed captain and assistant surgeon N. G. Pa., and assigned to duty with the Fifth Infantry.—Dr. J. Chester Wolfe, Ridley Park, sustained severe burns of the hands and face while lighting a gas radiator at his house, January 28.—Dr. S. B. Koser, Mountville, while driving across the Pennsylvania Railroad tracks at that place, was struck by a train and seriously injured.—Dr. William E. Wright, assistant physician at the State Insane



Hospital, Harrisburg, has resigned and will engage in private practice.—Dr. Warren Z. Anders, Trappe, is ill at the home of his parents with scarlet fever.

**Typhoid Fever.**—The officials of the State Board of Health have been notified of the conditions that exist at Martin's Creek, near Easton, where 12 cases of typhoid fever have developed within a few days. The waters of the Delaware River are reported to be polluted by the drainage from the infected district. There was a serious outbreak of the fever at the same place a year ago, when the state authorities compelled the cement companies to remedy the evils. This time, however, the trouble is said to exist on premises owned by the Howell estate, where foreigners rent shacks.—Between 30 and 40 cases of typhoid fever are reported in Huntingdon, where four deaths have occurred, and much alarm is felt. An expert has been summoned to examine the water. The water supply of Huntingdon is pumped from Stone Creek, just east of the town. It has been the main supply for many years. Despite the fact that the water is supposed to be filtered before it is sent through the mains from a pumping station, it is thought to be the cause of the epidemic. There are three school buildings in Huntingdon, all of which are supplied with water from Stone Creek. The water supply has been shut off and 1,500 children are carrying boiled water, milk, coffee and other beverages to school in bottles.

#### Philadelphia.

**Bequests.**—By the will of Martha J. Moore \$250 was left to the Pennsylvania Hospital for the Insane.—The will of Martha E. Kortright devises \$25,000 to the Presbyterian Hospital.

**Society.**—The alumni and undergraduates of the Medico-Chirurgical Hospital have organized a social club, of which Dr. Benjamin F. Devitt has been chosen president, and Dr. Harry A. Duncan, secretary and treasurer.

**Schott in Philadelphia.**—Dr. Theodore Schott, Bad Nauheim, Germany, whose visits to other cities have been mentioned in THE JOURNAL, also visited Philadelphia last week, as the guest of Dr. S. Lewis Ziegler. On Wednesday he spoke before the College of Physicians on treatment of chronic diseases of the heart. On Thursday a luncheon was given by Dr. S. Solis-Cohen, following which Dr. Schott spoke at the University of Pennsylvania on "Chronic Muscular Disease of the Heart," and in the evening was the guest of honor at a dinner given by Dr. James Tyson. On Friday he lectured for Dr. James M. Anders at the Medico-Chirurgical College on the "Pathology and Therapeutics of Angina Pectoris," and in the afternoon at Jefferson Medical College for Dr. James C. Wilson on "Acute Overtaxing of the Heart." In the evening he was the guest Dr. Anders at dinner at the Union League Club.

**Elections.**—The Philadelphia County Medical Society has elected the following officers: President, Dr. James B. Walker; vice-presidents, Drs. William S. Newcomet, Joseph M. O'Malley, Wendell Reber, Robert H. Chase, Morris J. Karpeles, Franklin Brady and William S. Wray; secretary, Dr. Ross H. Skillern; treasurer, Dr. Collier L. Bower; censor, Dr. Charles A. E. Codman, and district censor for the Medical Society of the State of Pennsylvania, Dr. Albert M. Eaton. In the future the Northeast Branch of the Philadelphia County Medical Society will hold its meetings in the newly finished Frankford Branch Auditorium of Philadelphia's free library system. The election of officers and committees to serve for 1907 resulted as follows: Dr. W. E. K. Wurcel, chairman; Dr. William Harmar Good, clerk; committee on scientific business, Drs. Albert C. Buckley, William H. Morrison, S. Reughley and W. Harmar Good, and committee on increase of membership, Drs. Boyer, George C. Hanna and E. A. Drake.—The Section of General Medicine of the College of Physicians at its January meeting elected the following officers to serve during 1907: Dr. Aloysius O. J. Kelly, chairman, and Dr. George W. Norris, clerk.

#### SOUTH DAKOTA.

**Societies Elect Officers.**—At the annual meeting of the Aberdeen District Medical Society, held January 16, the following officers were elected: President, Dr. C. E. McCauley, Aberdeen; vice-president, Dr. W. M. Edgerton, Faulkton; secretary, Dr. E. J. Clemons, Aberdeen; treasurer, Dr. M. C. Johnston, Aberdeen; censor, Dr. J. D. Jones, Groton.—At the annual meeting of the Yankton District Medical Society the following officers were elected: President, Dr. J. Roane, Yankton; vice-president, Dr. F. A. Swezey, Wakonda; secretary and treasurer, Dr. J. L. Stewart, Irene; delegate, Dr. S. M. Hohf, Yankton; censor, Dr. E. M. Morehouse, Yankton.

#### VIRGINIA.

**Physicians Acquitted.**—Drs. McMinn M. Pearson and Joseph H. Delaney, Bristol, who had been charged with malpractice by J. M. Bevans and wife, Johnson City, Tenn., who sought damages of \$10,000, were acquitted January 22.

**Society Election.**—At a meeting of the Patrick Henry Medical Society, held in Martinsville, January 14, Dr. Benton F. Tatum, Stuart, was elected president; Dr. Robert R. Lee, Martinsville, vice-president, and Dr. J. Russell Perkins, Spencer, secretary.

**Contagious Diseases.**—The health board of Hanover County met in Atlee, January 28, and decided to establish a rigorous individual quarantine and to enforce vaccination. Dr. Gray was appointed special health officer, with full power to quarantine and vaccinate whenever necessary.

**McCormack in Virginia.**—Dr. J. N. McCormack will address the students of the Medical College of Richmond at 1 o'clock, the general medical profession at 5 o'clock, and the public at 8:30 o'clock, March 2. At the public lecture Dr. McCormack will be introduced by the governor of Virginia.

**Proposed Law in Indiana, Not Virginia.**—In THE JOURNAL, January 19, a news item concerning proposed health regulations in Indiana was, by mistake, credited to Virginia. We understand that no such legislation is proposed in Virginia, but that the bill referred to has been prepared by the State Board of Health of Indiana.

**Personal.**—Dr. Stark A. Sutton, Norfolk, has resigned as lieutenant and assistant surgeon of the Seventy-first Infantry.—Dr. Robert R. Robertson, Portsmouth, has been appointed as jail physician, vice Dr. Charles L. Culpepper, deceased.—Dr. J. Richard Adams, Blackstone, has been appointed physician of Nottoway County, vice Dr. Algernon S. Epes, deceased.—Dr. William G. Fox, surgeon at the Home Hospital, Hampton, has resigned, to take effect February 17.

#### GENERAL.

**Major Kean's Work on Cuban Yellow Fever.**—Major J. R. Kean, surgeon, U. S. Army, who was sent to Cuba at the beginning of the recent American occupation for special duty with the department of health, is making a flying visit to Washington. When it was found, on the arrival of American troops, that yellow fever was again prevailing in Cuba, Major Kean, who had taken such an active part in the suppression of that disease in the previous occupation, was put in practical charge of the situation and, by virtue of his intelligent and active measures, soon had the disease under control. Since January 7 no case of yellow fever has been reported in Cuba and, while a sporadic case may be expected to develop occasionally, Major Kean does not expect any spread of the disease. There has not been a single case among the enlisted force and only one among the officers of the American troops.

#### CANADA.

**Canadian Association for the Prevention of Tuberculosis.**—The annual meeting of this association will be held at Ottawa, March 13-14. Dr. Charles Sheard, medical health officer of Toronto, and chairman of the Ontario Board of Health, will deliver a public address on "The Home Treatment of Tuberculosis."

**Canadian Nobel Prizes.**—By the will of the late A. McCharles, a prospector of Sudbury, Ont., the University of Toronto has received \$10,000 in Ontario government bonds, which is to be used in giving prizes on a small scale similar to the Nobel plan. Two clauses interest medical men: A prize is to be given for any important discovery, invention or development by any Canadian which will lessen the dangers and loss of life in connection with the use of electricity in supplying power and light; and another for any marked public distinction achieved by any Canadian in scientific research in any useful and practical line.

**Medical Legislation.**—The Canadian Press Association, just in session in Toronto, attacked the Ontario Medical Council and other bodies composed of "irresponsible" men. The association will ask the legislature to amend the Ontario medical act.—A bill has been entered in the Quebec legislature to amend the law respecting physicians and surgeons by which it is proposed to extend the medical course from four to five years and better to define what constitutes the illegal practice of medicine. It will also seek to define better the powers of the medical council to discipline members and to permit of the board or the College of Physicians and Surgeons giving grants to medical societies.



**Money for Hospitals.**—When the special committee toward erecting a tuberculosis sanatorium in Manitoba has collected \$5,000 the provincial government has promised to donate \$25,000.—A nurses' residence has been opened in connection with the Sick Children's Hospital, Toronto. The building was the gift of Mr. John Roos Robertson, Toronto, proprietor of the *Evening Telegram*, who has been very generous to this institution. The building cost \$130,000.—The Ontario government will establish cottage hospitals or rural colonies for dealing with patients afflicted with mental delusions.—The Isolation Hospital and Nurses' Home in connection with the Vancouver General Hospital is now completed.—The nurses' home in connection with the Winnipeg General Hospital was formally opened February 1.—Wingham, Ont., has a new hospital.

**Personal.**—Dr. George R. McDonagh, Toronto, has gone to Egypt.—Dr. Loir, a pupil and nephew of Pasteur, and a graduate of the medical faculty of Paris, has been appointed to the chair of biology in Laval University, Montreal.—Dr. John Malloch, Toronto, who has been in England the past two years and was recently admitted F.R.C.S. England, has been appointed pathologist to Victoria Park Hospital, London, Eng.—Dr. D. A. L. Graham has been appointed assistant pathologist at the Toronto General Hospital, to assist Dr. A. H. Caulfield, who has gone to England for graduate work.—Dr. R. B. Burwell has been appointed clinical pathologist to the Toronto General Hospital.—Dr. John Stewart, Halifax, after visiting in Toronto recently, went to Bermuda for his health.—Dr. Harry Watson, Winnipeg, Man., who a few years ago practiced in Ottumwa, Iowa, and then was in the Philippines with the United States Army as surgeon, is seriously ill in St. Boniface Hospital, Winnipeg.—Dr. H. A. Wright's office and home at Oak Lake, Man., was recently destroyed by fire.—Dr. Cluff, Winnipeg, has been appointed resident pathologist at St. Boniface Hospital, Winnipeg.—Dr. L. S. McKid, Calgary, Albt., is studying abroad.—Dr. George McDonald, Calgary, has been taking graduate work in New York.—Dr. J. B. Chambers, Minto, Man., has been appointed assistant superintendent to the Hospital for the Insane at Brandon, Man.

#### FOREIGN.

**Death of Greek Medical Centenarian.**—Our exchanges report the death at Athens of A. Marvoyeni, M.D., at the age of 111.

**Medical Men Arrested in Russia.**—According to the official organ of the National Russian Medical Association 972 physicians had been arrested for participating in the revolutionary movement, up to November, 1906, and since then a number of arrests have been made.

**Sixth German Congress of Orthopedic Surgery.**—This congress will be held in Berlin, commencing April 2, the day before the German Surgical Congress convenes at the same place. For further particulars apply to Dr. Joachimsthal, Magdeburgerstrasse 36, Berlin W.

**Seventh International Congress for Physiology.**—This congress will meet at Heidelberg Aug. 13-16, 1907, with Prof. A. Kossel in the chair. An exposition of scientific apparatus will be held in connection. Address all communications to the Physiologische Institut, Heidelberg, Germany.

**Congress of Stomatology.**—The first French Congress of Stomatology will take place in Paris, Aug. 1-5, 1907, and will be open to all doctors of medicine who are interested in dental and oral science. For further particulars one may address the general secretary, Dr. Chomper, 182 rue de Rivoli, Paris.

**Stipends for Medical Students.**—An endowment fund has recently been bequeathed to the Odessa University to aid worthy students with an annual stipend of 1,000 roubles, about \$500, each. The testator stipulated that the amount must be as large as this, as no student can devote himself entirely to science unless his material wants are fully provided for.

**Honors for Danish Physicians from Outside Their Own Land.**—During 1906, for his cancer researches, C. O. Jensen received the Walker prize, the first time it was awarded. S. M. Jorgensen received the Lavoisier and Berthelot medals for his research on the ammonia compounds, and A. Krogh the Seegen prize for his work on the elimination of nitrogen in the respiration.

**Proposed Memorial to Semmelweis at Vienna.**—A committee has been appointed by the Vienna medical councils to collect subscriptions to erect a memorial to Semmelweis at Vienna. The appeal issued by the committee is over the signatures of Regnier, Dirmoser and Savor. Vienna was the principal scene of his labors and witnessed what he called the "rising of the puerperal sun."

**International Medical Study Trip.**—The "international medical excursion" for 1907 will start from Paris in August and visit the health resorts of Austria, Hungary and southern Germany. The office of the organizer of the trips is at Paris, rue de Rivoli 184.

**Five Million Dollars for Paris Pasteur Institute.**—A cable despatch announces that the will of the late multimillionaire of Paris, Daniel Osiris, who died February 4, bequeathes \$5,000,000 to the Paris Pasteur Institute. Osiris has given many gifts to science and the public before, and in 1890 presented to the nation Malmaison, the historic residence of the Empress Josephine from 1789 to 1814.

**Private Gift of Clinic for Cutaneous Affections at St. Petersburg.**—A local merchant has built and equipped at an expense of about \$200,000, a modern clinic for cutaneous diseases and syphilis, with laboratory, etc., for experimental research. The endowment provides that 10 of the total 30 beds are free. Ssolowjew is in charge of the clinic, which is connected with the Institute for Experimental Medicine.

**Course of Lectures in Medical Pedagogy.**—A group of Paris internes have organized a course of elementary practical medical pedagogy in medicine, surgery, children's diseases, gynecology, cutaneous affections and syphilis. Each course comprises ten lessons and the price is 20 francs (\$4). Bord, interne at the Broca hospital, has charge of the registration, the number of attendants at each course being limited.

**Physicians in the Spanish Cabinet.**—Another one of the three editor of the *Siglo Medico*, Madrid, has been appointed to an important political position, O. Angel Pulido as sub-secretary of state. Another physician, G. Cabanas, has just been made minister of public instruction. One of his first acts was the appointment of two committees to further the progress of education in the schools and colleges. Each committee includes a number of physicians, Ramon y Cajal, Cortezo, San Martin and others.

**Repression of Venereal Disease.**—The German Society for Repression of Venereal Disease intends to discuss the question of sexual pedagogies at its next congress, to be held at Mannheim, May 24-25, 1907. The subject will be studied in all its bearings, with addresses by teachers of both sexes, by physicians, by mothers, etc. Foerster of Zurich, author of *Jugendlehre*, will open the discussion; Hellpach of Karlsruhe will deliver the address on "Sexual Dietetics," and Kemsies of Weissensee, the address on "Enlightenment of the Pupils in the High Schools and Colleges."

**Chair of Medical Parasitology at Paris.**—One of the oldest chairs in the medical school at Paris is that of medical natural history. Originally devoted mainly to botany, the trend of the times has given parasitology paramount importance, and the title has now been changed to the chair of medical parasitology and natural history. Prof. R. Blanchard has been the incumbent since 1897, and founded the *Archives de Parasitologie*, now in its second volume. He also established the Institut de Médecine coloniale, which has just closed its fifth course of lectures. It has awarded a total of 133 diplomas. About half the students are foreigners, mostly from Spanish America.

**Acquittal of Dealer Sued for Selling "Ear Spectacles" Under False Pretenses.**—The German boards of health at some places have warned against the extravagant claims for the electric ear spectacles put on the market by a London firm. Suit was instituted against a Berlin merchant who sold them, and experts testified that the ear spectacles were solely designed to bleed the public, without any therapeutic value from the weak galvanic current generated by the few small sheets of zinc and copper in the apparatus. The court expert, however, declared that the apparatus might possibly have some action as a hydrotherapeutic measure, owing to the moist applications to the ears, and it also might benefit by suggestion. The defendant as a layman had no opportunity nor cause to pass on the merits of the apparatus, but merely acted as the middle man. The suit against him was consequently dismissed.

**Suits Against a Physician for Mistake in Prescription.**—A German physician ordered instillation of a 50 per cent. solution of silver nitrate in the eyes of a newborn infant whose mother he was attending. He gave a prescription to this effect, and this strong concentration was used. The resulting inflammation was finally controlled by a specialist, but vision in one eye is permanently impaired. The accused ascribed his mistake to unusual stress of professional work at the time. The court accepted the plea of extenuating circumstances and a fine of \$25 was imposed. The father of the child is now suing the physician for nearly \$19,000 damages.



Becquerel of Paris Receives the Helmholtz Medal.—The German Academy of Sciences has presented the Helmholtz medal this year to Henry Becquerel, the French scientist who discovered the Becquerel rays. One of the Nobel prizes in 1903 was divided between him and the Curies.

### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Feb. 2, 1907.

#### "Patent Medicines" in Great Britain.

Americans have the reputation—undoubtedly well-deserved—of being the largest consumers in the world of "patent" and proprietary medicines and of nostrums of every description. The quantity of so-called remedies for all diseases under the sun, which are voraciously, nay, cheerfully swallowed by members of the great American public yearly, is, in the words of Dominie Sampson, "prodigious." Warnings that a goodly proportion of many of the widely advertised cure-alls are more calculated to wreak harm than to do good has had little effect. But although America can lay claim to the proud position of easily leading the world, both in the manufacture and consumption of nostrums, Great Britain has no rival for the second place, unless it be Canada. The sale of "patent medicines" in Great Britain had advanced by leaps and bounds. It has recently been announced that the sum paid by the British public for "patent medicines" in the year ended March 31, 1906, was \$15,633,400. Some patriotic Englishmen who wish to excuse their countrymen for the contraction of the "patent medicine" habit, say that it is chiefly due to the insidious wiles of the American nostrum vendor and advertiser. Whatever may be the cause, and there can be but little doubt that American "patent medicines" and American methods of advertising have made great headway in Great Britain of late, the fact remains that the people of Great Britain have developed an ever increasing tendency to consume remedies of every kind. Perhaps this may be one of the reasons for the much to be deplored physical and mental degeneration of the young in Great Britain.

#### Bioplasm in Great Britain.

Bioplasm is by no means unknown in Great Britain although it must be said that the product has made but little headway among the British consumers of patent medicines. It may, however, be instructive for the readers of THE JOURNAL to learn of the *modus operandi* in Great Britain of the firm which controls bioplasm. The methods are very similar to those employed in the United States. Some time ago, an advertisement appeared in the "Agony" column of the London Times of much the same tenor as that which was copied in THE JOURNAL. The advertisement purported to emanate from Mr. G. P. Burnham, Delmar, N. Y. When this gentleman was written to, a lengthy account of the manner in which he had been cured of locomotor ataxia in an advanced stage was received. It was also added that Mr. Burnham gave all particulars of his case and cure from purely philanthropic motives, but that if any user of bioplasm who employed it by Mr. Burnham's recommendation derived benefit therefrom, such a person might send a subscription which would be devoted to making known far and wide this marvelous remedy. Afterward a flood of circulars, etc., was received from the Bioplasm company.

#### Feeding of School Children in England.

The provision of meals bill has become law in England. This bill provides that all poor children whose parents state that they can not afford to give their children proper meals will be fed at the public expense. The act, however, must be adopted by a local authority before it can come into force. The question of the mental and physical deterioration of the English race, and especially of the rising generation of the towns, has been exciting much alarm within the past few years. It is acknowledged that the town bred children of Great Britain have deteriorated, and lack of proper food has been pointed out as one of the main causes. The bill recently passed, however, has provoked much severe criticism. It is claimed that to absolve parents from the responsibility of feeding their offspring, must in many instances lead to grave abuses. The question is well summed up as follows: 1. Want of food is one of the least important of the causes of distress, and in London and generally through the country, so far as it exists, it is met and adequately dealt with by private charity. 2. The unsatisfactory physical condition of a proportion of school children arises from causes in operation before school age is reached, causes which would be untouched by the proposed measure. 3. Experiments both in England and in Paris (*cantines scolaires*) have shown that the system is both expensive

and unsatisfactory. It is asserted, in short, that the measure will encourage and perpetuate parental neglect, selfishness, and ignorance, which are now the principal causes of children's distress, and will do so at the cost of those who are now performing their duty to their children and to the state.

#### Leprosy in Cape Colony.

The alarming increase of leprosy in South Africa has been described in a previous letter. In connection with this subject Dr. Sutherland Black, formerly superintendent of the great leper establishment at Robben Island, read an important paper at the Polyclinic entitled, "The Prevalence of Leprosy in Cape Colony, and Some of Its Problems." Dr. Black described the attitude of the government as one of anxiety and perplexity, due to doubts surrounding some of the elementary problems of the disease. At Robben Island there are now 600 inmates and nearly as many more in another asylum for natives. In addition it is calculated that there is a nearly equal number of lepers at large, for whom there is at present no accommodation. The authorities have now to face a great increase of the disease in Cape Colony. With regard to the asylums Dr. Black stated that there is need of more systematic treatment, of proper organization of the patients' labor and of hygienic improvements in the buildings. The death rate of the inmates from tuberculosis has been excessive. He found that the nodular variety of leprosy is more common among the whites than among the natives. During the seven years he spent at Robben Island he tried many drugs and obtained some good results from creosote, but found most advantage from chaulmoogra oil in considerable doses. He thinks that the disease is infectious only during the existence of nasal ulceration. After this stage has passed he suggested that there is no necessity for segregation. In the discussion which followed Mr. Hutchinson said that for twelve years the Cape Government had enforced the segregation of lepers and nowhere else had the law been carried out with such vigor and consistency. But this experiment in segregation has been an utter failure. Leprosy spontaneously died out in the middle ages—a result which would have been impossible if it were a contagious disease. Segregation should be abolished, he said, and more sensible measures adopted. Though thoroughly well conducted and though everything possible is done for the lepers at Robben Island the establishment is a prison and the high death rate from tuberculosis is due, he declared, to the state of utter hopelessness engendered in the unfortunate "prisoners" by the utterly unnecessary and useless procedure of segregation.

#### Changes in Meat Essences Kept in Tin.

A large consignment of tins of beef essence prepared several years ago and sent to South Africa during the war, being no longer required by the army, was sold and recently returned to Great Britain. They were found to differ from new samples, being fluid and discolored, although sterile. The changes were found to be due to metallic contamination, the essence having absorbed tin from its receptacle. Metallic tin was present in amounts between 0.02 and 0.03 per cent. (between 1½ and 2 gr. per pound). The bacteriologist thought that this amount might produce symptoms of acute poisoning. In invalids or in prolonged use even the minutest amount of metallic impurity would be objectionable. It was suggested that the solvent action on the tin was due to the presence of organic acids, such as lactic and carnine acids.

#### Report on Anthrax.

The first annual report of the anthrax investigation board for Bradford has been issued. This board consists of representatives of the employers and work people engaged in wool combing, spinning and manufacturing hair, wool and alpaca. With the help of Dr. Eurich as bacteriologic expert they have arrived at some important conclusions as to infection of workers. During the first year of existence of this board 17 cases of anthrax were reported to them, of which 4 were doubtful. Out of the remaining 13, 7—all in persons over 40—were fatal, and 6—all in persons under 33—ended in recovery. Of the former all the patients but one suffered from internal anthrax, while the latter all had the disease in external form. All the patients, except the abnormal one mentioned, contracted the disease during the preliminary operations of handling the materials, principally before they had been washed. The most dangerous materials were found to be Persian wool, camel hair, and some kinds of mohair. The board recommends that certain dangerous kinds of work shall be scheduled and the materials only combed under the supervision of a government inspector.



## Pharmacology

### THE AMERICAN DRUGGISTS SYNDICATE.

#### An Organization for Appropriating and Dispensing Physicians' Prescriptions.

While the legal status of the prescription may be unsettled, it would be claimed by few, we think, that the druggist had any legal or moral right to its use in counter prescribing. This, however, is the avowed *raison d'être* for a druggists' combine calling itself the American Druggists Syndicate, or, as it is more euphoniously known to the "trade," the A. D. S.

This concern, which brazenly announces that it is dispensing physician's prescriptions in ready-made packages, for the alleviation of all the ills that flesh is heir to, has the official sanction of that self-proclaimed friend of the medical profession, the National Association of Retail Druggists. Mr. Jacob Diner, a member of the executive committee of the N. A. R. D., only recently placed the seal of his approval on the combination in an interview reported in the *Apothecary*, and by becoming a stockholder in the concern. When first organized, the syndicate was under the ban of suspicion and was looked on with misgiving by the National Association of Retail Druggists. This distrust, however, did not arise from any shock to the ethical conscience of the association, but simply because of a faulty "serial numbering" plan. This plan, it should be explained, is a means adopted by the manufacturers for the tracing of any package sold below the contract price, each package sent from the factory bearing its definite serial number; this prevents the "cut-rate evil" of which so many large department stores are guilty. When this moral delinquency had been remedied, the A. D. S. was received with open arms and at once became, so to speak, a member in good standing.

While the fate of the syndicate was in the balance, waiting for approval of the N. A. R. D., it got out a magazine with the high-sounding title of "*The Voice of the Retail Druggist*." This journal, which, bogey-man-like, was to frighten the N. A. R. D. into submission, was edited by J. B. Duble, ex-chief organizer of the N. A. R. D. and had two issues; more correctly *one* issue, for the first issue had a very limited circulation. By this time, the National Association of Retail Druggists, for reasons unknown but easily guessed, had reconsidered its attitude and given official recognition to the American Druggists Syndicate. Since then the "*Voice*" has become aphonic and its worthy editor has become field representative of the *Apothecary*, which magazine has taken a graceful tumble from an attitude of vituperative abuse to one of smiling acquiescence.

Whether the remarkable change of heart that has occurred is due in any way to the fact that, at its first annual meeting, the syndicate announced a gross profit of \$62,000 and declared a 20 per cent. annual dividend to be paid quarterly, we may never know. Remembering, however, that nothing succeeds like success, we may venture the opinion that it probably is.

The reported founder of the A. D. S. is a Mr. C. H. Goddard, an advertising man, who went east about a year ago to organize this company of which he is now secretary. The first men to become interested in this concern were the dissatisfied stockholders of the Rexall Company, of "Vinol" fame. At the time the N. A. R. D. was opposed to the syndicate, Mr. Goddard was given an opportunity to "be good" by the Metropolitan Association of Retail Druggists of New York City. This opportunity he "turned down" and when before the association's committee he told them point-blank that within a year they would be handling his goods. This prophecy has been fulfilled. While before the committee he was asked by Mr. Diner, the chief inquisitor, whose conversion we have mentioned, if the advertising claims of the syndicate were not a representation to the public that druggists were in the habit of stealing their formulas from physicians. Mr. Goddard admitted this and also that druggists steal formulas.

The advertising referred to is a pamphlet they distributed widely, especially on the Pacific coast, in which several common ailments are considered under their appropriate headings. For example, for headache—specific term!—two prescriptions are given, written in full, with the statement that while these

are good, nay, *excellent*, the *best* prescription is that put up by them in a "ready-made package and marked Rx 1000, A. D. S. Headache Wafers;" (we may note here, parenthetically, that each wafer contains 4 grains of acetanilid,) "they cure where all others have failed." Have you dyspepsia? The "worst forms are *relieved* by these"—and here follow two ordinary pepsin mixtures—"but instantaneous *results* are secured and a permanent cure effected in many cases by taking Rx 1000, A. D. S., Digestive Tablets. A thousand druggists guarantee it." And more to the same effect.

#### ITS MEANING.

What does the whole scheme mean? Simply this, that a few of the prominent retail druggists after selling for years the various nostrums on the market, have decided that it will be more profitable if they themselves go into the "patent medicine" business and thus participate in the gigantic profits accruing from humbugging the public. It means that they use, or deceive the public into thinking they use, the physicians' prescription as the basis for their products. It also means, that the National Association of Retail Druggists is playing with the physician a "heads I win, tails you lose" game, and that while vowing friendship for the profession in public, it goes hand-in-glove with those interests most strongly inimical, not only to medicine, but to public health. It means, in short, that the N. A. R. D. puts its official stamp of approval on the nefarious nostrum evil and by so doing becomes an aider and abetter in the continuance of an abuse that the better class of pharmacists, the medical profession, and the public have been earnestly striving to eradicate.

#### ITS PERSONNEL.

The officers of this syndicate, aside from its advertiser-publisher-promoter-secretary, Goddard, are all either druggists or are financially interested in the drug trade. The president is George Ramsey, who is also general manager and vice-president of the Hegeman corporation that has seven large drug stores at the following places in New York City: 200 Broadway; 205 Broadway; 200 W. One Hundred and Twentyfifth Street; 1917 Amsterdam Avenue; Third Avenue and One Hundred and Forty-ninth Street, and in the *Times* Building at Broadway and Thirty-ninth Street. R. Scherick, the first vice-president, is president of the Scherick Drug Company of New York City with two large stores at 487 and 525 Broadway, respectively, and at 525 Park Avenue. The second vice-president is Dr. William C. Anderson, dean of the Brooklyn College of Pharmacy, former president of the N. A. R. D., and a member of the American Pharmaceutical Association. His pharmacy is situated at 320 Lafayette Avenue, Brooklyn. George W. Haekenburger, the third vice-president, is general manager of the Miner Drug Company, which operates the Original Bowery Pharmacy and a store at 112 E. One Hundred and Twenty-fifth Street. On the board of directors we find Charles Huhn of 98 Western Street, Minneapolis; Edward A. Hays, at Middle and Free Streets, Portland, Maine; F. A. Davidson of Boston, the principal owner and manager of the Theodore Metcalf Company of Boston; E. C. Kinsel, with a drug store at 26 Michigan Avenue, Detroit; E. L. Weston, secretary of the Syracuse (N. Y.), Retail Druggists' Association, with a store at 111 N. Salina Street, Syracuse; Otto G. Hottinger, of the Hottinger Drug and Truss Company, Chicago; C. A. Codman, manager of the Standard Drug Company of Cleveland, Ohio, with stores at Perry and Prospect, Cedar and Vienna, and Erie and Superior Streets, respectively, and C. S. Roberts of Syracuse, N. Y.

#### "THE TRANSATLANTIC QUACK."

##### Further Remarks on Nostrum Advertising in Religious Papers.

Strikingly apropos of the article on "Nostrum Advertising in Religious Papers," in *THE JOURNAL*, February 2, comes a voice from across the Atlantic in the form of an article in the *British Medical Journal*, January 26. The article is headed "The Transatlantic Quack." Surely every loyal American citizen must feel a glow of honest pride on reading the opinion, held in British professional circles, of American business methods. The writer says:



Many hard things have been said about American business ways, but nothing puts them in a more despicable light than the letters addressed by so-called companies carrying on a medical business in this country in the name of American quacks. One of the most repulsive of these purports to be sent out by the Theo. Noel Company, Limited, dating from 29 Ludgate Hill, London, E. C., whose vice-chairman is said to be J. R. Noel, M.D., and is addressed to clergymen. The merits of the company's nostrum called Vitæ-Ore are heralded in this style: "Is it not a fact that sickness among the members of your congregation is a great hindrance to your plan and work? Do you not often wish that, like the Great Physician, you could heal the body as well as minister to the soul? You may be tempted to throw this letter down and conclude that we are talking cant for business purposes." [The writer of this circular anticipates, with marvelous clearness, the effect produced on any intelligent reader by his composition.] "We admit we are talking business, but what is the use of preaching that Christianity is applicable to all conditions of business life, if as soon as a Christian business man refers to Divine things, he is set down as a charlatan talking cant?"

Then follows an offer to supply, gratis, packets of "Nature's tonic and healer," to be paid for one month from receipt, only if benefit has been derived from them, "in the hope to benefit some of these poor persons and thus set them talking about Vitæ-Ore." The writer boasts of the number of church ministers who have availed themselves of this offer and of the "editors of the leading medical religious newspapers who have endorsed the claims of the company's remedy."

As shown in the cut printed in THE JOURNAL,\* the *Cumberland Presbyterian* (issued weekly by the Cumberland Presbyterian Publishing Union) advocates the "Peace, Unity and Purity of the Church" on the front cover and Vitæ-Ore on the back. The English branch of the Theo. Noel Company asks English clergymen to use its nostrum, so that "like the Great Physician, you can heal the body as well as minister to the soul," and when a minister of the Cumberland Presbyterian church remonstrates against the prostitution of the pages of his paper, the Rev. James E. Clarke, editor, replies that it is "hardly the function of such a paper as the *Cumberland Presbyterian* to decide questions in accordance with any professional code of ethics," while the manager writes that "the very papers which, with axes to grind which other papers understand, are leading the crusade against 'patent medicines' are carrying in their columns at the same time lies galore, setting forth other wares."

Is one to conclude, from this specimen of ecclesiastical logic, that the argument of the management of the *Cumberland Presbyterian* is that since all advertising is founded on fraud, there is no reason why their paper should not derive as much profit as possible from such conditions? As mere laymen, we are led to remark that such a conclusion savors quite as little of early Christian ethics as it does of any known code of professional ethics, however much it may be in accord with the commercialism of modern religious journalism.

Would the Rev. Mr. Clarke wish his readers to believe that, if the Great Physician were to-day walking the earth among men, he would distribute advertising circulars and sample packages of Vitæ-Ore, instead of loaves and fishes to the multitude that hung on his words, and thus "heal the body as well as minister to the soul?"

Can one imagine Paul of Tarsus, who fought with beasts at Ephesus and who died a martyr for his faith, or the beloved John on the Isle of Patmos, taking the position that it was "hardly his function to decide questions in accordance with any professional code of ethics?"

Would the advertising manager of the *Cumberland Presbyterian* have been willing to certify that Luke, the beloved physician, was "personally known to the publishers of this paper as a reliable and competent physician" unless he had entered the office of this religious journal with a fat advertising contract in his hand?

Can the whole filthy, disreputable nostrum business boast of a more disgraceful piece of literature than this blasphemous and sacrilegious attempt—shown in the *British Medical Journal*—to use the personality of Jesus Christ to boom the sales of a nostrum and to make advance agents out of weak-minded Christian clergymen? And can any honest member—either lay or clerical—of the Cumberland Presbyterian church, or any other church, look without shame on an editor and a paper which, while claiming to advocate the purity of the church have no better defense to offer than that all advertising is lying anyhow, and that other papers do the same

thing? Yet much time has been spent in discussing the reasons why the church of to-day lacks the vigor and energy of apostolic times. A glance into some of our religious journals will supply at least a partial solution of the problem.

#### HISTORICAL.

The interesting nostrum mentioned above has been exploited for the past fifteen years by its owner and "discoverer" (?) Theophilus Noel. This gentleman was formerly engaged in the newspaper business and later in mining and is said to lay claims to special knowledge as a geologist and mineralogist. We are informed that he came to Chicago in 1891 and engaged in the "patent medicine" business, advertising and selling Vitæ-Ore, which he claimed to be a mineral which he had discovered somewhere in Florida or Mexico. This preparation is sold in the form of a powder put up in envelopes which retail at \$1.00 each. It is supposed to be dissolved in water and drunk. The advertisements, which appear mainly in religious papers, state: "It is a mineral remedy, a combination of substances from which many of the world's noted curative springs derive medicinal power and healing virtue. These properties of the springs come from the natural deposits of mineral in the earth through which water forces its way, only a very small proportion of the medicinal substance being taken up by the liquid."

An analysis published in Bulletin No. 69 of the North Dakota Agricultural College Experiment Station states that Vitæ-Ore is simply ferric subsulphate (Monsel's salt), to which a little magnesium sulphate (Epsom salt) has been added. Our readers can readily choose the more reliable of these two statements. One can also readily understand how exceedingly beneficial Monsel's salts and Epsom salts would be in cases of rheumatism, diabetes, Bright's disease, gout, "stomach trouble," diphtheria and the other diseases for which Vitæ-Ore is recommended.

This nostrum is also interesting as showing the profits to be derived from such a business. In 1891 Mr. Noel is said to have been compelled to peddle his nostrum in person in order to obtain sufficient means to start his business. In 1893, only fourteen years ago, he is reported to have had in his employ two girls and three men. The extent of the establishment was three or four rooms and a basement. The business now occupies a three story building covering three building lots. The owner has a summer home in Michigan, a winter home in California, a permanent residence in Chicago and spends most of his time in travel. It is alleged that one of his recent trips to Germany was for the purpose of being treated for chronic rheumatism, which evidently Vitæ-Ore had failed to relieve. It is claimed that the present assets of the company amount to over \$200,000.

As has been said, most of the advertising of this firm has been carried on in the religious papers. Here we have further evidence that piety, properly exploited, is a valuable asset in the "patent medicine" business.

However, the founder of this edifying mixture of faith and works is no longer the dominant factor in the business. One is led to wonder whether rheumatism has had anything to do with his retirement. Surely not, since the advertisement states that "Thousands of people testify to the efficacy of Vitæ-Ore in relieving and curing rheumatism," and that "This medicine cures, whether the sufferer believes it or not." The principal factor in the business is now Dr. Joseph R. Noel, who was graduated in 1894 from Jefferson Medical College, practiced three years at Ogden and Harrison Streets, Chicago and taught therapeutics for a time at one of the night medical schools of Chicago. Did he advise his students, we wonder, to prescribe Vitæ-Ore for rheumatism? Did he learn his present therapy at Jefferson? He has recently opened a bank, possibly as an outlet for the money sent him by readers of religious papers. It is possible that he foresees the coming end of the nostrum business, and wishes to "make to himself friends of the mammon of unrighteousness." We are informed that he is the J. R. Noel, M.D., alluded to in the extract from the *Lancet*.

\* THE JOURNAL, Feb. 2, 1907, p. 436.



## LETTERS FOR RENT

300,000 Jas. Wm. Kidd medical file cards, representing all kinds of diseases (will sort) 1904.  
180,000 men's matrimonial, 35,000 women's '04, 1st.  
200,000 agents and canvassers.  
50,000 Dr. Pierce order blanks, '02, '03.  
20,000 Ozomulson order blanks, '03.  
30,230 Theo. Noel, '02, '03, medical file cards.  
59,000 Agents' directory, '03, '04, '05.  
250,000 Home work, '03, '04, '05.  
27,500 Rosebud trust, firsts, '03, '04.  
13,500 Bond Jewelry payups, trust, '04, envelopes.  
52,000 10c song orders, Star Music Co., '04, '05.  
17,500 Dr. May & Priar, ladies' regulator, '03, '04.  
6,000 Nervous debility, '03, '04, Appliance Co.  
Over 1,000,000 letters on hand, all kinds. Call or write me for samples and ads. Letters bought.  
G. A. Davis, 1634 W. Ohio Street, Chicago.



The above is reproduced from the *Ladies' Home Journal*. Editors of religious papers will no doubt be pleased to learn that Brother Noel, in selling the names of those sufferers who have written him in hopes of obtaining relief, is following the scriptural injunction not to let his right hand know what his left hand doeth.

Isn't this a delectable mixture? To make a (financially) successful nostrum, take one pious but ignorant man who has dabbled in many things and who talks glibly of all, no money but unlimited nerve, a mixture of any ridiculous stuff, a pinch of mystery, and a plentiful supply of quackery. Put on to boil in a religious weekly, stir slowly with a sensational display advertisement, season heavily and *ad nauseam* with piety and cant of the celebrated Chadband variety and serve hot to an ignorant and gullible public on a Sunday School lesson leaf.

## Correspondence

### Preparations of Dios Chemical Company Not Approved.

BOWLING GREEN, KY., Feb. 9, 1907.

*To the Editor:*—As secretary of the Warren County Medical Society I am instructed to ask you about the preparations made by the Dios Chemical Company: Neurosine, Dioviurnia, etc. A very nice young physician, who is well-known here, is traveling for the house, and, when he was in Bowling Green, stated to our physicians that he was instructed that all of their preparations had been approved by the Council on Pharmacy and Chemistry. As I do not find any of these preparations on the list furnished by the Council, I ask you for information on the subject, as our society has resolved to use only pharmaceuticals which have been approved by the Council.

L. H. SOUTH.

[ANSWER.—None of the Dios Chemical Company's preparations has been approved by the Council on Pharmacy and Chemistry. About a year ago this firm sent out a circular to the effect that its preparations had been approved, but when its attention was called to it, it agreed to withdraw the circular. Evidently, however, it is trying to convey, in a different way, the impression that its products have been approved by the Council on Pharmacy and Chemistry. Those who are with us in this fight for sane medication in this country, and who are willing to back up the work by refusing to prescribe anything that has not been accepted by the Council, will find a list of the accepted articles in the advertising pages of the first issue of *THE JOURNAL* each month.—Ed.]

### Superstition in Teratology.

DALLAS, TEX., Jan. 30, 1907.

*To the Editor:*—The article of Dr. E. T. Shelly, published in *THE JOURNAL*, January 26, contained many convincing arguments and the author's views will undoubtedly be endorsed by every progressive physician. I do not wish to take issue with him, on the views expressed by him, in regard to the subject of contiguity and continuity of mother and fetus, although he seems to have overlooked the unquestioned factor of heredity, but I wish to relate one interesting case in connection with this subject. A man had one child born by his first wife, with

a pes equino varus. He married again, his second wife became pregnant, and although there was no other case of malformation in her husband's or her own family, she was constantly worried about the possibility of having a deformed baby. She gave birth to an otherwise perfectly healthy child, but with a double club-foot. Of course we agree on this deformity being due to faulty development, but the coincidence is certainly striking.

EMILE ARONSON, M.D.

### The Relation of Abortion to Cancer of the Uterus.

NORTH PLATTE, NEB., Jan. 31, 1907.

*To the Editor:*—In looking over several articles on cancer of the uterus recently published in *THE JOURNAL* I find, that in giving the causes of uterine cancer, two things were not considered, which I believe to be either predisposing or exciting causes of this disease. I refer to self-induced abortions and miscarriages and to office treatments. My purpose is simply to call attention to two things which I think play an important part in the etiology of uterine cancer. It can be understood how the trauma incident to an abortion self induced, with a crochet hook, pencil or some such instrument, could furnish the necessary conditions for the starting point of cancer. I think it would have a wholesome effect on the minds of some of our female patients if the fact became generally known to the laity that an abortion may result in cancer. In regard to the other cause I have suggested, a thorough understanding of it would have, no doubt, a wholesome effect on many of our own profession who inflict "treatments" on innocent women for months and even years. The most common place for cancer is the cervix. Therefore it must be the most susceptible to the causes which produce cancer. We know that irritation is an exciting cause of cancer. Why then irritate a uterus every day or every few days for a month or a year with chemicals and foreign substances?

D. T. QUIGLEY, M.D.

### The Medical Profession in Denmark.

COPENHAGEN, DENMARK, Jan. 23, 1907.

*To the Editor:*—I have thought it might be of interest to send a word to *THE JOURNAL* from Copenhagen, as most American physicians who go to Europe seek some of the larger European cities for study and clinical observation, and only touch Copenhagen for a few hours to see the Finsen Light Institute.

In *THE JOURNAL*, April 12, 1902, I contributed an article on "Finsen's Phototherapy." I can say now from personal observation, that splendid results are obtained at the Finsen Institute with concentrated, cooled electric light. I have been especially impressed with the frequency of lupus vulgaris of the mucous surfaces of the nose, the hard palate and the pharynx. In treating these cases the same lamps are used as in the treatment of lupus of the skin, except that the light is passed through a reflector to the affected area. To Americans this seems a tedious form of treatment. As the compressing apparatus is held tightly on the affected area and each application lasts for an hour and fifteen minutes daily, the treatment is also painful. But the Danes are proud of Finsen's methods and consider it the safest and best way of treating this disease. Copenhagen has many splendid clinics beside the Finsen Institute, but it is difficult for the stranger to find them. Take, for example, the clinic at the Royal Frederiks Hospital of Prof. Thorkild Rosing, than whom there is in Europe no better surgeon on the genitourinary organs. The general public hospital, "Kommunehospitalet," is a splendid place for Americans to visit when in Copenhagen. It may be of interest to know that the Germans, who themselves are great masters of system, go to Copenhagen in great numbers. An individuality marks the work of the Danes which I fail to find in other large cities of Europe. There are but few medical books published in Denmark, but those few are well worth reading. To the student of pediatrics who is able to read Scandinavian, I can recommend the "Paediatricke Forelaesninger og Studier" of S. Monrad.

At the clinics in Copenhagen they look down on American physicians as men who practice medicine more for the money there is in it than for the purpose of investigating disease



and developing exact methods of eradicating it. This prejudice, however, is not found in the younger men, many of whom have visited America.

P. C. CLEMENSEN, M.D.

### One Standard of Medical Licensure Asked in New York.

60 E. 77th St., NEW YORK, FEB. 8, 1907.

*To the Editor:*—Year after year the medical profession of New York has been called on to oppose the passage of laws creating state examining boards in osteopathy, dermapathy, optometry and so on. Year after year we have succeeded in convincing the legislature that the passage of such laws would be unwise, but, in answer to the inquiries of senators and assemblymen, "What are you going to do with these people who besiege us each year?" we have answered, "Let them comply with the present law and then practice any method they choose." Then has come the second pertinent query, "The homeopaths have a separate board, why should not the osteopaths be granted the same privilege if they will comply with all the requirements excepting treatment?"

As the result of all this a bill has been drawn up, which is endorsed by the State Department of Education, and many leading members of the legislature, accurately defining the practice of medicine and providing for a single examining board, before which all who desire to practice the healing art must come and pass a common examination, eliminating the subject of practice, assuming that all who have the other necessary qualifications will be able to practice intelligently the method which seems to be indicated in the cases they meet.

It is not expected that the enactment of this law is going to bring about an immediate leveling of all the barriers now existing between "allopathic," homeopathic and other "pathic" physicians, although, doubtless, that will be the ultimate result. Nor will it prevent the demands in the future of peculiar classes desiring separate recognition for commercial and other reasons. It will, however, place the legislature in a position to say when future efforts to secure class legislation along medical lines are made, that the State of New York recognizes only the ordinary educated physician, and the method of practice is something the individual physician must determine for himself. It will place medical practice on a higher plane than has heretofore been accorded it, and will accomplish what our present law was designed for, and has failed to do, namely, properly protect the people of the State of New York from incompetent physicians.

Will you please request your New York readers to write their representatives in the legislature at once, urging the defeat of osteopathy, optometry and all similar bills, and the passage of the single board bill, which is Senate Bill No. 154, Assembly Bill No. 160, and to use these numbers when writing.

FRANK VAN FLEET, M.D.

Chairman, Committee on Legislation of the Medical Society of the County of New York.

### A Protest Against Compulsory Publicity.

ROCHESTER, MINN., Feb. 10, 1907.

*To the Editor:*—We have lately suffered an unwarranted intrusion into our private affairs, through the publication in certain newspapers of a sensational article furnished by a "Sunday Supplement" syndicate. Up to the present we have succeeded in checking several such publications. We are now taking legal steps to determine what redress if any, may be had, and to what extent not only ourselves, but the medical profession as a whole, can be protected against such outrages on common decency.

W. J. and C. H. MAYO.

## Association News

### Special Rates for the Atlantic City Session.

According to advices, one first-class fare plus \$1.00 for the round-trip, going and returning by the same routes, will prevail from points more than 100 miles from Atlantic City. Tickets will be on sale June 1 to 4, inclusive, returning leaving Atlantic City June 4 to 10, inclusive. A special validating agency is also promised, so it is to be hoped that there will be little trouble in this regard.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### NEPHRITIS COMPLICATING EXOPHTHALMIC GOITER.

NEW YORK, Jan. 28, 1907.

*To the Editor:*—Please inform me whether Bright's disease complicates exophthalmic goiter and what influence nephritis would have on this condition.

CHARLES F. D'A. FRANCIS.

ANSWER.—Nephritis is not recognized as a common complication of exophthalmic goiter; several authors do not even mention albuminuria as a symptom. Others do so but no emphasis is placed on it. Thus Tyson (*Practice of Medicine*, 3d edition, 1903, p. 675), says "Intermittent albuminuria is frequent, as pointed out by Dr. Begbie;" Moebius, in Nothnagel's System, refers to albuminuria as being occasionally present. Slight toxic degeneration of the renal epithelium in long-continued or severe cases may explain such albuminuria. Of course, exophthalmic goiter may appear in one who has a genuine nephritis, the association of the two conditions being purely accidental. Such a case is reported by Elliot (*THE JOURNAL*, June 17, 1905, p. 1897), in which exophthalmic goiter was complicated both by glycosuria and by a true nephritic albuminuria with albuminuric retinitis. In regard to the association of Bright's disease with exophthalmic goiter he says: "No direct association exists between exophthalmic goiter and nephritis, although transient albuminuria has been noted during the periods of acute disturbance. Chronic Bright's disease is not numbered among the phenomena of exophthalmic goiter." Lastly, in exophthalmic goiter there may develop a period of cardiac incompetency from myocardial weakness. When this occurs dilatation of the heart with passive congestion of the liver and kidney, edema of the lower extremities, etc., may be present. Such a renal congestion might be accompanied by a not inconsiderable trace of albumin in the urine, and even by a few casts.

### THE LENGTH OF HYPODERMIC NEEDLES.

MAHANAY CITY, PA., Jan. 22, 1907.

*To the Editor:*—I would like to have your opinion why the present hypodermic needles are made an inch to an inch and a half long. My idea is that a needle half an inch long has the advantage, that it is not so likely to puncture a superficial vein, and that it will be almost impossible to reach an artery or nerve. The same physiologic action will result from either length.

G. W. REESE, M.D.

ANSWER.—While the average length of the needles generally sold with hypodermic syringes may be longer than is necessary, our correspondent is in error in assuming that they measure from an inch to an inch and a half in length. The better class of manufacturers are sending out syringes equipped with needles from three-quarters to one inch in length. These lengths have been adopted because of a general demand for these sizes. Those who prefer needles of shorter length can obtain them by specifying the length they want. Modern surgical instrument catalogues illustrate needles as short as one-quarter of an inch. Our opinion is that needles of one-half to five-eighths of an inch in length are preferable to those of standard length.

### RULES FOR FIRST AID TO THE INJURED.

WARRIOR, ALA., Jan. 28, 1907.

*To the Editor:*—Where can I obtain a formula of rules for the care of the injured around mines and brickyards—rules to be posted around the above-named places and used to instruct in first-aid to the injured?

J. G. VANCE, M.D.

### THE RUSSO "REACTION."

DENVER, Jan. 31, 1907.

*To the Editor:*—Will you tell me where I can get information regarding Russo's reaction of methylene blue in urine? I am desirous of learning something of its nature. In the abstract in *THE JOURNAL* it states that the reaction "occurs as an ordinary physical" phenomenon in any urine.

ANSWER.—The reaction referred to was proposed by Russo (*Riforma Medica*, May 13, 1905), and consists in adding to 4 or 5 c.c. (one dram) of urine 4 drops of a solution of methylene blue. In typhoid patients he found that the urine became a light green in the first stage, an emerald green at the height of the disease and gradually assumed a bluish green to blue color during the stage of decline and convalescence. Russo believed that the color depended on toxins present in the urine and might be made of diagnostic value. It was possible by simple experiments for E. Cousin and S. Costa (*Presse Medicale*, March 14, 1906), and also Ch. Gandy (*Presse Medicale*, March 21, 1906), to prove, what might have been suspected beforehand, that the green color was due to the mixture of the blue liquid with the yellow urine. Every-



one is familiar with the fact that a mixture of pigment blue with yellow produces green. The varying shades of color observed by Russo are due to the varying concentration of the urine at the different stages of the disease. Cousin and Costa found that diluting the urine restored the blue color and that the green tint could be produced by placing a test-tube containing the methylene blue solution in a beaker containing urine of a deep yellow color with out mixing the liquids at all. Gaudy decolorized typhoid urine which gave the reaction and found that after the color was removed the urine gave a blue color instead of the green previously obtained. The reaction is, therefore, a mere physical phenomenon depending on the color of the urine and not on any chemical change and is devoid of any diagnostic value.

#### BEST CLIMATES FOR HAY FEVER.

CINCINNATI, Feb. 6, 1907.

*To the Editor:*—Can you inform me whether there are any districts in the United States which are entirely free from hay fever?  
G. A. HINNEN.

ANSWER.—We published a reply to a question covering the same ground in *THE JOURNAL*, Aug. 11, 1906, page 457.

#### "LAXINE."

TOLEDO, OHIO, Feb. 1, 1907.

*To the Editor:*—The Columbus Pharmacal Company makes a product for sale to physicians which they call "Laxine." The label states that this is a synthetical laxative, the chemical name of which is Di-hydroxy-benzo-methy-quinolactone. This sounds well, but I can find no one in this city who can tell me what it means. Will you please tell me what this chemical is in plain every-day English? A number of local physicians are interested and will be grateful for the information.  
GEORGE H. JONES.

ANSWER.—This is probably phenolphthalein. For a discussion of this subject see *THE JOURNAL*, Jan. 5, 1907, p. 64, "Method of Introducing New Preparations," and also p. 70. As phenolphthalein is a comparatively new preparation it is being introduced under other names—purgen, for example, and it will not be surprising if it becomes the chief ingredient of some new proprietaries. It can be bought of any wholesale chemist at from 35 to 50 cents an ounce.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending Feb. 9, 1907:

Vedder, Edward B., asst.-surgeon, relieved from duty in the Philippines Division, and will proceed to the United States, and on arrival report by telegraph to the military secretary of the Army for further orders.

Williams, Allie W., asst.-surgeon, advanced to rank of captain from Feb. 4, 1907.

Fife, James D., asst.-surgeon, ordered to proceed from Fort Slocum, N. Y., to Jefferson Barracks, Mo., for temporary duty, and on completion thereof will return to his proper station.

Nelson, Kent, asst.-surgeon, ordered to proceed from Fort McHenry, Md., to Fort Slocum, N. Y., for temporary duty. On the return of Asst.-Surgeon Fife, U. S. Army, to Fort Slocum, Captain Nelson, asst.-surgeon, will rejoin his proper station.

Stephenson, William, surgeon, ordered to report to commanding officer, Troop K, Fourteenth Cavalry, Presidio of San Francisco, to accompany said troop to Boise Barracks, Idaho. On completion of this duty to return to his station, the Presidio of San Francisco.

Bradley, A. E., surgeon, relieved from duty at Fort Sheridan, Ill., and ordered to report in person to the military secretary of the Army in this city for instructions, and will then proceed to Fort Slocum, N. Y., for purpose of investigating certain methods relating to the examination of recruits, and thence to Jefferson Barracks, Mo., for station and duty.

Woodall, William P., asst.-surgeon, relieved from duty at Fort Clark, Wash., and ordered to Fort Logan, Colo., for duty.

Lambert, Samuel E., asst.-surgeon, relieved from duty at Fort Wright, Wash., and ordered to Fort Logan, Colo., for duty.

Bell, Richard P., contract surgeon, relieved from duty at Fort Monroe, Va., and ordered to duty at Fort Wadsworth, N. Y.

Felts, Ribert L., contract surgeon, ordered to Savannah, Ga., for annulment of contract and granted leave of absence for twenty days.

Shellenberger, James E., contract surgeon, died Feb. 4th at Christ Hospital, Cincinnati.

Wolven, F. Homer, dental surgeon, left Fort Monroe, Va., and arrived at Fort Hamilton, N. Y., for duty.

Slayter, John T. H., contract surgeon, returned to Fort William Henry Harrison, Mont., from temporary duty at Fort Lincoln, N. Dak.

### Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending Feb. 9, 1907:

Bacon, Sankey, acting asst.-surgeon, appointed acting asst.-surgeon from Feb. 1, 1907.

Lumsden, G. P., medical inspector, detached from Naval Rendezvous, Dallas, Texas, and ordered home to wait orders.

Stibbens, F. H., asst.-surgeon, ordered to the Naval Training Station, San Francisco.

Ruge, O. G., pharmacist, ordered to the Naval Medical School, Washington, D. C.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 6, 1907:

Kerr, J. W., asst.-surgeon-general, granted leave of absence for two days from Jan. 31.

Stoner, G. W., surgeon, directed to report in Washington, D. C., for special temporary duty, on completion of which to rejoin station.

Williams, L. L., surgeon, granted leave of absence for one day, February 6, under Paragraph 189 of the Service Regulations.

Stimpson, W. G., surgeon, granted three days' leave of absence as requested.

Cofer, L. E., P. A. surgeon, granted leave of absence for twenty-two days, from February 4.

Clark, Taliaferro, P. A. surgeon, directed to report in Washington, D. C., for special temporary duty, on completion of which to rejoin station.

Heiser, V. G., P. A. surgeon, reassigned as chief quarantine officer, Philippine Islands, to take effect July 17, 1906.

Gwyn, M. K., P. A. surgeon, two days' leave of absence granted from January 17, revoked.

Schereschewsky, J. W., P. A. surgeon, directed to report in Washington, D. C., for special temporary duty, on completion of which to rejoin station.

Bogges, J. S., P. A. surgeon, temporarily relieved at Stapleton, N. Y., and directed to proceed to Perth Amboy, N. J., and assume temporary charge of the service.

de Valin, Hugh, asst.-surgeon, granted leave of absence for two days, from Jan. 22, 1907.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for four days, from Jan. 26, 1907, under Paragraph 210.

Safford, M. V., acting asst.-surgeon, directed to report in Washington, D. C., for special temporary duty, on completion of which to rejoin station.

Stevenson, J. W., acting asst.-surgeon, granted leave of absence, without pay, for two months, or so much thereof as may be necessary, beginning Feb. 18, 1907.

Wilson, R., acting asst.-surgeon, granted leave of absence for thirty days, from February 14.

Troxler, R. F., pharmacist, granted leave of absence for six days, from February 4.

Morris, G. A., pharmacist, granted leave of absence for fifteen days, from February 6.

Thomas, A. M., pharmacist, leave of absence for thirty days amended to be effective January 23, instead of January 20.

#### BOARDS CONVENED.

A board of officers was convened to meet at Portland, Me., on February 5 for the purpose of making a medical examination of an alien. Detail for the board: Surgeon P. C. Kalloch, chairman; Surgeon W. P. McIntosh; Acting Asst.-Surgeon M. V. Safford, recorder.

A board of officers was convened to meet at Port Townsend, Wash., for the purpose of making a physical examination of Pharmacist G. C. Allen to determine his fitness to promotion to the grade of pharmacist of the first class. Detail for the board: Surgeon W. G. Stimpson, chairman; P. A. Surgeon J. H. Oakley, recorder.

A board of officers was convened to meet at Stapleton, N. Y., for the purpose of making a physical examination of Pharmacist Edward Rogers to determine his fitness for promotion to the grade of pharmacist of the first class. Detail for the board: Surgeon, P. H. Bailhache, chairman; P. A. surgeon H. W. Wickes, recorder.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 8, 1907:

#### SMALLPOX—UNITED STATES.

Georgia: Augusta, Jan. 22-29, 3 cases.  
Indiana: Indianapolis, Jan. 20-27, 13 cases, 2 deaths.  
Michigan: Detroit, Jan. 26-Feb. 2, 6 cases.  
Mississippi: Natchez, Jan. 19-26, 3 cases.  
Missouri: St. Joseph, Jan. 19-26, 12 cases.  
Ohio: Cincinnati, Jan. 25-Feb. 1, 1 case.  
Washington: Spokane, Jan. 12-19, 14 cases (imported).

#### SMALLPOX—FOREIGN.

Canada: Cape Breton: Sydney, Jan. 26, present; Kent County, present; Nova Scotia: Colchester County, present; Cumberland County, present; Pictou County, epidemic.  
Chile: Antofagasta, Jan. 6, 4 cases, 2 deaths; Coquimbo, 16 cases, 1 death; Iquique, Jan. 6, present.  
Cuba: Habana, Jan. 30, 1 case.  
Ecuador: Guayaquil, Dec. 1-31, 27 deaths.  
France: Paris, Jan. 5-12, 11 cases.  
Gibraltar: Jan. 13-20, 1 case (imported).  
Great Britain: Cardiff, Jan. 12-19, 3 cases; Liverpool, 5 cases.  
Malta: Dec. 29-Jan. 5, 1 case.  
Mexico: City of Mexico, Dec. 9-15, 12 deaths.  
Netherlands: Rotterdam, Jan. 12-19, 8 cases, 1 death.  
Peru: Lima, Dec. 1-31, 9 cases.  
Russia: Moscow, Dec. 29-Jan. 5, 1 death; Odessa, Jan. 5-12, 10 cases, 1 death.  
Spain: Barcelona, Jan. 10-20, 7 deaths.

#### YELLOW FEVER.

Ecuador: Guayaquil, Dec. 1-31, 17 deaths.

#### CHOLERA—INSULAR.

Philippine Islands: Provinces, Dec. 8-15, 29 cases, 22 deaths.

#### PLAGUE.

Chile: Antofagasta, Jan. 6, 3 cases, 1 death.  
China: Nuchwang, Jan. 28, present.  
Peru: Callao Dec. 31-Jan. 5, 2 cases, 1 death; Catacaos Dec. 19, 2 cases, 2 deaths; Chiclayo, 1 case, 1 death; Mollendo, 9 cases, 3 deaths; Paiza, city and vicinity, Dec. 19, 7 cases, 2 deaths; San Pedro, 11 cases, 2 deaths; Trujillo, 17 cases, 3 deaths.



## Marriages

CHARLES E. IDE, M.D., to Miss Margaret Davis, both of Redlands, Cal., February 9.

JAMES EDWIN BALL, M.D., to Miss Edith Wall, both of Millville, Mo., January 30.

EUGENE WAHL, M.D., to Miss Mae Bradley, both of Edwardsville, Ill., January 30.

EDWARD T. DILLON, M.D., to Miss Laura Doran, both of Los Angeles, Cal., January 29.

PAUL ESNARD BECHET, M.D., to Miss Lucile Ducournau, both of Natchitoches, La., January 9.

BENJAMIN FOSSE, M.D., to Miss Ethel Winifred Bennett, both of Beloit, Wis., January 16.

WILLIAM T. NEWMAN, M.D., to Miss Elve Dolhonde, both of Independence, La., January 16.

THOMAS STEPHEN GREENE, M.D., to Miss Georgia Xaviere Schultz, both of Chicago, February 6.

CHARLES E. SMOOT, M.D., to Miss Elsie Moore, both of Pemberton, Ohio, at Covington, Ky., recently.

H. DENELL WILLIAMS, M.D., to Miss Adeline Diana Cereghino, both of San Francisco, January 23.

EDMUND WORRELL CARTER, M.D., Prattsburg, Ga., to Miss Christine Kelly, Augusta, Ga., January 23.

CHAUNCEY MAY POND, M.D., Groveland, Cal., to Miss Josephine Kebby, at Alameda, Cal., February 6.

W. W. McDONNELL, M.D., to Miss Vida Lester, both of Macon, Ga., at St. Augustine, Fla., January 16.

ROBERT ORMISTON BROCKWAY, M.D., Brooklyn, N. Y., to Miss Florence Stiasny of New York City, January 30.

## Deaths

R. Harvey Reed, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1876; a member of the American Medical Association and the Association of Military Surgeons of the United States; formerly president of the Wyoming State Medical Society and of the Rocky Mountain Interstate Medical Association; surgeon general of Wyoming; professor emeritus of principles and practice of surgery and clinical surgery in Ohio Medical University, Columbus; formerly editor of the *Columbus Medical Journal*; division surgeon of the Union Pacific Railway, with headquarters at Rock Springs, Wyo., and surgeon of the Union Pacific Coal Company, who had suffered for a long while from the effects of septicemia and had gone to Southern California for his health, committed suicide at the Hotel Lankershim, Los Angeles, January 30, by gunshot wound of the head, aged 56. His body was cremated at Evergreen Cemetery.

Claiborne J. Walton, M.D. University of Louisville, Medical Department, 1853; first representative to the Kentucky legislature from Hart County in 1850; state senator in 1855 and 1859, resigning to enter the Federal Army, where he served throughout the Civil War as surgeon of the Twenty-first Kentucky Volunteer Infantry; after the war a member of the state senate in 1873, 1881 and 1895, and a member of the legislature in 1899; in 1890 appointed United States pension agent at Louisville, died at his home in Munfordville, from cerebral hemorrhage, February 1, after an illness of six weeks, aged 83.

Francis L. Stone, M.D. Bellevue Hospital Medical College, 1865; one of the oldest practitioners of Genesee County, N. Y., and coroner of the county; at one time president of the county medical society for several years, and a member of the State Medical Association and of the New York State Association of Railway Surgeons, and local surgeon for the Buffalo, Rochester & Pittsburg Railroad; town clerk of Stafford for several years, died at his home in Leroy, January 22, from influenza, after an illness of four weeks, aged 72.

Johnson Van Dyke Middleton, M.D., who entered the medical department of the Army as lieutenant and assistant surgeon in 1861, was made captain in 1866, major in 1876, lieutenant colonel in 1893, and served as medical supply officer at San Francisco during the Spanish-American War, was retired in 1898 and attained the rank of colonel retired in 1904; who was brevetted captain and major for services during the Civil War, died at his home in Washington, D. C., January 30, aged 72.

William Denny, M.D. Miami Medical College, Cincinnati, 1879; a member of the American Medical Association; one of the founders of the Washington (Pa.) Hospital; a member of the board of managers of the State Reform School, Morganza; treasurer of the Washington school board and Washington County jail physician, died at his home in Washington, February 1, from cerebral hemorrhage, after an illness of five days, aged 52.

James Alexander Finley, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1872; who entered the United States Army as lieutenant and assistant surgeon in 1874, promoted to captain and assistant surgeon in 1879, and was retired in 1893, and afterward lived in Haverford, Pa., died at Bryn Mawr (Pa.) Hospital, after an operation for aneurism, January 23, aged 57.

William Wesley Davis, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1871; one of the oldest physicians of Davis County, Iowa; a member of the Des Moines Valley Medical Society and Davis County Medical Society; while despondent on account of ill health, took carbolic acid and died a few minutes later, at his home in Floris, Iowa, January 25, aged 72.

Henry William Haslit, M.D. Illinois State Board of Health, 1879; Missouri Medical College, St. Louis, 1888; of Grandview, Ill.; a member of the state and county medical societies and the Æsculapian Medical Society of the Wabash Valley, died at the Union Hospital, Terre Haute, Ind., January 22, from injuries received in a railway accident 56 hours before, aged 58.

William F. Ard, M.D. University of Maryland School of Medicine, Baltimore, 1891; formerly house surgeon at the Woman's Hospital in the State of New York, and later attending physician at the City Hospital, Binghamton, N. Y.; a practitioner of Westchester, N. Y., died in New York City, January 24, after an illness of more than two years, aged 40.

Ludwig Hubert Junghanns, M.D. University of Freiburg, Germany, 1856; staff surgeon to General Fremont during the Civil War; from 1870 to 1880 in the service of the Japanese government as medical officer, and thereafter a resident of Poughkeepsie, N. Y., died at Vassar Hospital in that city, January 26, from cancer of the stomach, aged 72.

Augustus L. Justice, M.D. Northwestern University Medical School, Chicago, 1875; a member of the American Medical Association; surgeon in the Confederate army during the Civil War; until two years ago state quarantine officer at El Paso, Tex., died at his home in El Paso, January 30, from nephritis, after a short illness, aged 66.

William Drechsler, M.D. Washington University, Medical Department, St. Louis, 1853; surgeon of the Fifth Missouri Volunteer Infantry during the Civil War; for two terms a member of the St. Louis Board of Education, died at his home in St. Louis, February 1, from cerebral hemorrhage, after an illness of 16 days, aged 77.

Abram J. Williams, M.D. University of Maryland School of Medicine, Baltimore, 1872; a member of the house of delegates from Calvert County, Md., in 1898; afterward county health officer and more recently vaccine physician for the second district, died at his home in Barstow, near Prince Fredericktown, January 24, aged 58.

George Wentworth Newton, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1884; for several years a director and treasurer of the Chicago West Side Hospital, and associate professor of gynecology in the College of Physicians and Surgeons, died at his home, February 9, from pneumonia, aged 46.

George H. Thoma, M.D. Albany (N. Y.) Medical College, 1864; a member of the American Medical Association, and one of the leading physicians of Nevada; a veteran of the Civil War, died at his home in Reno, January 31, from meningitis, following a light attack of influenza, after a short illness, aged 54.

Edwin Theodore Parker, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1891; a member of the American Medical Association, and one of the best-known physicians of southern Alabama, died at his home in Brewton, from heart disease, January 22, after an illness of two weeks, aged 41.

Edwin R. Lewis, M.D. Harvard University Medical School, Boston, 1867; a veteran of the Civil War; for many years a practitioner of Indianapolis, and thereafter an examiner in the United States pension bureau, Washington, D. C., died in Madison, Ind., after an illness of six months, January 31, aged 67.

Richard P. Comfort, M.D. Columbus (Ohio) Medical College, 1882; a member of the Michigan State Medical Society, and



for 30 years a practitioner of that state, died at his home in Nashville, January 27, from septicemia, due to an operation wound, after an illness of several months, aged 58.

**William H. H. Miller, M.D.** Pennsylvania Medical College, Philadelphia, 1849; for many years a prominent member of the Lycoming County (Pa.) Medical Society, and for nearly half a century a practitioner of Williamsport, died in that city, February 1, from nephritis, aged 81.

**Theodore Van Lear Davis, M.D.** Jefferson Medical College, Philadelphia, 1856; for seven years assistant physician at the Western State Hospital for the Insane, Staunton, Va., died at his home in Greenville, Va., Nov. 9, 1906, from senile debility, after an illness of three years, aged 77.

**Levi S. Campbell, M.D.** University of Louisville, Medical Department, 1855; formerly a practitioner of Indianapolis, but for the last five years a resident of Los Angeles, Cal., died at the home of his son in that city, January 31, from influenza, after an illness of six weeks, aged 84.

**David A. Collins, M.D.** Medical School of Harvard University, Boston, 1886; assistant surgeon of the Ninth Regiment, M. V. M., for several years, and physician for the Eliot school district for three years, died at his home in Roxbury, Boston, February 5, after a lingering illness, aged 44.

**Benjamin Frantz, M.D.** Jefferson Medical College, Philadelphia, 1846; dean of the medical profession of Franklin County, Pa., where he had practiced for more than 60 years, died at his home in Waynesboro, February 1, from angina pectoris, after a short illness, aged 82.

**Christian Rohr Johns, M.D.** Jefferson Medical College, Philadelphia, 1890; for several years general secretary and physical director of the Hazleton (Pa.) Y. M. C. A., died at his home in Hazleton, January 30, from hypertrophy of the liver, after a long illness, aged 43.

**E. Scott Pigford, M.D.** Hahnemann Medical College and Hospital, Chicago, 1880; for 20 years a practitioner of Wilmington, N. C., died at the James Walker Memorial Hospital in that city, January 23, from cerebral hemorrhage, after a short illness, aged 63.

**Augustus A. Moloney, M.D.** College of Physicians and Surgeons in the City of New York, 1869; a member of the state and county medical societies, died suddenly at his home in New York City, from heart disease, January 31, after a short illness, aged 59.

**Edmund C. Rickerts, M.D.** College of Physicians and Surgeons in the City of New York, 1885; superintendent of the Tweedie Trading Company, died at his home in Brooklyn, January 9, from pneumonia, after an illness of eight days, aged 55.

**Augustus Frank Bauer, M.D.** Miami Medical College, Cincinnati, 1891; died at his home in Chicago, February 4, from pneumonia, said to have been due to exposure and overwork in connection with the present epidemic of contagious diseases, aged 39.

**Thomas J. Gray, M.D.** Hering Medical College, Chicago, 1893; of Berkeley, Cal.; formerly president of the St. Cloud (Minn.) Normal School and Greeley (Colo.) Normal School, died at Tonopah, Nev., January 20, from typhoid fever, after a short illness.

**Herman J. Abel, M.D.** University of Buffalo, Medical Department, 1895; a member of the Medical Society of the State of New York, died at his home in Honeoye, N. Y., January 30, from tuberculosis, after an illness of seven months, aged 36.

**Robert W. Hansen, M.D.** Columbus (Ohio) Medical College, 1886; of Haigler, Neb., died on a train en route to Denver, where he was being taken to have an operation performed for skull fracture, due to an unexplained accident, January 29.

**George W. Clower, M.D.** Southern Medical College, Atlanta Ga., 1882; for two years representative in the legislature from Coweta County, Georgia, died at his home in Grantville, January 26, from cerebral hemorrhage, after a short illness.

**Hugh Douglas McLean, M.D.** Jefferson Medical College, Philadelphia, 1854; surgeon of the One Hundred and Sixth Pennsylvania Volunteer Infantry throughout the Civil War, died at his home in Philadelphia, February 3, aged 77.

**W. A. Jemison, M.D.** University of Louisville, Medical Department, 1876; of Carrollton, Ky.; a veteran of the Civil War, died at the home of his son-in-law in that city, February 2, from pneumonia, after a short illness, aged 65.

**John W. Mason, M.D.** Missouri Medical College, St. Louis, 1899; of Brookfield, Mo., and formerly coroner of Linn County,

died at the home of a patient, from the effects of a self-inflicted gunshot wound, February 1, aged 40.

**John C. Beck, M.D.** Rush Medical College, Chicago, 1900; assistant in surgery at the Chicago Policlinic, died at his home in Chicago, February 7, from tuberculosis of the throat, after an illness of three months, aged 38.

**Alexander G. Barnhill, M.D.** St. Louis College of Physicians and Surgeons, 1893; surgeon for the Minera (Texas) Coal Company, died at Minera from the effects of an accidental gunshot wound, January 26, aged 39.

**Elsner Christian Gunther, M.D.** Harvard University Medical School, Boston, 1892; of New York City, died at the hospital of Dr. William T. Bull, New York City, January 31, after an illness of several months, aged 42.

**Oliver M. Sheridan, M.D.** New York University Medical College, 1886; a practitioner of Roxbury, Boston, for more than 15 years; a member of the Massachusetts Medical Society, died at his home, January 29, aged 43.

**S. H. Smith, M.D.** Philadelphia College of Medicine and Surgery, 1841; for more than 40 years a resident of Nichols, Iowa, died at his home, January 28, from cerebral hemorrhage, after an illness of a few hours, aged 87.

**Amecy Beason Seward, M.D.** Cincinnati; a pioneer physician of Tipton County, Ind., died at the home of his daughter in Laurel, Ind., Dec. 26, 1906, from cancer of the stomach, after an illness of one year, aged 73.

**Marvin W. Thatcher, M.D.** Long Island College Hospital, Brooklyn, N. Y., 1865; for many years a practitioner of Branch County, Mich., died at his home in Coldwater, January 31, after a short illness, aged 74.

**Theodore Herman Seyfert, M.D.** Department of Medicine of the University of Pennsylvania, Philadelphia, 1867; died at his home in Philadelphia, January 27, from nervous disease, after a long illness.

**Frederick Weller Jones, M.D.** Rush Medical College, Chicago, 1886; of Appleton, Wis., died at St. Elizabeth's Hospital in that city, January 29, from pneumonia, after an illness of ten days, aged 45.

**Everett H. Merwin, M.D.** Chicago Homeopathic Medical College, 1893; treasurer of the Kansas City Homeopathic Medical College, was shot and killed in his office in Kansas City, January 9, aged 39.

**Alfred S. Alford, M.D.** Memphis Hospital Medical College, Memphis, Tenn., 1882; a retired practitioner of Leander, Tex., and a Confederate veteran, died suddenly at his home, January 21, aged 65.

**Horace F. Trueman, M.D.** Miami Medical College, Cincinnati, 1882; a well-known physician of Toledo, died at his home in that city, January 31, from heart disease, after an illness of three days.

**Josiah P. Sugg, M.D.** College of Physicians and Surgeons in the City of New York, 1867; of Kittrell, N. C.; a Confederate veteran, died in Pittman Hospital, Tarboro, N. C., January 25, aged 65.

**Jefferson G. Martin, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1873; died at his home in Kahoka, Mo., January 31, from tuberculosis, after a lingering illness, aged 60.

**James H. Miles, M.D.** University of Maryland School of Medicine, Baltimore, 1845; a school commissioner of St. Mary's County, Md., died at his home in St. Inigoes, January 28, aged 84.

**William N. Sullivan, M.D.** Cooper Medical College, San Francisco, 1892; for several years a surgeon in the United States Navy, died at his home in San Francisco, January 31, aged 34.

**Edward M. P. Ludlam, M.D.** Hahnemann Medical College and Hospital, Chicago, 1861; died at his home in Chicago, from erysipelas, after an illness of one week, February 9, aged 67.

**Thomas Osborne Butler, M.D.** Chicago Homeopathic Medical College, 1881; died at his home in Chicago, January 26, from nephritis, after an illness of three months, aged 50.

**Darwin Cyrus Doolittle** (Years of Practice, Illinois), 1877; died at his home in Woodstock, Ill., from cerebral hemorrhage, January 29, after an illness of two days, aged 82.

**Robert T. Wood, M.D.** Medical College of Ohio, Cincinnati, 1878; a member of the state and county medical societies, died suddenly at his home in Paris, Ky., January 26.

**William B. Vick, M.D.** Indiana Eclectic Medical College, Indianapolis, 1881, died at his home in Green Hill, Ind., January 31, aged 78, after an illness of several months.



L. C. Bell, M.D. Eclectic Medical Institute, Cincinnati, 1888; died at his home in Hamilton, Ohio, January 30, from nephritis, after an illness of several weeks, aged 43.

John Stout, M.D. Chicago Medical College, 1879; formerly physician of Peoria County, Ill., died at his home in Omaha, January 29, from heart disease, aged 54.

William M. Quarles, M.D. St. Louis Medical College, 1869; a Confederate veteran and a prominent citizen of Richmond, Mo., died suddenly at his home, February 2.

Joseph M. Abbott, M.D. New York Medical College, New York City, 1863; a Confederate veteran, died at his home in Trilby, Fla., January 4, aged 62.

James E. Shellenberger, M.D., contract surgeon United States Army, stationed at Fort Sam Houston, Tex., died at Christ Hospital, Cincinnati, February 4.

#### Deaths Abroad.

L. Willems, M.D., former president of the Belgian Academy of Medicine and inventor of the vaccine for protection of cattle against pleuro-pneumonia, died recently at Hasselt, Belgium.

A. P. Fokker, M.D., professor of hygiene at Groningen, Holland, died recently as the result of overexertion during the fire that destroyed the university buildings. He used to protest against the exclusive predominance given to bacteriology, and was inclined to believe that the so-called pathogenic microorganisms were products of the cells of the diseased organism, a form of "heterogenesis."

P. Budin, M.D., the well-known professor of clinical obstetrics at Paris, Tarnier's successor, died at Marseilles January 23, aged 60. There is scarcely a branch of obstetrics on which he has not published some work, and he founded the *Obstétrique* in 1895. From simple beginnings, asking the women delivered at the maternity to bring their babies back every week for advice and encouragement, these "infant consultations" have become an established institution in France and are being copied in other lands. Their working has been described in THE JOURNAL. Budin strove indefatigably to have similar "consultations" established at other points, and his trip to Marseilles was for the purpose of delivering an address on the subject, when he succumbed to grippal pneumonia. With Roussel and Strauss he founded in 1902 the "League against Infantile Mortality," and has always been one of the pioneers in the line of the protection of infant life.

Sir Michael Foster, the eminent physiologist, died suddenly, January 29, in London, at the age of 70. He was educated at University College and graduated M.B. at London in 1859. He practiced for a few years as a doctor in his native town of Huntingdon and, taking a great interest in physiology, he devoted all his spare time to research. He was enabled to gratify his taste when he was appointed teacher in physiology in 1867 at University College and subsequently professor. In 1869 he was appointed to the Fullerian professorship of physiology at the Royal Institution, succeeding Huxley. In 1870 he went to Cambridge to teach physiology and was appointed prælector of physiology. In 1883 a chair in physiology was created for him by the university. He took a great share in the development of the Cambridge Biological School and his influence was not confined to the department of physiology, but extended also to the studies of vegetable physiology and morphology. In 1872 he was elected to the Royal Society, and in 1881 he succeeded Huxley, who became president, as one of its secretaries. He held this post until 1905, taking an active part in the multifarious work of the society. In 1900 he was elected member of parliament by the London University. His greatest work was his "Text-Book of Physiology." The beauty of his English was also well displayed in his "Lectures on the History of Physiology," delivered at Cooper Medical College, San Francisco, in 1900. He also wrote "A Life of Claude Bernard," "Elements of Physiology" in conjunction with Dr. J. N. Langley, and "Elements of Embryology" with F. M. Balfour. He edited, with Dr. Ray Lankester, the "Scientific Memoirs" of Huxley. He founded and edited the *Journal of Physiology*. The deceased was perhaps the greatest British physiologist of his generation. He was an admirable teacher, both in the lecture room and in the laboratory, and he had the invaluable faculty of arousing the enthusiasm of his pupils. He found Cambridge with a meager equipment for scientific work and raised that university to the high position it holds to-day among schools of scientific research. Like many scientific men, Sir Michael was in private life modest and unassuming. He was never so happy as when at his home near Cambridge, with its broad lawns and spacious gardens. His hobby was horticulture, and he was an enthusiastic gardener.

## Society Proceedings

### COMING MEETINGS.

Assn. of American Med. Colleges, Richmond, Va., March 18, 1907.  
Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.

### MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and First Annual Meeting, held in Albany, Jan. 28-30, 1907.

(Continued from page 536.)

#### Diagnosis and Symptoms of Rheumatoid Diseases.

DR. R. R. FITCH, Rochester, divided these diseases into three classes. 1. Atrophic arthritis, usually known as arthritis. 2. Hypertrophic arthritis, formerly called osteoarthritis. 3. Chronic villous arthritis. In atrophic arthritis the glands are not enlarged and the blood is normal. Roentgen ray negatives are valuable in differentiating this condition from infectious arthritis. Hypertrophic arthritis, like atrophic arthritis, is a slowly progressive disease, but commonly occurs later in life. It first appears in the terminal phalangeal joints, while the atrophic form first involves the proximal row. The enlargement of the joints has not the spindle character of the atrophic form, but is localized definitely near the joint line. Hypertrophic arthritis may occur in any joint in the body, and produces its most disabling results in the hip joint. Hypertrophic arthritis of the spine is not infrequently diagnosed as intercostal neuralgia, renal or hepatic colic. The two conditions most likely to be confused with hypertrophic arthritis of the spine are infectious arthritis and mechanical lesions of the sacro-iliac joints. Chronic villous arthritis is usually a result of previous disease or injury. The increased amount of fluid in a distended joint stretches the membrane, causing it to thicken and take on a villous formation. These villi may go on to fatty or calcareous degeneration. The knee is the commonest location for this form of joint disease. There are no general symptoms, simply a mechanical condition producing swelling with crepitus and varying degrees of pain on motion.

#### Mechanical Treatment.

DR. H. L. TAYLOR, New York, thought that the medical profession does not fully appreciate the value of mechanic treatment in non-tuberculous affections of the joint because this method of treatment, as ordinarily practiced, is often ineffective. There need be no fear of atrophy and ankylosis. During the active stages of infection pressure and motion may both be injurious. These may be controlled by splints and apparatus with or without crutches, or recumbency, according to indications. Properly applied and timely mechanic control relieve pain, allay irritation, prevent deformity and favor recovery, except in those cases where there is active suppuration and where the original focus of general infection is of primary importance. Vibration, massage, and active, passive or forced movements may be required after irritation has subsided. If deformity remains, it can be remedied by mechanical or surgical means. In infectious arthritis suitable mechanic treatment is the main reliance, and when properly applied it gives perfectly satisfactory results.

#### Operative Treatment of Acute Suppurative Joints.

DR. WALTER WOOD, Brooklyn, dwelt on the danger of delay in acute suppurative joint infections. The operations indicated fall into two classes, incisions or incisions with removal of bone. In exceptional cases only aspiration with irrigation may be necessary. In reference to the ankle joint, in addition to the two incisions in front on either side, as usually advised, he has removed the astragalus on both sides and has been surprised at the good results obtained. In the knee joint it is not sufficient in the average case to make incisions in the classical way if one hopes to produce a movable joint. Continuous irrigation and additional drainage by a posterior tube through the popliteal space, or long incisions the whole length of the joint just above the lateral ligaments, have yielded some successes. He thought draining through the



condylar pouches better than through the popliteal space. For more advanced cases, where resection would formerly have been resorted to, he approves of making a transverse incision entirely across the joint above the patella, well into the lateral ligaments, thus opening the entire joint when the limb is strongly flexed. In three cases where the elbow had become infected through a compound fracture of the olecranon process he removed the process down to its base, carefully preserving the lateral fascia of the triceps and treating the arm in the acute flexed position. In all cases the sepsis promptly ceased, and the ultimate motion and strength of the arm nearly approached the normal. This method probably gives a more useful arm than resection of the humerus where the septic process is far advanced.

#### President's Address.

DR. JOSEPH D. BRYANT, in the annual president's address, after briefly recounting the facts that led him to accept the presidency a second time and mentioning some of the numerous obstacles he had encountered in his endeavor to perform the responsible duties laid on him, said:

"I will now bespeak your undivided attention, while briefly considering the character and the importance of the chief possessions of the State Medical Society, and of the great consequence of their development and care. For the purposes of orderly thought in this consideration, these possessions will be grouped under two distinct headings:

"1. Those already acquired and of established material worth.

"2. Those of professional character, the prospective products of present opportunity and of devoted personal effort.

#### THE JOURNAL.

"The important factors of the first class are the *New York State Journal of Medicine*, the Medical Directory of New York, New Jersey and Connecticut, and the belongings relating thereto, a library of considerable dimensions, a fruit of consolidation with the New York State Medical Association, and finally, the privilege of legal and moral support of the society in malpractice defense.

"The *Medical Journal* which, since its inception until a short time ago, has been to a greater or less degree a financial burden, is now reported to be no longer a source of expense. And you will be told by those who should know whereof they speak, that with active promotion, proper support and prudent vigilance, the journal will soon become a continual source of healthful influence and of substantial revenue. I am, however, clearly of the opinion that the net earnings of the journal should be utilized for its betterment, and for the purpose of extending, when feasible, publication courtesies to such of those as contribute to its pages important and original articles. It should not be the policy of this society, in my judgment, to accumulate worldly belongings, but instead to increase the wealth of good fellowship and professional advance, by a wise adjustment relating thereto, of its business management.

"In this relation it is well that you should realize at the outset, that our journal is having a circulation such as few medical journals possess, and with a prospect of a large increase in the near future, affords opportunity fertile with responsive possibilities, for those who thrive by the proper exploitation of legitimate business aims. The policy of announcement of business matters in the journal is advised and supervised by the versatile chairman of the committee of publication, Dr. E. Eliot Harris, who has given much time and thought to the differential consideration of patent, proprietary and allied kinds of medical agents. The recent report of the committee relating thereto is both instructive and interesting, especially in these particular respects.

"It should be plainly understood at this time, that the policy of the control of affairs by the *ad interim* house of delegates, has been to conduct matters relating to the society so as not to constitute a pledge of real or implied nature which might be binding on the organized body, at least, for a longer time than should be required by it, to secure a satisfactory adjustment of its own matters of state.

"Therefore, any objectionable items of business announcement, that are the products of previous contracts or of later conceptions of propriety, which now find places in the publications of this society, are either of brief permissible tenure therein, or of limited obligatory continuance, and, in all respects subject to the selective verdict of the house of delegates and council of the present organized body. I hope you will pardon a seeming presumption on my part if I urge in this connection that, in the making of future contracts of these

business announcements, the basis of such action should comprehend demands for pure drugs, whose names and virtues are in all respects definitely and ethically stated, and which are the products of honest pharmacists. A different course than this would be a faithless one and, therefore, destructive of professional claims of honesty and of truth on our part, since in the conduct of our publications the business and the editorial departments, especially of the journal, are under like control. Whether or not the medical journals which for covetous business reasons, exploit remedial agents in a manner calculated to deceive the unwary, the unsophisticated and the indolent, are to receive professional support, will, as it seems to me, be determined more by the outcome of patiently developed, and higher comprehensive professional sense, than by other inhibiting influences. In the blazing of the way in these matters relating to honest ethical action, one can gain much, indeed, in fitting knowledge and abiding support, through the force of the example which is now being established by the parent organization. The scientific reports of this medical body regarding the character of exploited remedies submitted by its wisely formed and impartial 'Council on Pharmacy and Chemistry' and published from time to time in *THE JOURNAL* of the American Medical Association along with the action taken in noteworthy cases, are deserving of thoughtful study and of prudent emulation. And concerning this matter I advise that the reports of this council and of the action taken relating thereto, be consulted by those who are hereafter placed in charge of these very important questions.

"The scientific part of the *New York State Journal of Medicine* affords ample opportunity to the members of the organization to consult with each other in matters of professional interest, by the means of published opinions, and, thereby correspondingly, to profit mutually in many substantial ways. The fact that each member of the organized body has rights in the publication equal to those of another, would seem to inspire sentiments of mutual interest and fidelity, resulting in a more extended and higher standard of professional fellowship, than sometimes appears to exist. And, too, the united voice of the profession can be heard through the agency of the journal, with a clear and unhindered emphasis on all matters relating to common professional and common public betterment. And it is not impossible, that some members of the profession, whose isolation or experience has begotten in them exaggerated notions of self-reliance or personal attainment, might, at a trivial outlay, gain in wisdom and correspondingly in skill, through the instrumentality of printed communion with their fellow laborers in the field of medical endeavor. Also the *State Medical Journal* affords the best opportunity, and at the least outlay, of keeping in touch with the attainments of others, and of placing those of your own before the profession, that can be devised."

The speaker then stated that the editorial policy of a journal like theirs should be guided by the consensus of opinion of a committee rather than by the editor himself.

#### THE DIRECTORY.

In speaking of the medical directory of New York, New Jersey, and Connecticut, issued by the society, Dr. Bryant said that he believed it to be the best book of the kind ever issued. The 1906 edition had been exhausted, which spoke highly for the interest taken by the profession in the work, and the president was disposed to attach great importance to the directory as a valuable asset of the organization. It is, he thought, "a prolific source of information in many matters of pressing interest of a professional nature, settling many questions of professional status to the satisfaction or the discomfort of honest inquiry, or deceptive intent, respectively," and it enables one, "especially at a distance, to come promptly in practical contact with another, thus providing a co-operative touch in business and professional matters of common interest."

#### MALPRACTICE DEFENSE.

In speaking of "The Privilege of Legal and Moral Support of the Medical Society in Malpractice Defense," Dr. Bryant called attention to the well-known fact that by far the greater number of malpractice suits are but unwarranted legal persecutions. In the majority of cases suits brought against physicians work deep and lasting harm, even though honorable acquittal is rendered, for "homely truth in a race of justice can rarely overtake picturesque falsehood." It seemed to him that each member of the society should take pleasure in supporting an organization which would provide a reasonable defense of



those unjustly attacked in the faithful pursuit of their calling. No one "engaged in the practice of medicine is immune to the subtleties of malignant mischief, or to the embarrassments of defensible error."

#### MEDICAL ORGANIZATION.

On the matter of medical organization the president said:

"Strange as it may appear to be, not half of the members of our profession in this populous state are constituent parts of representative medical organization. Many of these members plod their weary way in comparative professional seclusion, unconscious or uncaring of the higher, more attractive and ennobling state, as begotten by sympathetic and mutually profitable intercourse with the profession at large.

"This condition is not what it should be, since the non-members and the members of organized medical men alike, are losers thereby, the former, because of the loss of contact with those general professional activities which hasten understanding, and correspondingly enhance confidence and self-respect; the latter, because hidden away in the experience of the former class of practitioners there is much indeed, relating to the healing art of great significance to the entire medical profession. If it be true that medical men or populous environment, possess comparatively more medical knowledge than do those of meager surroundings, it is equally true that the difference is largely the outcome of the special advantages arising from the benefits of a broader personal contact, for, at the beginning of their respective careers no special dissimilarity can be noted. It follows, therefore, that medical society membership affords a remedy of great importance in this respect, hence, the membership should be increased and extended, and professional intercourse developed, in order that to each medical man may be given the opportunity of contributing his special attainments toward advancing the common good of the whole profession.

"At the present time, the membership of this society is about sixty-five hundred, of which over 90 per cent. have already qualified for continued membership, and are to-day receiving the benefits relating thereto. Each of these members should bring into the medical fold one of those who is not a participant with him in the special advantages of general professional relationship. The proper fraternal spirit in this society should purpose that every practitioner in medicine divorced from special dogma, and in good standing as a physician and a citizen, should be entitled to membership.

"The organization of the medical profession here, and everywhere throughout the country, contemplates the realization of more than the scientific advantages arising from personal contact and local co-operative thought. It should be regarded as an earnest, that the medical profession intends to take an active and controlling part, if possible, in those affairs of civil life which relate to the physical welfare of the body politic. There should be no question regarding the status of the medical profession in all matters relating to the securing of pure food, pure drugs, and wise public sanitation. Properly fathered measures, directed to attaining these ends in the promptest and completest possible way, should receive the earnest, honest support of united medical effort. It goes without saying, therefore, that your committee on legislation should be both vigilant and active in the discharge of its duties, vigilant in the detection and defeat of bad legislative efforts, and active in devising and promoting those which, in all respects, are good. And in supporting the efforts of your committee on legislation, each member of the medical body should make his influence felt in no uncertain manner, in the guiding legislative sense, so as to insure wise and beneficent law-making.

"It should come to your knowledge at this time that this state is entitled to be represented on the Committee of Medical Legislation of the American Medical Association. The purposes of this committee, under the able leadership of Dr. Charles A. L. Reed, of Cincinnati, relate to the molding of national legislation of general interest to the medical profession and of coincident importance to the people of the country. The functions of the Bureau of Medical Legislation, as set forth by Dr. Reed, are as follows:

"To formulate lists of correspondents; to revise and keep active the organization of the National and Auxiliary Councils; to issue all referenda, both special and general, and to conduct all routine correspondence relative to the legislative work of the American Medical Association."

"The National Legislative Council generally convenes in Washington during the first month of each session of Congress. The appointment of a representative by the state on this committee is of great importance, and, therefore, I earnestly commend such action to your attention."

#### LEGISLATION AND INSURANCE EXAMINATION.

President Bryant then spoke briefly of the bill recently introduced in the New York legislature providing for a single-headed board of examiners. This board is to be appointed by the Board of Regents and independently of all medical society recommendations. Dr. Bryant deprecated the contest that had recently arisen between the insurance companies of the state and their medical examiners. He was disappointed and grieved to know that many companies were recipients of medical services at a rate which could not call for the thoughtful consideration such work demands. He suggested that a committee be appointed to whom shall be referred all matters relating to medical insurance examinations that may come to hand during the current year. In closing his address Dr. Bryant spoke in terms of admiration of Dr. Warbasse, the editor, and also of the secretary, Dr. Ursner R. Townsend and attorney Lewis. He paid a gentle tribute to the memory of the late George Ryerson Fowler, who had been a student under President Bryant, as well as a close personal friend.

(To be continued.)

#### BOSTON MEDICAL LIBRARY MEETING.

*Regular Meeting, held Jan. 16, 1907.*

DR. GEORGE B. SHATTUCK in the Chair.

##### Treatment of Chronic Heart Disease.

PROF. THEODORE SCHOTT, Bad Nauheim, Germany, said that prior to 25 years ago rest and digitalis were the only therapeutic measures used in heart disease. About 25 years ago three methods of treatment appeared simultaneously and quite independent of each other. They are known to-day as (1) Swedish treatment by massage; (2) Oertel's method, mountain climbing, and (3) the balneologic method of the Schott brothers, combined with gymnastics. During recent years the number of remedial agents has largely increased, but Professor Schott found that digitalis with and without digitoxin is a mainstay, but some times the accumulative effect calls for other means, especially tincture of strophanthus, or strychnin when the heart muscle is weak and relaxed. Its use is desirable to produce stronger contractions of the wall of the heart, but unless carefully watched it some times sets up a condition of abnormal irritability occasionally followed by weakening of the cardiac muscle.

The nitrites, especially nitroglycerin, in 1 per cent. solution, are used in conditions where increased tension exists in the arteries. The action of this is sometimes highly effective in case of pain in angina pectoris. The salts of iodine sometimes produce a good effect like that of the nitrites.

Salts of mercury, and especially calomel, are not remedies for the heart in the strict sense, but combined with digitalis they are used for their depleting effect. The slowing of the pulse caused by morphin is the result of the vagi (?) action through the nervous mechanism; thus it fails to tone up the heart muscle, though this remedy is not to be disregarded in cases of pain. It should not be used too frequently nor for too long a time.

*Oertel's Method.*—Twenty-five years ago the treatment of heart disease by mountain climbing was advocated by Oertel, with restriction of quantity of liquids ingested. Oertel had three objects in view; first, to force the circulation by reducing the amount of liquid in the blood; second, to strengthen the heart by mountain climbing, and third, to remove the superfluous fat by diet. The mechanical part of Oertel's treatment consists in walking and climbing, in which different degrees of climbing were prescribed, in which he hoped to obtain development of the heart by increased action of the muscle. He now combines that with the application of dry heat, electricity and massage. His original treatment was devised for fatty heart. Oertel's treatment can only be adopted in a limited number of cases.

*Swedish Method.*—This method was started on a large scale in Sweden. Having no scientific basis and not being improved on, the Swedish method never went beyond Sweden until



Zander took it in hand. Opinions are divided as to its applicability. The difficulty to properly regulate the resistance in the apparatus and the expense are the chief objections.

*Schott Method.*—In 1872 Stokes of Dublin showed that patients subject to rheumatic fever could successfully use mineral baths, when rheumatism was combined with cardiac complaints. The Schott brothers found that carefully regulated balneologic treatment combined with gymnastics, mountain climbing and well regulated hygienic conditions frequently produced an improvement and even an absolute cure. They showed that the same principles underlie their treatment as underlie the treatment by digitalis and rest, namely, toning up a weak heart.

In the majority of cases there exists a comparative inadequacy of the heart muscle to propel the necessary amount of blood. Not every dilatation leads to lack of compensation. We must differentiate between dilatation due to congestion and dilatation following valve lesions. The action of the heart muscle must be improved so that the heart may rid itself of the greater amount of blood. The heart goes through many insufficient contractions, and after each systole a certain amount of blood remains in the heart cavities. The congestion can not be relieved by the heart itself. By balneologic and gymnastic treatment the heart is able to make stronger contractions. The heart is now able to empty the cavities completely during systole, and concomitantly the diastole is prolonged. In this way the heart is relieved of the constant overpressure which acted on the inner surface of the cavities, inviting the muscle to insufficient contractions. The effect is noticeable. Many others have attempted to explain the effect of the baths by the derivation of the blood to the skin and muscles, in this way a relief of the heart may be produced; but in Dr. Schott's opinion this does not explain the immediate benefit of the baths. The effect of the bath is much weaker, but more enduring. The effect of the exercises is more energetic and less lasting. There is a diminution of the congestion in the pulmonary system as well as in the venous system, a decrease of hepatic congestion and a reduction in the cyanosis and a decrease in the frequency of the pulse. In consequence of the increased quantity of the blood thrown into the arterial system the sphygmograph shows higher pulsations and a prolonged diastole. A later circumstance is restoration of the heart muscle.

The effect of the measures may be shown by percussion. Radiograms are valuable, but the difficulty of getting the patient in the same position is liable to lead to a variety of errors. Auscultation discloses a change in the cardiac signs, the weak signs become audible, a murmur produced by insufficiency becomes a normal sound, a murmur which was not audible becomes so. The apex beat moves upward and inward; this with a simultaneous rise in the level of the diaphragm shows that the heart has been improved. The effect is similar to the effect of digitalis, but the injuries of digitalis are avoided. The strengthening of the heart is produced by the disappearance of congestion in the venous system and by an increased amount of blood in the arteries; owing to this fact the blood that flows into the coronary arteries is more highly oxygenated and the heart is better nourished. Dr. Schott has made investigations of the changes of the blood during this treatment and showed that in those cases where the amount of hemoglobin was diminished it became increased by the treatment in question.

Dr. Schott emphasized that careful individualization is necessary in the treatment. It is very often advisable to observe the patient before, during, and after the bath. Nauheim baths contain 2 to 3 per cent. of sodium chlorid and about the same percentage of calcium chlorid. The percentage may be diminished or increased by the addition of mother lye. The duration of the bath should not be more than 10 minutes at the beginning. The temperature, 95 F., must not be exceeded, otherwise the tonifying effect on the heart might fail to appear. If the patient remains quiet, he may feel a sensation of chilliness; later he has a feeling of comfort. But should this feeling of comfort not be obtained within a minute the temperature of the bath should be raised. The patient should have a feeling of

comfort while in the bath. A secondary chilliness should be avoided. If it occurs it means that the bath was of too low temperature or too prolonged. Either the temperature must be raised or the patient leave the bath immediately. On the following day the bath must be taken warm. If the patient bears the treatment well, more concentrated baths may be given by increasing the per cent. of calcium chlorid.

Later on the patient takes the baths containing carbonic acid, beginning with a weak per cent. of the gas. These are the effervescent baths or sprudel baths. In sprudel baths there is free carbonic acid gas. In strong sprudel baths the water flows in and out with an excess of pressure over the atmosphere. The duration of these baths may be increased to 20 minutes, but not beyond that. After the bath the patient should be rubbed to a glow, then he should remain in bed for an hour.

The baths should be given progressively cooler, longer, and more frequently. The strict supervision of the conditions of the bath should be kept up uninterruptedly. The effect of the last bath is a guide for the next. The beneficial action is brought about by the mineral constituents, especially calcium chlorid, which acts on the peripheral nerves, by the carbonic acid gas and by the temperature. The summer months are most suitable for the treatment. Two to four weeks are advisable for moderate cases. An after period of rest should follow. In winter the patient should seek a southern climate.

Many mistakes arise in the application of the artificial Nauheim bath. The carbonic acid is not the only constituent that acts on the heart; all the ingredients are necessary. It is evident that constant medical supervision based on long experience is necessary. The patient must be relieved of family and business worries; a suitable diet is also of importance. In some cases excellent results may be obtained from the artificial Nauheim baths. The number of successful cases must be limited because the strongest Nauheim effervescent baths can not be made artificially.

Graduated gymnastic exercises act through the motor apparatus; the baths through the sensory apparatus. The following principle may be considered in the application of gymnastic exercises: Each exercise must be performed slowly, and resistance must be so regulated that the patient is always in condition to breathe freely; fatigue must be avoided; this is best avoided by exercising alternate groups of muscles; the pulse must be watched. A bedridden patient may perform these exercises and become able to get about. In some cases in which digitalis had been used extensively it ultimately proves inefficient, whereas in combination with baths and exercises it again produced its effect.

After the conclusion of the treatment by exercises the patient should resort to mountain climbing, but only when the heart muscle is strong enough. The powerful effect on the heart indicates in what cases this treatment is inapplicable. They are aneurism of the heart and large vessels; cases of advanced arteriosclerosis, and degeneration of the heart muscle. Every increase in muscular action becomes dangerous in these cases, as it might lead to rupture of the aneurismal sac, or produce apoplexy or embolism. The application of cold is also a good means of quieting the heart's action. In cases requiring immediate stimulation high-temperature baths should be used over the entire chest. Until recently electricity was mainly used to quiet the heart's action.

A mixed diet is to be preferred, nourishing and easily digestible food, no spicy dishes or effervescent beverages should be used. The consumption of any great amount of liquid should be avoided, for a distended stomach pushes the heart upward and impedes its action, the heart having to struggle against an increased abdominal pressure. When this pressure already exists it may be made to disappear by combining a lime-water cure with the diet. The use of tobacco should be greatly restricted or entirely discarded.

The discussion on this paper was participated in by Drs. H. F. Vickery, C. F. Withington, H. D. Arnold, R. C. Larrabee, Joseph H. Pratt and E. P. Gerry, who joined in complimenting the essayist and endorsing the value of the method of treatment described by him.



## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

### Typhoid Fever.

(Concluded from page 545.)

Continuing the subject, Thayer describes in detail the methods of sterilization of excreta:

**Sterilization of the Urine.**—The simplest and best method of sterilizing the urine, he states, is to place about 200 c.c. of a solution of 1 to 1,000 bichlorid of mercury in a large jar, which should always be kept covered. The urine should be poured directly into this jar. This amount of bichlorid would be sufficient to sterilize 3,000 c.c. of urine. The amount should be left standing until two hours after the urine has been added. Another vessel should be provided containing a 1 to 100 solution of bichlorid of mercury or a sufficient quantity of a 1 to 20 solution of carbolic acid, in which the urinal may be immersed during the period when it is not in use. A urinal which is used for a typhoid patient should not be used for others without previous sterilization. Urotropin (hexamethylenamin, U. S. P.), does not sterilize the urine. It does, however, prevent the multiplication of bacilli in the urinary passages, and is an important help. This drug may be given in doses of about 2 gm (gr. xxx) a day, divided into three or four doses.

**Sterilization of the Feces.**—The most satisfactory method of sterilizing the feces, Thayer states, is to add to the dejection about twice its volume of a 1 to 20 solution of carbolic acid; this is stirred up thoroughly and allowed to stand at least for two hours. The bedpan should be thoroughly washed out with carbolic acid and kept immersed between the periods of use unless it be sterilized by boiling or heat. The feces should be kept in the mixture for at least two hours.

**Sterilization of the Bath Water.**—This is accomplished by adding to each bath tub about half a pound of chlorid of lime, which will thoroughly sterilize the water in half an hour.

**Sterilization of the Linen.**—All linen should be soaked in a 1 to 20 solution of carbolic acid for about two hours before sending to the laundry. If, however, it is put directly into the boiler the same end may be served.

**Sterilization of Dishes and Utensils.**—All dishes should be sterilized thoroughly by boiling.

### SUPERVISION OF THE PATIENT UNTIL HIS EXCRETA ARE FREE FROM BACILLI.

This is a demand impossible to meet without skilled laboratory assistance. In the absence of this we must continue all precautions till the discharge of the patient, warning him when he leaves our hands that unless he exercises care in the disposition of his excreta he may be a source of danger to those about him. Happily, the great majority of patients are by this time free from bacilli. If these measures were carried out strictly in every case typhoid fever could be eradicated from the community. There are, however, various difficulties in the way, chiefly because of the fact that many cases of mild walking typhoid are unrecognized, and that some other convalescents excrete typhoid bacilli in their urine and feces for months.

### Local Treatment in Diphtheria.

Bourget in *Revue Internationale de Clinique et de Therapeutique* and *Journal de Medicine de Bordeaux*, recommends the following local treatment in this condition. As soon as the patient with pharyngeal diphtheria enters the hospital his throat is swabbed with the following mixture:

R.	Liquoris ferri chloridi		
	Pulv. aluminis		
	Acid borici, āā	3i	4
	Glycerini	3x	40
M.	et ft. sol.		

This is to be thoroughly applied by means of a tampon to the back of the throat and the whole affected area. The applications are to be repeated every few hours, using, of course, a fresh tampon each time. Five or six applications are made at each sitting, and these are repeated hourly, if necessary, or every two hours. A few minutes after each treatment the patient uses the following gargle:

R.	Tincturæ krameriae		
	Tincturæ guaiacæ, āā	3i	30
M.			

Two teaspoonfuls of this mixture are placed in a glass of warm water and this quantity is used in rinsing the mouth and throat. By proceeding in this manner a marked improvement is soon apparent in the general condition of the patient. Often the fever ceases on the third or fourth day.

Baginsky, in *Modern Clinical Medicine*, describes the local treatment of diphtheria as follows: The former severe mechanical and chemical measures used to remove the membrane are not in vogue to so great an extent at the present time. If used they are employed for the purpose of destroying the bacilli and thus preventing the further production of toxins, as the bacillus is not influenced in its property of life by the serum. For this purpose the following may be used:

R.	Potassii permanganatis	gr. xxx	2
	Aquæ dest.		Oii 1000

M. et ft. sol. Sig.: Use to gargle the throat as directed. Or:

R.	Hydrargyri chloridi corrosivi	gr. ss	103
	Aquæ dest.		3ii 60

M. et ft. sol. Sig.: Paint on the affected parts with a soft cotton swab from two to four times a day. Or:

R.	Hydrargyri chloridi corrosivi	gr. ss	103
	Ichthyoli	m. l	330
	Aquæ dest.		3ii 60

M. et ft. sol. Sig.: Paint on the affected parts with a soft cotton swab as directed.

This preparation Baginsky considers especially valuable, as ichthyol is said to kill the cocci that are present, whereas the corrosive sublimate has a more selective action on the bacilli.

Roteh and Caille do not recommend the vigorous local treatment of this condition by swabbing with either strong or weak solutions, but rather give preference to the method of cleansing the nose and throat by irrigating with mildly antiseptic solutions. Caille thinks the best way to cleanse the nasopharynx is to pour liquid into the nose from a spoon. If the nose is partly or almost completely stopped up a blunt piston syringe or a fountain syringe may be used. The irrigations may be done every hour or two, depending on the severity of the case.

Roteh describes his method of irrigation as follows: The method of irrigation by the fountain syringe may be employed for either nose or throat, except that a larger glass nozzle should be used for the throat. The child should lie on its side and the watery solution should be made to pass up one nostril and down the other until the stream runs clear. In some cases the child prefers to sit up for irrigation. Ordinarily the irrigation should be used every two or three hours, with longer intervals at night. If the child resists the treatment it may be well to lengthen the intervals or to omit it for a time, in order to preserve the child's strength. A similar method may be used for the throat and is of great comfort to the patient.

The following solutions are recommended for the irrigation:

R.	Sodii chloridi	3i	4
	Aquæ dest.		Oi 500

M. Sig.: Use as irrigating fluid.

Or:

R.	Acidi borici	3iv	15
	Aquæ dest.		Oi 500

M. Sig.: Use as irrigation for nose two to four times a day.

Or:

R.	Potassii permanganatis	gr. iii	18
	Aquæ dest.		Oii 1000

M. Sig.: Use as irrigation for nose and throat as directed.

Or:

R.	Hydrargyri chloridi corrosivi	gr. iss	109
	Aquæ dest.		Oii 1000

M. Sig.: Use as irrigating fluid for the nose and throat.



## Book Notices

A HISTORY OF THE BOSTON CITY HOSPITAL, from its Foundation Until 1904. Authorized by the Trustees and Edited by a Committee of the Hospital Staff, David W. Cheever, M.D., George W. Gay, M.D., and others. Cloth. Pp. 422. Boston: Municipal Printing Office, 1906.

The history published by the authority of the hospital covers a period of 40 years since 1861, the date of the foundation of a municipal hospital in Boston, and forms very interesting and instructive reading. The expense for the first building was limited to \$100,000. The total of the present properties of the hospital are assessed at \$3,061,500. The bed capacity of the hospital in 1864 was 208; in 1906, 615; the appropriation for maintenance in 1865 was \$66,789.04; in 1905, \$486,776.88. It will thus be seen that not only the number of patients, but the expense per patient has materially increased. The hospital was located in a somewhat insanitary portion of the city, but considerations of economy and expediency prevailed at that time and have prevented a change of location. An objection at the time of its foundation was its great distance from the center of population, but the growth of the city and the incorporation of suburbs now makes the hospital conveniently central. In speaking of the ventilation of the hospital basement a curious error appears. The writer of this chapter, Dr. G. H. M. Rowe, superintendent of the hospital, states that carbon dioxid gas was found in as high a proportion as 5 to 6 per cent. Reference to the reports of the Massachusetts State Board of Health for January, 1899, however, (from which, we learn, Dr. Rowe derived his statistics) show that the figures are misquoted, being five to six parts in 10,000, or 0.05 to 0.06 per cent. In addition to the hospital proper the buildings include out-patient buildings, an emergency relief station in the central part of the city, and a south department for infectious diseases. The hospital buildings also include a nurses' home and a medical library building for the use of the house and attending staff, the library containing 4,000 volumes, mostly of the latest books, as well as the classified clinical records of the hospital, which have been the basis of a considerable amount of valuable medical literature, as witness the Medical and Surgical Reports of the Boston City Hospital. A striking feature of the record of the management of the hospital—not to its credit—is the persistent refusal of admission to women medical students.

The history, which is freely illustrated, gives an account of the medical staff which has served the hospital from its inception and includes many eminent men. The reminiscences of some of the attending and house physicians emphasize the contrast between present aseptic surgery and the practice as it existed before the introduction of Listerism. Succinct accounts are given also of the trustees and superintendents of the hospital; of the inception, growth and present status of the various departments in the institution; of the training school for nurses, the libraries, the gifts and bequests, the methods of teaching, etc. The reader is impressed with the long and continuous periods of service of many of the members of the board of trustees, which from the beginning has been small and compact. The fact that the hospital since its beginning has had but three superintendents, the present incumbent having just completed a quarter of a century of "especially faithful and notable service" is also noteworthy and in striking contrast to the frequent, disturbing changes that heretofore have marked the management of so many other American municipal hospitals. A similar permanency of service has been the case also, at least to a large extent, with the members of the attending staff, two of the original members—David W. Cheever and John G. Blake—still remaining. The progressive, harmonious development of the hospital and its present high degree of efficiency and completeness in organization and equipment must be ascribed in large measure to this continuous service of faithful officers—who can doubt the wisdom of this system?—the result being a stable and skilled management. The hospital staff enjoys the privilege of nominating power, put in their hands by the trustees, to fill vacancies in their number. Teaching was begun four months after the opening of the hospital and has not ceased, but been am-

plified continuously ever since. This history is, in short, a truly remarkable record of public spirit and civic intelligence worthy of the close study and active emulation of the officers of every American municipal hospital. The true functions of a hospital are essentially threefold, namely, to care for and properly treat sick and injured human beings, to instruct students of medicine, and to study and investigate to the end that knowledge and control of disease may increase. The Boston City Hospital has given an account of the manner in which it has performed and now performs these functions that brings credit to Boston and will be of great value to sister communities.

THE DISSOCIATION OF A PERSONALITY. A Biographical Study in Abnormal Psychology. By M. Prince, M.D. Cloth. Pp. 569. Price, \$2.80 net. New York: Longmans Green & Co., 1905.

This is the second work that has appeared within two years on the interesting subject of multiple personality and, like the previous one, it is based on the observations of a single case. The present volume is more thoroughly a case report, and the subject has been already introduced to the medical reader in one or two preliminary articles by the author. The patient certainly was an extraordinary instance of a peculiar condition. There were three principal personalities: B I, a saintly neurasthenic; B III, a mischievous, childish character, and B IV, who was a later appearance, a more normal individual, but yet not the real Miss Beauchamp, which name the author gives to the subject of his study. B I was unconscious of everything done by the personality B III and B IV. B IV was similarly amnesic of the ideas and sensory experiences of B I and B III, though there was a sort of continuity of the emotional states of B I and IV to some extent, while B III, or "Sally," was perfectly conscious of the doings of the other two and even knew the thoughts of B I and later those of B IV. B II was a hypnotic condition which plays but a small figure in the history. "Sally" derived a malicious delight in tormenting her co-personalities. In the later portions of the history B I and B IV are synthesized into the real Miss Beauchamp and "Sally" goes out of existence, at least temporarily. In addition to the three principal personalities there are a number of modified conditions of fatigue, semi-somnambulistic states, etc., and the author uses diagrams like the graphic formulæ of chemistry to represent the various personalities and auxiliary side-chain conditions in the relations to each other. The report of the case is most thorough and the author introduces various letters and writings of the different personalities which illustrate their differences and peculiarities. Altogether it is a remarkable work of its kind. The story is told in a picturesque way and the tragi-comic complications due to the machinations of "Sally" are very strikingly put before the reader. The real personality which finally develops is perfectly conscious of the doings of B I and B IV, but not of those of the mischievous B III except indirectly, and the latter has disappeared except in special conditions of ill health, and it is not possible at the date of the author's final writing to say what part, if any, she plays in the subconsciousness of the restored normal individuality or whether, in fact, she exists as a sub-personality at all. Cases of alternating personality are not so uncommon, but that instances have been under the observation of most neurologists of extensive experience. The case here related is, however, so far beyond the average that its publication is a somewhat noteworthy contribution to the literature of these rather obscure psychological phenomena. The author promises to complete his study in another volume in which he will discuss the theory of this case and of disintegrated personality in general, and the various normal and abnormal conditions of the subconscious in human cerebration.

A TEXT-BOOK OF PHARMACOLOGY AND SOME ALLIED SCIENCES (Therapeutics, Materia Medica, Pharmacy, Prescription-writing, Toxicology, etc.), together with outlines for Laboratory Work, etc. By T. Sollmann, M.D., Professor of Pharmacology and Materia Medica in the Medical Department of Western Reserve University, Cleveland, Ohio. Second edition, thoroughly revised and enlarged. Cloth. Pp. 1070. Price, \$4.00 net. Philadelphia: W. B. Saunders Company, 1906.

The five years that have elapsed since the publication of the first edition of this valuable text-book have been marked by great activity in pharmacologic research. So many details



have been added to our knowledge and so many of our conceptions have been modified that the author has deemed it desirable not merely to revise, but practically to rewrite the book in order to make it representative of the present state of science. That this has been thoroughly done is shown by the frequent references to recent work. The author remarks that perhaps disproportionate space has been given to some of the newer remedies, but this can not be regarded as a fault since a critical treatment of these preparations is much needed at the present time. The section dealing with laboratory work has been entirely remodeled. It has been found not only desirable, but quite feasible, to teach pharmacology largely by the laboratory method, and, indeed, to make this the basis of, rather than an adjunct to, the instruction. The description of the technic and apparatus has been elaborated so as to form a guide for the beginning investigator, as well as for the instructor. A useful bibliography which is of necessity incomplete, but gives references to the latest work, has been appended. *Materia medica* is revised to accord with the new U. S. Pharmacopeia and the more important preparations of the National Formulary are introduced. The treatment of proprietary remedies is very judicious. They are indexed under their trade name to facilitate reference, but in the text they are almost uniformly referred to under their proper chemical designation with the trade name in parentheses. The attention given to toxicology is unusual in works on *materia medica*, but is a useful addition. A general chapter treats of the methods of toxicologic analysis and of the treatment of poisoning and the toxicology of each article is given separately, including the symptoms and treatment of chronic poisoning and drug habits. Such a treatment brings this subject into the relation with pharmacology and therapeutics where it properly belongs. The minor details of pharmacy, including prescription writing, dosage, the use of flavoring agents, etc., are given a place to which their great practical importance justly entitles them. The subject of flavoring medicines, which is largely neglected in other works on *materia medica*, is given 12 pages, mostly in fine print. A very instructive section on the "Historical Development of Therapeutics" is included in the introduction to pharmacology.

This volume is adapted to the double purpose of the instruction of students and the information of the practitioner wishing light on the conclusions of modern science in regard to the action of drugs and the methods by which such conclusions have been formed. By the use of display type the main facts are made prominent, and the details of research are to a large extent placed in smaller type. Therapeutics is based as far as possible on physiologic action, and the conclusions in many cases ought to correct notions long current among practitioners. For instance, the rational use of uric acid solvents is limited to irrigation of the bladder to dissolve calculi. Given internally they can be of no service because of the presence of sodium in the blood and urine. The stimulant action of alcohol is explained as illusory, while it is not denied that it may be of service therapeutically.

A careful perusal of this work will repay not only the student and the instructor in *materia medica*, but also the general practitioner, who should gain from it the conviction that the science of pharmacology, or the action of medicine as determined by experiment, must form the chief foundation for a rational use of therapeutic agents.

**DISEASES OF THE NOSE, THROAT, AND EAR.** By C. P. Grayson, A.M., M.D., Clinical Professor of Laryngology in the Medical Department of the University of Pennsylvania, etc. Second edition, revised and enlarged. Cloth. Pp. 532. Price, \$4.00 net. Philadelphia: Lea Brothers & Co., 1906.

The author attempts to deal with a large subject in a comparatively small space. In so doing he has sometimes strayed far from the proportion that would seem correct to the experienced laryngologist. He has not presented much that is new, but has redressed the old in an attractive form, although in some places much space has been occupied by what is of no interest to the practitioner of experience and by what seems of little value to the student. For example, under the treatment of chronic rhinitis we find the following which, although true enough, does not appear of great value, partly for the

reason that he makes no special application of the facts mentioned to the relief of the disease under consideration. "There is no mystery about the success that comes of being thorough, nor is there anything surprising in the inevitable failure that attends carelessness. A great deal of tact must usually be employed in persuading men to reduce their allowance of tobacco and alcohol, and women their sweets and coffee and tea. The excessive use of the latter two articles is much more common than may be usually supposed and always should be inquired about. Our greatest difficulty in the general management of the patient, however, will be encountered in the effort to overcome the habit of overeating and the indisposition to take the proper amount of exercise. It will not be one or a dozen warnings that will correct these matters, but our inquiries and protests must be repeated again and again until the patient is weary of his own weakness and can not excuse his indiscretions by any indifference to them on our part. Having, so far as possible, cleared from our path all these obstructions to a successful issue, we are ready to attack the disease locally."

The book contains many good illustrations copied from Laurens and others, though one copied from Laurens, page 212, showing the method of transillumination of the maxillary and frontal sinuses, gives an entirely erroneous view. There are a few colored plates, one of which, representing the appearance of the naso-pharynx in empyema of the sphenoidal sinus, is deserving of special commendation. As a whole the book may be commended to laryngologists for casual reading, but we can hardly recommend it to the student as a complete guide.

**HISTORY OF THE NEW HAMPSHIRE SURGEONS IN THE WAR OF THE REBELLION.** By C. P. Conn, A.M., M.D., Published by Order of the New Hampshire Association of Military Surgeons, 1906. Cloth. Pp. 558. Concord, N. H.: Ira C. Evans Co., Printers.

This book consists of a compilation of life sketches of the various men who served either as regular or contract surgeons during the Civil War or who became physicians after their term of army service had expired. Dr. Conn has used General Ayling's *Register* freely, to which he gives due credit. Many names, however, have been introduced that are not to be found in the *Register*, as the history is a much later compilation and Ayling's work did not embrace contract surgeons. Each New Hampshire regiment is taken up separately in numerical order and a brief abstract of the history of each regiment given, followed by the individual histories of its surgeons. After dealing with the various infantry regiments, the cavalry and heavy artillery are briefly considered. The work includes also those physicians of New Hampshire who became United States Volunteers and were commissioned for special work along the line of medicine and surgery. The records of the New Hampshire men who served in the United States Navy were obtained from the Navy Department, and mention is made of the fact that soon after the war closed one of New Hampshire's sons became surgeon general of the United States Navy, the highest official position in that department which our country can bestow on the profession. The book will prove particularly interesting to those of the profession who were in any way connected with the Army or the Navy during the Civil War. The general reader will find many anecdotes and interesting descriptions to enliven what might otherwise prove dry reading.

**OUTLINES OF PRACTICAL SANITATION.** For Students, Physicians and Sanitarians. By H. B. Bashore, M. D., Inspector for Pennsylvania Department of Health. First edition, with forty-two illustrations. Cloth. Pp. 208. Price, \$1.25 net. New York: John Wiley & Sons, 1906.

The author has departed from the beaten track of the usual text-book on sanitation and subjects are introduced which are of interest not only to health officials, but to the laymen, for example, the topics of milk and food supplies, car sanitation, etc. All the subjects considered are dealt with concisely and clearly, the limited scope of the work precluding any lengthy dissertations. The chapter on the cause and prevention of contagious and infectious diseases is excellent. The author's views are in consonance with those of advanced thinkers and practical sanitarians. This little work is commended.



## State Boards of Registration

### COMING EXAMINATIONS.

MAINE Board of Registration in Medicine, Common Council Room, Portland, March 5. Secretary, Dr. W. J. Maybury, Saco.

MASSACHUSETTS Board of Registration in Medicine, Room 15, State House, Boston, March 12-13. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

CONNECTICUT Medical Examining Board (Regular), City Hall, New Haven, March 12-13. Secretary, Dr. Charles A. Tuttle, New Haven.

CONNECTICUT Eclectic Medical Examining Committee, State Capitol Building, Hartford, March 12. Secretary, Dr. George A. Faber, Waterbury.

CONNECTICUT Homeopathic Medical Examining Committee, New Haven, March 12. Secretary, Dr. Edwin C. M. Hall, New Haven.

IOWA Board of Medical Examiners, Des Moines, March 19-21. Secretary, Dr. Louis A. Thomas, Des Moines.

OKLAHOMA Board of Medical Examiners, Guthrie, March 26-27. Secretary, Dr. J. W. Baker, Enid.

**Rules Governing Examinations in Arizona.**—Dr. Ancil Martin, secretary of the Board of Medical Examiners, sends us the following rules governing examinations for license to practice medicine in that state:

1. Examinations will be held in Phoenix on the first Monday in January, April, July and October, lasting two days.

2. Examinations will be conducted in writing in the English language.

3. Examinations consist of 10 questions in each of the following branches: 1, anatomy; 2, physiology; 3, chemistry; 4, materia medica and therapeutics; 5, obstetrics; 6, gynecology; 7, practice; 8, pathology; 9, surgery.

4. In order to be admitted to practice the applicant must obtain a total average of 75 per cent., provided that in no branch shall the percentage be less than 60, except in practice, obstetrics, gynecology and surgery, in which branches the minimum is placed at 80 per cent.

5. The examination fee is payable in advance, on the first day of the examination.

6. Candidates once rejected may appear at the next regular meeting of the board, with the special permission of the board only. The applicant must pay full fee for the next examination.

7. Diploma and affidavits required by law must be presented to the secretary before the examination is started. Blank affidavits furnished by the secretary on request.

8. No applicant known to be a habitual user of morphin or cocain will be examined.

9. Any applicant presenting himself under the influence of alcoholics will not be examined.

10. Any candidate detected trying to give or obtain aid shall be instantly dismissed from the room, and his or her paper for the entire examination cancelled.

11. It is unlawful to practice in this territory while awaiting an examination, but the board will give special examinations when it is deemed advisable. Applicants are cautioned against beginning practice in Arizona before they have received a license. Any physician engaged in the practice of medicine without complying with the law, is not only subjecting himself to prosecution and punishment, but can have no protection in event of malpractice suits, nor can he collect his fees by law. Any contract physician or surgeon in the employ of a mining company's work who has not complied with the law, can be of no protection to the company which employs him, for the reason that he is already violating one of the laws of the territory, and the court can not recognize him as a legal practitioner.

**Rules Governing Examinations in Delaware.**—The following rules govern examinations for license to practice medicine in Delaware:

1. Questions for approval by the Medical Council must be sent to the secretary of the council at least ten days before the date of examination.

After approval, the selected questions shall be printed and returned to the examiner who must retain them securely in his own possession and under no circumstances shall he allow the sealed envelope to be opened, until the time arrives for the examination on that particular subject. If information relative to the examination be given to a candidate by any member of this Board of Medical Examiners it shall be the duty of said board, on ascertaining that fact, to recommend that the governor annul the commission of such member.

2. Questions must be given out and answers collected punctually at the time specified on the question papers. Under

no circumstances will papers be accepted unless the examination be actually held at the appointed time. The time for each examination paper of ten questions shall not exceed two hours.

3. Explanation of questions and criticism or inspection of the answer papers during the examination are positively prohibited.

4. No candidate shall, under any circumstances, communicate in any way with any other candidate, nor have books or helps of any kind, nor be permitted to question any examiner in reference to the meaning or interpretation of the question under consideration, but must rely solely on his or her own judgment as to the meaning of each question, and on his or her own knowledge of the subject in answering. Any candidate violating this rule shall be debarred from that particular examination at the discretion of the examiner.

5. At the close of the examination in each subject each candidate must subscribe his or her name and postoffice address to the following declaration, place it in an envelope, seal and deliver the same with his or her answer papers, to the examiner:

"I,....., now at the close of the examination in (naming the subject), declare that, prior to this examination, I had no knowledge of the questions to be proposed, and have neither given nor received explanations or other aid in answering any of them. (Signed.....)

This rule must be read to the applicants before the examination question papers are distributed.

Every set of answers lacking this declaration and signature, however satisfactory in other respects, will be rejected, and in no case can this omission be supplied after the papers have reached the Board of Examiners.

6. Any candidate detected in trying to give or obtain aid shall be instantly dismissed from the room, and his or her paper for the entire work canceled.

7. If any candidate withdraw himself or herself, without permission, from the sight of the examiner, his or her examination shall be closed. This rule permits a candidate temporarily ill, to withdraw from the room and return only by the consent of the examiner.

8. No candidate shall, under any circumstances, enter the examination more than thirty minutes late, unless excused by the examiner; and no candidate shall leave the room within thirty minutes after the distribution of the question papers.

All time lost by being absent shall be deducted from the time allotted to the examination of that particular subject.

9. The Board of Examiners shall inspect answers submitted by the candidates as soon as convenient after the close of the examination, and shall complete and report the same at the meeting of the full board, the following Tuesday.

A correct set of answers to the questions of any one paper, shall entitle the candidate to the full mark for that paper, viz.: one hundred points; each full and correct answer rating ten points.

Partial or imperfect answers shall be rated by the examiners in accordance with their degree of fulness and correctness.

10. A general average of not less than seventy-five of a possible one hundred points shall entitle the candidate to a license to practice medicine and surgery in this commonwealth; provided that he or she has otherwise complied with the law.

11. Handwriting of the candidates must be legible. Proper punctuations and use of capital letters and general appearance of examination papers will be considered in making answers.

**Method of Conducting Examinations in Pennsylvania.**—Dr. Henry Beates, Jr., president of the State Board of Medical Examiners, sends us the following statement of the method of examining applicants for license to practice medicine in that state:

Under the Act of the Assembly governing the practice of medicine, as it at present obtains, candidates, because of the large classes, are examined in a hall which gives a floor space of 36 square feet to each candidate. Candidates are permitted to occupy any seats they see fit to select, and on entering the room are supervised in order to see that no books or aids of any kind are in their possession.

The seats are so arranged as to be under the range of linear vision of the members of the board, who are stationed in certain positions and change their location more or less constantly, so as to see that each candidate is in alignment. Any position other than that necessary to answer the questions by writing is at once recognized, and the individual out of align-



ment notified that he must change his seat. A second failure to comply with the exactions means expulsion. Proof of cheating, in contradistinction to evidence, means, as a maximum penalty, permanent expulsion. Evidence of cheating means expulsion from a given session, with the penalty of not being permitted to reappear for from six months to two years, at the discretion of the medical council, to which body action is recommended by the Board of Medical Examiners.

All candidates must be in place promptly at 9 a. m. and must leave promptly at 12 o'clock. The afternoon session begins promptly at 2 p. m. and terminates sharply at 5 o'clock. Any candidate entering after one-half hour from the beginning of the session can do so only by especial permission of the board, which examines as to the cause of lateness. During the sessions candidates are not permitted to leave the room unattended.

To prevent substitution candidates, when making application to the medical council and proving eligibility for examination, must supply their signature to the medical council. The medical council issues an admission card and the board requires countersigning of this card. The two signatures are compared. I may say in this connection, that even under such circumstances substitution is more or less practicable, and would suggest that each candidate be obliged to supply a photograph of himself.

Even this system can be circumvented, because a substitute engaged in ample time could supply a photograph of himself, and go through the whole system without detection. It might be well to have medical students supply the dean of the college when they matriculate with photographs of themselves, and then to have state boards compare the photographs supplied by the candidates, allowing for a change of physiognomy accompanying advanced years. A practical prevention of substitution is thus secured.

Each candidate signs the papers handed in. We do not believe it possible that partiality can be shown in grading, because the board is no more cognizant of the individual who signs these papers than would any one who would open letters in a postoffice and read the signature, have knowledge of the author of the letter so perused.

A rule of importance in force is, that a candidate must not, by any quotation or other manner, indicate the school from which he has obtained his degree. A candidate so doing has his papers eliminated and his examination declared void.

Eligibility for examination for licensure in Pennsylvania is not determined by the Board of Examiners, but by the Medical Council, a body created under the Act of Assembly especially for this purpose. If the Medical Council is satisfied with the credentials, which embody a preliminary education approximating that which is exponent of a reputable four years' high school course, and for the medical qualification a diploma issued by a reputable medical college after four years of medical study, it issues a card of admission to such candidates, and notifies the board of its action. At the session of the board the candidates to be admitted must present this card.

The question of proof of moral character is provided for in the Act of Assembly, but should receive more careful attention than it does. Experience shows that some of our licentiates have degenerated into quackery and various forms of charlatanism, and it is hoped that the state of Pennsylvania will be able so to amend its act as to empower it to revoke the license of such a type of characterless licentiate.

NOTE.—Since the above was received the following letter has come to us:

*To the Editor:*—The Medical Council of Pennsylvania has unanimously adopted a rule, which I think of sufficient value to warrant presentation to the profession at large through the columns of THE JOURNAL. It is that in the subject of chemistry in the examinations for licensure, questions shall be specifically and therefore legally those of chemistry only as applied to medicine, and not as a science.

I regard this as a very important advance, for it certainly is not right to expect of physicians making application for examination for licensure, an examination in the domain of the science of chemistry. Perusal of questions of various state boards demonstrates that questions in manufacturing chemistry, absolutely foreign and remote to the chemistry of medicine, and in no sense a test for qualification to practice medicine or surgery, are frequently submitted. This is eminently unfair; certainly is not legal, and is so demoralizing to candidates, when before an examination of so vital importance to them, as to render them incapable, in a large measure, of doing themselves justice.

The Medical Council has also ordered that, beginning with the June session of the State Board of Medical Examiners, 1907, candidates must supply photographs of themselves, signed by the deans of the colleges from which they have graduated, and countersigned by themselves. Recognizing the impracticability of older practitioners complying with this requirement, an especial provision is made for this class of examinees, which provides that they shall

supply photographs signed by themselves, and file affidavits to the effect that the long time since they have graduated or whatever other impracticability may be set forth, prevents the complete fulfillment of the requirement being observed.

It is reported, and probably based on excellent authority, that renegade physicians have been paid to go through the entire medical course of four years in order to obtain the degree and, of course, complete the conspiracy when supplying that same photograph to State Boards of Medical Examiners. To obviate this possible fraud and to insure identification of the licentiate with the license, I believe it would be an excellent plan to compel state licenses to be so prepared that a photograph of the licentiate should be taken thereon. This would, doubtless, effectually stamp out the criminal practice of substitution or impersonation.

HENRY BEATES, JR.

**Georgia October Report.**—Dr. E. R. Anthony, secretary of the Board of Medical Examiners (Regular), reports the written examination held at Atlanta, Oct. 9, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 27, of whom 26 passed and one failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Atlanta Med. Coll.*	.....	(1898)	76
Atlanta Coll. of P. and S.	.....	(1906)	79, 82
International Med. Miss. Coll.	.....	(1906)	75
University of Kentucky	.....	(1906)	79, 83
Louisville Med. Coll.	.....	(1906)	83
Tulane University	.....	(1906)	82
Marion-Sims Med. Coll.**	.....	(1899)	80
Leonard Med. Coll.	.....	(1906)	80
North Carolina Med. Coll.	.....	(1906)	80
Miami Med. Coll.	.....	(1905)	83
Jefferson Med. Coll.	.....	(1903) 95; (1906)	82
Univ. of Pennsylvania	.....	(1904)	81
Chattanooga Med. Coll.	.....	(1906)	78, 80
Meharry Med. Coll.	.....	(1905) 78; (1906) 76,	84, 86
Univ. of Nashville	.....	(1905)	75
Vanderbilt University	.....	(1906) 81,	84, 85
Memphis Hosp. Med. Coll.	.....	(1906)	81

#### FAILED.

University of Georgia.....(1905)†  
 \* United with Southern Medical College in 1898 to form Atlanta College of Physicians and Surgeons.  
 \*\* United with Beaumont Hospital Medical College in 1901 to form Marion-Sims-Beaumont Medical College.  
 † Percentage not given.

**Iowa December Report.**—Dr. J. F. Kennedy, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Dec. 11-13, 1906. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 5, of whom 2 passed and 3 failed. Fourteen reciprocal licenses were granted at this examination. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
College of P. & S., Chicago	.....	(1906)	86
Tufts Coll. Med. School	.....	(1903)	77

#### FAILED.

Keokuk Med. Coll., Coll. of P. & S.	.....	(1906)	56, 69
St. Louis Coll. of P. & S.	.....	(1906)	59

#### REGISTERED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Hering Med. Coll.	..... (1906)	Illinois
Rush Med. Coll.	..... (1905)	Illinois
College of P. & S., Chicago	..... (1905)	Illinois
Northwestern University	..... (2, 1905)	Illinois
Med. Coll. of Indiana	..... (1905)	Indiana
Keokuk Med. Coll., Coll. of P. & S.	..... (1892)	Nebraska
University of Michigan	..... (1906)	Michigan
Ensworth Central Med. Coll.	..... (1905)	Kansas
St. Louis College of P. & S.	..... (2, 1906)	Illinois
University of Nebraska	..... (1905)	Kansas
Jefferson Med. Coll.	..... (1904)	Maryland
McGill University, Quebec	..... (1889)	Minnesota

**Indiana Reciprocity Report.**—Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration, sends us a report of physicians licensed through reciprocity during 1906. The following colleges were represented:

College.	Year Grad.	Reciprocity with.
College of P. & S., Chicago	..... (1902)	Wisconsin
Rush Med. Coll.	..... (1905)	Wisconsin
Iowa College of P. & S.	..... (1898)	Iowa
Chicago Homeo. Med. Coll.	..... (1882); (1888)	Nebraska
Kentucky School of Medicine	..... (1887)	Kansas
Louisville Medical College	..... (1890)	Kentucky
Hospital Coll. of Med., Louisville	..... (1897)	Kentucky
Baltimore University	..... (1899)	Maine
University of Michigan	..... (1902)	Michigan
St. Louis Coll. of P. & S.	..... (1903)	Iowa
Bellevue Hospital Med. Coll.	..... (1876)	Illinois
Med. Coll. of Ohio	..... (1878)	Illinois
Toledo Med. Coll.	..... (1905)	Illinois
University of Wooster, Cleveland	..... (1888)	Ohio
Ohio Med. University	..... (1905)	Ohio



Georgia Reciprocity Report.—Dr. E. R. Anthony, secretary of the Board of Medical Examiners (regular), sends us a report of physicians licensed through reciprocity during 1906. The following colleges were represented:

College.	Year.	Reciprocity
	Grad.	with.
Columbian Univ., Washington, D. C.....	(1902)	Dist. Colum.
University of Maryland .....	(1906)	Maryland
Cincinnati Coll. of Med. and Surg. ....	(1889)	Indiana
Univ. Coll. of Med., Richmond.....	(1903)	Virginia
Medical Coll. of Virginia.....	(1901) (1905)	Virginia

## Discussions

### LICHEN PLANUS OF THE ORAL MUCOSA.

(Continued from page 562.)

#### DISCUSSION.

DR. L. DUNCAN BULKLEY, New York City, said that a few years ago lichen planus was described as an affection which was confined to certain areas, especially the hands and wrists. More recently, a further study of the subject has shown that the eruption may involve all parts of the body. Dr. Bulkley said he believes that he was the first to describe two cases in which the affection was observed on the glans penis before involving any other part of the body. The lesions in those cases were characteristic, and had existed for some months before the patients sought treatment. Lesions finally developed elsewhere on the body, and there could be no mistake in regard to the diagnosis. He has since seen a number of similar cases. Occasionally he has observed the lesions on the tongue and inside of the mouth, as well as on other mucous surfaces. Dr. Bulkley said that arsenic is one of the most valuable remedies to control the lesions of lichen planus, provided it is taken in full doses and continued for a sufficiently long time. How the drug acts is not known, but it certainly has some controlling influence over the development of the lesions. The fact should be borne in mind, however, that every case of lichen planus does not improve with the use of arsenic, and in some instances it even aggravates the affection. Cases have to be treated more or less along general lines. He called attention to a method of treatment introduced thirty years ago or more by the elder Dr. Boeck of Norway, who regarded lichen planus as a disease of sub-oxidation, and on empirical grounds suggested the use of chlorate of potash in from 5 to 10 grain doses, taken directly after meals, and followed in the course of half an hour with 5 or 6 drops of strong nitric acid, well diluted. Dr. Bulkley said that he is strongly convinced of the value of this treatment, and has resorted to it in many cases with the greatest degree of success. Later in the course of the disease it may be necessary to give arsenic, or the arsenic can be alternated with the chlorate of potash and nitric acid.

DR. JAMES C. WHITE, Boston, asked Dr. Lieberthal if he had noticed whether the lesions in the mouth showed any tendency to maceration.

DR. HENRY G. PIFFARD, New York City, said that the chlorate of potash and nitric acid treatment of lichen planus, to which Dr. Bulkley referred, was introduced about 25 or 30 years ago by Dr. Robert W. Taylor (*Archives of Dermatology*, January, 1875).

DR. DAVID LIEBERTHAL, Chicago, said that it was a well-known fact that acute lichen planus will not heal under the use of arsenic. Besides other cutaneous symptoms, arsenic produces hyperemia and exudation, especially in places which are the seat of pathologic changes. Therefore, it not only does not beneficially influence acute lichen, but, on the contrary, sometimes acts unfavorably. Dr. Lieberthal said that he would regard acute lichen planus as an acute dermatitis, and treat it accordingly. In reply to Dr. White's question, he said that there was no maceration, in the strict sense of the word, in any of the lesions. The lesions on the cheek at a certain stage were somewhat flattened, and looked as if they might be the seat of some maceration.

### A SERIES OF AFFECTIONS TREATED BY ARTIFICIAL AUTOINOCULATION.

(Continued from page 577.)

#### DISCUSSION.

DR. L. HEKTOEN, Chicago, said the idea which underlies therapeutic inoculations in infectious diseases is by no means new, although we owe our present interest in this method of treatment to the recent efforts of Dr. Wright. In 1833 a German physician wrote a monograph in which he supported the idea expressed in the title that all contagious diseases contain in their contagion the materials necessary for their healing. He called attention to precautions which should be borne in mind when we judge the results of therapeutic inoculation. The cases that are treated by this method are comparatively few, isolated, and relatively scattered, so that it will take a long time before we can have adequate material for statistics from which accurate deductions can be made, such as, for instance, in a disease like diphtheria. Many of these diseases that are being treated with therapeutic inoculations sometimes undergo rapid, mysterious or spontaneous cures. In support of this statement he referred to an instance of furunculosis in a physician who presented himself for treatment some time ago. In order to prepare himself for the treatment, the physician thought it best that he should go home. When he arrived home the disease disappeared spontaneously. Now, if this patient had received one single inoculation we would naturally have attributed the result to the effect of the inoculation. The beneficial results obtained in many cases of tuberculosis must also be judged with this idea in mind. Speaking of tuberculosis, he began the treatment of this disease according to Wright's method, under the guidance of the opsonic index, nearly a year ago. During the succeeding time he has had perhaps 15 cases of various forms of tuberculosis under treatment. Two of these cases are regarded as cured. One is a case of abdominal tuberculosis; another, a case of tuberculosis of the sacro-iliac joint, with fistulous tracts. In both of these a symptomatic cure has been fully established. The sinuses have all healed. These patients have received no other treatment than tuberculin injections at intervals of 10 to 12 days, guided by the opsonic index, the doses being 1/1000 mg. of Koch's new tuberculin. In these cases the improvement was synchronous with the administration of the tuberculin, and the general impression obtained by those who have followed the cases is that the treatment has produced very marked and beneficial effect. He has had two cases of urinary tuberculosis, one of which has been under treatment for several months. In this case there has been very marked general and local improvement. The tuberculin was administered in the same manner as mentioned, and was followed by prompt subjective improvement, namely, by fall of temperature, by diminution in the frequency of urination, etc. The tubercular process involved the base of the bladder and the beginning of both ureters. These lesions have subsided, so that at present nothing can be felt by the examining finger. The second case of urinary tuberculosis has not been under treatment sufficiently long to make any definite statements about it. A case of tubercular peritonitis has been treated in the hospital with tuberculin inoculations, and there has been marked local and general improvement; but it is too early to pronounce definitely as to what the final result will be in this case. More recently he has taken up the study of the streptococci index in patients with scarlet fever. It has been found that the streptococci-opsonic index pursues a rather critical course. In the beginning of the disease it is below normal; then at about the eighth or tenth day it rises above normal, not very high, four-tenths to five-tenths, then gradually falls to normal again. When glandular involvement takes place in the neck, in the course of the disease, it is signalized by a fall in the opsonic index, and as the improvement takes place, continuously or otherwise, the index rises. One or two cases have been treated with streptococcal vaccine, and there was a marked immediate beneficial effect on the glandular infection.

DR. L. L. McARTHUR, Chicago, confined his remarks very largely to the clinical aspect of the opsonic index and opsonic theory as applied to tuberculosis. It is applicable to practi-



cally all infections, but it is a method of treatment which requires trained assistants, particularly in the chronic type of infection, such as tuberculosis, before one can determine the time for the added dose. This necessitates making various blood counts, stainings, etc. In the course of the past three or four months he has had under his care some 30 odd cases of tuberculosis. The first of these had been under his care for months and even years, and these under such therapeutic measures as the essayist has mentioned have very decidedly improved. Some of them have been symptomatically cured. He passed around some cards which showed the dates and actual readings of the capacity of the leucocytes to take up bacteria, as well as the opsonic index for six months' time. A decided gain in case of tuberculosis is this: It is no longer necessary to give a patient anything in order to make a probable diagnosis in the extremely doubtful cases as to whether there is tuberculosis or not, for by taking some of the patient's blood and testing it outside of the body it is possible to determine whether his index is low or not. It has been his experience, without failure, in every case of positive tuberculosis, to find the opsonic index below normal. He asked Dr. Ohlmacher whether in any case of gonorrheal arthritis he has obtained a successful culture from the joint he has aspirated for the purpose of making an autogenous vaccine. In these infections it is considered that the fluid of the joint is fairly free from the organisms, and they are found beneath the synovial membrane much as in cases of purulent urethritis, gonococci are found beneath the mucous membrane of the urethra in the submucous tissue. He believes we are at the threshold of a great advance.

DR. JOHN C. HOLLISTER, Chicago, said that when one spends two or three weeks in Wright's laboratory at St. Mary's Hospital, in London, and attends his clinic in the afternoon, which is held two or three times a week, and follows the progress made in the clinical aspect of cases in that short time, he is impressed with the results obtained by Wright's treatment. If we take the series of cases reported by the essayist, and the series of 34 cases reported by Turtin and Parkin in the *Lancet*, Oct. 27, 1906, the results are universally good. In other words, the essayist had brought before the society a systematic therapy that has wrought universal improvement in the class of cases mentioned. The opsonins, which are physico-chemical bodies, so act on the invading microorganism as to make the organism more subject to phagocytosis, to the taking up of that microorganism by the polymorphonuclear leucocytes. Wright has developed a method for increasing the opsonic power of the serum. The entrance of the germ increases the opsonic power of the serum. Why, it is not known. In a joint article by the speaker and Dr. McArthur they have reported eight cases of surgical tuberculosis in conjunction with Bier's cupping apparatus in which the results thus far have been encouraging. In surgical treatment to-day it is very essential to combine a general surgical technic with not only the Bier cupping apparatus in passive hyperemia, but with the vaccine treatment, such as Wright has advocated. As to local reaction, the injection of tuberculin has no local reaction. In the injection of staphylococcus he has found almost universally that a small area is tender, swollen, attended with pain in the arm or in the axilla. As to a general reaction, they have given, up to within the last three weeks, all their cases tuberculin without any general reaction, except in one or two cases. He reported a good result in a case of cervical Pott's disease, with fistula.

DR. R. W. MCCLINTOCK, Chicago, gave the results of his experience in treating cutaneous pus infections. He has treated in the last year about 18 cases, and 10 of them have resulted in satisfactory clinical cures. One was a complete failure. This was a case in which the opsonic index was low to begin with, and the administration of the first dose resulted in such an aggravation of the symptoms that the patient refused further treatment. As a rule, he has made from four to five determinations of the opsonic index in each case and has depended on the clinical results and clinical picture to tell him the dose he should use. This treatment is too promising to be restricted to tuberculosis. He believes that every practitioner, with laboratory experience, can use this method successfully.

DR. M. HERZOG, Chicago, said that the opsonins do not act on the leucocytes, but on the bacteria, making the bacteria susceptible of being taken up by the leucocytes. So by opsonic index is meant a relative figure which expresses how many bacteria are taken up by the leucocytes. The principle of the opsonic treatment depends on how many questions can be formed, how many opsonins can be taken up by the bacteria, and how many bacteria can be taken up by the leucocytes. One of the co-workers of Dr. Hektoen has shown that virulent pneumococci do not take up any opsonins, and hence can not be taken up by the leucocytes. The index for virulent pneumococci can not be increased. If that can be shown experimentally, how can we expect, by injecting another antitoxin or vaccine into the body, to so affect the leucocytes that they will take up pneumococci, if we have no means of increasing the opsonic index? He considers it nothing short of miraculous that Dr. Ohlmacher secured such a splendid result as he did in a case of pneumococcus infection. He inquired as to what the opsonic index was in that case.

DR. L. HEKTOEN, Chicago, said there is a tendency to over-emphasize, in our therapeutic inoculations, the fact of the opsonins. When we inject a bacterial vaccine we increase the other reactive products in the body as well as the opsonins. What Dr. Herzog has said with reference to virulent pneumococci in the test-tube is correct. The same thing is true of other animal virulent bacteria; but when we vaccinate against pneumococci we may produce other substances besides opsonins that beneficially affect the infection. We may produce something which, for the moment, destroys the power of the virulent pneumococci to resist opsonins. There may be a point here we have not yet been able to unravel.

DR. A. P. OHLMACHER, Detroit, said he was much pleased with what Dr. Hektoen said concerning the streptococcal effects of scarlet fever, and he felt from the little work he had done in regard to streptococcal cellulitis and scarlet fever that there is a field of usefulness for opsonic therapy in the latter disease. He emphasized the necessity of using smaller doses of streptococcal vaccine than seems to be the custom. He thought many mistakes have been made in connection with the treatment of acute pneumonia by using pneumococcus vaccine in which the dose has seemed to be unusually large. As to the work in tuberculosis, the taking of the opsonic index is a matter of more importance than it is in connection with many other infections. On the other hand, the tuberculo-opsonic index of tuberculosis is more difficult from the technical standpoint. As to the results obtained, considering the difficulty of making an emulsion of the tubercle bacillus and in getting results from the various emulsions, he had not felt entirely secure; nevertheless, he had treated several cases, one in particular, a case of genito-urinary tuberculosis, with progressive betterment. Another case of diffuse pulmonary tuberculosis had responded very favorably to five injections up to the present time. An autogenous vaccine is the best, as a rule, if we can obtain it. In reply to a question about the strain of gonococcus, put by Dr. McArthur, he said the particular vaccine he is working with was obtained from a strain that he had under cultivation ever since a year ago last September. He has succeeded in keeping alive two strains for that period, one of which gave an effective vaccine, while the other did not. He has worked with more recent ones, one having been isolated for a period of six weeks, but it did not give satisfactory results. Finally, two or three times he has obtained the gonococcus from the patient and reintroduced it. Whether the adaptation of this particular strain to the medium has something to do with the success of the vaccine or not, he was not sure. But the gonococcus is an organism which excites a violent reaction when injected in the form of a vaccine. He desired to impress the fact that the opsonic valuation is not imperatively necessary, at least in the common acute, subacute and chronic infections. In tuberculosis it is more important. A practitioner, competent otherwise by laboratory training, should not hesitate to use bacterial vaccines, because he may not be able to make a sufficient number of opsonic determinations. This, he had learned, is Wright's own view concerning staphylococcus infections. When we have chronic acne we



have, perforce, a low staphylococco-opsonic index. When a patient's lesions are aggravated, there is a negative phase. When the lesions improve, and the general condition improves, there is a positive phase, and whenever temporary improvement abates somewhat it is time to intervene. He has found some patients who seem to learn unconsciously that fluctuations occur, and they report for treatment often spontaneously. As to the interval between treatment, he thought seven to ten days might be taken as an average for the ordinary subacute and chronic infections. For tuberculosis, he was quite convinced that Dr. Hollister is right when he says the injections should be made at shorter intervals. As to how the pneumococcus acts, that question is at the foundation of the theoretical discussion of opsonic therapy, and it can not yet be answered. Personally, he did not feel that Wright's theory of opsonins explains wholly the phenomena that follow therapeutic inoculations. He thought, as Dr. Hektoen has suggested, we will find other substances besides the one we are now pleased to style opsonins that are important in this connection. But we should not hesitate to give humanity the benefit of this new method of treatment because we do not know how the pneumococcus vaccine acts on virulent pneumococci.

## SYMPOSIUM ON MILK FEEDING.

(Continued from page 590.)

### DISCUSSION

ON PAPERS OF DRS. BROWN, TOWNSEND, BROWN AND LOWENBURG.

DR. C. F. WAHRER, Fort Madison, Iowa, said that any paper, no matter how scientific it may be, when clouded by details that are unnecessary and too complex to follow, except in well-appointed hospital laboratories, must necessarily fail of the object an essayist has in mind. A consensus of opinion on the essentials of milk modification and infant feeding by well-known authors, omitting such details as every practitioner must of necessity supply in each individual case, would lead to far greater results among those who compose the rank and file of physicians, than all the algebraic formulas devised to date. Experience has proved that all such formulas, aside from being too complex, are incorrect, judging from published formulas of more recent date.

DR. S. M. HAMILL, Philadelphia, said that the result of the work of the Elmira commission should act as a stimulus to those living in smaller cities and towns. He has been secretary of the Philadelphia Pediatric Society Milk Commission for a number of years and has a very fair appreciation of the value of that commission to the city of Philadelphia. His experience has taught him how difficult it is for the best equipped dairies to furnish good milk without the supervision of a milk commission. A case in point is that of one of the Philadelphia hospitals which substituted for a very poor milk, which it had been using, the product of one of the best equipped dairies of Philadelphia, a dairy owned by a member of the board of managers of the hospital. On examination by the bacteriologist this milk was found to contain many millions of bacteria to each cubic centimeter. That was milk produced in a dairy provided with the most modern equipments and presumably carefully prepared, and yet the lack of supervision which resulted in the failure to carry out the minor details of dairy farming led to these atrocious results. In the examination of the dairies which have applied to the commission for certificates it has been found invariably that the bacterial content of the milk is in the hundred thousands, and not until these dairies have been under the direction of the commission for some time have they been able to come within the commission's requirements. Home modification of milk for an ordinary dairy is a very uncertain proposition. The percentage of fat obtained from the top milk should be known. The fact is lost sight of that milk coming from large herds, since the cows are milked in groups, may represent five or six different milk mixtures with great variation in the percentage of fat. The only way to standardize the fat contents of the milk of a herd is by studying the fat content of the individual cows and then so to distribute them as to make

the fat content of the milk of the groups milked separately as nearly even as possible. It is often necessary to have the herds rearranged before a milk of fairly even fat content can be obtained. At best there is always a variation of from  $\frac{1}{2}$  to 1 per cent. from day to day.

DR. J. W. KYGER, Kansas City, Mo., said that it is a notorious fact that the milk supply of the smaller cities, and, indeed, of many of the larger cities, is exceedingly bad. Kansas City, with 350,000 inhabitants, has no milk inspection of any value, and the character of the milk furnished the people is certainly very bad. By stimulating interest by the appointment of milk commissions much good will be done throughout the entire country. All the members returning from the meeting to the small cities, he said, should certainly look after this matter. Certified milk not only in regard to solids, but in regard to the bacteriologic count, will be of immense benefit. Milk commissions produce competition among dairymen, which is the only way to have them interested. As demonstrated by Dr. Kerley, Dr. Kyger believes that starch can be digested much earlier than has been supposed. Further, milk is one of the very best agents for the cultivation of bacteria. He has been in the habit of using cereal mixtures much earlier than has been recommended, and believes that the muscles of the stomach can be developed as the muscles of the arm are developed.

DR. W. G. MURPHY, Hartford, Conn., related the experience of a milk commission of the Hartford County Medical Society in 1897, which was the third county medical society to establish a milk commission. Two farmers were secured to supply certified milk. The herd of one was high-grade Jerseys, that of the other Ayrshires. A 10,000 per c.c. bacterial count was established and a certificate was to be given to the farmer obtaining this standard. The commission immediately got into hot water. If one farmer reached a standard of 10,000 and the other was higher, the one with the good results complained if the commission did not take the certificate away from the other. Next month the second farmer might have a good record and the other not. The commission had trouble with the physicians, finding they would use the high-grade milk for a short time and then drop to cheaper milk. The dairies were not supported as they should be. The work, however, is progressing. Dairymen are adhering to the requirements of the milk commission, although not under its control, and the work has had a good effect on the general milk supply of Hartford. It is well not to attempt too much; get one good dairyman, Dr. Murphy said, and work with him. It is not possible for a milk commission to reconstruct the whole milk supply of a city.

DR. MELINDA K. GERMANN, Quincy, Ill., agreed with Dr. Lowenburg in his reference to the physician instructing the mother in the home modification of milk, and asked him how fat and proteid indigestion in artificial feeding can be recognized.

DR. ROBERT W. HASTINGS, Brookline, Mass., said that it is desirable to start with a whey mixture in the feeding of the infant, adding cream as seems best and reaching a certain proportion of whey and cream which shall make the ideal food for that baby. This is safe, simple and perfectly practicable. Of course not every child will find this the best modification. Whether or not the whey and cream agree with the baby may well be decided by the simple methods laid down by Dr. Lowenburg.

DR. C. G. KERLEY, New York City, agreed with Dr. Townsend in giving cereal mixtures at the sixth month, as he can feed babies better when cereals of some kind are added at about that period. He happened to be in Elmira at the time of establishing the milk commission and knew something of the difficulties which Dr. Brown encountered in establishing a certified milk supply. It is good missionary work to start a milk commission in any city. It invariably improves the general character of all the milk produced in the locality. He is particularly interested in Dr. Lowenburg's success with dispensary patients in milk feeding. The general idea is that the reverse is true in dispensary service. Dr. Kerley has had very satisfactory results in working along these lines. Physicians should take the trouble to teach patients the principles of milk feeding. In feeding very delicate children in families



who can afford the very best laboratory preparations Dr. Kerley uses whey. With a well conducted laboratory and following out the methods suggested by Dr. Lowenburg very few cases will need wet-nurses.

DR. S. M. HAMILL, Philadelphia, said that his experience with whole milk and fat-free milk has been different from that of Dr. Townsend. Frequently he has been able to feed infants on fat-free milk and cream combined when he could not feed them on cream and whole milk mixtures.

DR. THOMAS MORGAN ROTCH, Boston, said that almost everyone interested in infant feeding indulges in a new formula. As a mathematical production, Dr. D. R. Brown's formula is exceedingly good, but it is not the way to get simplicity in infant feeding. Dr. Rotch said first judge what percentage the infant needs and then calculate it in the way one finds best. Some physicians may not believe in using the whey mixtures by which the proportions of whey proteid and caseinogen are altered so as to resemble those of human milk, but Dr. Rotch believes in this method appropriately used. A large number do believe that no matter what is said about simple methods many of them are sufficiently accurate to modify milk satisfactorily. The whole root of the matter is to find out what a baby needs and to write the prescription for it. He hopes that in the future there will be laboratories just as there are now apothecary shops, so that physicians can write for the percentages the babies need. To attempt to interfere with physiologic truths and to educate an undeveloped function to perform its work before Nature has intended, he said, is not a true principle. Most physicians think that mother's milk is a pretty good food for babies. Dr. Rotch believes it is the best food for the first year of life, if it is good mother's milk. In all these years of direct feeding from breast milk, Nature has not introduced starch into mother's milk at the fourth month, and yet breast milk remains the best food. Therefore in substitute feeding, he asked, why call on the function to carry on its duties before Nature has intended it to? He does not claim that the men who use certain cereals ought not to do so. It is perfectly right for them to do so, but there are many others who are following rather more closely Nature's methods in not giving cereals in the early months. They believe they get along much better without them. Yet the experience of one man must not be underrated. Dr. Kerley's method must be taken fully into consideration. Dr. Rotch declared that it is better not to force a function before it is ready to be used, not to bring in the use of cereals thinking they are better than mother's milk; that the physician should think in percentages, write in percentages, find out what especial percentages of the fat, sugar, proteid, etc., the baby needs and get them by any method of calculation that is most convenient to his individual type of mind.

DR. D. R. BROWN, Salem, Mass., said that it is somewhat difficult to demonstrate the mathematical principles on which the calculation of percentage mixtures depends, and at the same time to show the simplicity of the percentage method. He is well aware of the intolerance of mathematical formulas, but, to insist that the substitute food shall contain definite percentages of the food elements, and then say that formulas, which express in the simplest possible way the necessary operations, are of interest only to the mathematician, that it makes no difference whether they are accurate and adequate, or not, is inconsistent. Without accurate computation, there can be no "accurate method." In all the published formulas, certain analyses have been assumed for the cream and milk employed; cream and milk of other than the assumed analysis can not be computed accurately by these formulas. The percentage method, therefore, has never been established on a mathematical basis. The "working formulas," which Dr. Brown did not have time to show, yield, he said, satisfactory results.

DR. C. TOWNSEND, Boston, said he wished to make himself clear on the matter of cereal dilution. Generally, he thinks that babies after six months are better for cereals. Very often he begins with cereal dilution before that age and sometimes uses it with the new-born, notwithstanding the fact that Dr. Rotch states that there are no cereals in woman's

milk. Unfortunately, woman's milk and cow's milk are very different not only in the percentages of their ingredients, but also in the ingredients themselves.

DR. C. W. M. BROWN, Elmira, N. Y., said that he is glad that the idea of the milk commission commends itself to the members of the Section. Those who have discussed it, however, are all from the large cities. His appeal was to the representatives of the smaller ones. From the standpoint of the general practitioner he spoke in regard to the question of infant feeding. He became specially interested in it after more than twenty years' practice. He listened to the teaching of several men. He read all the articles in the English language on this subject and whenever he came to an article containing mathematical formulas he was puzzled. Perhaps, he said, he has what Dr. Claiborne calls "figure amblyopia." He is sure that all such things cloud knowledge. From the standpoint of the general practitioner a fundamental knowledge of the principles underlying infant feeding is needed, a knowledge of the kind and quality of the food which normal infants at different ages need and are able to digest; and, more than that, a statement of the symptoms, so far as can be gained from a study of the baby and from the character of the stools, whether or not there is fat digestion, proteid digestion, etc. Each one must apply this knowledge for himself. Everything must be made simple and plain so that mothers as well as physicians can understand it. Besides the nursing bottle marked for ounces and half ounces, Dr. Brown uses a pint graduate, many times nothing except the graduated nursing bottle, and succeeds fairly well.

DR. H. LOWENBURG, Philadelphia, objected to the chart of Dr. C. W. M. Brown because it is not needed. It is just such mathematical curiosities as this, he said, that prevent many practitioners from adopting percentage feeding. He believes with Dr. Townsend that one of the most important things in securing a successful formula is to secure a clean milk with which to work. The less milk is handled on the farm, the sooner cooled and the better iced the better it is for the infant. He said that fat indigestion is recognized by vomiting occurring from half an hour to an hour after feeding. The vomitus is sour and smells like rancid butter. Diarrhea and sometimes constipation occur. This latter condition has recently been emphasized by Holt. The fat can be differentiated from the curds by its solubility in ether, its floating on water and by the fact that it is blackened by osmic acid. Proteid indigestion is diagnosed by green stools, curds, mucus and usually a foul diarrhea. Sometimes the stools are constipated and white. Sugar indigestion is rare and is characterized by an acid diarrhea and excoriation of the anal region. In adding cream to whey the latter should be heated first, otherwise the cream will be curdled. However if heated above 158 F. the lactalbumin will be coagulated. He has used whey mixtures in hospital work more than in private practice. He agreed with Dr. Brown of Elmira as to the necessity for simplicity in infant feeding.

## Medicolegal

### Waiver of Privilege by Administrator and Others.

Section 4608 of the Iowa Code provides that no physician or surgeon shall be allowed, in giving testimony, to disclose any confidential communication properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice. Such prohibition shall not apply to cases where the party in whose favor the same is made waives the rights conferred. The Supreme Court of Iowa says, in *Long vs. Garey Investment Company*, that, ordinarily, an administrator or executor represents the deceased. In most controversies he acts in his stead, as in prosecuting or defending claims for or against the estate, and as a proponent of will. The heirs or devisees may also waive the privilege in such a contest. But the privilege can not be waived by the appointee as beneficiary under an insurance policy. Nor can it be waived by any one not in some way representing the patient or his



interests. And the court says that in an action by an administrator to set aside conveyances of land, as bearing on the issue of the decedent's inability to execute the instruments, the administrator so far represents the deceased that he may waive the privilege of the patient by calling the physician to testify concerning communications made to him as such. But in so far as the action rests on allegations of fraud, the testimony of the physician should not be considered, for an administrator in such a case does not represent the deceased or his interests.

#### **Request and Promise to Pay for Operation Inferable.**

The Appellate term of the Supreme Court of New York holds, in the case of Pryor vs. Milburn, that where there was evidence that a surgeon had performed an operation for pay on a patient at a hospital about three days prior to the operation for which compensation was sought, that the last operation was absolutely necessary "on the chance" to save the life of the patient, and that the patient was operated on as claimed, this evidence warranted an inference of a request on the part of the patient to have the operation performed, with an understanding that a reasonable compensation would be paid for the performance of it.

#### **Court Not Sure Woman of 60 May Not Bear Children.**

The Court of Appeals of Kentucky says, in Bailey's Trustee vs. Bailey, where there was a woman 60 years old, whose husband was alive, and, so far as the record showed to the contrary, was a vigorous man, that it is unable to concur in the conclusion that, because the woman had arrived at the age of 60 years, it was impossible that she should thereafter bear children. It says that it knows of no rule, either in law or nature, for such a conclusion; but, on the contrary, very high authority can be cited against it: Gen. xvii, 17; Gen. xxi. 2.

#### **Insane Delusions and Testamentary Capacity.**

The Supreme Court of Iowa says, in the will case of Hardenburgh vs. Hardenburgh, that while it is true that the existence of insane delusions shows a diseased condition of the mind, it is still true that a person thus afflicted may be entirely sane on all other subjects, so that, although one afflicted with insane delusions can not be said to be possessed of an entirely sane mind, it can not be said that he is generally insane or of such mental incapacity as to disqualify him from making a valid will. But it is the general rule that insane delusions existing in the mind of a testator will render invalid a will which is the direct offspring of such delusions, although the general capacity of the testator remains unimpaired.

#### **Taking Exercise and Not Seeking Medical Aid—Carrying Sick Person Beyond Destination.**

The Supreme Court of Wisconsin says, in the case of Nelson vs. Chicago & Northwestern Railway Company, an action brought to recover damages for carrying the plaintiff, when sick, beyond his destination and leaving him at another point, that it was claimed that he was guilty of contributory negligence in attempting at the latter station to walk about and omitting to procure the aid of a physician. But it did not appear that either he or his friends understood the nature of his physical condition, or were apprised that he was suffering from a brain lesion accompanied by cerebral hemorrhage. He was not informed that his condition required immediate medical attention. He believed that the physical exercise taken by him was conducive to his improvement. Under such circumstances his failure to seek medical advice and assistance at that point and his conduct in walking about the place did not in themselves so clearly show negligence on his part that the court could so declare it as a matter of law, and the determination of the question required submission to the jury, on all the evidence in the case, which found in his favor. Furthermore, the facts of the plaintiff's affliction having been brought to the attention of the trainmen, who were informed that he desired to get home for care and treatment, and were requested to put him off at his destination, the court says that it seems obvious that, under such circumstances, an ordinarily prudent person would know that a sick person must necessarily be injured to some extent from the excitement incident to the worry, disappointment and mental strain, and the addi-

tional physical exertion required for the extra travel, his stay among strangers at the hotel, and the delay in receiving proper rest, care and medical attention.

#### **Responsibility of Physician or Surgeon—Bad Results Not Conclusive of Malpractice—Expert Evidence.**

The Supreme Court of Oklahoma holds, on the appeal of Champion vs. Kieth, an action for malpractice brought by the latter party, that a physician or surgeon is never considered as warranting a cure, unless under special contract for that purpose. His contract as implied by law is that he possesses that reasonable degree of learning, skill and experience which is ordinarily possessed by others of his profession, that he will use reasonable and ordinary care and diligence in the treatment of the case which he undertakes, and that he will use his best judgment in all cases of doubt as to the proper course of treatment. He is not responsible for damages for want of success, unless it is shown to be the result of want of ordinary skill and learning, such as ordinarily possessed by others of his profession, or for want of ordinary care and attention. He is not presumed to engage for extraordinary skill or for extraordinary diligence or care, nor can he be made responsible in damages for errors in judgment, or mere mistakes in matters of reasonable doubt or uncertainty. This rule of responsibility is treated in many different ways, but the above, the court thinks, substantially gives the rule in a succinct form.

In this case the plaintiff, while handling a sack of grain in a flouring mill where he was working, turned suddenly, and his hip gave way. The defendant was called to attend him. There was no attempt to show that he did not possess that reasonable degree of learning, skill and experience which is ordinarily possessed by others of his profession. The effort was to show that he did not use reasonable and ordinary care and diligence in the treatment of the case; in other words, that he did not properly diagnose the case, and treated it as one for dislocation, when he should have observed that there was a fracture, and treated it as such. But it appeared that at the time he called another physician of experience and standing to aid him in consultation and making an examination of the injury, and the two made a thorough examination, and arrived at the conclusion therefrom that the thigh was dislocated, and thereupon set the same, and placed it in a plaster-of-Paris cast, and afterward both physicians visited the patient three or four times until he moved away from the city. Moreover, it appeared that in making the diagnosis as to the injury sustained and the subsequent treatment thereof, every precaution was taken and every method used which other surgeons possessed of a reasonable degree of learning, skill and experience would have used under like circumstances, though the treatment was not successful, and resulted unsatisfactorily. The court holds that such evidence did not establish a case of negligence on the part of the attending physician, and did not show a failure on his part to use ordinary skill, care and attention; and, further, that, under such circumstances, he was not responsible in damages for want of success.

Even admitting that there was a mistake in the diagnosis of the case, still the evidence, in the court's opinion, failed to establish negligence. It says that it might be here observed that even if the testimony of the plaintiff showed that there was in fact a fracture, which the court does not think it did to any reasonable degree of certainty, still the examination having been made long after the injury, and at the time when all of the witnesses admitted that a better and more satisfactory examination could be made than at the time of the injury, it would be the subject of some criticism on that ground. Again, the court says that it might be noticed that the testimony of expert witnesses, in cases of this kind, is only at best opinionative; there is usually nothing in it very definite or conclusive. Opinionative testimony is never more than merely persuasive.

It did not follow, because the treatment resulted unsatisfactorily, that, therefore, the surgeon was negligent. The court thinks it is a matter of common knowledge that in very many cases of like injuries, as well as others, under the most skilful treatment, Nature fails to respond properly, and the result is permanent injury. It also knows that some persons recover



readily from injuries that are the most serious; in fact, cases that seem at first to be almost if not quite hopeless, while others fail to recover from very slight injuries. This is not because of any want of skill or of the negligence of the surgeon, but it is because of the inherent recuperative power in the patient on the one hand and the lack thereof on the other.

In the trial of cases such as this one, courts should proceed with great care, as frequently there is liability that prejudice will creep into the minds of the jurors, and oftentimes a jury is liable to arrive at unwarranted conclusions; and from a reading of the entire record it would seem that such was the case here, as the record disclosed that the defendant was a reputable surgeon, possessing the ordinary skill and ability required, that he used the precaution of calling in an assistant with perhaps even more skill and knowledge than he himself possessed, that their examination was very thorough, that all precautions and appliances at their command were used, that the treatment given was proper and skilfully applied, and that the attendance afterward was diligent on the part of both surgeons, the result alone, however, being unsatisfactory. To hold the defendant liable in damages under such conditions would amount to a warranty of a cure, and this, too, a case treated on his part as one of charity, without any expectation of a fee or an intent to charge one.

#### Pictures Not Enjoinable.

The Supreme Court of Illinois says, on the appeal of Christian Hospital vs. People, ex rel. Murphy, that certain facsimiles of certificates of membership in the staff of the hospital were ornamented with a picture which apparently represented the lecture room of a medical school where surgery was taught. The picture was oval in shape,  $1\frac{1}{4}$  inches high at the widest place and  $2\frac{1}{4}$  inches long. There were tables in the front, with some persons standing around. Back of the tables there appeared to be an amphitheater filled with people, and there were about 40 people in the picture. The largest figure in the foreground, standing by the table, was alleged to be that of the complainant, and the head of that figure was not larger than a hemp seed. The faces of the spectators seated in the amphitheater were no larger than pin heads. There were affidavits that the largest picture represented the complainant, and that it would be recognized as his picture by his acquaintances. It seemed that his features could be distinguished in the picture by persons who knew him, but it was clear that there would be no implication from the picture that he was in any way connected with the hospital. The mere publication of this picture would not be an act for which he could obtain an injunction.

#### Dropping of Tooth Into Lung.

The Court of Appeal of the Second District of California says that it was alleged in the complaint in the case of McGehee vs. Schiffman that the defendant had extracted seven teeth and removed all of the same from the plaintiff's mouth excepting one tooth, which, by the defendant's carelessness, negligence, and unskilfulness, was permitted and allowed by him to drop and pass into the plaintiff's right lung, without any fault or negligence on her part. It was contended that this was insufficient in that the negligence averred was not the proximate cause, for the reason that it was manifest that the plaintiff, having control over her own muscles and breathing apparatus, the tooth by any negligence or omission of the defendant could only have been allowed to escape into the mouth, and that it should reach the lung comprehended action on the plaintiff's part which would be the proximate cause of the injury; that, if there was an unbroken sequence of events through which the injury was chargeable to the defendant, those continuous events should have been pleaded; that the complaint was uncertain in that it could not be ascertained how or in what manner any carelessness on the part of the defendant occasioned the injury, nor how the defendant by any act or omission of his could permit or allow the plaintiff's tooth to drop or pass into her right lung. The court, however, regards the complaint as sufficient, and in no sense as ambiguous or uncertain. It also thinks that there was evidence in the record sustaining findings that the defendant carelessly and negligently permitted and allowed a tooth to

drop and pass into and down the plaintiff's windpipe, and thence into the plaintiff's right lung, without fault on her part, by reason of which she was damaged. Among other things this evidence tended to show that an anesthetic was administered, that when the plaintiff regained consciousness she was strangling and coughing as though she were choking, and she felt as if some foreign substance had gone through her windpipe, that she continued this coughing and became sick, that an abscess formed in the lower lobe of the lung and quantities of yellow pus were expectorated, that afterwards during a fit of coughing, a tooth was expelled from the lung, that before she entered the defendant's office to have these teeth extracted she was in perfect health, that thereafter she was continuously under the care of a physician, but began to improve after the tooth was expelled. On the other hand, there was no evidence in the record that the defendant took any precaution to discover whether any of the teeth or any fragments thereof had not been removed from the mouth. But there was evidence tending to show that, notwithstanding the plaintiff's coughing and giving every evidence of having some foreign substance in her windpipe, no attention was paid to her by the defendant, and no effort made to ascertain the cause of her unusual condition. There was, therefore, the court says, competent evidence tending to establish the averments of the complaint, not only as to the negligence, but as to the proximate cause of the injury. A judgment for the plaintiff affirmed.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

January 31.

- 1 \*Trypsin Treatment of Cancer. W. P. Graves, Boston.
- 2 Instruction in the Physiology and Hygiene of Sex in Public Schools. H. C. Putnam, Providence, R. I.
- 3 \*Can a Specific Disease Be Aborted? J. M. French, Milford, Mass.
- 4 \*Ancient and Modern Ideas Concerning Tuberculous Adenitis. H. F. Stoll, Hartford, Conn.
- 5 Chloral Delirium. H. W. Mitchell, Danvers, Mass.

1. **Trypsin Treatment of Cancer.**—Graves reports four cases of recurrent cancer of the breast in which this treatment was carried out systematically and the results were typical. The cases were inoperable; the patients were in good general health. Graves began with 10 minims of the undiluted trypsin solution, and after two or three treatments increased this to 40 minims three times each week. Severe constitutional reaction was observed only once. Graves sums up his experience as follows: First, a discrete cancerous node systematically attacked by injections of trypsin shrinks and becomes hard and fibrous or disappears. Second, neighboring nodes are little if at all affected, and are probably influenced only when the trypsin comes into actual contact with the growing cells. Third, the treatment of a given node causing it to shrink or disappear does not prevent the appearance later of another node in immediate proximity to it. Fourth, there is no evidence in these cases to show that trypsin affects cancer cells by circulating in the blood, or that it affects them in any way except by direct contact. Fifth, the internal administration of the various ferments of the pancreas is of benefit to cachectic patients; but there is nothing to show that this benefit is due to anything else than the assistance given to the intestinal digestive secretions of the individual patient. Sixth, the direct action of trypsin on growing cancer cells as shown clinically and microscopically, is sufficient warrant to continue the treatment in inoperable cases, especially in view of the fact that there are apparently no serious results that can occur from its use.

3. **Abortion of Specific Diseases.**—French says that although it is generally conceded that specific diseases can not be aborted, yet the use of antitoxin in diphtheria and the results obtained controvert this belief. If this be true, French asks, may it not also apply to pneumonia, typhoid, malaria, syphilis, gonorrhea, rheumatism and tuberculosis.



4. **Tuberculous Adenitis.**—Stoll believes that an earlier diagnosis of tuberculous lesions and a keener appreciation of what can be accomplished by the fresh-air treatment will materially diminish the number of cases in which operative interference is indicated.

#### New York Medical Journal.

February 2.

- 6 \*Common Misconceptions in the Pathologic Physiology of the Circulation and Their Practical Significance. T. C. Janeway, New York.
- 7 \*Surgical Application of Blood Examinations. J. B. Deaver, Philadelphia.
- 8 Age Limitations of Sports. H. Toeppen, St. Louis.
- 9 \*Early Diagnosis of Pulmonary Tuberculosis With Special Reference to Symptoms. W. H. Coffmann, Asheville, N. C.
- 10 \*Immediate and Remote Consequences of Cranial Injuries, Based on Histories, which Illustrate the Extradural, Subcortical and Intracranial Types of Intracranial Hemorrhage. H. Cushing, Baltimore.
- 11 \*Case of Urethrovessical Calculus Weighing 845½ Grains. S. E. Earp, Indianapolis, Ind.
- 12 Modified Endoscopic Tube and Endoscopic Lacunar Knives. F. Bierhoff, New York.

6. **Pathologic Physiology of Circulation.**—Janeway emphasizes the importance of making a complete medical study of the pulse rate and blood pressure in every case of acute infectious disease, claiming that much useful information bearing on treatment may be obtained in this way.

7. **Surgical Application of Blood Examination.**—Deaver finds blood examinations of considerable value but urges that more than one blood count should be made before coming to a conclusion because the leucocytes vary greatly with the pathologic progression of the disease under consideration. To avoid error, he believes it essential that the blood counts on the same patient should always be made by the same examiner.

9. **Early Diagnosis of Pulmonary Tuberculosis.**—The symptoms and signs discussed particularly by Coffmann are hemoptysis, cough, fever, shortness of breath, pleural pains, evidences of functional derangement of digestion and the presence of a red or livid line at the margin of the gums. He says that a tuberculin test is indicated only when other methods of inquiry and examination have failed. He states that the truly early stage case will more often be found accidentally or when the physician is especially alert and extends his inquiries further than is usual in ordinary medical practice. The patient's early history is of great importance. In 256 cases cough was the first symptom in 114; loss of weight and strength in 50; hemoptysis in 20; pleurisy in 18; easily induced fatigue in 14; various disturbances on the part of the nervous system in 10; disturbances of the digestive organs in 8; symptoms attributable to laryngeal involvement in 4, and night sweats in 3 cases. Coffmann says that in the hands of very skilful and practiced observers the Roentgen ray as an aid in diagnosis can at most be one of greater or less degree of confirmation, and the method has no differential import. In the early deposits of tubercle in the lungs there is no real consolidation, hence no shading in the fluoroscopic picture can be expected. When the disease has caused alterations to a degree that the fluoroscope will indicate them, there are auscultatory signs and percussion changes in evidence.

10. **Consequences of Cranial Injuries.**—The third case in the series reported by Cushing was one of an old penetrating bullet wound of the skull involving the left frontal lobe. The patient suffered from attacks of epilepsy with vocal aura. The bullet was extracted, the adhesions were separated and the cortex was stimulated by faradization. The patient recovered from the operation and although he was much improved subjectively, his epileptic attacks continued.

11. **Urethrovessical Calculus of Large Size.**—In the case reported by Earp about two inches of the lower portion of the calculus occupied the distended urethra. The patient was a woman, 47 years old, who had suffered from bladder disturbance for about five years. For three years there was retention of urine but it was impossible to pass a catheter on account of the obstruction. A physician was not notified of this fact. Finally the calculus, weighing 845½ grains, was passed spontaneously. The stone was three inches long and its greatest diameter was 1½ inches.

#### Medical Record, New York.

February 2.

- 13 \*The Interlude of Cancer. J. Beard, Edinburgh, Scotland.
- 14 \*Theory of the Toxic Origin of Pernicious Anemia. A. W. Hollis and N. E. Ditman, New York.
- 15 \*The Electric Psychometer. F. Peterson, New York.
- 16 \*Medical Expert Testimony. G. F. Shiels, New York.
- 17 \*Varicose Veins of the Lower Extremities and Their Treatment. P. T. O'Connor, Waterbury, Conn.

13. **Interlude of Cancer.**—Beard outlines the course and nature of his scientific work and conclusions since the spring of 1888. He says that the theories of epigenesis, somatic origin of germ cells, and recapitulation in development are fading away into thin air before the mighty powers of evolution with predestination, an actual tangible continuity of germ cells from generation to generation, and an antithetic alternation of generations as the only possible mode of animal development. Beard believes that without doubt cancer is hereditary. He says that this is abundantly borne out by clinical histories which he has in his possession. According to his belief, the proper scientific treatment of cancer is the enzyme or pancreatic one. The preparations used should be potent extracts, scientifically prepared from the fresh gland direct. Beard classifies tumors into three groups: Embryomata (benign neoplasms); amprimixomata (malignant neoplasms, combinations of embryomata and trophoblastomata); and trophoblastomata (cancer and sarcoma).

14. **Toxic Origin of Pernicious Anemia.**—Hollis and Ditman describe various experiments carried on by others in the search for knowledge concerning the toxic origin of pernicious anemia.

15. **Electric Psychometer.**—Peterson gives a recapitulation of Tarchanoff's experiments. In his own work he uses a Deprez d'Arsonval mirror galvanometer and a horizontal glass scale placed about one meter from the galvanometer to which the lamp is attached. The light shines on the mirror from which it is reflected to the scale. Here the light travels to and fro, marking the fluctuations in the organism of the individual experimented on. As a rule, the galvanometer is put into circuit with one or two Bunson cells and a rheostat, the patient's hands making contact on copper plates on elapsing nickel-plated brass electrodes. In order to affect the instrument the emotions excited must be actual and real. The patient is required to respond to any word uttered with the first word that comes into his consciousness. Indifferent words produce no effect on the finger of light in the psychometer, but words exciting emotion send the light along the scale for a varying distance in proportion to the intensity and actuality of the emotion aroused.

16. **Medical Expert Testimony.**—Shiels believes that expert medical evidence could be of the greatest value in upholding justice if it were properly introduced. He suggests two plans: (1) Let the attorneys of each side select two experts and let the four thus chosen choose a fifth. These five men could, after mature deliberation, present a full and useful report on any technical points considered by them. Or (2), the matter could be left in the hands of the court, who could call one or a dozen medical men to elucidate without prejudice any technical points that might arise in the trial. Shiels favors the plan in which the court has control.

17. **Treatment of Varicose Veins.**—O'Connor believes that it is not alone the greater degree of surgical skill and dexterity that determines success in the management of these cases, but that a factor of equal importance appears to be the aseptic precautions necessary to be carried out before, during, and after manipulation.

#### Lancet Clinic, Cincinnati.

January 26.

- 18 Present Status of the Roentgen Ray. S. Lange, Cincinnati.
- 19 Was the Emperor Napoleon Sane or Insane During the Last Dozen Years of His Life, and if Sane was He Morally Responsible? A. N. Ellis, Maysville, Ky.
- 20 Clinical Indications for Cesarean Section. W. Schell, Terre Haute, Ind.

February 2.

- 21 Early Recognition of Acute Intestinal Obstruction and Prompt Surgical Intervention. J. A. Johnston, Cincinnati.
- 22 What to Do in Persistent Obscure Abdominal Symptoms. H. H. Grant, Louisville.



## Illinois Medical Journal, Springfield.

December.

- 23 Future Progress in Surgery. D. W. Graham, Chicago.
- 24 \*Problems in Appendicitis. H. N. Rafferty, Robinson, Ill.
- 25 \*Some of the Complications and Emergencies in the Surgical Treatment of Ovarian Cystoma. G. L. Eyster, Rock Island.
- 26 Nutritional Background of Adolescence. F. P. Norbury, Jacksonville.
- 27 Arthritis Deformans. E. W. Ryerson, Chicago.
- 28 Subjective Symptoms of Eye Strain and Their Effect on the Pupils' Work. A. L. Adams, Jacksonville.
- 29 Modern Conceptions of the Metabolism of the Diabetic. R. W. Webster, Chicago.
- 30 \*Modern Dining Car. M. Cavana, Oneida, N. Y.
- 31 Prognosis and Surgical Treatment in Traumatic Ruptures of the Kidney, Ureters and Bladder. W. Fuller, Chicago.

January.

- 32 Traumatic Ruptures of the Intestines and Stomach; Their Prognosis and Treatment. E. W. Andrews, Chicago.
- 32½ Treatment of Diffuse Suppurative Peritonitis. J. A. Blake, New York.
- 33 \*Duties and Obligations Relating to Tuberculosis. C. W. Lillie, East St. Louis.
- 34 Importance of Specialties in Educational Centers. J. Price, Philadelphia.
- 35 \*Case of Leprosy. E. A. Fischkin and E. C. Seufert, Chicago.
- 36 \*Leprosy in the United States and the Policy to be Pursued in Regard to It. W. A. Pusey, Chicago.
- 37 Lumbar Lordosis. M. S. Marcy, Peoria.
- 38 Treatment of Inoperable Malignant Tumors—Carcinoma. J. M. G. Carter, Waukegan.
- 39 \*Multiple Sclerosis With Report of a Case. J. Grinker, Chicago.

24 and 25. See abstracts in THE JOURNAL, June 23, 1906, page 1965.

30. **Modern Dining Car.**—Cavana calls attention to the danger of toxicosis from eating undrawn poultry and cites a number of instances in which the patrons of dining cars were poisoned in this way. He says, that the time for the consideration of present cold-storage methods and their health and life-destroying results is at hand. The protection of the railway dining car and the safety of its patrons and the general public, is the prize at stake. The profession ought to put forth its best efforts to procure such legislation in the several states as will compel, by law, as thorough and complete dressing, cleaning, and preparation of game and poultry for storage and the market, as is now practiced by the slaughterers of beef, pork and mutton, and thus safeguard the masses from the dangers of health and life, which must follow continued indifference toward this situation.

33.—See abstract in THE JOURNAL, June 9, 1906, page 1786.

35 and 36.—See abstracts in THE JOURNAL, Dec. 8, 1906, page 1945.

39. **Multiple Sclerosis.**—Intention, tremor, scanning speech, nystagmoid movements, exaggerated reflexes, Babinski sign, transient motor and sensory palsies, attacks of vertigo, insignificant objective sensory disturbances, slight and transient sphincter trouble, remission and intermission of symptoms, absent abdominal and cremasteric reflexes—are symptoms that make Grinker's case one of the typical Charcot type of multiple sclerosis, and besides, satisfy the demands of modern authors. Grinker says that the question of trauma as a cause in this case can be disposed of by recalling that the first symptom—an external rectus paralysis—occurred one year prior to the fall. If any influence is to be attributed to the trauma at all, it can only be that of hastening the latent processes and not of actually causing them. Grinker claims that strychnin, iodids, arsenic, iron and other so-called tonics do not seem to act beneficially. The best single drug for palliative treatment he has found to be sodium bromid, in doses of from 15 to 20 grains, three times daily. It has a tendency to relieve the extreme nervousness and often gives the patient a feeling of greater security in walking.

## Detroit Medical Journal.

January.

- 40 The Physician as a Character in Fiction. C. B. Burr, Flint.
- 41 \*Nitrous Oxide Gas. W. Warren, Detroit.
- 42 \*Chloroform and Ether. C. S. Oakman, Detroit.
- 43 Study of Infant's Stool. P. Selter, Solingen, Germany.

41. **Nitrous Oxid Gas.**—Warren's experience with nitrous oxid anesthesia has been entirely confined to its use for operations on the tonsils and the removal of adenoid vegetations from sixty-six patients. The youngest of these was about three years and six months old, and a few of them have been above twenty-five years of age. In some of the small patients, with limited pulmonary capacity, the anesthesia

has been very brief, apparently not over thirty-five seconds in duration. In patients over 10 years of age, however, the anesthesia generally lasts from forty-five to fifty seconds, and usually affords ample time for the removal of both tonsils, and adenoid growths. Warren has never noted any ill effects from inspiration of blood or tissue.

42. **Chloroform and Ether.**—Oakman says that the margin of safety is narrow with chloroform and wide with ether. Chloroform is a powerful drug and dangerous. Ether, while comparatively innocuous, is yet not an agent to be trifled with, and there should be a united effort to promote greater skill in its administration.

## Washington Medical Annals, Washington, D. C.

January.

- 44 Combat of Scientific Medicine With Superstition. J. D. Morgan, Washington, D. C.
- 45 First Fifty Cases of Tuberculosis Treated at Starbmont Sanatorium. Surgeon-General, G. M. Sternberg, U. S. Army.
- 46 Simple Retinitis. R. S. Lamb, Washington, D. C.
- 47 Postoperative Complications Connected With Kidney and Ureter. G. B. Miler, Washington, D. C.
- 48 Typhoid Fever; Perforation, Operation, Recovery. C. S. White, Washington, D. C.
- 49 Partial Review of Internal Medicine. C. N. Howard, Washington, D. C.
- 50 \*Case of Friedreich's Disease. W. L. Robins, Washington, D. C.
- 51 Two Cases of Cerebrospinal Meningitis. E. E. Richardson, Washington, D. C.
- 52 Hypernephroma of Kidney; Nephrectomy. I. S. Stone, Washington, D. C.
- 53 Case of Aortic Regurgitation and Floating Liver. E. P. Magruder, Washington, D. C.
- 54 Case of Hodgkin's Disease or Tuberculosis. T. A. Groover, Washington, D. C.

50. **Friedreich's Disease.**—Robins reports one case and analyzes two recorded cases. Of the 100 cases studied, 67 per cent. began at or below the age of 12. In 80 of these 100 cases more than one case of this disease was found in the same family. In only 6 cases was there direct hereditary transmission. The mental condition was probably normal in all but 7 cases. Of the 13 cases in which the expression of countenance was mentioned practically all the patients presented a dull torpid appearance. Two cases were reported to follow an injury to the head. In 2 cases there was probably a history of syphilis. There was a marked alcoholic history in one or other parent in 14 cases, and in a grandparent in 4 cases. In 2 cases the father had phthisis, and in one case the mother was phthisical. In 8 cases the parents were cousins. Ten cases followed closely on measles or scarlet fever or both. Five other cases followed such diseases as remittent fever, whooping cough, dysentery and rheumatism. A history of insanity was found in 3 cases. In one case the father suffered from migraine, and in one case the mother had chorea. The mother of 3 patients died of cancer of the liver. Choreiform or jerky movements of the head and trunk were marked in 51 cases. Of the 25 cases in which special mention of unsteadiness was made, probably 18 patients showed inability to maintain the erect position with the eyes closed; and many of the latter number were unable to stand unsupported with the eyes open. The Romberg symptom was recorded as present in only 3 instances. The knee jerks were absent in 71 and diminished in 5 cases. They were recorded as exaggerated in only 6 cases. All deep reflexes were recorded as absent in 3 instances. In a large majority of the cases no mention was made of any of the deep reflexes other than the patellar tendon. The Babinski sign was present in 3 cases.

Concerning the superficial reflexes, which are not especially important in this disease, the plantar, cremasteric and abdominal were present in 23 cases. In a few instances the superficial reflexes were absent. The plantar reflex was exaggerated in 5 cases. Of the 55 cases in which the condition of the feet was given, 47 showed more or less characteristic deformity. The condition of the spine was spoken of in 64 cases. Of this number 48 showed lateral curvature, the location of which, in a large majority of cases, was in the dorsal region. Antero-posterior curvature was present in four cases. In 12 instances speech was not affected. Of the 70 cases in which there was affection of speech, perhaps the difficulty would best be described by the words "slow," "drawling," "slurring," "indistinct," and "jerky" or "ataxic." In only two cases was the speech considered to be of the



"scanning" type. There was specific mention of some loss of motor power in the legs in only 20 cases. In most of these cases there was no atrophy whatever. In 78 cases ataxic symptoms began first in the lower extremities; and in only 6 cases did they begin in the upper extremities. Several cases were doubtful.

Of the 51 cases in which mention was made of the sphincters, 42 showed the bladder and rectal sphincters to be normal. There was a slight incontinence of urine in four cases, and micturition was delayed in 5 cases. In 23 cases the gait was described as "staggering or drunken;" in 19 as "ataxic;" in 11 as "unsteady, awkward or jerky." In a few cases the gait is called "shuffling or reeling." The field of vision was practically normal in all cases cited. Nystagmus was reported as present in 51 cases and absent in 20. Lateral nystagmus was specifically mentioned in 29 cases. Sensation was practically normal in 41 cases; in many cases no mention was made of it. Muscular sensibility was diminished in 6 cases. There was diminution of heat, pain and touch in only 4 cases. Pains or cramps in the legs were present in 6 cases; lightning pains in 2; dull backache in 2; and girdle sensation in only one case. Vertigo was decided in 2 cases; faintness and giddiness in 4 cases. In 2 cases there was syncope.

#### Archives of Pediatrics, New York. January.

- 55 \*Relapses in Typhoid Fever of Children. H. Koplik and H. Heiman, New York.
- 56 Teaching of Scientific Infant Feeding. H. D. Chapin, New York.
- 57 \*A New Siphon Aspirator. F. Huber, New York.
- 58 Paralysis of Abducent Nerve Following Influenza. A. S. Wilner, New York.
- 59 Case of Septic Endocarditis with Recovery. W. C. Gardner, New York.
- 60 Treatment of Scarlet Fever. I. L. Polozker, Detroit.

**55. Relapses in Typhoid.**—Koplik and Heinman analyze 24 relapses which occurred in 160 cases of typhoid and concluded that relapses in typhoid fever are more common in children than in adults. The mortality is exceedingly low. The usual duration of a relapse in a child is from one to two weeks. As a rule the temperature is continuously high between a rapid rise at the onset and a rapid fall to normal at the termination of the relapse. A constant symptom in addition to the prolonged temperature elevation is about 75 per cent., leukopenia in about 60 per cent. of relapses in children. Complications in these cases are mild and infrequent. For the prediction of a relapse no reliable signs are furnished by the character of the interpyrexial period nor by the course, duration and severity of the original attack. Persistent enlargement of the spleen after defervescence occurs in a fair proportion of relapse cases; and a relapse following a mild primary illness is not as likely to be repeated as one occurring after a severe original attack.

**57. New Siphon Aspirator.**—The appliances described by Huber for use in pleural effusions are said to be simple, convenient and inexpensive. For more than 20 years it has been the practice of Huber to use the Dieulafoy as a means of siphoning the fluid from the pleural cavity in the following way: After the needle has been inserted, two or three ounces are slowly drawn off in the usual manner and allowed to remain in the glass barrel. The outflow cock is now opened, a steady flow is established at once, the *vis a tergo* being supplied by the expanding lung. The apparatus, it is understood, must be on a lower plane than the chest. The serous or sero-purulent fluid escapes without the necessity of any further manipulation. An ordinary aspirating or exploring syringe, about  $3\frac{1}{4}$  inches in length, holding about one-half ounce (the lower fitting replaced by a cap provided with two stopcocks), is employed as a substitute in place of the elaborate glass cylinder with the rack and pinion action of the Dieulafoy apparatus.

#### Journal of Nervous and Mental Disease, New York. December.

- 61 Relation of School Work to the Mental Fatigue of Children. B. Sachs, New York.
- 62 A Definite Clinical Variety of Cerebral Arteriosclerosis. J. Collins, New York.
- 63 Vision Fields in Cases of Indirect or Incomplete Lesions of the Optic System. C. K. Russel, Montreal.
- 64 Connective Tissue Character of the Septa of the Spinal Cord as Studied by a New Stain. A. R. Allen, Philadelphia.

#### January.

- 65 \*Pseudo-Hypertrophic Muscular Atrophy. C. E. Ingbert, Independence, Ia.
- 66 Myopathy of Distal Type and Its Relation to Neural Form of Muscular Atrophy. W. G. Spiller, Philadelphia.
- 67 Consciousness in Brutes. G. V. N. Dearborn, Boston.
- 68 Peripheral Obliterating Arteritis as Cause of Triplegia Following Hemiplegia. C. W. Burr and C. D. Camp, Philadelphia.

**65. Muscular Atrophy.**—The histopathologic findings in a case reported by Ingbert add support to the conclusions of other investigators that pseudo-hypertrophic muscular atrophy is primarily a disease of the muscles, and that the changes in the spinal cord and in the spinal nerve roots are secondary.

#### Virginia Medical Semi-Monthly, Richmond. January 11.

- 69 Medical Reminiscences of Richmond During the Past Forty Years. J. N. Upshur, Richmond.
- 70 Prison Sanitation. C. V. Carrington, Richmond.
- 71 Calculous Cholecystitis Simulating Appendicitis. G. G. Holladay, Portsmouth.
- 72 Hysteria. D. P. Hickling, Washington, D. C.
- 73 Typhoid Fever; General Considerations. B. H. Hite, Hollydale.
- 74 \*Mosquito Theory of Malarial Diseases—Is It True? T. J. Taylor, Cochran.
- 75 Plea for Castration to Prevent Criminal Assault. J. Ewell, Ruckersville.
- 76 Contusions of Abdominal Wall. C. W. Roller, Staunton.

**74. Mosquito Theory of Malaria.**—Taylor questions the etiology relationship believed to exist between the mosquito and malaria. He says that if it is true, as claimed by scientists, that malaria can not exist unless the particular variety of mosquito is there to propagate it, it is one of the most remarkable facts in the whole domain of natural history. He can not understand why this one variety of gnat, with exactly the same internal organs, the same food, habits and habitat as other gnats, should alone be able to develop the malarial parasite. He says further, that there are numerous and incontestable facts which do not coincide with the present theory of the origin and propagation of malaria. There are regions of the earth, high and dry, which afford no breeding places for mosquitoes, yet some of these regions, he states, are intensely malarial.

#### Colorado Medicine, Denver. January.

- 77 Mind Cure; Its Service to the Community. R. C. Cabot, Boston.
- 78 Early Diagnosis and Treatment of Tabes Dorsalis. G. E. Neuhans, Denver.
- 79 \*Wright's Latest Opsonic and Bacterial Vaccine Work. G. B. Webb, Colorado Springs.

**79. Opsonins and Bacterial Vaccines.**—Webb presents what is known of the opsonic theory as promulgated by Wright and reviews several very interesting cases that have been published by Wright. He also points out the value of the opsonic index in reference to the effect of exercise in tuberculous patients.

#### American Journal of Obstetrics, New York. January.

- 80 \*Nature of Shock. E. Boise, Grand Rapids, Mich.
- 81 A Surgeon's Criticism of Gynecology. C. W. Barrett, Chicago.
- 82 \*Technic of Fixation of Floating Kidney, With Reference to Longyear's Ligament. C. A. L. Reed, Cincinnati.
- 83 Anterior Vaginal Celiotomy: Its Technic, Indications and Limitations. S. W. Bandler, New York.
- 84 \*Preservation of Vault in Vagina in Pelvic Operations. A. Vander Veer, New York.
- 85 \*Observations and Experiences Respecting Symptoms and Treatment of Atresia Vaginae. A. P. Clarke, Cambridge, Mass.
- 86 Abortions. J. A. Hall, Cincinnati.
- 87 Perineal Tears. J. E. Cannaday, Hansford, W. Va.
- 88 Difficulty Encountered with Fetal Arms in Breech Labor. F. Reder, St. Louis.

**80. Nature of Shock.**—Boise believes that the circulatory conditions of shock are essentially and primarily a condition of tonic or spasmodic contraction of the heart, with probable coexistent contraction of the arterioles. Boise reports his experiments on animals in full.

82.—See abstract in THE JOURNAL, Sept. 29, 1906, page 1045.

84 and 85.—See abstracts in THE JOURNAL, Oct. 13, 1906, page 1220.

#### Albany Medical Annals. January.

- 89 \*Production of Cytotoxic Sera by the Injection of Nucleoproteids. R. M. Pearee and H. C. Jackson, Albany.
- 90 \*Chemistry of Atheroma and Calcification (Aorta). L. K. Baidauf, Albany.
- 91 \*Action of Certain Drugs on the Elimination of Uric Acid During a Nitrogen-Free Diet. H. C. Jackson and K. D. Blackfan, Albany.



- 92 \*Experimental Myocarditis; Study of Histologic Changes Following Intravenous Injections of Adrenalin. R. M. Pearce, Albany.
- 93 \*Production of Vascular Lesions in the Rabbit by Single Injections of Adrenalin. R. M. Pearce and L. K. Baldauf, Albany.
- 94 \*Experimental Production of Liver Necrosis by Injection of Hemagglutinative Sera. R. M. Pearce, Albany.
- 95 \*Regenerative Changes in the Liver. R. M. Pearce, Albany.
- 96 \*Liver Necrosis and Venous Thrombosis in Horses Actively Immunized with Diphtheria and Tetanus Toxins and with Streptococci and Their Products. H. D. Pease and R. M. Pearce, Albany.
- 97 \*Affections of the Thyroid Gland. G. E. Bellby, Albany.
- 98 \*Puerperal Infection. E. McDonald, Albany.
- 99 Embryonic Glandular Tumors of the Kidney. H. W. Carey, Albany.
- 100 \*Tuberculosis of an Adenomyoma of the Uterus. J. L. Archambault, Albany.
- 101 \*Four Instances in which Giant Cells Occurred in Unusual Situations. N. K. Fromm, Albany.
- 102 Spontaneous Amputation of an Appendix Contained in a Femoral Hernia Sac. F. G. Schaible, Albany.
- 103 Case of Exfoliative Cystitis. J. F. Robinson, Albany.
- 104 \*Malaria with General Distribution of the Plasmodia. A. T. Laird, Albany.

89.—See abstract in THE JOURNAL, Nov. 24, 1906, page 1766.

90.—See abstract in THE JOURNAL, Dec. 1, 1906, page 1854.

91. Action of Drugs on the Elimination of Uric Acid.—Jackson and Blackfan have performed a very extended series of experiments for the purpose of determining the action of alcohol, colchicum and sodium salicylate, on elimination of uric acid during a nitrogen-free diet. After personal experience, they decided that for their taste the daily diet most adapted to prolong general use was the following:

Grams.	Calorific value.
250 arrowroot .....	957.0
140 pure cane sugar .....	504.4
50 butter .....	450.0
100 fat in the form of 250 c.c. of 40 per cent. cream	900.0

Sodium chlorid to taste..... 2,811.4

This mixture formed a pudding which was flavored with various kinds of extracts and fruits. From the thermodynamic standpoint the diet was found to be sufficient. The authors sum up the results of these investigations as follows:

1. The elimination of uric acid on a purin-free or nitrogen-free diet is not a constant value for the same individual.
2. There appears to be evidence that the elimination of creatinin may be altered by conditions other than that of the creatinin in the food.
3. Alcohol increases the output of uric acid during a nitrogen-free diet; there occurs a coincident diminution in the elimination of ammonia; the organic phosphorus pentoxid excretion is also increased.
4. Both colchicum and sodium salicylate increase the output of uric acid, along with which takes place an augmented excretion of organic phosphorus pentoxid.
5. These facts seem to indicate that the rise in the uric acid elimination is caused by an increased formation as a result of augmented decomposition of nuclein-containing compounds of the cell.
6. From this it seems reasonable to decide that any agent which tends to cause an increased production of uric acid in the organism and thereby to increase its amount in the blood, must be contraindicated in those conditions where there exists a tendency for a deposition of urates to occur (gout). Probably the temporary beneficial effects of salicylates and colchicum observed clinically are the results of some secondary action possessed by them. That no permanent benefit results must be due to the fact that they are contraindicated.

92 and 93.—See abstracts in THE JOURNAL, Dec. 1, 1906, page 1854.

94 and 96.—See abstract in THE JOURNAL, Oct. 13, 1906, page 1227.

95.—This article also appeared in the *Journal of Medical Research*, Boston, July, 1906.

97.—See abstract in THE JOURNAL, June 23, 1906, page 1972.

98.—See abstract in THE JOURNAL, March 3, 1906, page 681.

100.—This article appeared in full in THE JOURNAL, Sept. 8, 1906, page 768.

101. Giant Cells in Unusual Situations.—Fromm found giant cells in the bronchi in bronchiectasis, in a carcinoma of the tongue, in a recurrent granulation polyp of the aural canal, and in the wall of a cyst of the broad ligament.

104. Malaria with General Distribution of Plasmodia.—In the case reported by Laird, the parasites were found in practically every organ, the spleen, liver, bone marrow, lungs, heart, kidney, pancreas, brain and blood vessels of the intestines. The pigmentation of the spleen, liver and brain was very marked.

## Annals of Ophthalmology, St. Louis. October, 1906.

- 105 Late Changes in Specific Chorioretinitis. J. Hirschberg and O. Fehr, Berlin.
- 106 Chorioidal Diseases: Their Relation to General Diseases. G. E. de Schweinitz, Philadelphia.
- 107 Therapeutic Application of Roentgen Ray in Diseases of the Eye. W. S. Newcomet, Philadelphia.
- 108 Surgical Treatment of Trachoma. G. S. Ryerson, Toronto.
- 109 Double External Rectus Paralysis, Traumatic in Origin. H. F. Hansell, Philadelphia.
- 110 Embolism of Cilio-Retinal Artery: Loss of One Eye Through Gonorrheal Conjunctivitis; Endocarditis; Sequelæ of Gonorrheal Urethritis. W. Zentmayer, Philadelphia.
- 111 Operative, Postoperative and Traumatic Infections of the Eye. H. F. Hansell, Philadelphia.
- 112 Enucleation of Eyeball Under Local Anesthesia. H. D. Bruns, and E. A. Robins, New Orleans.
- 113 Report on the Eyes of Four Classes of College Freshmen at University of Pennsylvania. M. W. Zimmerman, Philadelphia.

## Medical Library and Historical Journal, Brooklyn. September, 1906.

- 114 The Hôtel Dieu of Paris—an Historical Sketch. E. N. La Motte, Baltimore.
- 115 A Sketch of Benjamin Rush. H. G. Webster, Brooklyn.
- 116 \*A Forgotten Medical Worth, Dr. Diego Alvarez Chanca, of Seville, Spain. A. M. F. de Ybarra, New York.
- 117 Supposed Warfare Between Medical Science and Theology. J. J. Walsh, New York.
- 118 German-American Influence in Medicine and Surgery. J. C. Hemmeter, Baltimore.
- 119 Biography of François Magendie. P. M. Dawson, Baltimore.
- 116.—This article appeared in full in THE JOURNAL, Sept. 29, 1906, page 1013.

## The Physician and Surgeon, Detroit. December, 1906.

- 120 Some Cardiac Arrhythmias. L. C. Grosh, Toledo, Ohio.
- 121 Oponins. E. B. Bradley, New York City.
- 122 Primary Basal-Cell Carcinoma of the Appendix. A. S. Warthin, Ann Arbor, Mich.

## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

## British Medical Journal. January 19.

- 1 Fractures of the Base of the Skull. A. Bowlby.
- 2 \*Intraperitoneal Implantation of Ureters into Colon. G. Barling.
- 3 \*Transplantation of Ureter into the Bladder for Ureterovaginal Fistula. E. P. Paton.
- 4 Traumatic Rectovesical Fistula. H. T. Mursell.
- 5 \*Microscopic Diagnosis of Tumors During Operations. C. B. Lockwood.
- 6 Etiology and Prophylaxis of Dracontiasis. R. T. Lelper.
- 7 Atoxyl in Treatment of Trypanosomiasis. A. Breinl and J. L. Todd.
- 8 \*Treatment of Paralytic Talipes Valgus by Tendon Transplantation. B. Kilvington.
- 9 Papain in Malignant Growths. C. W. Branch.
- 10 Hydatid Cyst of Neck with Cellulitis Caused by Rupture and Escape of Hydatid Fluid. E. C. Bevers.

2. Implantation of Ureters Into Colon.—Barling reports the case of a young man, aged 20, who was suffering from fractured pelvis with ruptured urethra and laceration of the neck of the bladder. Exit for the urine was given by suprapubic drainage. A suppurating sinus led down to the back of the fractured pubic bone. The method of operation pursued in this case was as follows:

The ureter was found with little difficulty, and was lifted out of its bed for about an inch and a half, was divided low down, the lower end ligatured and pushed under the peritoneum, while the upper end was held lightly between finger and thumb to prevent leaking. The portion of bowel to be used was selected, and a puncture barely one-third of an inch long made on its inner side, the utmost care being observed to prevent any fecal soiling. The upper end of the ureter was threaded with a fine catgut suture, the needle attached to which was passed into the opening in the colon, across the bowel and through its opposite wall. By means of this suture the ureter was drawn inside the bowel, and held in position while a first row of interrupted sutures fixed the outer coats of the ureter to the margins of the incision in the intestine, and narrowed this opening up to the walls of the ureter, but without constriction. A second row of sutures approximated the peritoneal covering of the bowel to the outer coat of the ureter, and so secured rapid adhesion and seclusion. The suture through the wall of the colon to retain the ureter, while suturing fixed it, was then cut short and its point of exit secured by a single mattress suture. The colon was displaced somewhat toward the middle line, which relieved the ureter from tension and tended to return it to the bed of subperitoneal fat from which it had been disturbed, while finally the inner edge of the divided posterior peritoneum was sutured to the inner margin of the colon, thus giving further security against leaking. The wound was closed except for a small gauze drain.

The operation on the right side was rather more difficult than that on the left, as the small intestine was not so easily



pushed out of the way and the common iliac vein obtruded a good deal into the wound when the posterior peritoneum was divided.

3. **Transplantation of Ureter Into Bladder.**—In the case reported by Paton the operation devised by Hammerschlag in a case of uretero-cervical fistula, was employed successfully.

5. **Immediate Microscopic Diagnosis of Tumors During Operation.**—Lockwood states emphatically that freezing microtome should form an essential part of the equipment of an operating theater. He describes the procedure carried out in his service and cites a number of instances to substantiate his claim.

8. **Treatment of Paralytic Talipes Valgus.**—Three cases are reported by Kilvington to show that moderate degrees of this deformity are very suitable for treatment by tendon transplantation. He applies a tourniquet above the knee to prevent hemorrhage, and when possible, the transplanted tendons are fixed directly to the bone by silk sutures. He says that the decision as to the operation to be performed depends on the muscles affected, but that talipes valgus does not offer the same field for nerve surgery as do paralyzes, involving the peronei or extensor muscles.

**The Lancet, London.**  
*January 19.*

- 11 Diagnosis of Tumors of the Spinal Cord. F. E. Batten.
- 12 Skepticism in Therapeutics. A. H. Bampton.
- 13 \*Opsonins and Treatment by Bacterial Vaccines. J. L. Bunch.
- 14 \*Hemorrhagic Cyst of Spleen. W. L. Harnett.
- 15 \*Relative Sizes of Maternal Pelvis and of Fetus in Europeans, Eurasians, East Indians and Bengalis. J. C. H. Leicester.
- 16 Fatal Case of Myxedema with Changes in Parathyroid Glands. D. Forsyth.
- 17 \*Pyloric Stenosis and Condition of Pylorus During Life. C. W. Moullin.
- 18 \*Abnormal Development of Esophagus. J. E. Spicer.
- 19 \*Fat Necrosis. J. E. H. Sawyer.
- 20 Disseminated Sclerosis. Z. Mennell.
- 21 Diphtheritic Membrane Involving Pharynx, Esophagus and Respiratory Passages. F. E. Field.
- 22 Limitations of Medical Evidence. S. B. Atkinson.

13. **Opsonins and Bacterial Vaccines.**—Bunch reviews this subject generally and reports several instances in which these procedures were employed with great benefit.

14. **Hemorrhagic Cyst of Spleen.**—Harnett's patient gave a clear history of malaria. On admission a pulsating swelling having all the characters of an aneurism of the popliteal artery was present on the inner side of the left thigh just above the knee. The body was covered with a pustular rash and there was well-marked general arteriosclerosis. The liver and spleen were enlarged. Excision of the aneurism was followed by suppuration and death. The spleen was found converted into an enormous unilocular cyst which contained nearly a pint of dark-brown, turbid fluid which proved to be altered blood. Harnett believes that his case supports the view that these cysts arise from rupture of an intrasplenic vessel following, perhaps, the development of an aneurism.

15. **Size of Maternal Pelvis and Fetus.**—Leicester measured 941 pelves and weighed and measured 699 full-term children, the patients being Bengalis, Europeans, East Indians and Eurasians. As the result of this study he concludes that the proportion in weight and size of the child's head to the size of the pelvis through which it is born is by no means so strikingly regular as would appear from the measurements obtained by Lane, and certainly does not in any way seem to justify the enunciation of any law on the subject.

17. **Pyloric Stenosis.**—Moullin says that patients, unless warned, are likely to expect too much from gastroenterostomy done for pyloric stenosis. They should be told that while the gastroenterostomy will relieve the stenosis it does not in any way affect the condition which preceded the stenosis and which may continue after the stenosis has been divided. If the conditions of living which gave rise to the dyspepsia at first, when the stomach was healthy, are allowed to continue, they will give rise to the same results, after gastroenterostomy has been performed. When patients complain that their condition was not greatly improved by the operation, Moullin puts them to bed, physics them, and restricts them to a milk diet for a few days. He has never known a case in which the pain did not disappear immediately and recovery follow at once.

18. **Abnormal Development of the Esophagus.**—Spicer reports three cases of abnormal development of the esophagus due to mal-development of the tracheo-esophageal septum in the anterior part of the primitive esophagus. As a result, the upper part of the esophagus is found to end in a dilated cul-de-sac, while the lower opens above into the posterior wall of the trachea immediately above the bifurcation. The patients died twenty-two hours, six and nine days after birth, respectively.

19. **Fat Necrosis.**—Sawyer reports 8 cases, three of which have been published before. Three of them were associated with acute hemorrhagic pancreatitis, 2 with subacute pancreatitis, and one each with gangrenous pancreatitis, hydrochloric acid poisoning and mitral disease, respectively. Sawyer says that although some destruction of the pancreatic tissue seems to be a necessary factor in the production of fat necrosis, yet in cases of extensive disease of the pancreas, fat necrosis does not always occur. Three points in his cases seem to oppose Eppinger's view: (1) The areas of fat necrosis are sometimes seen just under the peritoneum and nowhere else, except in the immediate neighborhood of the pancreas, indicating that the ferment had escaped into the general peritoneal cavity; (2) the fat necrosis was observed in the edges of a laparotomy wound; and (3) the radiating appearance of the fat necrosis in one of the cases seems to point to direct extension from the pancreas.

**Journal of Obstetrics and Gynecology of British Empire,**  
**London.**  
*January.*

- 23 \*Tuberculosis of the Female Pelvic Organs. R. H. Lucy.
- 24 \*Tuberculosis of the Cervix Uteri. E. E. Young.
- 25 \*Treatment of Puerperal Sepsis by Active Disinfection of Uterus. A. K. Gordon.
- 26 Development of Uterus Bicornis. C. Lockyer.
- 27 Three Cases of Chronic Tuberculosis of the Fallopian Tube. A. W. W. Lea.
- 28 Case of Repeated Extrauterine Pregnancy, with Estimate of Age of Fetus from Appearances Shown in Roentgen Ray Photograph. J. Phillips.
- 29 Removal of Pregnant Uterus on Account of Fibroids Complicated by Fibroid of Round Ligament. John Campbell.

23. **Tuberculosis of Female Pelvic Organs.**—Lucy draws attention to certain causes of ill-health in the female which until recently had been but imperfectly understood, that is, tuberculosis affecting the different structures in the female pelvis, but chiefly tuberculosis commencing in the Fallopian tubes. The subject is discussed from a clinical standpoint, the author taking up the channels of infection, tuberculous salpingitis, tuberculous pelvic peritonitis, and tuberculosis of the bladder and of the uterus.

24. **Primary Tuberculosis of Cervix.**—Young reports the case of a married woman, aged 26, on whom a vaginal hysterectomy was done for primary deposit of tubercle in the cervix uteri. The only symptoms complained of were the presence of a thick yellow, inoffensive discharge from the vagina, and a constant aching pain in the lower part of the abdomen and sacral region. The patient had always been healthy, her husband was healthy, and no family history of tuberculosis could be obtained.

25. **Treatment of Puerperal Sepsis.**—Gordon describes a series of cases of puerperal sepsis in which he employed somewhat vigorous disinfection of the uterus, after thorough curettage, with most excellent results.

**Intercolonial Medical Journal of Australia, Melbourne.**  
*November 20.*

- 30 The Opsonic Index as a Guide for Therapeutic Inoculation, with Some Results of Treatment by Vaccines. T. P. Dunhill.
- 31 Treatment of Bacterial Disease. J. Smith.
- 32 Early Signs of Tuberculous Meningitis. W. H. Summons.
- 33 Lumbar Puncture in Children. S. W. Ferguson.
- 34 Fracture of Larynx and of External Auditory Meatus. T. K. Hamilton.
- 35 Treatment of Extreme Infantile Paralysis of Lower Limb in Children. W. Mackenzie.

**Annales de l'Institut Pasteur, Paris.**  
*Last indexed, page 84.*

- 36 (XX, No. 11, Pp. 881-975.) \*Sterilization with Formaldehyde at High Temperatures. (Transformation reversible du trioxyméthylène en méthanal.) L. Perdrix.
- 37 Reversible Actions of Diastases. (Formation et dédoublement des éthers-sels sous l'influence des diastases du pancréas.) H. Pottevin.



- 38 \*Spirillosis of Fowl Embryos, Compared with Inherited Syphilis in Man. (Spirillose des embryons de poulet dans ses rapports avec la Tréponémose héréditaire de l'homme.) C. Levaditi.
- 39 \*Influence of Normal Serum on the Phagocytic Process. (Observations sur la phagocytose *in vitro*.) M. Löhlein.
- 40 Albuminoids in Cheese. (Dosage de la matière albuminoïde non-transformée dans les fromages.) Trillat and Sauton.
- 41 Gangrenous Bovine Affection in Paraguay. (Maladie sphacélaire des bovidés du Paraguay.) Elmassian and R. Urlzar.
- 42 (No. 12, Pp. 977-1070.) Action of Bulgarian Ferment on Milk. (Action du ferment bulgare sur de lait; Yoghourt.) G. Bertrand and G. Weisweiler.
- 43 \*Process for Dosage of Albuminoids of Milk. (Matière alb. du lait. Nouveau procédé de dosage.) Trillat and Sauton.
- 44 Growth in Curves of Bacterium. (Des tropismes du "Bacterium zopfi" Kurth.) E. Sergent.
- 45 Dosage of Active Substances in Hemolytic Sera. (Etude des sérums hémolytiques.) L. Remy.

36. **Advantages of Heat in Formaldehyd Disinfection.**—Perdrix reports tests which prove that the amount of gas generated when formaldehyd is heated to 100 C. (212 F.) is 27 times greater than at 18 C. (64.4 F.), and at other temperatures in proportion. In disinfecting apartments, therefore, the process is immeasurably promoted by heating the rooms by every possible means. He states that it is an illusion to suppose that more than a certain proportion of the gas can be injected into a room at a given temperature. This proportion, however, can be increased at will by raising the temperature of the room. The white powder deposited occasionally on solid objects during formaldehyd disinfection at ordinary temperatures is a product of the polymerization of the gas and is known as trioxymethylene. By heating this substance it is possible to transform it back into formaldehyd gas, and this reversible transformation of trioxymethylene can be utilized in practical disinfection. Perdrix has devised an apparatus for the purpose with which remarkably effectual disinfection is realized from the transformation of trioxymethylene into formaldehyd gas by the action of heat alone. It consists of a copper cylinder with double walls, the space between the walls being filled with boiling water. The double front wall is pierced by large horizontal tubes opening into the inner cavity of the cylinder. In each of these tubes slides another tube the bottom of which is perforated and the top cut out to form an open drawer. These drawers slide in and out and hold the objects to be disinfected. The lower drawer holds the trioxymethylene from which the gas is generated by the action of heat. Each of the drawers when pushed in projects into the inner cavity, and the articles in them are thus bathed in the gas which enters through the perforations in the bottom. No odor of formaldehyd gas escapes from the apparatus. It can be working in a room for days with no odor to suggest its presence. The few grams of trioxymethylene placed at first in the apparatus have never had to be replaced during all his tests.

38. **Spirillosis of Fowls Compared with Inherited Syphilis in Man.**—Levaditi confirms his previous announcements that inherited syphilis is an acute or comparatively chronic spirillosis of the newborn infants of syphilitic parents, due to the presence of the *Treponema pallidum*, Schaudinn's spirochete. This treponemosis differs in certain respects from the other forms of spirillosis yet known in man and animals, but, on the other hand, the analogies between them are numerous. He injected hen's eggs with spirilla and found that they never developed unless the egg had been previously fertilized. The resulting infection produced conditions in the embryo remarkably similar to those observed in the congenitally syphilitic infant. Among other facts noted is the finding that Brazilian spirillosis is never transmitted by infected hens to their embryos, but the latter seem to be immunized against infection from the *Spirillum gallinarum*.

39. **Phagocytosis in the Test Tube.**—Löhlein reports tests of the influence of normal serum on the phagocytic process which confirms, he says, the assertions of Hektoen and Ruediger. He protests against the term "opsonins," as the substances thus styled are the same as those previously described by Metchnikoff under the name of "fixateurs." To avoid all confusion, however, he proposes to add to the term fixateur or sensibilisatrice the adjectives "phagocytic" or "bacteriolytic" to distinguish between the two kinds of sensitizing substances in normal and specific sera.

43. **Dosage of Albuminoids of Milk.**—Trillat and Sauton utilize the property possessed by formaldehyd of rendering albuminoids insoluble as a means of determining the proportion of albuminoids present in milk. Five c.c. of milk are diluted with 25 c.c. of distilled water and boiled for five minutes and then five drops of formol are added, and the whole is boiled again for two or three minutes. It is then set aside for five minutes and then treated with 5 c.c. of 1 per cent. acetic acid and stirred. The precipitate is filtered out and the filter and its contents are treated with acetone to remove the fat, then dried, and the precipitate is weighed. The addition of the ordinary preservatives to the milk does not affect the precision of the test, which is simple and deserves wide application, they think, for practical dosage of the albuminoids in milk.

#### Berliner klinische Wochenschrift.

- 46 (XLIII, No. 52, Pp. 1643-1666.) \*Development of Our Knowledge of Ozena. (Entwicklung der Lehre von der Ozaena.) B. Fraenkel.
- 47 Medicolegal Value of Deviation of the Complement in Blood Tests. (Der Wert des Neisser'schen Verfahrens der Komplementablenkung.) A. Schütze.
- 48 \*Measurement of Blood Pressure. (Blutdruckmessung bei Menschen.) H. J. Bing.
- 49 \*Pseudo-spirochetes. (Zur Frage der Silberspirochæte.) W. Schulze.
- 50 Non-Use of the Voice in Treatment of Laryngeal Tuberculosis. (Schweigetherapie bei der Kehlkopftub.) Lubinski.
- 51 The Extra-Systole: Its Pathology, Diagnostic and Clinical Significance. (Extrasystole des Herzens.) A. Bickel.
- 52 (No. 53, Pp. 1667-1678.) Free Receptors. (Freie Rezeptoren.) E. Weil and O. Axamit.
- 53 \*Pseudo-Paralytic Myasthenia Gravis. (Myasth. gravis pseudo-par.) E. Sitsen.
- 54 \*Relation of Meningococci to Gonococci. (Beziehungen der Men. zu den Gon.) L. Zupnik.

46. **Ozena.**—Fraenkel looks back over his 70 years and calls attention to the fact that his pioneer publications on the subject of ozena need scarcely any revision to-day. Little more is known than he taught years ago. He cites this fact to emphasize the need for further research in this line, adding that science progresses like a spiral, always upward and onward, although to a casual observer it seems to be at times retrogressing.

48. **Measurement of the Blood Pressure.**—Bing applied the Riva-Rocci apparatus with a cuff on each upper arm. The registered findings are tabulated as observed on a number of individuals. He affirms that the blood pressure measured by the ordinary clinical apparatus depends on the contraction of the vessels below the point of compensation. Changes in the lumen of these vessels are able to induce changes in the blood pressure without necessarily any corresponding changes in the pressure in the aorta. It is not the terminal pressure in the brachial artery which the apparatus measures; it measures the lateral pressure in this artery.

49. **"Silver Spirochetes."**—Schulze reaffirms on more extended experience that he has been able to inoculate rabbits with syphilis and, further, that in the successfully inoculated rabbit eye and also in human organs affected with syphilis he has constantly demonstrated the presence of Siegel's *Cytorrhyses luis*. The more or less spiral elements found in syphilitic and non-syphilitic organs on application of the silver technic are nothing more nor less, he states, than tissue elements, generally terminal fibrils of the nerves. Neisser has also succeeded in inoculating rabbits with syphilis, the proof of the positive results being afforded by inoculation of monkeys in turn.

53. **Pseudo-Paralytic Myasthenia Gravis.**—Sitsen reports a case in full and tabulates the details of 29 others from the literature. In 9 cases the lymphatic system showed anomalies under the microscope, but autopsy was incomplete in most, and further research is needed, such as examining during life the blood and all the organs, the lymphatic system and the bone marrow.

54. **Relations Between Meningococci and Gonococci.**—Zupnik comments on Rüppel's recent announcement of the production from gonococcus cultures of an immune serum which conferred protection against meningococci as well as gonococci, and, further, a serum from meningococci which protected equally effectually against gonococcus infection. In his own experience he has occasionally cultivated from cases of epidemic cerebrospinal meningitis a coccus which seemed to be



identical with the gonococcus. He is convinced that the various clinical pictures of infectious diseases are due to the genus of the infectious agents rather than to the species. The various genera and not the species, he declares, are responsible for the special pathologic changes. To confirm these views he tried to inoculate human beings with gonorrhea by injecting them with his meningococci. Five physicians volunteered for the experiments, but the results were negative. Even the strain of meningococci which resembled gonococci so closely failed to induce any affection suggesting gonorrhea. The experiments confirmed anew, he says, "the diagnostic dignity of the species in respect to the pathogenetic properties of microbes." Ruppel's interacting sera can thus be explained by the generic specificity of the toxins and antitoxins. Experiments of others have further demonstrated that the agglutinins, precipitins, toxins and antitoxins, that is, all the antibodies produced by the gonococci and meningococci, are specific for the genus. The term "group agglutination" is misleading, he says; "genus agglutination" is the preferable term.

**Deutsche medizinische Wochenschrift, Berlin and Leipzig.**

- 55 (XXXII, No. 51, Pp. 2057-2112.) Stenosis of Larynx After Intubation and Secondary Tracheotomy. (Intubationsstenose des Kehlkopfes nach sec. Tracheotomie.) O. Franck.  
56 \*Points for Differential Diagnosis of Peritonitis. (Diff.-diagn. Kriterien der Peritonitis.) A. Barth.  
57 \*Varix Simulating Incarcerated Femoral Hernia. (Diagn. Schwierigkeiten in der Beurteilung inkarzierter Schenkelbrüche.) J. P. Haberern.  
58 Rinsing the Vagina and Disinfection of the Hands. (Scheidenspülung und Händedesinfektion.) E. Opitz.  
59 Sciatica Induced by Backward Flexion of the Uterus. (Durch Retroflexio uteri bedingten Fall von echter Ischias.) Offergeld.  
60 Artificial Eardrums of Paraffin and of Silver. (Künstl. Trommelfelle aus Paraffin und Silber.) B. Gomperz.  
61 \*Report of German Sleeping Sickness Expedition. (Ueber den bisherigen Verlauf der deutschen Expedition zur Erforschung der Schlafkrankheit in Ostafrika.) R. Koch.  
62 \*Treatment of Gonorrheal Epididymitis. (Behandlung der Ep. gonorrhoeica.) C. Schindler.  
63 Deviation of Complement and Differentiation of Albumin. (Komplementablenkung und Biuteilweissdifferenzierung.) P. Uhlenhuth.  
64 Orthocentric Eyeglasses No Improvement. (Sind orthocent. Kneifer zu empfehlen?) W. G. Feilchenfeld.  
65 Ancient Arabian Surgeons. (Die Chirurgie der Araber.) F. Durante.  
66 (No. 52, Pp. 2105-2128.) Treatment of Anemia. (Behandlung der Anämien.) G. Sittmann. Clinical lecture.  
67 \*Early Diagnosis of Carcinoma of Stomach. (Frühdiagn. des Magencarcinoms.) A. Albu.  
68 \*Apparatus for Increasing Effect of Extension Treatment of Fractures. (Einfache Vorrichtung zur Unterstützung der Bardenheuerschen Extensionsbehandlung der Frakt.) K. Vogel.  
69 A New Tonsillotome. (Ein neues Pharynxtonsilliotom.) E. Barth.  
70 Aspirator for Nasal Affections. (Zur Technik der Saugbehandlung von Naseneriden.) J. Martin.  
71 \*Complicating Hemorrhagic Diathesis in Scarlet Fever. (Kompl. häm. Diathesen bei Scharlach.) H. Klose. (Commenced in No. 51.)

56. **Differential Diagnosis in Peritonitis.**—Barth makes a practice of dictating his diagnosis, made from the clinical study of the case before the operation, and then comparing it later with the pathologic anatomic findings. He has found this extraordinarily instructive, and has notes of 117 cases thus studied in detail. In 90 cases of peritonitis, a rise in the temperature was invariably noted at the beginning of the affection when it originated in the appendix; vomiting occurred in every case without exception, sometimes recurring and sometimes persisting, especially when the inflammation spread rapidly over the peritoneum, but the reflex rigidity of the abdomen was the most important symptom as it occurred constantly and its location and extent were directly proportional to the inflammation in the abdominal cavity. Whenever the abdomen was found rigid on both sides the peritonitis invariably proved to have extended to both sides, but when the rigidity was restricted to one side, the inflammatory process was always found limited to that side. This rule does not apply to serous effusions; these were found in his experience invariably sterile, and his 16 patients in this class all recovered. He ascribes the serous effusion to distant toxic action from an encapsulated focus, and the prognosis is good. He explains the rigidity of the abdominal walls as a local symptom of irritation of the sensory nerves of the parietal peritoneum from certain special chemical conditions. The more intense the toxic action, the greater the rigidity. In peritonitis

originating in the female genital organs, gonorrheal or puerperal, rigidity was never observed. In gonorrheal peritonitis the pulse rate increased much more rapidly than with appendiceal peritonitis; meteorism was frequently noted, and the abdomen was very painful, especially on pressure. There was also always characteristic tenderness in the posterior roof of the vagina, and the slightest movement of the uterus was painful. Gonorrheal pelveoperitonitis generally develops at the time of the menses. Palpation of the tubes at this stage is not free from danger and is unnecessary. After the peritonitis had subsided he invariably found the characteristic thickening of the ureter or tubes. Differentiation is important as gonorrheal pelveoperitonitis does not indicate operative intervention, and a fatal outcome from extending peritonitis is not known to him except in cases in which the focus in the ovary was not left to subside spontaneously under rest. If the protecting adhesions are broken up by rough manipulations, the prognosis, of course, becomes bad. In puerperal streptococcus peritonitis the abdomen is much less painful and there is no rigidity as in appendiceal peritonitis; meteorism is a prominent feature. Rigidity was observed in a case of rupture of the liver with suppuration, and with colon bacilli in the pus, and Trendelenburg also observed it in a case of rupture of the spleen. It was absent, on the other hand, in 5 cases of sterile tubal abortion.

57. **Varix Simulating Femoral Hernia.**—Haberern describes a case of supposed femoral hernia in a woman of 49 who had worn a truss for nearly four years. Symptoms of incarceration indicated operative interference, undertaken under consultation, when the trouble was found to be a large varix. After evacuation and ligation of the varix all disturbances ceased. He reviews the similar cases on record. In some the varix simulated an inguinal hernia.

61. **Success of Arsenic in Sleeping Sickness.**—See news item on page 149.

62. **Treatment of Gonorrheal Epididymitis.**—Schindler writes from Neisser's clinic to extol the value of puncture in treatment of acute gonorrheal epididymitis. It is impossible, he states, to learn otherwise of the presence of pus and to heal the process. In one case there was high fever, and the process persisted refractory to the usual measures. One puncture proved negative, but a second puncture brought thick pus, after which the process rapidly subsided. Even at the best, he remarks, the relics of the affection are liable to entail more or less serious functional disturbances later, and no pains should be spared in prophylaxis. The physician should strive to restrict the primary infection to the anterior urethra, and the public should be educated to consult a physician at the first slight symptoms of infection, and not to wait until possibly irreparable damage has been done.

67. **Early Diagnosis of Gastric Cancer.**—Albu insists on the great diagnostic importance of a gradual loss of weight notwithstanding a nourishing diet with easily digestible food given in small amounts at frequent intervals. If the patient continues to lose weight, the assumption of a malignant process is justified. If attention is directed to the stomach, symptoms suggesting atrophic chronic gastritis point to carcinoma in the fundus, while symptoms suggesting stenosis of the pylorus indicate cancer in the pyloric region, particularly when the amount of hydrochloric acid slowly declines from week to week. In his experience, the history never has had the slightest value in the diagnosis of gastric cancer. An inoperable lesion may lurk behind the slightest subjective disturbances. Only by the most attentive observation of the course of the objective signs of the disease may we hope to diagnose it in its early stages, that is, before a palpable tumor is discovered. He reports 2 cases in which an operation was undertaken on an early diagnosis based principally on the constantly progressive loss of weight. In the first case a man of 52 lost 6¼ pounds in the course of four and one-half weeks; in the second, a woman of 45 lost 10 pounds in about four months. Both patients were constantly under observation on a nourishing, comparatively well-relished diet. The operation in the first case revealed a flat tumor smaller than a silver dollar, on the posterior wall. In the second case the tumor



was scarcely as large as a walnut, and had developed on the basis of an old, flat ulcer in the pyloric region. Albu remarks that it certainly must be one of the smallest gastric carcinomata ever diagnosed in the living subject. The patient is in good health to date.

68. **Apparatus for Improved Extension.**—Vogel's apparatus consists of a triangular iron frame with three legs, like a small triangular bed, on which the patient's arm or leg can be placed to maintain sufficient abduction in extension treatment of fractures. He has slightly modified the Bardenheuer apparatus as he shows in his illustrations.

71. **Complicating Hemorrhagic Diathesis in Scarlet Fever.**—Klose reports in detail a case of mild petechial scarlet fever complicated by a hemorrhagic diathesis with remittent manifestations and exacerbations. The patient was a girl of 6, and the clinical diagnosis was chronic hemorrhagic purpura following scarlet fever. Autopsy revealed a general hemorrhagic diathesis with fatty degeneration of the myocardium. The scarlet fever occurred in May, 1904, and the child succumbed to exhaustion two years later. She had been previously healthy, with healthy parents. The case further shows the benefits of gelatin treatment, four courses of 10 per cent. solution of gelatin having been followed by arrest of the hemorrhages in 24 or 48 hours, and absorption of the blood in from 12 to 45 days. A total of 520 c.c. of the 10 per cent. solution were injected subcutaneously in addition to internal administration, without harm, but the extremely chronic course of the affection prevented regeneration of the blood.

*Jahrbuch f. Kinderheilkunde, Berlin.*

*Last indexed, page 341.*

- 72 (LXIV, No. 6, Pp. 779-896.) \*Gonococcus Infection in Children; Its Prevalence in Institutions, and Its Prophylaxis. (Gon.-Inf. bei Kindern, mit bes. Bezugnahme auf deren Vorkommen in Anstalten und die Mittel zur Verhütung derselben.) L. Emmett Holt.
- 73 Innervation of the Mammary Gland. (Zur Physiologie der Milchdrüse.) K. Basch.
- 74 "Congenital" Megacolon not Congenital but Acquired. (Ungewöhnlich umfangreicher "Dickdarm" bei Kindern.) W. E. Tschernow.
- 75 Physical Proportions of the Newborn. (Körperproportionen des Neugeborenen.) S. Weissenberg.
- 76 Grooves in the Thighs of Children. (Oberschenkelfalten des Kindes.) M. Cohn.

72.—See THE JOURNAL, vol. xlv, 1905, page 1146.

74. **Enlargement of the Large Intestine in Children.**—Tschernow reviews the history of Hirschsprung's "megacolon congenitum," summarizing the various cases that have been published and adding two from his own experience. He is convinced that the condition is not congenital, but is acquired from some obstruction. The various conditions causing the obstruction are generally located in the lowest segment of the sigmoid flexure, especially at its junction with the rectum. Treatment should include measures to empty the bowels temporarily with an artificial anus, and later entero-anastomosis, uniting the cavity of the sigmoid flexure or the upper part of the descending colon with the ampulla of the rectum. His two cases show the possible advantages of treatment on these principles. Another patient, a girl of 4, thus operated on in 1904, is still in good health, and Björkstén has had a similar experience in one case. In short, "megacolon congenitum" is not congenital, he declares, but acquired, and is amenable to treatment.

76. **Folds in Infants' Legs.**—Cohn remarks that the folds and grooves in the legs and arms of plump infants have been studied by artists, but otherwise little attention has been paid to them. He ascribes their origin to the position of the child in the uterus. Asymmetry in the adductor fold suggests the possibility of congenital dislocation of the hip joint, before any other sign of it is apparent, although asymmetry is frequently observed in normal children. The depth of the grooves is an index of the child's general condition, as any affection tending to loss of flesh smooths out the grooves more or less, and they never return to the same extent.

*Monatsschrift f. Geb. und Gynäkologie, Berlin.*

*Last indexed, page 344.*

- 77 (XXIV, No. 6, Pp. 703-846.) Comparative Physiology of the Menstrual Cycle. (Zur Kenntnis des menstruellen Cyklus.) M. van Herwerden.

- 78 \*Obstetrics in Maternities and at the Home in Their Relation to Artificial Premature Delivery. (Anstaltsgeburtshilfe und Hausgeburtshilfe.) O. v. Herff.
- 79 Treatment of Delivery with Contracted Pelvis. (Geburt bei engem Becken.) E. Bauer.
- 80 \*Parathyroid Insufficiency in Respect to Eclampsia and Tetany. (Experimentelle Versuche zur parathyr. Insuff. in Bezug auf Eklampsie und Tetanie, mit bes. Berücks. der antitoxischen Funktion der Parathyroiden.) V. Frommer.
- 81 Review of Recent Works on Suprarenal Preparations and Gelatin as Hemostatics in Gynecology and Obstetrics. (Nebennierenpräparate und Gelatin.) M. Neu.
- 82 Recent Works on Appendicitis in Women. (App. bei der Frau.) R. Klein.

78. **Advantages of Artificial Premature Delivery in Case of Contracted Pelvis.**—If a woman is delivered in a maternity, von Herff thinks that expectant treatment, with possibly Cesarean section or pubiotomy at need, should be the rule. But if delivered at home, the dangers of these operations and other considerations should impel the physician to advise artificial premature delivery as promising far better results with less danger for the mother. The relations between the head and the pelvis must be carefully determined beforehand; preliminary version should be avoided as far as possible, as also the use of the high forceps, and pubiotomy should be the last resource. He cites his experiences and various statistics and urges that more attention should be paid in the medical schools to instructing the students in obstetrics as applied in the home. Far more childbirths occur in the home than in a lying-in institution, and the conditions vary widely in the two.

80. **Parathyroid Insufficiency in Respect to Eclampsia and Tetany.**—Frommer's experiments on animals have confirmed the assumption that the parathyroid glands have an antitoxic function, the lack of which entails tetany. Partial removal of the parathyroids in the non-gravid rabbit does not cause any appreciable disturbances, but total removal may have a fatal effect. The entire removal of both parathyroid and thyroid glands may induce fatal tetany. Five grams of sterilized, normal human placenta tissue introduced into the abdomen of a rabbit or other animal after partial removal of the parathyroids caused invariably severe disturbances, evidently inducing extremely toxic metabolic products. The young all died later, although apparently healthy. He describes the anatomy of the human parathyroid glands. He found four in 12 cadavers and only two in two others. They are less transparent than lymph glands and are further distinguished by the reddish, yellowish tint. They are round or oval, from 2.5 to 15 mm. in diameter, and a little tougher in consistency than the thyroid gland. The article reviews the present status of our knowledge in regard to the parathyroids, including Vassale's theory and his method of treating eclampsia with extract of beef parathyroid substance.

*Münchener medizinische Wochenschrift.*

- 83 (LIII, No. 52, Pp. 2565-2588.) \*Dosage and Mode of Administering Anesthetics for Spinal Anesthesia. (Lumbalanästhesie.) C. Hofmann.
- 84 Proteolytic Ferment of the Leucocytes and the Autolysis of Normal Human Blood. (Proteolytische Ferment und Autolyse normalen Menschenblutes.) F. Erben.
- 85 \*Technic of Spirochete Staining. (Spirochätenfärbung.) A. Kraus.
- 86 Pseudoarthrosis of the Styloid Process of the Ulna. (Pseudoarthrose.) A. Stoffel.
- 87 Earning Capacity After Healing of Artificial Anus. (Erwerbsbeschränkung nach Heilung eines Anus praeternaturalis.) M. Mayer.
- 88 Epidemic Cerebrospinal Meningitis and Its Origin in Mines. (Grubeninfektion beim Entstehen der Genickstarrepidemien.) L. Jeñle.
- 89 Graphic Records of Lung Findings. (Bildliche Darstellung von Lungenbefunde.) Besold and Elkan.
- 90 Active Principle of Vaccine. (Vakzineerreg.) J. Siegel.
- 91 (LIV, No. 1, Pp. 1-56.) Statistics and Pediatrics. (Statistik und Säuglingsfürsorge.) A. Schlossmann.
- 92 The Bonn Station for Milk for Infants and Advice for Mothers. (Mutterberatungsstelle und Säuglingsmilchküche.) Esser.
- 93 The Dispensary for Infants at Weissenburg. (Säuglingsfürsorgestelle.) H. Doerfler.
- 94 Determination of Toxin in the Blood in Diphtheria. (Nachweis des Toxins in dem Blute des Diphtheriekranken.) C. Fränkel.
- 95 \*Air Massage. (Luftmassage.) R. Klapp.
- 96 Relations Between the Orbit and the Pterygopalatine Fossæ. (Bez. der Orbitae zu den Fossae pteryg.-palat.) W. Krauss.
- 97 \*Filling the Bladder with Oxygen to Aid in Cystoscopy and Radiography. (Füllung der Blase mit Sauerstoff zum Zwecke der Cyst. und Rad.) L. Burkhardt and O. Polano.
- 98 Treatment of Gonorrheal "Posterior Cystitis" by the General Practitioner. (Gon. Posteriorzystitis.) Kromayer.



99 \*Two Cases of Aural Vertigo Cured by Operation. (Ohrschwindel.) Isemer.

100 \*Treatment of Gastrointestinal Hemorrhages with Fluid Gelatin (Magen- und Darmblutungen.) A. Mann.

83. **Dosage for Spinal Anesthesia.**—Hofmann announces that he has been surprised to find that weaker dilutions induce anesthesia as completely as the customary dosage of the anesthetics. He used to inject a 5 per cent. solution, but now uses only 1 per cent., increasing the amount of fluid to correspond. His experience has shown that the larger amount of fluid required aids the induction of the anesthesia while materially reducing the by-effects.

85. **Improved Technic for Spirochete Staining.**—Kraus commends the Giemsa technic, preceded by fixation of the specimen with the fumes of osmic acid, according to the Hoffmann-Halle modification. This shows up the spirochetes well, but the effect is liable to be marred by precipitation of the stain, and Kraus has devised a means to avoid this. The specimens prepared by the above technic are placed for about half a minute in a 30 per cent. aqueous solution of tannin. The results are most excellent.

95. **Massage with Air.**—Klapp has been studying the reactive hyperemia induced by facing the wind for some time, and has been striving to apply the same principle in therapeutics. He has nothing practical yet to announce in this line, but in his research on this subject he has learned the efficacy of strong jets of air as a means of massage. He uses a one-horse power motor to produce the jet of air which issues from an adjustable nozzle, about 8 cm. in diameter. The air can be hot or cold, and the jet is so strong that it hollows out a depression in the tissues and the skin piles up in folds around the spot—an actual massage of the skin and tissues below without any surface friction. The part feels cold and empty if cold air has been used, but a reactive hyperemia follows at once on the application of warmth to the part, the reaction increasing in intensity with each sitting. The indications for this "frictionless massage" are the same as for any massage. It has the advantage of being painless; the air massage is agreeable rather than otherwise, and there is no danger of displacement of a reduced fracture. It is also useful for promoting the absorption of infiltrates and edema after subsidence of an inflammatory process. If the continual jet of air is constantly turned on and off in rapid succession the result is a kind of vibratory massage, an absolutely painless, frictionless shaking of the parts. Klapp is assistant at Bier's clinic at Bonn.

97. **Filling the Bladder with Oxygen for Cystoscopy and Radiography.**—Burkhardt relates that when the bladder is irritable he has found it a great advantage to fill it with oxygen, instead of air or fluid, as a preliminary to cystoscopy or radiography. The oxygen is chemically pure and no danger of embolism need be feared from it, while it has actually a soothing and sedative action on very irritable bladders. This result is similar to Hoffa's experience with it in joint affections. Comparative radiography, with and without the oxygen, showed that the shadows cast by bladder stones were much more distinct with the oxygen and the details of the bladder walls could be inspected more clearly. The advantage was so marked that it suggests the possibility of introducing oxygen into the hilus of the kidney through the ureter catheter, he declares, in puzzling cases of kidney stones.

99. **Aural Vertigo Cured by Operation.**—The two cases described were remarkable in the sudden onset of the vertigo, its severity, and its prompt subsidence after operative treatment of a long chronic middle ear affection.

100. **Treatment of Gastrointestinal Hemorrhage with Fluid Gelatin.**—Mann reports nine cases of gastrointestinal hemorrhage cured by administration of a tablespoonful of a mixture of 2 gm. citric acid and 20 gm. syrup of bitter orange peel to 200 gm. of fluid gelatin. One patient was at the eighteenth day of typhoid fever when a little blood was observed in the stools and the gelatin mixture was given every two hours; no further traces of blood were observed. The gelatin was given several days in another typhoid case with the same result. The other patients suffered from ulcer or cancer of the stomach, and in every instance the blood vanished from the stools

on the administration of the gelatin. The only exception was in a case of very severe typhoid fever. Serious intestinal hemorrhage suddenly occurred, but was arrested by the use of various hemostatics, including the gelatin mixture, and the stools next day were free from blood. Another and immediately fatal hemorrhage occurred a few days later and autopsy revealed multiple serious intestinal ulcerations. In all the other cases the benefit was prompt and marked without the use of any other measures.

Virchow's Archiv, Berlin.

Last indexed, page 272.

- 101 (CLXXXVI, No. 3, Pp. 321-524.) **Finer Structures of the Bones, with Special Regard to Rachitis.** (Feinere Knochenstrukturen.) F. Dyrenfurth.
- 102 \***Kidney Cysts.** (Nierencysten.) C. Braunwarth.
- 103 **Physiology of Islands of Gastric Mucosa in Upper Segment of Esophagus.** (Magenschleimhautinseln im obersten Oesophagusabschnitte.) H. Schridde.
- 104 **Histology of Nodose Goiter.** (Struma nodosa.) L. Michaud.
- 105 \***Energy of Growth and Etiology of Malignant Tumors.** (Wachstumsenergie und Et. der bösartigen Geschwülste.) P. Kronthal.
- 106 (CLXXXVII, No. 1, Pp. 1-196.) **Development and Absorption of Experimentally Induced Amyloid Substance in the Salivary Glands of the Rabbit.** (Amyloidsubstanz in den Speicheldrüsen von Kaninchen.) W. Dantchakow.
- 107 **Amyloid Degeneration of the Heart.** (Herzamyloid.) P. Huebschmann.
- 108 **Vaginal Cysts.** (Cysten der Vag.) A. T. Högström.
- 109 **Case of Missing Thyroid Gland and Vascular Thyroid Tumor on the Tongue.** (Athyreosis und vikal. Zungenstruma.) E. Ungermann.
- 110 \***Pathology of Branchial Parathyroids.** (Path. der branch. Epithelkörperchen.) T. v. Verebely.
- 111 **Dwarf Growth in Related Families in High Alpine Valley.** (Mehrfacher Zwergwuchs.) Schmölck.
- 112 \***Icterus, Ascites and Enlargement of Spleen in Cases of Cirrhosis of Liver.** (Milztumor, Icterus und Ascites bei Lebercirrhose.) F. Klopstock.
- 113 **Histologic Characteristic Enlargement of the Spleen, Generally Familial.** (Eine Systemerkrankung des lymphatisch-hämopoetischen Apparates Typus Gaucher.) F. Schlagenhauser.
- 114 \***Laws Regulating the Natural Resistive Forces at Various Ages.** (Altersgesetz der nat. Widerstandskraft.) L. Ascher.
- 115 \***Source of Pulmonary Anthracosis of the Lungs.** (Ursprung der Lungenanthrakose.) H. Beltzke.

102. **Kidney Cysts.**—Braunwarth states that the normal kidneys of fetuses, newborn infants and nurslings contain actual cysts in about 50 per cent. He ascribes them to arrested development, and states that they are liable to increase in size with advancing years, especially in case of inflammation in their vicinity.

105. **Etiology of Malignant Tumors.**—The article is subdivided as: "Relations of the Malignant Tumor to Its Bearer," "The Cell Is the Elementary Organism," "Form and Function of the Cell Determine the Conditions Under Which It Lives," "Fertilization and Segmentation of the Cell," and "Why the Previous Conceptions in Regard to Malignant Tumors to Date Have Not Been Satisfactory." The aim of Kronthal's argument is to the effect that the cells of the malignant tumors are not old cells of the individual, whose character has been transformed, but they are the young descendants of some freshly fertilized cells of the individual bearing the tumor or of another individual of the same species. The tumor cell is the descendant of a union between epithelial elements or migrating cells. Freshly fertilized cells show the greatest energy of growth. The cells of sarcoma and carcinoma, like the migrating leucocytes, have the faculty of ameboid movements. This enables them, like the migrating leucocytes, to emerge free on the mucosa and thence find their way to another individual. That they often do break loose is shown by the metastases. Wherever the migrating cell or the foreign tumor cell gets a hold and remains, wherever the fertilization of a fixed epithelial cell occurs, there the cancer develops.

110. **Pathology of Parathyroids.**—Verebely reviews the cases of anomalies in development of the parathyroids that have been published and three cases of cysts from his own experience, with others of primary affections of the parathyroids and secondary disturbances.

112. **Icterus, Ascites and Enlargement of Spleen with Cirrhosis of the Liver.**—Klopstock found ascites in 172 out of 250 cadavers with cirrhosis of the liver. He believes that these findings indicate that the same toxic cause inducing the cirrhosis is also responsible for the ascites. The frequency of coincident intestinal tuberculosis was also striking. The absence of ascites in two instances shows that the effusion is not re-



sponsible for the predisposition to the tuberculous affection. Other facts which he cites sustain his assumption that cirrhosis of the liver may result directly from tuberculous infection. In short, he insists that although the prevalence of cirrhosis of the liver in hard drinkers and the predisposing influence of alcohol are not to be denied, yet the decisive rôle in the production of the affection does not belong to them, but to bacteria and their toxins. He noted cholelithiasis in 8.6 per cent. of 209 men, and in 17 per cent. of the 41 women in his material. He ascribes the benefit of extirpation of the enlarged spleen in certain cases to the fact that the spleen is not only the dumping ground for all the foreign bodies circulating in the blood, but is also able to bind and hold toxic substances. The operation removes the organ which, by its faculty of attracting toxic substances, becomes the source of a condition of chronic intoxication. Icterus was observed in 66 of the 250 eadavers.

114. **The Age Laws of the Natural Resisting Forces.**—Ascher presents a number of curves drawn from vital statistics and other sources, all of which demonstrate, he thinks, that the natural resisting forces are at their highest point during the age from 5 to 15, and decline each way in a regular progression. Knowledge of this law will prevent misconception in many lines in biology, pathology and hygiene. It should be borne in mind, he says, in compiling vital statistics. One of the practical results of this law is that the outlook for sanatorium treatment of tuberculosis is most promising between 16 and 20.

115. **Origin of Anthracosis of the Lungs.**—Beitzke found that insoluble particles passed through the intact intestinal wall of animals and were distributed in the lymph to various organs, but the lungs were least affected. Scarcely any of the particles found their way into the lungs, while other organs, especially the liver and spleen, were gorged with them. The particles which he did find in the lungs he attributes to preceding inhalation.

**Norsk Magazin f. Lægevidenskaben, Christiania.**

*Last indexed, page 272.*

- 116 (LXVII, No. 11, Pp. 1249-1376.) \*Epidemics and the Weather. (Genus epidemicus.) A. Magelssen.  
117 Diplococcus Found in Noma. (Bakt. undersøgelser over et tilfælde af noma.) E. Hellesen.  
118 \*Experimental Polyuria and the Hanssen "Variability Test" in Examining Kidney Functioning. (Variabilitetsprøven og exp. polyuri.) J. Nicolaysen.

116. **Epidemics and the External Forces of Nature.**—Magelssen believes that the curves for the biologic phenomena as well as for the medico-pathologic are nothing but a somewhat modified reflection of the variations of the weather. He thinks that this can be mathematically established, and that the special meteorologic causes for each sickness might thus be rendered evident. He regards the vital phenomena as a consequence, a reflection of the external forces that surround the organism, acting on it, transforming it and given back. The weaker the organism the less resistance it opposes to the transforming action of external influences. The cause of the so-called "constitutio epidemica" or "genus epidemicus" should be sought in connection with the external forces of Nature, the beneficent as well as the injurious and the destructive, which manifest themselves to us in the various elements of the weather.

118. **Tests of Kidney Functioning.**—The "variability test" is a combination of extreme dilution of the urine on one day with fluid diet, followed two days later with a dry diet, thus inducing extreme concentration of the urine. The test requires six days, and the patient must stay in bed, but the findings are extremely instructive as the kidney functioning in these two directions of dilution and concentration is compared, the specific gravity of the urine reaching its lowest and highest figures in turn. Nicolaysen examines the urine every two hours and gives the curves of 28 cases of various kidney affections in which these tests were applied, with the findings in 18 healthy persons. He also gives the curves of three cases in which he applied the experimental polyuria test after catheterization of the ureter, having the patient drink three glasses of water or water gruel; he examined the urine every half-hour before and after.

**Archivio per le Scienze Mediche, Turin.**

*Last indexed, page 183.*

- 119 (XXX, No. 3, Pp. 217-340.) Mononuclear Leucocytes. (Sui globuli bianchi mononucleati.) A. Ferrata.  
120 Postmortem Forms of Myelin. (Forme mielliche postmortali.) E. Bizzozero.  
121 Branchiogenic Relics and Tumors Originating in Them. (Residui branchiogeni e neoformazione cui danno origine.) G. Mioni.  
122 \*Experimental Study of Removal of Thyroids and Parathyroids. (Ablazione delle tiroide e delle paratiroidi.) M. Segale.  
123 Supernumerary Muscles in Back of Hand. (Moscoli soprannumerari del dorso della mano.) C. Bruni.  
124 \*Localization of Typhoid Bacilli in Biliary Apparatus. (Localizzazione dei bacilli del tifo nell'apparato biliare.) P. Sisto.

122. **Ablation of Thyroid and Parathyroids.**—Segale tabulates the results of much experimental research in this line. They demonstrate that tetany, although of frequent development after thyroidectomy, is not a fundamental symptom. It is similar to death from dilatation of the heart in a case of tuberculosis; the heart disturbances are not the essential feature of tuberculosis. After parathyroidectomy such profound disturbance of the metabolism occurs that all efforts on the part of the organism to repair it are absolutely ineffectual. The old notion of cachexia strumipriva is based on solid foundations, he states, and means more than ever before, only the disturbances are not due to the extirpation of the thyroid, but rather to the parathyroidectomy unwittingly done at the same time. The symptomatology is the same whether the parathyroids alone or the parathyroids plus the thyroid are extirpated. True cachexia strumipriva kills in from 15 to 16 days, incidentally by tetany perhaps, but in reality by the intense disturbance of the metabolism resulting from lack of the parathyroid function.

124. **Localization of Typhoid Bacilli in Biliary Apparatus.**—Sisto describes two cases in which a suppurative process developed in the gall bladder in the course of typhoid fever. In the first case ulceration progressed to necrosis and perforation of the walls of the gall bladder. The resulting peritonitis remained limited and encapsulated, but the patient succumbed later to diffuse peritonitis from perforation of an intestinal ulceration. In the second case the typhoid fever was of a mild type, but very protracted. In the seventh week a suppurative cholecystitis developed, but without ulceration or necrosis. The process spread to the liver, where numerous abscesses followed. The symptoms in this case were merely a continuous dull pain in the right upper abdomen, increased by pressure, with rigidity of the abdominal wall. This pain was probably the sign of a slow development of the cholecystitis and involvement of the liver. The patient succumbed the ninth week of the typhoid fever after presenting symptoms of bronchopneumonia.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**THE PRACTITIONER'S MEDICAL DICTIONARY.** An Illustrated Dictionary of Medicine and Allied Subjects, including all the Words and Phrases Generally Used in Medicine. By George M. Gould, A.M., M.D., Editor of *American Medicine*. Containing among other new features the terms of the Basle anatomic nomenclature and the standards of pharmaceutical preparations as given by the eighth, decennial revision of the U. S. P. Illustrated. Flexible leather. Pp. 1043. Price, \$5.00 net. Philadelphia: P. Blakiston's Son & Co.

**AMERICAN POCKET MEDICAL DICTIONARY.** Edited by W. A. N. Dorland, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania. Containing the pronunciation and definition of all the principal terms used in medicine and kindred sciences, with over 60 tables. Fifth edition. Flexible leather. Pp. 578. Price, \$1.00 net. Philadelphia: W. B. Saunders Company, 1906.

**CHEMICAL PATHOLOGY.** A Discussion of General Pathology from the Standpoint of the General Processes Involved. By H. Gideon Wells, Ph.D., M.D., Assistant Professor of Pathology in the University of Chicago. Cloth. Pp. 549. Price, \$3.25 net. Philadelphia: W. B. Saunders Company, 1907.

**ANATOMY FOR NURSES.** By E. R. Bundy, M.D., Member of the Medical Staff of the Woman's Hospital, Philadelphia. With a glossary and 191 illustrations, 34 of which are colored. Cloth. Pp. 252. Price, \$1.75 net. Philadelphia: P. Blakiston's Son & Co., 1906.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII.

CHICAGO, ILLINOIS, FEBRUARY 23, 1907.

No. 8.

## Address

### THE FACTORS OF SAFETY IN ANIMAL STRUCTURE AND ANIMAL ECONOMY.\*

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The living animal body is like a machine in action. Like a machine, its structures are subject to a variety of stresses and, like a machine, the work is accomplished by an expenditure of energy derived from a supply of fuel. I intend to discuss in this lecture whether, as in the human made machines, the structures and functions of the animal mechanism are provided with factors of safety. The term "factor of safety" is employed in engineering to designate the margin of safety required in the building of engines, bridges, houses, etc. For instance, in designing a boiler, if the tensile strength of the steel of which the plates and stay-bolts are made is 60,000 pounds per square inch, the actual stress which is allowed for the work of the boiler should not be more than 10,000 pounds per square inch for the plate and not more than 6,000 pounds per square inch for the stay-bolts; that means the stress to which the plates or the bolts may be exposed in the boiler should only be one-sixth or one-tenth of the actual strength of the steel. The factors of safety are said to be here six for the plate and ten for the bolts. In some instances the required factors of safety may be as low as three, in other cases again they may be as high as twenty and even forty. The character of the stress to which the structures might be subjected is an important point in deciding on the size of the margins of safety. Structures, for instance, which are to be employed for alternating loads require high factors of safety; the highest margin of safety is required when the structures are subjected to rhythmic shocks. In constructing a bridge or a machine, it is then calculated that the structures should be capable of withstanding not only the stresses of reasonably expected maximum loads, but also the stresses of six or ten times the size of such loads. The factor of safety has its foundation in our ignorance of what might happen and in the reasonable desire to meet unexpected contingencies. Some writers are, therefore, inclined to designate the factors of safety as factors of ignorance.

It is obvious that the factors of safety are applicable not only to the structures, but also to the supply and expenditure of energy of the machine. The supply of fuel is calculated to have the engine in readiness not only for expected maximum work, but also to be capable of meeting unexpected contingencies. On the other hand, when there is no exceptional need for it, no engine is allowed to perform maximum work; this economy here is again a factor of safety.

Are the structures and the functions of the living animal body provided with such factors of safety? As far as I know, that question has never yet been clearly raised, and certainly was never made the subject of a direct investigation. There is, however, no lack of casual remarks bearing on that problem and these are manifestly unfavorable to an assumption of the existence or requirement of factors of safety in animal organisms. On the contrary, there are many to whom it is apparently self-evident that Nature is economical and wastes neither material nor energy. Theories and practical suggestions are based on such a view as a premise which seems to their authors to require no special proof. Verworn, for instance, asserts that the assumption of special inhibitory nerves for skeletal muscles can be rejected, *a priori*, because the presence of such nerves would be a waste of matter and energy and in contradiction with the prevailing principle of economy in the animal body. Another instance is the extreme position held by some recent writers with respect to the supply of energy to the animal machine. Factors of safety, maximum or optimum supply of fuel, do not come in for a consideration in the discussion of these writers.

#### A MINIMUM DIET THE IDEAL STANDARD OF DIET.

The argument is directed against the use of a dietary standard which represents the average mean supply of energy, the minimum supply of food being considered as the ideal standard of diet. As is known to all, Professor Chittenden and his co-laborers have carried out nutrition experiments of long duration on a number of men. The essential feature of these experiments was the use of a low proteid diet; in some instances the diet was also combined with a considerable reduction in the caloric values of the food. All the subjects of the experiments retained their usual health. Professor Chittenden admits that the diet used in these experiments, especially with regard to the proteid intake, represents the minimum requirement of the human body; he nevertheless earnestly advocates its acceptance as a general standard of diet, assuming *a priori* that the minimum food with which a number of men can manage to live for some time without harm, is the desirable standard of supply of energy for all animal machines. Whereas, in the economy of the human-made mechanisms, and, in fact, in the economies of all human organizations, decrease in supplies and increase in expenditure leads invariably to disaster, it would seem that in the physiologic economy of the living mechanism such a procedure may even lead to a greater efficiency of the mechanism. Professor Irving Fisher tells us recently that nine Yale students, under the influence of prolonged mastication of a diet greatly reduced in proteid and in caloric values, gained very much in endurance in performing certain physical tests.

Is there, indeed, a difference between the economies

\* Harvey Society Lecture, delivered at the New York Academy of Medicine, Dec. 15, 1906.



of human-made organizations and those of the living organism? I have stated above that the factors of safety in mechanical constructions are, after all, only factors of ignorance. Possibly wise Nature constructs her organisms on such an efficient principle which permits the accomplishment of the greatest amount of work on a minimum supply of material and energy. It would be a fascinating distinction between a dead mechanism and a living organism, if true.

#### SAFETY AND ECONOMY IN THE ORGANISM.

The subject of this lecture will be an investigation of this question, an investigation whether the structures and functions of the animal organism are constructed with a special consideration for the greatest economy or for the greatest safety. Or, to leave the purposefulness of the organization out of discussion, I may, perhaps, put it more correctly by saying that it will be essentially an investigation into the ratios of the supply of material in many organs of the body to the amount of work they are expected to perform. I believe that the investigation may lead to some instructive general conclusions of a theoretical and practical character. As already stated, the problem seems to me to be new and, as far as I know, no original investigations were carried out with the special purpose of solving it. There are, however, a great many well-established facts brought out in theoretical and practical work undertaken for other purposes, which are, nevertheless, capable of throwing a good deal of light on our problem. Such facts have the advantage of being unbiased witnesses, since no preconceived theory was at the bottom of their discovery. My task will consist in reviewing these facts as far as they are available, or more correctly, as far as they are known to me, and bringing them impartially in proper relation to our problem.

#### FACTORS OF SAFETY IN THE PLAIN TISSUES.

I shall commence with the plain tissues of the body. In the multitude of studies on these tissues there are not many investigations which could be utilized for our purpose. However, a series of careful investigations, recently published by Triepel, have an intimate bearing on our problem. Triepel investigated the elasticity and resistance of several tissues, like muscle, tendon, elastic tissue, bone, cartilage, etc. For us the following statements are of special interest. For muscle, tendon and elastic tissue, Triepel found that the maximum stretching which may occur in the animal body is not far below that degree which can cause tearing of these tissues. The resistance of bones and cartilages to a crushing stress is, however, far above any stress which might occur in normal life. With regard to muscle, tendon and elastic tissue it appears therefore that the structures in themselves have practically no factors of safety above the maximum stress to which they might be subjected. Any unexpected tension above the maximum occurring in ordinary life might lead to a rupture of these tissues. Triepel, however, calls attention to the fact that the degree of stretching of these tissues is greatly limited by their connections with the structures surrounding them, especially by the skeletal parts. These limitations will, for the most part, prevent these tissues from reaching their breaking point. We may then say that muscle, tendon and elastic tissues have no factors of safety in the structures themselves; but they are provided nevertheless with some such factors by their connections with other tissues. The bones and cartilages, on the other

hand, which are but little influenced by other tissues, are provided with a very large margin of safety over the stresses to which they might normally be exposed. Triepel here makes a remark which has a direct bearing on the problem with which we are dealing. He says that the large surplus of material in bone and cartilage tissue shows that Nature does not follow the law of obtaining a result by the smallest possible means.

It is worth noticing that the large margin provided here can not have the object of offering protection against unexpected contingencies coming from within the body, as these, according to Triepel, will never reach even the yield point of these tissues. The protection is here provided against contingencies coming from without, against injuries of external origin. It is a protection not against an internal, a physiologic calamity, but against an external, so to say, pathologic contingency.

#### SAFETY FACTORS IN THE MORE COMPLEX TISSUES.

A sufficient number of readily available data for the study of our problem we find in researches on complex tissues or organs. We shall begin with the bilateral mechanisms. Here are, in the first place, the kidneys. Every medical man now knows that one kidney can be removed with entire impunity if the other kidney is normal. The amount and the composition of the urinary secretion remains practically unaltered, and this even soon after the removal of the kidney. That can only mean that normally the kidney has an abundance of tissue which can do, at a moment's notice, at least twice the normal amount of work. From the experimental work of Tuffier, Bradford and others we know that at least two-thirds of both kidneys may be removed without serious detriment to the animal's life or to the secretory function of the kidneys. At the same time, we must remember that the normal secretion represents by no means the minimum amount of work of the kidney. We know that the average quantity of the urine, as well as the normal quantities of its various constituents, may be greatly reduced without any visible detriment. In fact, there may be anuria for many days without any serious symptoms, and perhaps also without serious consequences, if the anuria be not due to a disease of the kidney, but to such causes as hysteria, calculus, reflex or compression. The margin of safety in the tissue of this eliminating organ amounts, at least, to twice its normal need.

This would seem to be an unreasonable luxury, a waste. But what a blessing. For a score of years, or more, in many of us the kidney is gradually losing some of its valuable material from one cause or another without any symptom, without a reminder sufficient to spoil our pleasure of life or to hamper our activities. Not until that luxurious surplus is approaching its exhaustion do we get a warning. But then our work is mostly done and our time limit nearly reached.

Next we shall consider the lungs, an organ of supply and elimination of first order. We all know that life may continue though a great part of the lungs be destroyed, if only the disease which caused the destruction came to a standstill. We know that in some cases of pneumonia one lung can be entirely consolidated without seriously impairing the process of ventilation. Furthermore, a patient whose thorax was freely opened to evacuate a one-sided pleural abscess has, after the opening, less dyspnea than before. In empyema, as in pneumonia, it is essentially the infection and intoxication with their reactions which cause the apparent disturbance in the



respiratory mechanism, and not so much the mechanical interference with the ventilation of the corresponding lung. Since the classic experiments of Regnault and Reiset, many investigators have stated that compression of one lung, or a unilateral pneumothorax, exerts very little influence on the respiratory exchange of gases. Hellin reported, recently, a series of experiments on rabbits in which the right lung was completely removed. The right lung of the rabbit has four lobes and is much larger in volume than the left; that means that more than one-half of the lung tissue was removed. Most of the animals survived the operation and some lived a year and longer. Except for a temporary moderate dyspnea, lasting only an hour or two, the animals were in a normal condition, and the respiratory quotient continued to be, after the removal of the lung, exactly as it was just before the operation. We see, then, that the normal process of respiration can be carried out with at least one-half of the lung tissue and probably with a good deal less. We have here, with regard to the quantity of tissue, a factor of safety equal at least to two, which does not appear to be an excessive margin considering the importance of the function which that tissue has to carry out.

Of the bilateral organs of reproduction, we know from numerous surgical operations that the removal of one ovary or of one testicle does not interfere in the slightest degree with the corresponding functions of the individual. For the female organs it has been frequently established that even a small part of one ovary is sufficient to carry on the function of menstruation and conception. In fact, there are a number of reliable cases on record in which pregnancy occurred after the removal of both ovaries, which cases were explained by the assumption that some particle of normal ovarian substance was caught in the ligature and retained in the body, and this fragment was then sufficient to carry out the function of ovulation and conception.

For the testicles we may safely assume also that a small fragment of one testicle left in the body would be capable of carrying on the function of reproduction. But I did not come across experimental or surgical data which directly bear out this assumption. There are definite data with regard to the secondary sexual characteristics in fowls. If in the process of castration some fragment of one testicle is left, the cock, according to Foges and others, does not lose the comb and other secondary sexual characteristics. However, these secondary characteristics are probably connected with the internal secretion of these organs, and their persistence might not be a sufficient proof for the persistence of the function of reproduction. At any rate, it is sufficiently evident, especially as will be seen later, that the tissues of the organs of reproduction are greatly in excess of the maximum need of the chief function of these organs.

Among the bilateral organs there are two whose functions are carried on exclusively by internal secretion. I mean the thyroid and the adrenal glands. We do not notice their activity while they are present, but we recognize their importance by the serious effects which follow their removal. The complete removal of both thyroid glands is followed either by acute symptoms of a tetanic type or by chronic states which are known under the names of myxedema and cretinism. It is, however, a well-established fact that the removal of four-fifths or even five-sixths of both thyroids is not followed by perceptible consequences, which means that one-fifth or one-sixth of

the entire gland is amply sufficient to provide the body with the indispensable substance contained in the secretion of the gland. It was just on that account that, at first, the experimental results showing the importance of this gland were disputed by some observers; small accessory glands were hidden in some cases which made the apparently complete removal of both thyroids, ineffective. The thyroid gland possesses accordingly four or five times more tissue than is necessary for the complete maintenance of health and life of the animal.

In recent years some of the symptoms following the removal of the thyroid gland, especially the acute manifestations, are ascribed to the simultaneous removal of the epithelial bodies known as parathyroids. They are four in number. I do not know of a statement dealing directly with the question how much of the parathyroids has to be removed in order to bring out the pathologic effects. However, in the dog the parathyroids are imbedded in the thyroids, two in each lobe, and some of the acute symptoms following the removal of the thyroids in dogs are ascribed as stated above, to the simultaneous removal of the parathyroids. By the removal of four-fifths of the thyroids, surely two and probably three of the parathyroids are also removed. But since the removal of four-fifths of the dog's thyroids is not attended with any evil consequences, we may also conclude that a good deal of the substance of the parathyroids can be dispensed with without any ill effects.

For the suprarenal glands it is now well established that their removal is absolutely fatal to the animal. Death follows within eight to thirty-six hours after the extirpation of the glands, under conditions of low blood pressure, extreme muscular weakness and exhaustion. But the removal has to be complete; if one-tenth of the glands or even less is left in the body, the animal shows no pathologic symptoms. Here, again, as in the thyroid, this fact caused the divergence of opinion which sprang up soon after Brown-Séquard made the discovery of the importance of this ductless organ. In many of the experiments bits of the tissue of that organ were left behind; besides, many an animal hides somewhere accessory organs of the same type. For the adrenals, then, it is evident that the body possesses indispensable tissue at least ten times as much as is necessary for the maintenance of normal life.

The brain is built on a bilateral plan. In former years, when following the lead of Flourens and as a reaction to the teachings of Goll, the brain was considered as a uniform organ, attending only to one function, some facts seemed to demonstrate indeed that there is a great excess of tissue in that organ, since the older experiments of Flourens and newer experiments of Goltz indicated that large parts of the brain could be removed without serious injury to life. To-day we know that the brain presents a collection of many organs, of many centers, the injury of each of which is followed by sensory or motor disturbances in definite areas of the body. As a whole, the bilaterality of the hemispheres does not mean the same as bilaterality in other organs, namely, a duplication of tissue for one and the same function. One hemisphere attends to the needs of one side; for instance, the motor areas of the right arm or right leg are located in the cortex of the left hemisphere, and those of the left arm and left leg are located in the right hemisphere. The same is true of the subcortical centers and apparently also of the medulla oblongata.



To this rule there is, however, an exception, for the motor organs having in charge such muscles or group of muscles which normally contract on both sides simultaneously. The motor area of one side can take charge of the muscles of both sides. Such is the case with the motor areas of the respiratory muscles, the muscles of the larynx, of deglutition, etc. An injury to the motor areas of these muscles in one hemisphere only does not cause paralysis of these muscles. An instance well known to practitioners is the one-sided injury to the motor area of the orbicularis palpebrarum. The muscle, as a rule, is not paralyzed by such an injury, at least not when the muscles on both sides contract simultaneously. As is well known, the absence or presence of paralysis of this muscle in cases of facial paralysis serves as a means to diagnose whether the paralysis is of central or peripheral origin.

An example of an uneconomical principle, to use the expression of Verworn, we find in the bilateral innervation of certain viscera by the pneumogastric nerves. For instance, the normal rhythm of respiration is completely changed when both vagi are cut, whereas when only one vagus is cut, the respiration remains normal. Apparently, one vagus nerve is amply sufficient to carry on the regulation of respiration. A similar condition obtains with regard to the heart beats. For certain animals, the dog, for instance, the vagi carry on an inhibitory tonus. When both vagi are cut, the heart beats are considerably increased in frequency; when only one vagus is cut, the rate does not change. Here, again, a single vagus nerve is sufficient to carry on that inhibitory tonus. Still more striking is the following fact: After cutting both vagi, the animal dies within a day or two from aspiration pneumonia, whereas when only one vagus is cut, the animal not only survives the operation, but is for all purposes apparently perfectly normal. One vagus nerve, then, is amply sufficient to carry on all these functions; but the body is provided with two nerves. According to Verworn, this should be an example of a violation of the principle of economy in the animal body and its existence should be denied *a priori*.

#### EXCESS OF TISSUE IN THE UNSYMMETRICAL ORGAN.

Further examples of the ample provision of the structures of the body with factors of safety we meet also in the organs of the body which are not built on the bilateral plan, the unsymmetrical organs. We shall mention here first the pancreas with respect to its internal secretion. It is now common knowledge that the complete removal of the pancreas leads to glycemia and glycosuria. But here we note the fact that if a small part of the gland, say not more than one-tenth, is left in the body, no ill effects follow such an extirpation. One-tenth of that gland is capable of completely protecting the animal against glycosuria; but the body is nevertheless provided with ten times as much.

Another striking example is the liver. This organ has many important functions. It converts the sugar into glycogen; it converts the poisonous ammonia compounds into the comparatively harmless urea. It forms bile which carries out poisons from the body, removes waste products, assists in some way or another in the absorption of fats, aids in the digestion of proteids and what not more. But Ponfick found that the removal of one-half of that organ practically does not interfere with the life of the animal, and the successful removal of even three-fourths of the organ does not produce symptoms indicating that any of its functions are seriously inter-

fered with. That organ then is provided with an abundance of active tissue considerably in excess of its normal requirements.

Similar striking examples of factors of safety we meet with in the luxurious construction of the gastrointestinal canal. The entire stomach or the greatest part of it has been removed in animals and man without interfering with digestion and nutrition. Of the small intestines, large parts have been resected without serious consequences. In human beings the largest part removed measured, I believe, over 3 meters, and Erlanger and Hewlett have studied the metabolism of dogs seven or eight months after the removal of 70 or 80 per cent. of the movable part of the small intestines. Three-fourths, then, of the small intestines are almost a luxury to the body. We need not perhaps speak of the fact that surgeons have removed large parts of the colon without ill effects. From the present attitude of bacteriologists and physiologic chemists toward the activities of the large intestines, one is led to believe that the body might do best without any part of that organ. Be this as it may, it is quite sure that the digestive canal is provided with a good deal more structure than is required for the maintenance of its function.

Here we shall discuss briefly also the luxurious provision of the alimentary canal with digestive ferments. There are two proteolytic ferments, pepsin and trypsin, to which we may add also erepsin, a ferment found by O. Cohnheim in the mucous membrane of the small intestines, and which is said to be capable of splitting albumose into amino acids. There are two amylolytic ferments, the ptyalin of the salivary glands and the amylopsin of the pancreas. As to lipolytic ferments, the steapsin of the pancreas is not the only one of that kind which reaches the contents of the digestive canal. Thus several investigators have recently confirmed the statement of Volhard that the fundus of the stomach secretes a lipase which is capable of splitting emulsified fat. Lipase is contained also in the liver and in the bile.

Now, there are a number of experiments and clinical facts which go to show that digestion can continue in normal fashion, even if one-half or at least a good part of these ferments are eliminated from the digestive tract. Older and recent experiments have established the fact that the removal of the salivary glands has no effect on the digestion. We know, on the other hand, that after removal of the pancreas, or in cases of isolated destructive diseases of this organ, the digestion of carbohydrates is not disturbed. Normally, therefore, there is a superabundance of amylase in the digestive canal. As to the proteolytic ferments, we have already mentioned that the complete removal of the stomach does not disturb digestion. Furthermore, in cases of achylia gastrica, in which the stomach secretes neither hydrochloric acid nor pepsin, the proteid digestion is apparently normal. On the other hand, we know that the elimination of the pancreas does not affect palpably the proteid digestion. With regard to lipase, clinical pathology was teaching that in cases of disease of the pancreas the stool contained fat, which would seem to indicate that, in the absence of the pancreatic lipase, no other lipolytic ferment was present in sufficient quantity to split completely the ingested fat. However, in a very recent study of Umber and Brugseh it was shown that the fat-splitting function is carried on, even in the absence of the pancreas, in a normal way.

We are, then, surely justified in claiming that the vari-



ous digestive ferments exist in the alimentary canal in quantities far above the necessities for the digestion of a normal amount of food.

#### THE EXTRAVAGANCE OF NATURE.

All the numerous organs and complex tissues which we have just passed in review are built on a plan of great luxury. Some organs possess at least twice as much tissue as even a maximum of normal activity would require. In other organs, especially in those with an internal secretion, the margin of safety amounts sometimes to ten or fifteen times the amount of the actual need. An extreme degree of superabundance and actual wastefulness we meet with in the organs and functions having charge of the continuation of the species. Let us illustrate it by the following few data: The ovum exists for the purpose of reproduction. Assuming that the sexual function of a woman lasts forty years and assuming, further, that every ten months of these years would be taken up by a pregnancy, then only fifty ova would be required of the ovary. But assuming even that a regular menstruation is an essential and indispensable part of the sexual function, then five hundred ova would be the maximum that the function of reproduction could use. Nevertheless, we find that the ovary of the new-born female child possesses between 100,000 and 400,000 eggs, and at the time of puberty there are still about 30,000 ova ready to enter on their possible mission. That is, the ovary contains at puberty sixty times more ova than the body could possibly ever employ. But there is an incomparably greater waste in the provision of the male germ. According to Rohde, each ejaculation contains 226,000,000 of spermatozoa. Now, we know that of all these legions only one single spermatozoon is required and only one can be used. What a marvelous waste of living cells for the sake of assuring the perpetuation of the species. But there are some attenuating circumstances. With a velocity of only 0.06 of a millimeter per second, with the dangers of crossing the sea of fatal acid vaginal secretions and with a resistance to the onward progress offered by the cilia of uterine epithelium swaying in the opposite direction, not too many of the storming millions stay in the race and have a chance to reach the goal. At any rate, it is not by economy, but by immense waste of cell life that the chance for continuation of the species is assured.

In striking contrast to the extreme luxuriousness of provision of tissue in the organs previously described stands out the comparative scantiness of cell tissue in some organs—if we may call them so—of the central nervous tissue. The centers of the medulla oblongata, for instance, present such minute bodies that hardly a part of any center could be injured without endangering the entire function. Any injury to the respiratory center suspends immediately and permanently the function of respiration. The possible existence of some respiratory centers in the spinal cord does not alter the practical result. The same applies to the center of deglutition. The blood pressure, as we shall see later, is provided with quite a large number of safety factors. However, the immediate effect of an injury to the vasomotor center is a dangerous drop in blood pressure, the restitutions and compensations over which the mechanism commands are not forthcoming until after a long interval. We may point out, however, that the central nervous system is provided externally with factors of safety against two of its main enemies: it is protected by a bony encasement against any physical injury, and especially is the medulla

oblongata well hidden away, and it is protected by an abundance of blood vessels against dangers of anemia.

Following the old divisions of the organs of animal life into reproductive, vegetative and animal systems, we may say, perhaps, that the reproductive system is provided most and the animal system is provided least with factors of safety, while in the vegetative system, which in that regard occupies a middle position, those organs which seem to be less well differentiated, like the organs for internal secretion, seem to be provided with a larger surplus of tissue.

#### FACTORS OF SAFETY IN THE CIRCULATORY APPARATUS.

The complex apparatus of circulation is well provided with factors of safety. In the first place, the animal body possesses a good deal more blood than it requires for its work. It is known by experimental evidence and clinical observations that nearly one-half of the blood can be withdrawn without serious consequences to the life of the animal. As a further factor of safety in this regard we might register the ability of the blood to recover its loss very rapidly.

Furthermore, the capacity of the entire system of blood vessels in a completely relaxed state is again much greater than the volume of blood of the body. It is this difference between the volume of blood and the volume of the vessels which greatly facilitates the circulation of the blood and the proper nutrition of the various organs of the body. On the basis of this difference large quantities of blood can be thrown at once and with ease into the splanchnic region, into the skin or into the working muscles. After a local injury or infection in a very brief time for the sake of repair or defense hyperemia sets in, and vessels which were not noticeable before become fairly visible. An instance of a similar order is the widespread institution of collateral circulation. Around an anemic focus blood vessels which previously were hardly visible become full and large to meet the threatening danger of necrosis of the neighboring anemic tissues. All these devices which spring into activity only under special exigencies are manifestly factors of safety and are made possible by superabundance of blood vessels.

The difference between blood volume and capacity of vessels is an indispensable factor of the circulation, and its permanence is assured by many devices. Thus, for instance, any artificial increase of the volume of blood is immediately corrected through the chief eliminating organs, or through the secretory glands, or even by throwing some of the surplus serous fluid temporarily into the lymph spaces and serous cavities. Edema, ascites and hydrothorax are sometimes not parts of the affliction, but means of repair.

Furthermore, existence of the difference between vascular capacity and quantity of blood is made possible only by a wonderful mechanism which controls in every part of the body the mutual adaptation of blood and vessel—the so-called vasomotor apparatus. It causes the dilatation of the vessels in the part of the body which requires and is to receive more blood, at the same time causing a constriction of the vessels in a part which can spare some of its blood. This mechanism is so important that it is again guarded by an abundance of factors to assure its safety. There is a vasomotor center in the medulla oblongata; when this is destroyed a number of vasomotor centers in the dorsal medulla assume control; when they are eliminated the sympathetic ganglia take over the command, and when they too drop out the



vascular wall itself attends to the proper regulation and adaptation of the capacity of the vessels to the volume of blood.

Finally, the chief motor mechanism of the circulation, the heart, is a clear instance of an organ provided with a superabundance of volume and force. Normally it is in a state of tonus and receives only a moderate volume of blood which it throws into the aorta with no great hurry and with an expenditure of only a moderate amount of energy. But at any moment it is ready to receive many times the usual volume of blood, is ready to double or treble the rate of its beats and is capable of developing nearly any amount of energy which the situation might require of it. It is a wonderful, prompt, adaptive motor mechanism with a good reserve of force.

We have, then, in the circulatory system many instances of provisions with factors of safety to assure the nutrition of all parts of the body in all states and conditions. An abundance of blood, a superabundance of blood vessels, a vast provision of factors for the safety of the adaptation of the two to one another and a great reserve of motor force for transportation and distribution of the blood.

The multiple mechanisms existing for the care of the vasomotor apparatus lead us to the following considerations: The internal motor organs of the body, like the gastrointestinal canal, the heart, the uterus, etc., are provided with central motor innervations as well as with local motor mechanisms. In all cases it has been shown that the movements of the organs continue also after the severance of the connections with the central nervous system. Thus the heart continues beating after section of both vagus and accelerator nerves, the peristalsis of stomach and intestines continues after cutting the vagi and the splanchnics, and pregnancy and delivery take a normal course after complete destruction of the spinal cord.

On the basis of these facts it is now generally assumed that the extrinsic innervations of these organs have only a regulating function, while the real motor function is invested in peripheral devices, be they of neurogenic or of myogenic character. This conclusion is obviously based on the supposition that the function of an organ is carried on only by a single mechanism. Hence the fact that the motor work is carried on after eliminating the extrinsic nerves seems to be sufficient evidence that they can not form an integral part of the motor function.

These conclusions are fallacious. There are an abundance of instances in which one and the same function is cared for by more than one mechanism. But we need only refer to the vasomotor apparatus. It was known before, and it has been very recently conclusively demonstrated again by Magnus, that after eliminating the influences of the sympathetic and the central nervous system the blood pressure is well taken care of by the peripheral mechanism of the walls of the blood vessels. Nevertheless, nobody doubts that the vasomotor centers are integral parts of the vasomotor mechanism. Why this difference of views for the different organs of the body?

The subject is evidently an important one; but we shall not enter into a further discussion of it. The remarks were made to illustrate the importance of the conception that in the animal body one function is not infrequently cared for by more than one mechanism. It is capable of profoundly affecting the views on many vital biologic problems.

#### DUPLICATION OF MECHANISMS AND ORGANS.

We shall cite a few more instances in which two or more parallel mechanisms exist for the accomplishment of one function. I may be permitted to mention in the first place the function of deglutition. As was shown by us about twenty-five years ago, fluids and semifluids are squirted down from the mouth to the cardia by the force of the contraction of the mylohyoid muscles, but they can also be carried down by the peristalsis of the esophagus. Of the latter there are again, as I have recently shown, two kinds: a primary peristalsis which runs independently of the integrity of the esophagus and a secondary peristalsis which is closely connected with the integrity of the tube and which is more resistant to certain detrimental influences. It will probably be shown before long that the esophageal wall alone is also capable of contributing to the function of carrying the food down to the stomach.

The functions of the pancreatic secretion seem to be an instance in which mechanisms of a different type are sharing in its management. It has long been established that the pancreatic secretion stands under the influence of the central nervous system. Recently it was discovered by Bayliss and Starling that an intravenous injection of secretin causes a considerable increase of pancreatic secretion. Secretin is an extract made of the duodenal mucosa with an addition of hydrochloric acid. It is assumed that this substance is produced normally when the acid chyme comes in contact with the mucosa of the duodenum, and that by its absorption into the circulation it is one of the normal causes of pancreatic secretion. Now, the effect of the secretin seems to have nothing to do with the nervous system, since the injection is active even after all connections with the nervous system are destroyed. On the other hand, in cases of achylia gastrica, in which the stomach is devoid of all secretion, the pancreatic secretion is apparently normal, as the digestion of proteids remains undisturbed. But since in these cases there is no secretion of hydrochloric acid, secretin ought to be absent; here the pancreatic secretion is probably attended to properly by the other partner in the management of the function; that is, by the central nervous system.

A double management of partners of a different type exists probably also for the mammary secretion. There is sufficient evidence that the secretion of milk is under the influence of the nervous system. Nevertheless, the secretion continues after all nerves going to the mammary gland are cut. The milk secretion in the latter case is probably kept up by a stimulation through an internal secretion provided by the reproductive organs. Internal secretion is probably a co-existing factor in many functions of the body.

Furthermore, there are instances in which one function is cared for by two separate organs. The function of digestion of proteids in the alimentary canal is carried on by two separate organs with a different chemical activity: the pancreas and the stomach. The trypsin of the pancreas digests proteids in an alkaline medium, while the pepsin of the stomach is active only in an acid medium.

An arrangement of a similar character we meet with in the organization of the function of the defense of the body carried on by the white cells against foreign invaders. This cellular army of defense is made up of two types: the microphages, the polynuclear leucocytes whose abode is in the bone marrow, and the macrophages, the



large mononuclear cells which have their barracks in the lymph nodes and lymphoid tissue. According to Opie, one of the effectual weapons of these warriors is their intracellular proteolytic ferments. But the ferment of the microphage is active in an alkaline medium, while that of the macrophage requires for its activity an acid medium.

As factors of safety we may consider also the assistance which one organ lends to another or the vicariation of one organ for another. For instance, the assistance which the sweat glands render to the kidney in the process of elimination of a surplus of water, or the vicariation of the mucous membrane of the intestinal canal in the process of elimination of urea. Such mutual assistance of the organs is a widespread institution in the animal body and assures the safety of many vital functions.

#### MODE OF DISTRIBUTION OF THE ACTIVITY AMONG THE TISSUES.

Returning to the organs which are provided with a large surplus of active tissue, the question confronts us: Which is the mode of distribution of the normal activity of an organ among its luxurious tissues? Since the activity of such organs, as we have seen, is far below the capacity of their tissues, the distribution could occur only in two ways. Either some part of the tissues work to their full capacity, while the other parts remain idle, being only in readiness for emergencies—like the unemployed vice-president of some organization—or all elements of the organ take equal part in the work, each tissue-element employing only a fraction of its capacity for work. The last alternative is probably the more frequent mode of distribution. There are, for instance, probably no totally inactive glomeruli and tubules in the kidneys, no inactive liver cells, no thyroid epithelial cells entirely without colloidal substance, but the epithelium of the glomeruli and tubules work only one-half of their capacity, the islands of Langerhans work less than one-tenth, the vesicles of the thyroid about one-sixth of their capacity, etc. For the muscles of the heart it is generally assumed that all the fibers take part in every contraction, but that they work normally only a fraction of their capacity. On the other hand, there are organs in which surely parts of the tissue do not take active share in the work, unless called on under special circumstances. In the ovaries, for instance, surely only one ovum becomes fertilized, while all the others are only on the waiting list. An instructive instance is the mode of distribution of work among the respiratory muscles. In normal inspirations, for instance, we find only the diaphragm alone at work. When somewhat deeper breathing is required, the inspirations are supported by the levatores costarum and the scaleni. Furthermore, in labored respirations also the sternohyoid and the posterior superior serrati become engaged in the work, and when the difficulties become still greater still other groups of muscles enter into the struggle. In other words, the different groups of muscles which are designated to do the work of inspiration are not engaged in it in the manner of partners of equal standing, but enter on their duties as a series of vice-presidents, or, rather, as a series of reserve forces. On the other hand, in the diaphragm probably all the muscle fibers are engaged in the work of each inspiration at all times, employing only a fraction of their capacity in normal or shallow inspiration and working to their utmost capacity in dyspnea or asphyxia. We see, therefore, in one and the same function both modes of distribution of work well represented, one mus-

cle steadily at work with all fibers, like a heart, adapting the degrees of their energies to the various requirements of their work, and a number of groups of other muscles, acting as graded reserve forces, idle but ready for emergencies—instructive examples of luxurious factors of safety.

In the foregoing we have brought forward a sufficient number of instances in which various parts of the living organism are provided with a superabundance of material and energy to warrant the comparison of the organism with a machine with regard to the provision with factors of safety.

#### FACTORS OF SAFETY FOR THE FACTORS OF SAFETY.

One of the fundamental differences between living organisms and human-made machines is that the former carries in it the germ for self-propagation, while machines have to be made by human hands. As a further difference between the two constructions we may perhaps consider the phenomenon of the self-repair. Possibly the phenomenon of self-repair in the organism is closely allied with the phenomenon of self-propagation. The same source which provides the organism with a mechanism for a reproduction of the entire body provides its parts with a mechanism for regeneration of these parts. Reproduction and regeneration might have a common cause. At any rate, self-repair distinguishes the organism from the machine. If parts of a machine yield to stress and the factors of safety become exhausted, the machine would surely break down, unless it is repaired by human hands, just as it is made by human hands. As far as I know, no machine has yet been invented which is provided with devices for a continual self-repair. In the living organism self-repair is a widespread function of living tissues and organs. It is a dormant force, a reserve force, which springs into immediate activity as soon as any injury is inflicted. It is a factor of safety peculiar to the living organism. It manifests itself in the forms of regeneration and hypertrophy of tissues and organs, and also in the functional forms of inflammatory reaction, of substitution, vicariation and adaptation. And here it is interesting to observe that self-repair does not set in only when the margin of safety is exhausted, when there is an actual need for repair, but already when only the integrity of the factors of safety is encroached on. Self-repair is a factor of safety also for the protection of the factors of safety. When, for instance, one kidney is removed, the hypertrophy of the secreting elements begins a few hours later, although the urinary secretion was hardly impaired. It is an attempt to reprovide with luxurious tissue. The liver cells regenerate, the thyroid, the adrenals and other organs hypertrophy and regenerate even when the preceding injury was not extensive enough to affect the function of these organs. It is, as stated before, an attempt to restore the factors of safety. A heart working above normal becomes hypertrophied even if it has not yet met with any obstacles; it is a provision in time against possible shortcomings; it is a repair of the factors of safety. This is a very interesting field, but it would lead us too far to enter on a detailed discussion of the various aspects of the subject.

#### TWO EXCEPTIONS.

We would only call attention to two exceptions. One is the very scanty repair which takes place in the organs of reproduction. But the affluence is here so immense that the organs may safely forego the benefits of self-



repair. The other exception concerns the nerve ganglia; nerve cells, as a whole, do not regenerate. We have learned above that the ganglionic masses of the central nervous system are scantily provided with factors of safety. Here we learn that they are also deprived of the great aid afforded by regeneration. There is some functional self-repair in the central nervous system. Other centers assume the work of the lost ones; adjacent tissues become educated to the work; dormant centers of the opposite hemispheres awake gradually to their new missions. But all these substitutes are insufficient satisfactorily to replace the lost function, not to speak of a provision for factors of safety.

Here we must recall that the lack of regeneration applies only to the nerve cells. The nerve fibers, on the other hand, especially those of the peripheral nerves, show rather a very active regeneration.

The foregoing review shows, I believe, conclusively, that the tissues and organs of the living animal organism are abundantly provided with factors of safety. The active tissues of most of the organs exceed greatly what is needed for the normal function of these organs. In some organs the surplus amounts to five, ten or even fifteen times the quantity representing the actual requirement. In the organs of reproduction the superabundance and waste of tissue for the sake of assuring the success of the function is marvelous. Furthermore, the potential energies with which some organs, like the heart, diaphragm, etc., are endowed are very abundant and exceed by far the needs for the activities of normal life. The mechanisms of many functions are doubled and trebled to insure the prompt working of the function. In many cases the function of one organ is assured by the ready assistance offered by other organs. The continuance of the factors of safety is again protected by the mechanisms of self-repair peculiar to the living organism. We may, then, safely state that the structural provisions of the living organism are not built on the principle of economy. On the contrary, the superabundance of tissues and mechanisms indicates clearly that safety is the goal of the animal organism. We may safely state that the living animal organism is provided in its structures with factors of safety at least as abundantly as any human-made machine.

#### ECONOMY OF EXPENDITURE AS A FACTOR OF SAFETY.

The safety of a mechanism is increased, as we have stated before, also by an economic handling of the expenditure of its energy. The expenditure of energy by the living animal organism consists chiefly in the work which it performs, that is, the contraction of the muscles. Of the involuntary work of the body it is only the action of the heart and the respiratory muscles of which we possess a knowledge of some available facts. The heart, although capable of doing a great amount of work, is normally kept down to perform only the most indispensable duty. The inhibitory tonus exercised by the vagi prevents the heart from beating too rapidly and too strongly when it is not required, and the vascular reflexes carried from the heart or aorta to the vasomotor centers regulate the vascular circulation so as not to offer too much resistance on the one hand and not to fill up the heart with too much blood on the other hand.

The respiration is normally carried out only by one muscle, the diaphragm, and this works only with a fraction of its capacity, the distension of the lungs producing an inhibitory stimulus preventing the muscle from overaction.

The contractions of the skeletal muscles being regulated chiefly by the will offer insufficient opportunities for a study of the normal regulation of expenditure of energy emanating from this source. There are, however, two facts which are instructive and deserve to be mentioned. One is the provision of the muscle with the sense of fatigue setting in with overexertion; it might serve as a guard against overwork, against exhaustion of the muscles. The second fact is the provision of the muscular innervation with inhibitory impulses for antagonistic muscles; it prevents harmful or even only unnecessary contractions. In other words, it prevents the muscles from an unnecessary expenditure of energy. While the facts are not many, they are sufficient to indicate the tendency of the organism to be economical in its expenditure of energy.

#### FACTORS OF SAFETY IN THE SUPPLY OF ENERGY.

We now arrive at the examination of the principles governing the supply of the organism with energy. A machine is provided with fuel far above the necessity for the performance of the expected minimum work; it has to be in readiness for unforeseen exigencies. How about the organism? The supplies for the animal machine consist of inorganic salts, water, oxygen and food. Our knowledge of the laws governing the supply and expenditure of water and inorganic salts for the animal organism are still too imperfect to be utilized here for the elucidation of our problem. We have to restrict our discussion to the supply of food and oxygen. The supply of food is influenced so much by the will of the animal that it is difficult to obtain facts permitting only one interpretation. For instance, the amounts of food taken by men in all parts of the world can not be taken as the normal quantity which the body requires, because, as Chittenden and his school say, this amount is dictated by habit and not by actual necessity. The latter found, as stated before, that with a proteid diet lower than the one employed in the current diet of man, a number of men continued their normal life without special incidents. As a result of this observation these investigators assume that the minimum proteid diet is the normal one and advocate its adoption as a standard diet.

The finding that men can continue to live with a certain minimum is a fact; the assumption that this minimum is the actual requirement of the organism is, however, only a theory, and a theory which decides that, in contrast to a human-made machine, the animal machine should be provided with a minimum supply of energy just sufficient for the average daily incidents and daily work. Neither can we, on the other hand, look on the facts which we have brought together as an absolute proof that the animal's supply of energy ought also to be provided on the same plan of superabundance. It may be claimed that the animal's welfare is best cared for by observing stringent economy in the supply of its energy.

#### SURPLUS OF OXYGEN.

Luckily, however, the supply of oxygen to the organism is a process practically entirely independent of the will, and, therefore, a fact or two which we find here may well throw some light on our problem. One fact here is, indeed, instructive. It is a frequently made and well-established observation that the oxygen of the inspired air may be reduced to about one-half of its normal amount without causing any ill effects whatsoever. The oxygen of the atmospheric air amounts to about 21 per cent., and it may safely be reduced to about 11 per cent.



or 10 per cent. Nature, then, supplies oxygen to the animal body in an abundance, amounting at least to twice the maximum quantity which the normal condition of life may require.

Furthermore, even with an atmosphere greatly reduced in oxygen, the body is capable of attending to work so strenuous that it may cause a consumption of oxygen perhaps five times the amount normally used up during rest or light work. This occurs, as was demonstrated in the interesting experiments of Zuntz and his co-laborers in climbing mountains and carrying at the same time considerable loads at altitudes with a barometric pressure of less than 500 millimeters of mercury. We should also remember another instructive and characteristic fact, namely, that the venous blood is comparatively still rich in oxygen, possessing often nearly two-thirds of that present in the arterial blood, which means that the oxygen carried in the arterial and capillary blood is greatly in excess of the requirements of the cellular tissues.

Finally, another interesting point is that labored breathing sets in long before the tissues are in actual need of oxygen. Dyspneic breathing is a device to cause a refilling of the exhausted surplus of oxygen by a more efficient pulmonary ventilation. The hard working skeletal muscles which consume an undue amount of oxygen produce at the same time a substance which stimulates the respiratory center to greater activity and thus to a more liberal provision of oxygen. This is, again, a sort of self-repair of the loss to the factors of safety. All this is sufficient evidence that, as far as the oxygen is concerned, the supply of the body with energy is certainly not conducted on the principle of stringent economy. On the contrary, abundance is the guiding rule here, as it is in the provisions of the body's structures.

We now again return to the question of supply of food. The presence of an abundant supply of glycogen and fat in all animal bodies seems to me to be a sufficient indication that carbohydrates and fats are not supplied on the principle of stringent economy. Fuel material is here abundantly stored up, not so much for its immediate use, but essentially for use in unforeseen exigencies. As far as I know the claim has not yet been raised that these savings deposits are due only to acquired habits of ingesting too much of the mentioned forms of food.

With regard to the proteid diet, however, the question of the normal supply, as we have repeatedly mentioned, is not above discussion. In a recent review of the subject by Benedict one of his precise statements reads: "Dietary studies all over the world show that in communities where productive power, enterprise and civilization are at their highest man has instinctively and independently selected liberal rather than small quantities of protein." Chittenden, on the other hand, says: "All our (experimental) observations agree in showing that it is quite possible to reduce with safety the extent of proteid catabolism to one-third or one-half that generally considered essential to life and health." And then adds: "It is obvious . . . that the smallest amount of food that will serve to maintain bodily and mental vigor . . . is the ideal." As valuable as the facts which Chittenden and his co-laborers found may be, they do not make obvious their theory that the minimum supply is the optimum—the ideal. The bodily health and vigor which people with one kidney still enjoy does not make the possession of only one kidney an ideal condition. The finding that the accepted standard of proteid diet can be reduced to one-half can be compared with the finding that the inspired oxygen can be reduced to one-half with-

out affecting the health and comfort of the individual. But nobody deduces from the latter fact that the breathing of air so rarified would be the ideal. Chittenden suggests that a greater use of proteid might be the cause of many ills, for instance, of gout and even of tuberculosis and cancer. I shall not attempt to discuss the merits of this theory as far as the causation of tuberculosis and cancer is concerned. As to the causation of gout, one of Chittenden's most able supporters, Otto Folin, has pointed out that, at best, this could be claimed only for eating crude meat, but not for an ingestion of protein in general, because the latter becomes converted into harmless urea, as Folin says. I would add that if we should avoid eating meat because some of us might sometimes get gout we should surely avoid eating carbohydrates because it sometimes leads to diabetes, and avoid eating fats because it often leads to various mischiefs. What, then, shall we eat with absolute impunity?

But I wish to recall here one fact, namely, that the administration of too large a dose of thyroid extract leads to a pathologic condition similar in character to that of Graves' disease. The normal body, nevertheless, possesses, as we have shown above, a great surplus of thyroid tissue without causing any thyroidism. That some isolated metabolic product might do some harm when artificially incorporated into an animal is far from being fair evidence that this normal product of the animal mechanism does harm there when in its normal connections. Metabolic products are present in great abundance in all healthy individuals without causing mischief.

#### STORAGE OF PROTEID.

The situation seems to me to be this: All organs of the body are built on the plan of superabundance of structures and energy. Of the supplies of energy to the animal we see that oxygen is luxuriously supplied. The supply of carbohydrates and fats is apparently large enough to keep up a steady luxurious surplus. For the supply of proteid we find in the actual conditions of life that man and beast, if they can afford, provide themselves with quantities which physiologic chemists call liberal. This may or may not be the quantity of which Nature requires and approves. Experiments have shown that a number of men subsisted on half of such quantities. This latter might be an indispensable minimum, just as there is an indispensable minimum for all other luxuriously endowed provisions of the animal organism, and the liberal ingestion of proteid might be another instance of the principle of abundance ruling the structures and energies of the animal body. There is, however, a theory that in just this single instance the minimum is meant by Nature to be also the optimum. But it is a theory for the support of which there is not a single fact. On the contrary, some facts seem to indicate that Nature meant differently. Such facts are, for instance, the abundance of proteolytic enzymes in the digestive canal and the great capacity of the canal for absorption of proteids. Such luxurious provision for digestion and absorption of proteids is fair evidence that Nature expects the organism to make liberal use of them. Then there is a fact that proteid material is stored away for use in emergencies, just as carbohydrates and fats are stored away. In starvation nitrogenous products continue to be eliminated in the urine which, according to Folin, are derived from exogenous sources, that is, from ingested proteid and not from broken-down organ tissues. An interesting example of storing away



of proteid for future use is seen in the muscles of the salmon before they leave the sea for the river to spawn. According to Mescher the muscles are then large and the reproductive organs are small. In the river, where the animals have to starve, the reproductive organs become large, while the muscles waste away. Here, in time of affluence, the muscles store up nutritive material for the purpose of maintaining the life of the animal during starvation and of assisting in the function of reproduction. This instance seems to me to be quite a good illustration of the rôle which the factor of safety plays also in the function of the supply of the body with proteid food. The storing away of proteid, like the storing away of glycogen and fat, for use in expected and unexpected exceptional conditions is exactly like the superabundance of tissue in an organ of an animal or like an extra beam in the support of a building or a bridge—a factor of safety.

I, therefore, believe that with regard to the function of supply of tissue and energy by means of proteid food Nature meant it should be governed by the same principle of affluence which governs the entire construction of the animal for the safety of its life and the perpetuation of its species.

Before concluding I wish to add the following remark: It seems to me that the factors of safety have an important place in the process of natural selection. Those species which are provided with an abundance of useful structure and energy and are prepared to meet many emergencies are best fitted to survive in the struggle for existence.

Rockefeller Institute for Medical Research.

## Original Articles

### CLINICAL PHYSIOPATHOLOGY.

#### THE NEED OF A NEW CLASSIFICATION OF DISEASES OF THE NERVOUS SYSTEM.\*

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One who meets large numbers of undergraduates in the class room and general practitioners in consultation is often confronted with the assertion that neurology is the hardest, or at least one of the hardest, branches of scientific medicine to comprehend.

Some genuine difficulties must be present in order to account for the prevalence of such an opinion. It would be absurd to assume that so many intelligent men can not grasp what to others of no greater mental capacity seems so easy of comprehension and so self-evident.

The view has been expressed, and in my judgment rightly so, that for preciseness, reasonableness and scientific accuracy the teachings and findings of modern neurology give this department of medicine a rank second only to that of ophthalmology. If this view be but approximately correct, then it would seem that many intelligent men are not as capable as they appear to be,

or else they are being handicapped by some previously acquired prejudice, erroneous conceptions or false deductions. The latter, I am sure, is the true explanation. The source of the whole trouble, I believe, may be uncovered by saying that the two classes of men, the pessimistic and the optimistic, are regarding the nervous system, both in health and in disease, from quite different standpoints, and that these different standpoints are respectively the anatomic and the physiologic.

#### I. THE ANATOMIC CONCEPTION OF DISEASE.

As a pure science, anatomy for centuries has been laying a splendid foundation for the beginning of the study of disease and for the elaboration of surgical and other mechanical means of treatment. Except some scattered observations of a few microscopists prior to Virchow's time, little of value was known of the minute structure of the human frame. There was no real pathology except along coarse and crude lines. The classification of diseases and their nosology were based wholly on symptomatic manifestations, and, as is the case largely with psychiatry to-day, the morbid entities known to general medicine were nothing more than groups of symptoms.

Ere long improved microscopes and microscopic technic widened the confines of histologic knowledge. The structure of the organized tissues became better known until finally the great cellular doctrine was promulgated and Virchow's own epoch-making labors culminated in "The Anatomic Principle in the Study of Disease." This address, now one of the treasured classics of medical literature, summed up so practical and so far reaching a scientific generalization which was apparently so well based on established data that disease as portrayed in it was identified almost solely with change of anatomic structure. A tremendous impetus had been given by the cellular doctrine to morphologic and pathologic study. Brilliant discoveries had been made and some marvelously happy correlations had been established between long-recognized clinical phenomena and postmortem findings. This together with the fact that the teachings of the cellular doctrine and all that rests on that doctrine were easy of comprehension and flattered that human weakness whereby men are led to accept what is perceived by their senses as true and what is not so perceived as doubtful or not true, accounts for the ready and continued popularity of this anatomic conception of disease. Clinical medicine, especially surgery, is dominated by it to-day. It stands as the evidence of a tremendous advance on the old symptomatic conception, and it has placed Virchow's name among those of the world's master minds.

During the last few years, however, a change has been going on in clinical and academic medicine, steadily and positively, yet so silently and insidiously that many who do not recognize it are confused and discouraged. Just as Virchow saw the untenability of the older anatomic conceptions and mere symptomatic classifications of disease before his day, many clinicians and pathologists are now beginning to recognize the inadequacy of morphologic changes and structural deviations to account for the multifarious symptoms of practical medicine. Something more than an anatomic conception of disease is needed, and hence was seen the older science of anatomy reluctantly, though surely, yielding to her younger sister, physiology, the guiding strings in the ultimate solution of the problems of disease.

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



## II. THE PHYSIOLOGIC CONCEPTION OF DISEASE.

Practical medicine has to do with living, functioning beings, whereas structural pathology investigates and draws its deductions from postmortem, non-living or at least highly altered tissues. Whether the disease process or the laboratory manipulation be the responsible agent, it is none the less true that the tissues which the pathologist investigates are not the same tissues which constituted a part of the living, though sick, man. It is the absence of the physiologic factor and all that it includes which differentiates the tissue under the microscope from the same tissue when a part of the living organism. For this reason, so obvious that one is amazed physiology has been thus long in assuming its rightful rôle in relation to clinical medicine, the anatomic conception alone of morbidity must always prove inadequate. Happily, scientific medicine has at last awakened to the realization of this truth; and on every hand evidences are beginning to appear that physiology, including physiologic anatomy, is being recognized as the proper guide in the interpretation of morbid phenomena. Pneumonia is no longer regarded as a disease merely of lung tissue. Typhoid fever is something more extensive than the ulceration of Peyer's patches. The rheumatic group of troubles are not alone confined to joint and muscular inflammations. Cardiac manifestations do not always depend on cardiac lesions. These and many other familiar examples demonstrate plainly how disturbed physiologic functions brought about by toxic blood states and ruptured harmony of action between the various parts of the entire organism, are of more importance than mere anatomic findings. Indeed, in connection with many diseases in which hitherto we had supposed that the structural changes observed after death were adequate to explain the whole process, we are beginning to question whether those structural changes are not to be classed rather as mere secondary, unimportant by-products. At all events, abnormal physiology is becoming more and more the interpreter of clinical manifestations, while the mere anatomic findings are being given a less prominent position than heretofore. Structural pathology is slowly but surely yielding first place to physiologic pathology.

As the physiologic conception of disease becomes more widely recognized, the time-honored, interminable debate about the significance of the terms organic and functional as applied to specific affections will die out; for, as Cowles rightly says, "In general medicine this distinction of organic and functional disease appears to be an expression of the dominance of morphologic conceptions in medical knowledge." All disease is functional; must necessarily be so, because disease is something that occurs in living, functioning beings, and not in dead, functionless tissues. But function is an attribute of matter, and, therefore, function and matter being bound up in unison, the only question at stake is that of the precedence in time and causation of the function and the alteration of the tissues. This is a futile question for debate, it seems to me, and yet it has divided the medical world into two opposing camps, the one holding that all disease in its last analysis is synonymous with change of structure with consequent disturbance of function; while the other equally maintains that all disease results primarily from disturbance of function with consequent alteration of tissue. Heretofore the former view has dominated, and still largely dominates, in medicine; but the latter view is pushing itself at present well to the forefront. It is to be hoped that

the upholders of the latter view will not, as too many enthusiasts are doing, advocate it to the absurd extent of entirely ignoring the former. Structure and function are interdependent, just as physiology and anatomy are; but, as physiology is interested only in living anatomy, so function is concerned only with living structures. In a word, as in the study of the normal living man, we follow physiologic lines, so in the study of diseased man we must follow the lines of his diseased functions. Therefore, clinical medicine has to do always and only with functional diseases, using the adjective here in the larger sense applicable to all diseases.

Let structural pathology furnish all the information it can as to the appearances of the tissues during and after the disease process, but in practical scientific medicine it must be remembered that the abnormal physiology, the disturbed functions, and the reasons thereof, are the desired goal of study. This is the physiologic conception of disease, and, while not wholly opposed to the anatomic, on which it, of course, in part rests, it is a higher and more accurate conception than the latter. It recognizes disease as a phenomenon of life and not as a mere postmortem exhibit.

## III. PHYSIOLOGIC CONCEPTION OF DISEASE SLOW OF ACCEPTANCE.

That disease is an abnormal physiologic process, and not a mere morphologic change, is not a new idea by any means; and yet there is very little evidence of its frank acceptance by the rank and file of the profession, the teachers, and the writers of medical text-books. Though himself the great exponent of pathologic anatomy, Virchow was ever ready to present as one of his favorite themes "the establishment of pathologic physiology which, to his mind, was the foundation of scientific medicine, and, therefore, of medicine as a whole." The living, functional activity of the tissues, whether those tissues be contemplated as body, organ or cell, is the object of medical research, both in health and in disease. The intimate study of the physical structure of these tissues naturally forms the groundwork whereon to begin the physiologic research, but one who limits his study of disease to the investigation of this mere groundwork rests at the bottom rung of the ladder and may even be led astray in his further deductions. As Claude Bernard long ago well said, "There exists only one science in medicine, and that science is physiology applied to the state of health as well as to the state of disease."

The physiologic method being obviously the one to be adopted in the study of the living, functioning organism, it sounds almost platitudinous in Lepine to say, "It is superannuated to think along anatomic lines nowadays," and in Huchard to insist that "in clinical work hereafter it will be necessary for one to think and act along purely physiologic lines." Robin voiced the same sentiment when he urged first and foremost always the study of the "disease of function."

Though the very definition of pathology is "the totality of the morbid conditions and processes in a disease," there is a remarkable absence of the teaching of these processes both in medical text-books and in medical educational institutions. Normal physiology and structural pathology are presented in great detail; and both special chairs and laboratories are established for their elucidation. Only one school, to my knowledge, teaches today pathologic physiology as a special branch of medicine, and that school, the Johns Hopkins, has had its laboratory open only for the last few months. In all



other schools the student takes up normal physiology as a special part of the curriculum, whereas abnormal physiology must needs be picked up in a fragmentary way from the lectures on general medicine. The study of clinical medicine and surgery is begun with a fairly complete idea of normal structure, normal function and even diseased structure, but with practically no idea of diseased or abnormal function. The student learns everything but that which he finds transcending everything else in importance when he gets into active practice, namely, how diseased human beings continue to live and perform their functions. And when as a practitioner he endeavors to supply this hiatus in his knowledge by a close study of medical literature he will, as Professor Hall<sup>1</sup> says in his recent address, "search the chapters of general pathology in vain for any sections that deal adequately with the problem of the physiology of disease." The only work on general medicine that attempts to correlate frankly physiology and pathology and to apply to clinical medicine the principles of pathologic physiology is Krehl's well-known "Pathologische Physiologie," of which an English translation has been recently made by Dr. Hewlett of the Johns Hopkins University. For neurology Grasset has done the same thing in his "Les Centres Nerveux: Physiopathologie Clinique," published only last year. And in my own work issued over a year ago a similar trend of thought was adopted in the classification and presentation of the diseases of the nervous system. In connection with the mention of literature devoted to the consideration of the physiologic conception of disease, commendation should be made of the papers of Putnam<sup>2</sup> and of Cowles,<sup>3</sup> two of the most logical, scientific and philosophic essays that have appeared in recent years. The work of Dana, Putnam, Prince, Herter, Chittenden, Barker, Cowles and others on this side of the Atlantic, and of Jackson, Mott, Halliburton, Ziehen, Campbell and many others in Europe is strong corroboration of the steady trend of modern thought in advanced scientific circles in the direction of physiologic medicine. As we have seen it is the only true and scientific method for the investigation of disease, we are all the more surprised at the relatively inadequate way in which it is taken up and presented by the teaching bodies and the general profession.

#### IV. THE PHYSIOLOGIC CONCEPTION OF DISEASE IN NEUROLOGY.

I think I am well within the bounds of truth when I say that the physiologic principle in the interpretation of disease and its symptomatology is more glaringly manifested in neurology than in any other department of medicine. It is largely for this reason that neurology seems so hard and confusing to many practitioners whose training in pathology and whose thinking in diagnosis have been along purely anatomic and morphologic lines. In 1901, using the anatomic conception of the spinal cord by way of illustration, I wrote:<sup>4</sup>

The spinal cord, as it is usually taught anatomically, is a more or less independent organ made up of certain columns of white matter, and certain central masses of gray. To these columns are attributed particular functions and assigned particular names and boundaries. Arbitrary divisions and sub-

divisions are laid, as, for instance, between the so-called anterior and lateral root-zones; fissures are described where there are no fissures; and mere disconnected, short, associative tracts are dignified with the name of column. As a result of all this, the cord, in its entirety, assumes, in a hazy way in the mind of the student, the characteristics of an individual, distinct organ, attached somehow at one end to the brain, and giving off and receiving along its sides motor and sensory nerve roots. When the student comes to study minutely the physiology of this organ, he is amazed to find that he has to learn its structure from an entirely different standpoint and that its physiologic dissection seems to nullify many of the arbitrary divisions and arrangements made in it by anatomy. He discovers that it is far from being a distinct organ, separate from and subordinate to the brain, but that both it and the brain, together with the peripheral nerves make up a composite organ whose parts overlap and run into each other in a most marvelous complexity of structure and function. He is surprised to learn that the term column is as applicable to the cellular gray matter as it is to the fibrous white matter, being, in fact, a poor term to be applied to either. He is not a little confused when he observes that the nerves are not given off and received by the cord, but that certain efferent processes are sent forth from its central ganglionic masses to terminate in the muscles, while the sensory processes from certain peripheral cells are merely received into it to arborize around its own cells. A series of ganglia with their appropriate efferent processes, in and about which terminate certain afferent processes from without, constitute the cerebrospinal organ in the truest sense of the word. The peripheral neurons and the central neurons find merely a meeting-place in the ganglionic gray matter surrounding the central canal, including the ventricles of the brain and the central canal of the cord.

The same thought was clearly in the mind of Grasset when he wrote:<sup>5</sup>

For each function, simple and complex, there corresponds a special nervous apparatus. . . . Each of these apparatuses extends through all of the neuronic levels, continues throughout all planes of section of the nervous system; has its own peripheral neurons, its neurons of relay, and its cortical neurons. Each one has at one and the same time centripetal fibers, centers and centrifugal fibers. The visual apparatus, for instance, comprehends motor nerves that are indispensable for vision, just as the general motor apparatus would be powerless to act without its kinesthetic nerves. And thus vanishes the division of the nervous system into cerebrum, medulla oblongata, spinal cord, which division has nothing but a mere geographical value. Furthermore, there is not even a geographical unity in the nervous system, nor a unity in the direction of the nervous current; the system of neurons, arranged in these various apparatuses possesses unity only in its function, and that is a physiologic unity.

Obvious as it is that the new anatomy of the nervous system is a physiologic anatomy, and consequently that a proper conception of neuropathology rests on a physiologic rather than on a mere anatomic basis, on goes the student and practitioner trying to learn what are the diseases of the brain and their particular symptoms, what of the medulla, of the cerebellum, of the spinal cord, of the peripheral nerves, etc. Is it any wonder that confusion overwhelms him, and in the end he exclaims against the almost insuperable difficulties in the understanding of neurology? His difficulties will continue to grow until he awakens fully to the fact that scientific neurology nowadays follows the guiding strings of physiology rather than those of mere anatomy.

Until physiopathology rather than anatomopathology is made the frank basis of clinical neurology there can be but slight hope of intelligently understanding why a paralysis is sometimes spastic and at other times flaccid; why a deep reflex is in one disease lost and in another

1. "Pathologic Physiology, a Neglected Field," THE JOURNAL A. M. A., Dec. 30, 1905.

2. "Value of the Physiologic Principle in the Study of Neurology," Boston Med. and Surg. Jour., Dec. 5, 1904.

3. "The Problem of Psychiatry in the Functional Psychoses," Am. Med., Feb. 3, 1906.

4. Med. Record, Oct. 5, 1901.

5. "Les Centres Nerveux," 1905.



disease exaggerated; why the electrical reaction of degeneration appears with one form of muscular atrophy and not with another form; why an illusion of one of the special senses is not the same as an hallucination of that same sense; why tactile sensibility can remain intact while the pain sense is completely abolished; why a tumor of one part of the brain presents a very different clinical picture from a tumor of another part of the brain.

Those of us who are teachers of neurology are not entirely without blame, for until we cease confusing our students and readers with two notions of the same thing we must expect them to complain and look askance at our specialty. If we tabulate tabes dorsalis under the head of spinal cord diseases, and then in the opening paragraph of our description declare that it is a disease of the peripheral sensory neurons or apparatus; if we classify acute anterior poliomyelitis, an inflammatory trouble plus certain secondary degenerative changes, with the primary, systemic degenerative troubles; if we present in a section of our book headed diseases of the spinal cord, an elaborate account of cerebrospinal disseminated sclerosis, and then devote three-fourths of the description to head symptoms; if we assert that exaggerated knee-jerks occur in certain spinal as well as in certain intracranial troubles, without furnishing at the same time some physiopathologic explanation; if we do all this and many other inconsistent things, we need not marvel at the impatience of our audience. The fault is with ourselves, for we have been mixing up old anatomy with new physiologic conceptions. For the sake of consistency, if not for anything else, we should discard the one and cling firmly to the other.

As Putnam<sup>2</sup> says:

We need all the help that anatomy can furnish, but as it is the organism in activity that we eventually seek to understand, it is necessary that the splendid services of anatomy should be supplemented by physiology, and the physician—above all the neurologist—needs to be trained more thoroughly than at present to work and reason in accordance with physiologic conceptions and methods as applied to the problem of disease.

While Cowles,<sup>3</sup> speaking for psychiatry, writes:

It appears that the turning away from the barrenness of histologic provings is becoming general; the improvements of the clinical method and psychologic experiment are inevitably drawing attention to the closer observation of the individual patient and to the better study of the minor causes of his mental variations. This means a trend towards physiology.

#### V. STATUS OF THE NEURON DOCTRINE.

In the evolution of knowledge, there are always two processes by which the desired goal is attained. These are parallel processes, equal in dignity and mutually interdependent. The one is inductive and involves the simple observation of phenomena; the other is deductive and concerns itself with the correlation and explanation of the observed phenomena. So-called facts are of little practical use to mankind until they are made available by some plausible reason or law for their existence. Theories, hypotheses, explanations and generalizations are equally futile unless they are based on and are adequately supplemented by a sufficient number of facts. It is infantile to dwell in a world of unexplained facts or phenomena, however innumerable the latter may be. It is mere day-dreaming to pile up theories and hypotheses without submitting to the wholesome restraint imposed by a constant consideration of observed facts or phenomena. The true scientist works for knowledge through both observation and theory.

The practical value of a science is enhanced when individual observations and generalized laws are most nearly balanced in value. When the perturbations of the planets, long known to the astronomers as mere phenomena, were accounted for by the laws of Kepler and of Newton, the science of astronomy became exact and of great practical value. When the colored composition of light was explained on the hypothetical basis of undulations in the ether, the science of optics became something more than an assemblage of curious exhibitions. What has the chemist not done these latter days in discovering and creating strange forms of matter by following the general laws more or less formulated by the atomic theory! Of what interest to any one are the marvelous complexities and anomalies observed in the biologic world until there is some explanation of them suggested in the laws of evolution, embryology and general morphologic progression?

Physiology is the science of life, a pure science. It has its mass of observations and its hypothetical explanations. Some of the latter have become established laws, while many of the former still remain unexplained. In connection with the physiology of the nervous system, the opinion is growing that there is great need of an explanation of the observed phenomena by some fixed law or laws. The neuron doctrine suggests such an explanation. To repeat what I have written elsewhere:

Of all the generalizations of science, none have been more brilliant, more illuminating, more practical than the neuron doctrine. Like all these great scientific generalizations, as, for instance, the law of gravitation, the atomic theory of chemistry, evolution, the nebular hypothesis and the undulatory theory of light, it is an inference merely, drawn from and propounded to harmonize a great mass of seemingly anomalous and unrelated facts and phenomena. It is not put forth as an infallible truth. It is open to future modification, and, if need be, to entire annihilation, should future discoveries be made that contradict its present teachings.

Up to the present time no discoveries have been made that tend to overthrow the doctrine in its essential features, though as in all progressive knowledge, many observations have been made and are being made that necessitate a readjustment and a restatement of some of its minor conclusions. All due allowances being made for the work and opposition of Bethe, Apathy, Nissl, and others, anyone who carefully follows both sides of the controversy can not fail to see that in the main the neuron doctrine remains unaffected. This is not stated in so many words by Barker<sup>6</sup> in his recent well illustrated review of the whole subject, for he wishes the reader to judge for himself; but his implied conclusion, as well as the conclusion that any unbiased reader of this review must come to, is that the neuron concept need not yet be abandoned.<sup>7</sup>

#### VI. PHYSIOLOGIC UNIT, THE NEURON.

The essential fact which the neuron concept inculcates is that the nervous apparatus parenchymatously consists of a physiologic unit immensely multiplied and interrelated with other similar units. In this the doctrine is nothing but a general restatement of the cellular doctrine for the nervous system. This is the feature of the doctrine

6. "The Neurons," THE JOURNAL A. M. A., March 31, 1906.

7. During the revision of this article for publication, the paper of Collins and Zabrieskie on the "Neurons and Neurofibrils" appeared in the *Medical Record* (June 16, 1906). It is a very full review of the present teachings anent the neuron and gives a fair exposition of both sides of the debate. Among its conclusions is the statement that "although there seems to be a necessity to modify the neuron theory, nothing has yet been done to cause it to be abandoned."



that still remains unassailed by any discovery that has hitherto been made. As a doctrine, it has overthrown the old notion of the nervous system being made up of two sets of elements, cells and fibers. There is only one element, one unit, and that a physiologic unit. This it has named the neuron. The definition of this neuron is the field whereon is waging the battle of opinions anent the validity of the doctrine. The latter asserts that the cell and its processes (dendrites and axons, formerly called fibers) constitute a solidarity, a single, integral factor, all parts of which are relatively of equal morphologic and physiologic importance. Certain subsidiary deductions made when the theory was first put forth have, as a result of later discoveries, been greatly modified or entirely given up. The notion of an ameboid movement being possessed by the neurons, though never very earnestly upheld, has at last been completely relinquished.

The discovery of neurofibrils that pass through, surround and connect the cellular elements has not only abolished the early teachings anent the contiguity of the neurons as opposed to the continuity of the nervous system, but has given birth to the catenary theory of Bethe wherein the nervous apparatus *in toto* is looked on as a continuous chain of conductors, a circle without beginning or end, like the vascular system. It must be admitted that if these neurofibrils do not convince one entirely of the continuous chain theory, they do demand of the neuron doctrine the adoption of a modified notion of partial continuity between the neurons. Much has yet to be learned and confirmed, however, even in regard to these fibrils before they may be used as the basis for dogmatizing and causing the complete abolition of older ideas. Indeed, as Barker<sup>6</sup> well says, "in the light of newer studies, the enormous importance attributed by Bethe and Nissl to the Golgi nets seems to have been premature; their views are unsupported by facts." Without stopping to discuss these neurofibrils in more detail, for Barker,<sup>6</sup> Collins and Zabrieskie<sup>7</sup> and others have done this, I would say that they do not overturn the neuron doctrine in its essential features, and moreover, that they are less adequate to found a theory on than are the so-called neurons of the latter theory. Whereas the latter offers some reasonable explanation for a large number of common clinical phenomena, the catenary theory simply adds confusion to what is already steeped in mystery.<sup>8</sup>

Other modifications that have had to be made in the earlier teachings of the neuron doctrine have been in connection with the question of the Wallerian degeneration, the development of the nervous elements, and their autogenous regeneration. These have all been discussed, and the arguments *pro* and *con* been carefully weighed by Grasset.<sup>5</sup>

A summary of the whole matter seems to show that both the neuron doctrine and the catenary theory in its latest form agree in adopting a physiologic unit. The character of that unit in regard to its minute structure appears to be the point whereat the two theories

diverge. The neuron theory (Waldeyer) defines the neuron as a cell with its processes. The catenary theory (Durante) declares for a "pluricellular unit," which is compared to a "primitive nervous lobule," Durante objecting to the term neuron on the ground that it is strictly a cytologic and not a physiologic term. As Barker<sup>6</sup> concludes anent this latter point, "should it have been made out that the neuron is pluricellular in its origin, the anatomic unit which Waldeyer called the neuron would still have existed. It would have been an organ then, rather than a single cell."

From the clinical and physiologic standpoint, then, the distinction between the two doctrines is one largely of terms. The neuron doctrine yielding to the view that the physiologic unit is polycellular, and the catenary theory accepting the idea that the nervous apparatus is made up of innumerable functional entities, there is no reason why the established and familiar term neuron should not be kept in use to represent this well recognized physiologic unit, while its minute structure and minor physiologic importance is left for future investigations and positive establishment.

#### VII. THE NEURON CONCEPT AND CLASSIFICATION OF DISEASES.

In his address, Barker<sup>9</sup> said, while referring to the value of a functional conception of disease:

As medicine has become more scientific, the mind has ceased to be satisfied with such descriptive classifications as the clinical symptoms and syndromes represent and with "clinical types" set up, and is ever on the alert to replace them by classifications of a developmental or genetic character.

This is especially true of neurology. As I have already intimated, I believe it is one source of the confusion which students and practitioners complain of in connection with neurology as presented in the average textbook. The old classification, based on old anatomic teachings, which so largely prevail are contradicted and nullified by the modern teachings of the physiology of the nervous system.

It was with this thought in mind that Grasset,<sup>5</sup> doubtless, determined to discard entirely the use of the terms cerebrum, cerebellum, medulla oblongata, spinal cord, peripheral nerves, etc., in his presentation of the subject of neurologic diagnosis. Adopting the neuron as the physiologic unit and studying especially the different functional apparatuses in which this physiologic unit is specifically aggregated, he presents the whole subject of neurology (save therapy) under the following physiologic captions: 1, The central nervous apparatus of motility and general sensibility; 2, the central nervous apparatus for orientation and equilibrium; 3, the central nervous apparatus for language; 4, the central nervous apparatus for vision; 5, the central nervous apparatus for hearing, taste and smell; 6, the central nervous apparatus for the circulation, secretion, nutrition, digestion and respiration.

Realizing in like manner the inadequacy of the present anatomic classification of nervous diseases and the fast growing need of their study and presentation along physiologic lines, I presented in my "Diseases of the Nervous System," a work appearing several months before Grasset's, a tentative classification based broadly and frankly on a physiopathologic groundwork. Like Grasset, I adopted the neuron concept as it was in the main then accepted. I first contemplated the nervous system

8. As Collins and Zabrieskie (footnote No. 7.) well argue, "the one thing that is needed by the opponents of the neuron theory is to show the transition of a sensory, centripetal impulse to a motor centrifugal tract without the intermediation of a ganglion cell. If they could do that their claims would be established. Whether they first go in or come out of the cell, whether the elementary trellis formation is originally extra-cellular or intracellular, whether the fibrils are at all interrupted at Ranvier's nodes, or whether there is a free peripheral termination, are all matters of trivial importance compared with this, for then the neuron theory would lose its applicability and usefulness to the problem of physiology and histology."

9. "Methods in Medicine," Boston Med. and Surg. Jour., June, 1905.



as being made up of two distinct sets of tissues; the true, functioning tissues (the neurons) and the mere supporting nutritive tissues (the vascular, connective and neuroglial elements). This distinction, of course, was primarily made for its physiologic bearing. This made a grand division of nervous diseases, so-called, into those primarily neuronic and those primarily non-neuronic or extra-neuronic. In the latter the neurons are usually more or less damaged, of course, but secondarily. *Tabes dorsalis*, for example, I placed among the neuronic affections; myelitis was regarded as primarily an extra-neuronic trouble, with secondary complication of the neurons. Amaurotic family idiocy (Sach's type) was a neuronic disease; infantile spastic diplegia was primarily a vascular or extra-neuronic trouble. Acute anterior poliomyelitis and intracranial hemorrhage were both extra-neuronic outbursts; the subsequent degenerations respectively in the anterior root fibers and pyramidal tracts were secondary neuronic implications or sequelæ as it were.

The practical value of this functional differentiation of the two sets of diseases will be noted on careful consideration. In the neuronic diseases, degeneration is the dominant pathologic change. This degeneration may be developmental (Gowers' abiotrophy) or acquired. Heredity, with all that it includes, is prominent among its etiologic incidents and second to heredity, with which it usually works in conjunction, is toxemia. In the extraneuronic diseases, inflammation and vascular changes constitute the cardinal pathologic presentation; and for the production of these the leading etiologic factors are toxemia of every sort and traumatism. Symptomatically, the neuronic diseases are strictly neural and well defined along neural lines; they are preëminently and wholly nervous; their manifestations are beautifully and sharply sensory, motor, trophic and all combinations of these; they rest clearly on the physiology and physiologic anatomy of the nervous apparatus.

Symptomatically, the extraneuronic diseases primarily manifest themselves by well-known general signs of vascular disturbance; the febrile picture is always more or less in evidence; these vascular symptoms being generalized and so prominent, the more strictly neural symptoms, depending on the secondary involvement of the neurons, are somewhat mixed, obscure and less well defined than they are in the neuronic diseases. From the prognostic point of view, the neuronic diseases are all but hopeless (possibly because of the dominance of the hereditary, neuropathic factors); only when the damage is very slight and the degenerative process is in its incipency can recovery be looked for; in most cases a cessation of the degenerative process is the best that can be expected. On the other hand, the extraneuronic diseases are relatively more hopeful; their prognosis is almost the same as that of the same sort of disease occurring in other than the nervous system, and must not be confounded with the more hopeless neuronic prognosis of the secondarily implicated neurons. For instance, the prognosis of *tabes dorsalis* is not hopeful, as we all know, because the trouble is primarily neuronic; the prognosis of anterior acute poliomyelitis as a vascular disease is excellent, though the outlook for the secondarily damaged neurons of the anterior cornua is bad. The distinction of neuronic from extraneuronic affections has its practical value, if one thinks of it, in the matter of treatment.

Continuing this tentative physiologic classification, I next subdivided the neuronic diseases into the so-called

functional and organic, explaining the while that, in my opinion, these terms represent merely differences in degree rather than in kind in the matter of the pathogenesis and pathology of the disease. This I have discussed briefly in an earlier part of this paper. The so-called functional neuronic diseases (diseases merely with undiscoverable histologic changes with our present means of investigation), the conventionally named neuroses and psychoneuroses, were divided into those of the cerebrospinal and sympathetic systems, because these systems as separate aggregations of neurons represented a more or less differentiation of function; while the organic neuronic diseases were classified for a like reason into those of the afferent system, the efferent system, and the combined afferent and efferent systems.

At this point the strictly and integrally neural diseases cease. Resuming, however, the classification of the extraneuronic maladies, and remembering that there are no functional differentiations in the vascular and connective tissue elements of the nervous system, these diseases were grouped under the head of brain, cord and peripheral nerve affections, the terms brain, spinal cord and peripheral nerves being employed merely for their topographical or, to use Grasset's<sup>5</sup> term, geographical, signification. The following schema shows the classification at a glance:

#### NEURONIC DISEASES (DEGENERATIVE.)

- a. The functional neuronic diseases.
  1. Cerebrospinal.
  2. Sympathetic.
- b. The organic neuronic diseases.
  1. Of the afferent system.
  2. Of the efferent system.
  3. Of the combined afferent and efferent systems.

#### NON-NEURONIC OR EXTRANEURONIC DISEASES (INFLAMMATORY, ETC.)

- a. Of the spinal cord and its membranes.
- b. Of the peripheral nerves.
- c. Of the brain and its membranes.

I confess that in completeness of radical change of method, Grasset has far outstripped me in the attempt to present the diseases of the nervous system with a physiologic classification. Perhaps, however, at the present time, when the pathology and the neurologic status of some diseases are still in dispute, a less radical change than that of Grasset may have its advantages.

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#### DISCUSSION.

DR. HOWELL T. PERSHING, Denver, asked Dr. Mettler if, after all, the reclassification would not be an anatomic one; not according to the old gross anatomy, but according to the finer anatomy of the nervous system.

DR. L. H. METTLER, Chicago, replying to Dr. Pershing's question, said that it is a new anatomy, a physiologic anatomy. Dr. Mettler said that Johns Hopkins, one of the oldest medical schools in the country, only recently opened a laboratory for the teaching of abnormal physiology. All the other schools teach normal physiology, but still neglect abnormal physiology, except what little the student is able to pick up from the clinical department. The anatomy Dr. Mettler spoke of is anatomy combined with modern physiology, and not the old anatomy as usually taught.

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**Unnecessary Noise.**—In all seriousness, however, we would commend to all those who come in contact with the sick that this subject of unnecessary noise be given careful consideration. To the youthful internes of hospitals or residents of sanatoriums we respectfully request that they exercise some of that rare quality known as thoughtfulness, and eschew hobnail boots, the slamming of doors and other manifestations of youthful over-exuberance of spirits.—*Journal of the Outdoor Life.*



## HYSTERIA IN CHILDREN.\*

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Among the most toilsome efforts expended in the service of neurology have been those directed at a finer appreciation and better understanding of that most protean of all disorders, hysteria. As it happens in the adult, it requires no introduction; of its occurrence in the child, I believe enough has not been said.

The preponderance of ardent study has applied to the intellectual and moral side of the young, with the attention especially riveted on an increasingly large number of irritable, unstable, capricious, precocious, eccentric neurotic children, whose minor mental abnormalities have always been a matter of deep concern alike to parents, educators and physicians.

Perhaps the zeal and energy consumed in understanding these, together with backward and degenerate types, has somewhat retarded the interest in hysterical phenomena; be that as it may, writers in general certainly have not given the subject of juvenile hysteria the illuminating presentment it deserves. As a result some few specialists and many more practitioners somewhat hesitatingly acknowledge that hysteria is ever exhibited in child life. I have sought for evidence of agreement as to the occurrence and particularly the prevalence of it in several approved text-books on neurology and pediatrics, but, on the whole, the references have been somewhat disappointing.

Holt<sup>1</sup> introduces the subject as follows: "This (hysteria) is not a disease of childhood, but one which is occasionally seen in early life," adding that it is very rare before the seventh or eighth year, occurring most often in children after the age of 10. Sachs<sup>2</sup> also inveighs against the idea that hysteria is ever a common disease and says: "Hysteria is a rare disease in the adult, still rarer in the child." Taylor<sup>3</sup> devotes a short chapter at the close of his book to functional paralysis and scatters a few references elsewhere about hysteria associated with epileptic, myasthenic and myoclonic states. Gowers,<sup>4</sup> in his earlier edition, supplies the Briquet and Landouzy table, which places 8 per cent. of all hysteria in the first decade of life, and adds that cases met with under the age of 10 generally commence after 6, although symptoms have occasionally been met with at 3, 4 or 5 years. Oppenheim,<sup>5</sup> aside from having often seen hysteria in the years ranging from 4 to 6 and repeatedly from 8 to 10, alludes to hysterical manifestations appearing as early as the age of 2 and 3. Baginsky<sup>6</sup> includes hysteria in his consideration of psychically defective children. Church<sup>7</sup> is in agreement with Oppenheim, stating that the age of puberty and the years of adolescence immediately following, furnish the majority of cases, adding that before 10 it is common, but children may develop it in very marked form even as

early as 2 or 3. Koplik,<sup>8</sup> who, in his 1906 edition of children's diseases, is abreast of the best pediatric thought, says: "It is not a true disorder of childhood," and then quotes Steiner, who states that 16 per cent. of all cases of hysteria occur in youth. He arranges the symptoms under two captions: 1. Psychic or nonconvulsive; 2, motor or convulsive. I refrain from quoting French authors, since hysteria to them is neither a respecter of age, sex or previous condition of servitude. Thus it will be seen that some of the modern text-book makers concede a juvenile, even infantile, form of functional disorder akin to that appearing in adult life, but do so with a reserve which begets doubt in the mind of the average reader.

To dissipate misapprehensions of every sort on the subject and show that tender years are not proof against hysteria, to reaffirm its frequent occurrence and emphasize its most characteristic phases is the object of this paper.

## ETIOLOGY.

For our first tentative knowledge of hysteria adutorum, we must go back to the Hippocratic view that held hysteria to be a disorder of uterine origin, hence restricted to females. This idea was opposed as early as 1617 by Carolus Lepois, whom Tourette also credits with being the first observer of hysteria as a not rare disease in children. Hoffman, in 1733, and Raulin, in 1759, evidenced in their general writings a clear idea of the subject.

It was reserved for Briquet,<sup>9</sup> in 1859, to correlate facts from his vast material that have given unqualified support from that day to this of the occurrence of juvenile hysteria as a common affection. His apparently extravagant claim that one-fifth of all cases of hysteria are developed before the twelfth year and that about 5 per cent. of the patients are males has found reiteration in the most recent figures by Bruns, who states that the ratios established "are not excessive, but less than the actual truth."

Since Briquet's time, Bourneville, Guinon, Tourette, Ollivier, Richer, Charcot,<sup>10</sup> Bezy and Bibent<sup>11</sup> of the French school, Seeligmuller,<sup>12</sup> Henoeh, Jolly, Oppenheim, Strumpell, Thiemich, Binswanger and Bruns<sup>13</sup> of the German school and Putnam,<sup>14</sup> Mills and Taylor of the American writers, contend for the frequency of hysteria in childhood. That the French have hysteria more constantly with them than the Teutons or Anglo-Saxons may be true, but it is equally certain that the latter peoples are not so entirely exempt as might be supposed from the imagined relative absence of emotionalism in their make-up.

That hysteria in children points to a defective system in modern education or is the expression of an effete civilization is, I believe, too presumptuous a statement, since large statistics show the major forms, those with palsies, contractures, passional attitudes, violent motation and convulsive seizures to be recruited from isolated rural districts and not from the great centers of urban activity.

The age limit from 4 to 14 has already been referred to, but hysteria most frequently develops between 6 and puberty. Bruns<sup>13</sup> agrees with Briquet<sup>9</sup> in stating that

\* Read at the annual meeting of the Illinois State Medical Society, Springfield, May 16, 1906.

1. "Diseases of Infancy and Childhood," 1896.

2. Sachs: "Nervous Diseases of Children," 1905.

3. Taylor: "Nervous Diseases of Childhood," 1905.

4. Gowers: "Diseases of the Nervous System," 1896.

5. Oppenheim: "Lehrb. d. Nervkh.," 1905.

6. Baginsky: "Lehrb. d. Kinderkh.," 1892.

7. Church: "Nervous and Mental Diseases," 1904.

8. Koplik: "Diseases of Children," 1906.

9. Briquet: "Traité de l'Hysterie," 1859.

10. Charcot: Prog. Med., 1882.

11. "L'Hysterie Infantile et Juvenile Monograph," 1900.

12. Seeligmuller: Deutsch. med. Wochschr., 1881.

13. Bruns: "Die Hysterie im Kindesalter, Monograph," 1906.

14. Putnam: Jour. Ner. and Ment. Dis., 1892, xxvii.



the ratio of juvenile to adult cases of hysteria is 1 to 5, one hysterical child to five hysterical adults. The average sex ratio between children is 2 to 1 in favor of the female, but with approaching puberty the tendency is for female types to increase and male types to decrease. To correct an erroneous impression, the pampered, spoiled child of the idle rich does not, by reason of its educated tastes and esthetic habits, alone fall heir to this affliction. Again, if statistics are to be valued, the poor and uneducated child of ignorant parents is equally susceptible and by some thought to be the more vulnerable of the two.

The monster predisposing agent, the *agent provocateur* (Charcot), to which all authors refer with great reverence is heredity. In a retrospect of one's ancestry, searching the byways as well as the highways, it were well nigh impossible not to come across some one member possessed of a friable or impressionable nervous system. Under Charcot, the French learned to grow fetishistic about heredity as a factor in the production of hysteria; others, again, think that many of the hysterical manifestations can be better explained in other ways. However that may be, the potential force of direct transmission must be admitted without the least reserve.

That hysterical symptoms are frequently engrafted on symptoms of organic disease and long outlast the latter, is, of course, not to be lost sight of. This is especially true of neuralgic and arthritic conditions following trauma. The genuine disability prepares the soil for further exaggeration of pain in an already impressionable child, and in the case of joint injury, for instance, hysterical tenderness, limitation of motion and contractures often supervene long after the original defect has subsided. Instances of this kind are cited later on.

A child's conscious aptitude for imitating the peculiarities, eccentricities and habits of others may, if long exercised, become a subconscious process, and the capacity for morbid degrees of mimicry shown by some children is truly remarkable. That a parent, for instance, may by precept and practice excite a nervous attack in a child is readily understood, but observers have not lost sight of the converse fact that when the neurotic tendency is strongly expressed the child may with equal facility induce a seizure in the parent. A sensitive child is quickly overwhelmed by what it sees, hears and feels and, under the ban of vicious example, weak discipline and an uncontrolled will, it requires but a brief period in which to elaborate a host of morbid impressions. So it is that hysterical parents have hysterical children.

In purely psychic cases of hysteria, isolation operates with excellent effect and works some speedy and wonderful cures. All of the underlying causes do not operate in each case of juvenile hysteria, but in every case we have to do with a psyche that is diseased, a psyche grossly perverted, modified by the influences of emotional or physical distress or both, but disaffected by actual organic disease.

#### SYMPTOMATOLOGY.

If one waits calmly for all the so-called stigmata and accidents of adult hysteria to be present before venturing the diagnosis, there will be little hope of ever recognizing this disease as it affects the child.

Juvenile hysteria in its objective manifestations is chiefly monosymptomatic. By that I mean that a localized paralysis may be the only physical finding in a case, or possibly one other symptom be associated with it to warrant the diagnosis, in marked contrast to the adult

type in which the hysterical syndrome is hardly ever complete without stigmata and accidents in great numbers. A single hysterical symptom, standing out in bolder relief in the child than it would in the adult, should from its very prominence arouse a suspicion as to its functional nature.

The paralyses of hysteria resemble those of organic disease neither in the manner of their distribution nor in the character of their onset or duration. In children monoplegias and paraplegias are frequent, and hemiplegia occurs, but always without involvement of the face. These palsies confined to a single limb usually appear with apoplectiform suddenness, are characterized by flaccidity, normal tendon reflexes, and in long-standing cases by very slight degrees of atrophy from disuse. Seen at short intervals, it is amazing how variable is the extent and degree of paralysis. Indeed, the rapid fluctuations from bad to worse and good to better should suggest the diagnosis. Associated with long-standing paralyses are the well-known contractures of functional type, marked in degree, relaxing only in deep sleep or narcosis and painful to the touch.

A child naturally takes smaller steps in walking than a grown-up person, and is in general more impulsive and less coördinate in all movements. When not hindered by pain, the mere knowledge of partial impairment is not always enough to remove haste, and this gives rise to jerkiness and dangling movements plainly seen with every hurried effort to advance the leg in locomotion. In several cases of monoplegia affecting the lower extremity I have observed a limp paralysis with some downward flexion of the foot, but in walking the scraping of the toes and sickle gait characteristic of organic hemiplegia were lacking. The astasic-abasic syndrome is very common in children. Bruns<sup>13</sup> thinks at least ten times more frequent than in the adult. Case 3 beautifully typified this phenomenon.

Some authors assert that areas of hysterical anesthesia, especially the "glove" and "stocking" varieties, occur with as much frequency as in adults, but my few observations harmonize better with the conclusions of those who think that anesthetic zones are only very rarely met with. The explanation for their absence is not far off. An adult is profoundly concerned about his utterly helpless extremity and gets the idea that if his arm is paralyzed for motion it must be paralyzed for sensation; if he can not move a limb, it naturally follows that he does not feel with it, and this suspicion grows to conviction with the physician's first suggestive inquiry and sensory examination. If at first the patient thought his tactile sense was impaired, he now is sure of it, for verily the physician tested it and, behold, it was absent. I believe with Strumpell that the mental attitude governing the display of sensory phenomena is so largely induced by objective examination and special tests that these stigmata no longer enjoy the clinical importance ascribed to them by earlier writers. The child's mind is not given to complicated mental maneuvers, and in the presence of paralysis it has a simpler interpretation for the feeling left in a paralyzed extremity, namely, that of discomfort. Sensitiveness was precisely the complaint and response I received in almost all instances in which sensory tests could be relied on at all. On the whole, I should say that sensory disturbances are rarely noted in children; that when present they are almost always of the hyperesthetic variety, and that hemi-anesthesias are practically unknown or have been reported only in children of more advanced years.



When an anesthetic zone, suggested or otherwise, is found to be present, it is the same unanatomic, sharply demarcated, rapidly shifting area that we are privileged to observe in adult hysteria.

Hysterical motor agitation in children is expressed in the form of choreic movements, a variety of facial habit spasms, convulsive tics, and epileptoid seizures. The graver forms of hysterical spasms are frequently mistaken for epilepsy and the less pronounced ones are conveniently evaded with a diagnosis of hysterio-epilepsy. Even when attacks of major hysteria (as described by Charcot and Richer) occur, as they sometimes, though rarely, do in children, we have a state of retained or semi-retained (never altogether lost) consciousness to deal with. In these cases, too, the widely and irregularly distributed hysterogenic (convulsion inducing) and hysterofrenatoric (convulsion allaying) points respond to the slightest pressure and initiate a seizure unquestionably hysterical in character. The hysterical convulsion is purely a psychic explosion attended with semi-retained consciousness, noisy, screaming delirium, violent motor play in all directions, a peculiar chattering of the teeth, flushed features, resistance of the eyes on attempts at opening them, no auræ, no biting of the tongue, no involuntaries and no personal injuries. The differential points between true epilepsy and hysteria should be carefully considered and, even when there is good cause for reservation and doubt, a so-called compromise diagnosis of hysterio-epilepsy should be discouraged.

Choreic movements in hysterical children are not at all infrequent, and as for frank chorea it is by no means rare. Bruns<sup>13</sup> is of the opinion that a large number of recurring choreas are hysterical, that a genuine metarheumatic chorea may have existed in the first instance, but that subsequent attacks were nothing else than hysterical imitations of the first, yielding to suitable treatment.

The polymorphous symptomatology would be rather incomplete without mention of such commonly noted phenomena in child hysteria as aphonia, mutism, stammering and blepharospasm.

#### CASE REPORTS.

In the past few years it has been my privilege to see 10 picturesque cases of juvenile hysteria, and I present the histories of 5 of these. If I seem prolix, it is because I desire to emphasize and detail the contributing as well as the exciting factors in the neurosis.

**CASE 1.—Summary:** *Four-year-old boy; family of "neurotics;" insignificant contusion; marked psychic trauma increased by overly sympathetic parents; fleeting monoplegic paralysis; sudden cure.*

**History.**—In July, 1903, I was called in an emergency to see A. J., aged 4, American born, a boy in a well-to-do family, who in the course of rough play had fallen and hurt his right arm. I had never before rendered the family a service. The mother was much excited, betraying enough sympathy and devotion to win over the affections of a regiment of children. In her anxiety, she had her husband and mother telephoned to about the terrible accident that had befallen the boy, and anticipated for everybody's benefit and within hearing of the child that the doctor would say the arm was broken. Fully 15 minutes were consumed in this preparatory display of nervous distress before the child's jacket was removed and the arm inspected. The history was that of a fall from a very low play-wagon.

**Examination.**—Patient was slight of build, pale, and very fidgety throughout the examination, whining and crying whenever or wherever he was touched. The forearm showed a soft swelling from contusion at the middle and extensor aspect, which nowhere reached to the joints; the long bones of the

forearm could readily be felt and were unhurt in their entire continuity from elbow joint to wrist. The arm was held rigidly flexed and adducted to the body. Every attempt to extend it was attended with screams from pain. Joint involvement could from the nature of the fall and the examination be absolutely excluded. Hot applications of ext. hamamelis were advised for the soreness and swelling, and a cumbersome dressing purposely avoided to disabuse the patient and family of the idea of a grave injury. Two days thereafter the mother displayed such intense feeling in the matter of a permanent bandage for the arm, that of her own accord she swathed it in dressings and talked freely of x-ray and possible fracture.

**Further History.**—A second examination a few days later convinced me that nothing was wrong except the swelling, which was already one-half subsided; but the child said all the fingers were getting stiff and efforts to half extend the over-flexed forearm were met with a snapping back and rigidity. The greatest pain was in the joint. The parents were strongly advised not to interfere, but make the boy eat with his right hand and play about without restraint.

Two days later the boy's arm was again examined by request, and instead of being held rigidly flexed was dangling limp by his side; passive movement at the joint was easily performed without pain, but the fingers and wrist were completely paralyzed.

The child was being fed and dressed and only allowed to play a little out-of-doors. Again the patient was encouraged by me to use the arm and hand vigorously, which advice the mother resented and thought cruel. After some days, I came across the boy in wild play with other children in the street, and had an opportunity to watch his antics for a full quarter hour. He pushed and shoved and was rolled about by the playmates without once showing disability, but the nurse who was in attendance, warned him to be careful of his hand.

Another week and I was requested to pass on the condition, since the child "could not eat," cried with pain in the wrist for hours at every bedtime, and the arm was again stiff and contracted at the elbow. I visited the child purposely at night when it had been asleep for an hour with the arm loosely resting on an extra pillow. The first grasp of the arm almost awakened the boy and caused it to get spastic with immediate contracture at the elbow, but on letting it go, it relaxed again, influenced by the deep sleep. I then made one final effort to correct the attitude of the parents, getting their promise to discipline the child by giving him nothing to eat unless he ate with his right hand. Two trials and sympathy triumphed; the child was fed. The next visit, with now almost a month elapsed since the fall, was paid at my office, where, with a small (so-called family) battery, a succession of electric shocks cured the boy in one sitting, and to my knowledge he has not since even so much as complained of weakness in the hand, and that is now almost three years ago.

**CASE 2.—Summary:** *Seven-year-old girl; in convalescence from scarlet fever, strange attacks of screaming by night and weak spells in legs by day; anomalous reflexes. Heredity good. Manifestations regarded as hysterical. Cured by hospital isolation.*

**History.**—M. W., female, aged 7, was brought to the clinic for nervous diseases at Northwestern University Medical School, Sept. 30, 1905, by her mother, who said that six weeks previously the child had come down with scarlet fever and was convalescing nicely until two weeks ago, when, during the night, at about 12 o'clock, she awakened with the most violent pains, apparently only in the legs, which were well drawn up on the abdomen and held in a most cramped position. The mother added that the calf muscles were "lumpy" in spots and the spasm, lasting about 15 minutes, was attended with agonizing screams. Long rubbing relieved them on the first night.

The second night, about the same time (midnight), the child had another leg spasm, screaming at the top of her voice with pain, throwing herself about and horribly distorting her features. This attack, of 20 minutes' duration, frightened the mother badly, who again worked vigorously over the child, rubbing the "lumps" out of her calves and applying hot flannels. For the first week the patient had these spells at nearly the same hour every night, and each time they seemed worse



than before, lasting anywhere from 20 to 30 minutes, and ending, after exhaustion and much petting, in sleep. Four days ago the mother became alarmed at a spell the child had before going to school, in which her legs gave away completely, and the seizure of pain, associated with spasmodic throwing about of all the extremities and fearful screaming lasted 15 minutes. While leading her to school the child fell down so often in every block that the mother practically had to carry her all the way. The mother has had this same experience daily, and on her way to the dispensary to-day was compelled to stop three or four times in every square.

The mother, an extremely sensible, quiet and tactful sort of woman, worn out from her broken night's rest, began to think something must be wrong with the child, and requested an examination and diagnosis. The child's antecedents were entirely free from neuropathic taint so far as the mother knew; the family were all rugged Hollanders and more phlegmatic than mercurial in temperament. The little patient had neither seen nor heard anything of "fits."

*Examination.*—This revealed a slender child, tall for her years, whose pallor of skin and mucous membranes might be attributed to her illness of scarlet fever. Heart and lungs were negative. The cranial nerves were uninvolved; the faucial reflex was absent; the jaw-jerk and upper extremity reflexes were brisk. The knee-jerks were absent and for a moment this suggested some organic disease, but with the legs hanging, and by aid of reinforcement, they responded promptly and equally. The Achilles reflex was bilaterally present, only, however, with reinforcement; the plantars were present also. The child complained of tingling in the arms and hands and tenderness in the leg muscles, although evidence of any weakness in them was lacking. In the presence of these symptoms, a possible beginning (post-scarlatinal) multiple neuritis was thought of, at any rate, some toxemic process. A positive diagnosis was withheld, the patient was given Basham's mixture for her anemic condition, and asked to return in another week.

At the second visit, two weeks later, the mother declared her experiences had nightly been the same, and she was too exhausted to continue the strain unless something could be done for the child.

Hospital care would have been advised at the first visit but for the possibility of spreading an infection during a delayed desquamative period. Now, however, some nine weeks had elapsed and it was safe to refer her to Wesley Hospital. In the children's ward of the hospital, the blood and urine examinations, repeatedly made, were negative. Nurse and internes were instructed seemingly to disregard the patient, and yet watch carefully for any disturbances, especially at night. The mother and relatives were not allowed to see the child. She remained in bed for two weeks, was up and around one week. During all that time she slept soundly all night and acted normally throughout all the days.

*CASE 3.*—Summary: *Four-year-old girl of neurotic stock; bad tempered; purely hysterical convulsions; anomalous reflexes; astasia-abasia; cured by isolation and appropriate method of disregard.*

*History.*—A. L., aged 4, seen July, 1905, is a female of Jewish descent. The parents of the child are in modest circumstances and the father has been in poor health for many years. Domestic cares have made the mother nervous and neurasthenic. The whole line of near relatives are neuropaths, and within the past three years, one uncle and two aunts of the child were committed to the care of state institutions for one or another form of mental derangement.

The child was a breast-fed baby, of extraordinary build, and presented no signs of rickets. Neither the history nor physical findings spoke for syphilis. Trauma was denied. About three months ago she showed a disposition to be quarrelsome in play with neighbor's children, and has grown intensely irritable without apparent cause.

Four weeks ago, while playing with dolls, patient got overheated in the kitchen and had what her mother called a "fit," which she described as follows: The hands were first stretched full length above the head, then thrown wildly about in the air; the body alternately stiffened and relaxed; the legs kicked in every direction until trunk and limbs finally got very rigid

and the chest was convexly raised from the floor. She was so frightened at the sight of this that she called to her next-door neighbor for help. She could not say whether the child frothed at the mouth or twitched in any particular part. When the attack was over the child had a crying spell, and was put to bed for the day. The next day she was up and well as if nothing had happened. The next spell followed a reprimand from the mother, and took its beginning in the mother's lap, the child sliding to the floor while screaming, jerking, frothing, breathing heavily, grimacing and making sucking, noisy movements with the mouth. This attack lasted about 10 minutes. Two subsequent attacks were induced by parental opposition and under stress of great emotionalism.

Three days ago, the date of the last attack, in a fit of anger at being refused some cake, the child slid from a high chair in one of these bizarre paroxysms, both limbs being crossed under her in extreme position as she fell. When the attack was over she could not get to her feet, and having bruised her shin was put to bed. I was called to see the child because it could not stand up and the parents feared some paralysis.

*Examination.*—The child presented an absence of the corneal reflex; "tickle" sense in the ear and nose was absent; the tendon reflexes were everywhere brisk, the child moved its limbs in bed when asked to do so, but a species of negativism was present in all the movements; for instance it would not voluntarily draw up the legs, but if the feet were tightly held at the ankles and drawn downward, strong efforts were made to oppose the extension, and when let go strong reflexion took place; the converse held true in extension maneuvers and I was fully convinced of the motor strength and unimpaired state of co-ordination, but the child would not stand and could not be stood up in bed. The knees would give way and the flaccidly held legs bend under their own weight.

*Treatment.*—The child was commanded to walk without success. Isolation was next recommended, but since hospital residence was strenuously disapproved of, it was decided to remove the child to a favorite aunt's house, isolate her there, and leave her for three months. For the first two days the child was ordered practically starved, and then far from her bed was placed a bowl of milk-toast, toward which she quickly walked and hurriedly devoured.

In a week she was entirely cured of her astasia-abasia, and in three weeks returned home, and has, to my knowledge, had no recurrent attack.

The absence of unconsciousness, biting of tongue, involuntary micturition, the prolonged duration of attack, upward of 10 to 15 minutes, the premeditated and emotional onset, the absence of initial personal injury, argue in this case for an hysterical attack; the physical findings reinforce this suspicion and the astasia-abasia completes it beyond peradventure of a doubt.

*CASE 4.*—Summary: *Thirteen-year-old girl; bad heredity; psycho-neurosis developing with pubescence; mutism and trismus; convulsions; hysterogenic zones, sensory stigmata; altered mentality; no opportunity afforded for treatment.*

*History.*—C. W., female, aged 13, of Swedish descent, blonde type and very anemic in appearance, was seen at her home Oct. 23, 1905. The patient's grandfather was insane and her father a confessed hard drinker. The girl was the third of five children, all of whom had grown up strong and well except one, an idiotic brother, who died, aged 3. With the advent of menstruation, which set in at the early age of eleven, the patient became gloomy and despondent without apparent cause. The mother states the mental change was complete. Her quiet way of doing things was replaced by cranky and irritable conduct, much weeping, depression and aversion for the society of other children.

It was hoped that taking her out of school for a year would materially improve the girl, and it did, although during this interval she had frequent fainting spells at the dinner-table, which her physician attributed to anemia of the brain, and which were not benefited by protracted dosage with iron. On the occasion of one of these spells, she awakened, but did not utter a word for two days, and had suffocative attacks whenever she drank water, which was oftener than usual. With



efforts at swallowing, the jaws and neck muscles would get very rigid, and water regurgitate through the nose and mouth. For these symptoms, which the family physician thought were very presumptive of lockjaw, she received one hypodermic injection of morphin. This was very painful to her, and after it she slept for ten hours. When she awoke her speech was perfectly restored and the dysphagia entirely disappeared. Directly after this experience the girl, at the age of 13, was sent to live with her married sister, with the idea that the change would do her good. This sister, who was in the fifth month of her pregnancy, developed eclampsia, and our patient unfortunately was compelled to witness the seizures. This circumstance brought the child back home, and I was asked to see her because of a series of "epileptic" (?) attacks which developed for the first time one month after having left the sister.

A week prior to my seeing her, she suddenly, one morning, while in bed, gave a scream, began to twitch, moan, froth, spit, writhe, roll her eyes, gnash her teeth, get rigid all over, and continued this for several hours, with intervals of three or five minutes of rest. At the onset of the attack she passed her urine in bed. Getting all these facts, I ascertained that she had experienced no attack in three days. I said that "seeing was believing," and suggested the impossibility of establishing a diagnosis from these data. Promptly the girl went into a major convulsive seizure of the most grotesque type, frankly hysterical, lasting ten minutes, and terminating only after hard thumb pressure over the supraorbitals.

*Examination.*—Examination revealed hysterical tenderness in the ovarian region and pressure over the left ovary precipitated an attack, which was easily cut short by hand pressure over the epigastrium. The patient presented tender spines, hysterogenic zones, and circular "stocking" anesthesia almost up to knees, equally on both legs.

*Treatment.*—This consisted in such isolation as the people could practice in their own home, cold baths, hypodermics of water (because of previous good effect) and no sympathy. The people then left the city and I have lost every trace of them.

*CASE 5.*—Summary: *Five-year-old boy; severe bronchitis; mild, but continuously annoying cough; shoulder "tic;" later, aphonia; no stigmata; cough cured by induced anorexia; "tic" voluntarily disappeared; aphonia overcome by one application of a strong electric current to the neck.*

*History.*—On Jan. 10, 1906, I saw I. K., male, aged 5, who had for some weeks been suffering from a hard cold on the chest, perhaps a bronchitis, for which "patent medicines" had been given internally and goose grease rubbings externally. The child was delicate and rachitic. The mother was frail and nervous; the father robust and boasted of "never a sick day." The parents reported their ancestry negative for nervous and other diseases. The boy was an only and much petted child, who had been reared in a small country town, and had always been hale and hearty prior to this, his first winter season in the city. After three weeks of "cold on chest," the parents thought the child should at least stop coughing, but it persisted more or less continuously. Nothing was expectorated, nor did the cough come in paroxysms of a croupy character.

*Examination.*—The cough proved to be merely a hard, hacking, barking noise, which when associated with a jerky shrug of the shoulders, immediately betrayed its hysterical character. During the examination of the chest, when commanded to be still, the child was quiet for 10 minutes or more at a time. Attracting the child's attention to his ribs and pressing hard in the right fourth intercostal space in front, would precipitate the harsh cough, which it was difficult to allay. Sleep was peaceful and undisturbed during the entire night.

*Treatment.*—Excluding organic disease on examination of the pharynx and lungs, the child was given a huge dose of syr. of ipecac. and responded with several explosive vomiting spells, and enough exhaustion to check both "cough" and "tic" permanently. The next day, the child could speak only in a whisper, and the parents, thinking exhaustion to be the cause, felt assured that the voice would get stronger in a day or so. They applied hot application and in two days the patient had an almost complete aphonia. On the fourth day, after the first

visit, one severely unpleasant shock from the electric current applied over the sides and front of the neck made the child scream, and it talked. Since that time proper hygiene and tonics have prevented return.

#### DIAGNOSIS.

In offering any remarks relevant to the diagnosis, I am keenly aware of saying nothing that has not been often and better said before, but a few general hints may simplify matters for those who have not given hysterical cases special study.

Confronted with a case of probable hysteria, the postulate of the German savant, Moebius, is a good one to bear in mind, that "such symptoms may be regarded as hysterical, which can be voluntarily produced or which may be simulated." Strong exception has been taken to this generalization by a few who have noted and denoted ocular palsies, pupillary changes, atrophies and edemas as hysterical. Nevertheless, the Moebius dictum at once prohibits any of the following unwilled phenomena from being classed as functional; the lost knee-jerk, the Babinski toe-sign and the reaction of degeneration, choked disc, optic atrophy, unilateral vocal cord paralysis, incontinence of urine and feces, facial paralysis, hemianopia, decubitus, fever, ankle clonus, marked pupillary changes. These signs and symptoms can neither be willed or simulated; they are always the unmistakable signs of organic disease of the nervous system, even though a few may cavil about their rare occurrence in hysteria. The Moebius maxim is discountenanced by some because it is said to be unscientific, but this is only a theoretical objection and as such is dismissed. Since no definition of hysteria has ever gone forth unchallenged or has proven wholly adequate, it is gratifying to have as a guide some rule which will enable us to assert in a given case:—This is a hysterical manifestation, and this is not.

Especially important is it in cases of organic disease plus something else to be able to say so much is organic, so much more must be functional. The greatest difficulty lies not so much in mistaking organic disease for hysteria, and *vice versa*, as in failing to appreciate that organic disease may be and frequently is complicated by hysteria. The liability to error in this regard applies in instances of juvenile as well as adult disease, and yet I venture to say the average physician seldom, if ever, thinks of hysteria in examining the child.

First to attract the physician should be the child's temperament. The *ego* ever asserts itself, and precocity, irritability, sadness, gladness, as well as a host of petty conceits, emotions and foibles, merit close and respectful attention. Since the hysterical child (and, for that matter, the parent also) is very apt to exaggerate every detail of its trouble and the condition giving rise thereto, it is well to note the disproportion between cause and effect in arriving at the diagnosis. A slight fall produces paralysis, a tap on the ear deafness, mutism, slight fright aggravates to profound choreic attacks. Slight cause, then, and grave consequence should arouse immediately a suspicion of hysteria.

The capacity of the young for autoimitation is great beyond measure, and untiring effort should be made to get at all the fads and fancies of the child. Febrile diseases conduce to notions of weakness and astasia-abasia results; pharyngeal disturbances subsequently give rise to aphonia; mild rheumatism eventuates in hysterical joint pains or perhaps contracture; cold air striking the eyes develops blepharospasm.

It is not always desirable to jump at conclusions, and



the above-named diseases need not have these stated terminations. There is no reason why a febrile disease with the patient's inability to stand in convalescence must be *astasia-abasia*. In fact, it much sooner could be *poliomyelitis* or *multiple neuritis*, but here again the criteria of organic disease, such as lost knee-jerks, etc., should at once dispel doubt. Every rheumatoid condition that ends in stiff joints need not be hysterical, because true ankylosis is the much more common and near explanation. Whenever rheumatic chorea recurs it is not as an hysterical imitation, but more often as a genuine second attack of chorea. In all these conditions, then, in which doubtful symptoms play a subtle part, the physician should always think of hysteria as a factor ever near enough to be probable, never so remote as to be impossible.

A consideration of such complicating states as *neurasthenia* and *hypochondriasis* would take me far beyond the reasonable limit of this paper.

Just a word in reference to the prognosis, which in children is infinitely better than adults. The very young fare even better than the older children in regard to cure, this being no doubt due to their greater psychic susceptibility to favorable suggestion. The younger the mind the more readily influenced and the easier the cure. Bruns had among his uncured cases only one boy as young as 7, all others ranged from 12 to 15.

#### TREATMENT.

Strumpell has said that in hysteria we meet with marvelous cures or no cures at all, and surely this will apply to many of the juvenile forms. A fundamental law which should never be lost sight of in treating hysteria is this: All hysterical symptoms are psychic, and the means of cure can only be psychic, that is acting on and through the child's mind.

An early and complete cure depends greatly on an early and positive diagnosis. Prompt suggestion to a child sufficiently old to appreciate it should prove most effective, for the reason that the hysterical habit, if we may so call it, has not had time to grow to morbid proportions.

Just as hysterical symptoms are ushered in with slight provocation, so they may be made to disappear with slight but appropriate treatment. As soon as the nature of the ailment stands revealed to the physician the parents must be made to understand the crux of the situation and be entirely governed by it. They must be told that a dispassionate interest, or, better, no interest at all, is the most wholesome thing for the child. Moral suasion is desirable, especially in cases with purely psychic manifestations, and, together with a firm yet gentle order of discipline, initiated early, will result in great and lasting good.

When one is denied the intelligent and obedient cooperation of parents, and this is only too often the case, isolation becomes an imperative measure. Isolation to be complete and effective means no visitors, no letters, no messages; in short, no reminders of the past. For proof of its efficacy, we are chiefly indebted to Charcot. With no intent to deprecate the talent and skill of the trusted family physician, let it be said that he is not the best nor, as a rule, the last adviser in hysterical cases. This disease is not a grateful one for the family physician to treat. Strange surroundings, strange people and the strangest physician will exert the greatest good and effect the quickest cure.

According to Bruns,<sup>13</sup> the etiquette to be observed toward a case of isolation should depend entirely on the

nature of the case. He has had an extensive experience with two methods called "*Die Uberrumpelungs methode*" (method of surprise) and "*Die Zweckbewusste Vernachlässigung*" (method of disregard).

The principle involved in the "method of surprise" is at once simple and logical. To emancipate the child from a deep-rooted obsession and do it quickly and completely (in one trial, if possible) is the purpose of the method. Give such children a chance to reflect and deliberate, and it means almost certain defeat for the cure.

A case of hysterical contracture treated in this manner would perhaps call for the exercise of moderate physical force. Assuming the knee joint to be the seat of trouble, use enough strength to overcome the rigidity and spasm and demand of the patient his immediate use of the limb, compelling him to stand or walk. When the *astasic-abasic* syndrome is present, slap the soles of their feet and insist that the child walk. Failing in this, it has proven curative to place such a patient in a bath tub, suddenly turn on the cold spray and see him scamper off. Intractable cases are reported in which recourse was had to suspension of the child, letting it drop to the hard floor where, from fright and surprise, it would stand glued to the spot. This is the psychologic moment in which to take advantage of the child's dilemma and surprise it with the words, after the manner of Bruns, who said, "See, now, you stand nicely and because you can stand you will be able to walk." If my starvation treatment in Case 3 had been a failure, I should have felt justified in trying this "suspension" maneuver.

Two rather weak objections have, I think, been raised against the rationale of this method freely used by Bruns. Some believe the surprise savors of just enough brutality to induce fright and fear to a morbid degree; that a fright neurosis may thus be superimposed on an already florid hysteria. Bruns and others contend that their experience is contrary to this deduction and think the objection not well sustained. Another group of conservatives say that the symptom is cured, but not the hysteria, to which Bruns aptly replies that the quick extermination of the initial symptom only too often annihilates the disease.

What of the "method of disregard" and the cases in which it applies? Given a child in whom hysterical convulsive seizures or choreiform movements have prevailed for some time, the plan is to have assistants, attendants and especially the physician in charge observe all that goes on carefully at a distance, but to seem utterly indifferent toward all symptoms. The patient reflects that no notice is taken because his or her trouble is too insignificant and it fades away to nothingness from the apparent contempt in which it is held.

In conjunction with isolation and these clever mental devices, all methods of avail in adult functional diseases are of use here. I refer to diet, massage, electricity, the lukewarm bath and cold spinal douche or the cold drip sheet. Hydrotherapy and electrotherapy is in the main extremely unpleasant and in part painful, hence successful. Hypnotism has met with growing disfavor, I believe, and is by many regarded as dangerous to children, if for no other reason than its being a form of induced hysteria. At the nervous clinic of the Northwestern University Medical School, hypnotism has been resorted to with success in a few very well-selected cases of habit spasm. • My experience to date does not permit of convictions for or against this mode of treatment.

After a cure in isolation has been effected, children



should not be returned to their old surroundings too soon. They should be given plenty of time in which to forget all the circumstances attending their former disabilities.

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## THE TREATMENT OF SIMPLE CHRONIC GLAUCOMA BY MIOTICS.\*

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It is the object of this paper to extol the action of miotics in the treatment of simple chronic or non-inflammatory glaucoma, to call attention to the very satisfactory results which attend the use of these drugs in this class of cases, and to urge their more intelligent and persistent administration; for while eserin and pilocarpin have been employed by ophthalmologists for 25 years or more for their miotic action in glaucoma, they have always been regarded as of secondary value to some form of operative procedure, being used either as adjuvants to iridectomy, both before and after operation, for the purpose of decreasing intraocular tension, or as substitutes for operation in advanced cases where iridectomy is contraindicated.

By most authorities operation has been and is still considered to be the only cure for glaucoma, and while the results of operation are known to be less favorable in simple chronic glaucoma than those obtained in other forms of this disease, yet it is almost universally conceded that even in this type iridectomy gives a better chance for retaining vision than any other form of treatment. I use the term "universally conceded," for I believe that the profession generally has adopted the views of such investigators as Nettleship, Bull, Priestley Smith, Knapp, Collins and Gruening, all of whom recommend early operation in the simple chronic as well as the congestive forms of glaucoma.

Although this advice has been accepted by the majority, it is probable that many hesitate to follow the counsel of these distinguished observers in all instances and prefer to treat many of their cases of simple chronic glaucoma in a less radical manner. When the average ophthalmologist considers the very slow progress of the disease and weighs the chances which iridectomy gives for retaining vision with the positive disadvantages which so frequently accompany the operation, and when he considers the liability of error in confusing glaucoma with optic atrophy, with excavation, and the needless risk of blindness to which patients with this latter disease would be subjected by iridectomy, it is not remarkable that the day of operation is often postponed and that recourse is had to measures which, though they may be regarded as being of less value, are never harmful.

Is there positive evidence, however, that miotics are of less value than iridectomy in the treatment of chronic glaucoma? Have statistics ever been compiled of groups of cases, the one treated by miotics and the other by operation, which prove this assertion and indicate the superiority of iridectomy over these drugs? So far as I am aware, no statistical study of any large series of cases of chronic glaucoma treated with miotics has ever been made, with the exception of that compiled by Dr. William Zentmayer and myself in 1895. At that time the histories of 167 cases of chronic glaucoma were collected from the services of the late Dr. William F. Norris

and Dr. C. A. Oliver at the Wills Eye Hospital, and from these records deductions were drawn which were thought to be fairly conclusive regarding many phases of the disease, including the results of different methods of treatment. Many of these cases had been observed over a very protracted period, and while the miotics which were employed were doubtless but indifferently administered in many instances, and carelessly applied, so that the full advantage which might have been gained from this form of treatment was not obtained in any of the cases, nevertheless an opportunity was afforded of comparing the prolonged action of these drugs with the results of iridectomy, which no other series of observations gives. For the conclusions of Nettleship and those of the other authorities already referred to were based merely on the results of iridectomy, and are of value only as they indicate the manner in which operative procedure influences the progress of glaucoma, and do not present any basis of comparison with cases treated by miotics.

As a result of our studies Dr. Zentmayer and I concluded that "the effect of the administration of eserin and of the performance of iridectomy in checking the course of the disease is proportionately the same in the treatment of simple chronic glaucoma. As operative procedures are always to be deprecated when other means are equally valuable, eserin should be employed in all cases of the disease. If at the end of a month the extent of the field has diminished, iridectomy should be resorted to, as there will be nothing further to expect from the action of the drug. If at the end of that time, however, an improvement is noted, as evidenced by a study of the field, the drug should be continued, as there is reason to expect that a beneficial action will be exerted for ten months on the extent of the field and fifteen months on the visual acuity. After iridectomy is performed there is ground to believe that the course of the disease will be checked for a period of eighteen months in 50 per cent. of the cases.

"Eserin is powerless in 20 per cent., iridectomy in 10 per cent. of the cases. So that 10 per cent. of all cases of simple glaucoma will not be benefited despite all therapeutic measures that may be employed. Both iridectomy and eserin exert a greater influence over central vision than they do on the extent of the visual field. This is seen in the greater percentage of cases in which vision was improved, as well as in the length of time in which it remained conserved.

"The intraocular tension was more benefited by both methods of treatment than any of the other symptoms, for eserin lessened its degree in all but 20 per cent. and iridectomy in all but 10 per cent. of the cases."<sup>1</sup>

In estimating the value of these conclusions it should be borne in mind that they were drawn from a study of dispensary patients and that many of these were under treatment at a time when the manner of administering miotics to the best advantage was not thoroughly understood. From observations which I have made on a very considerable number of cases, both in private and dispensary service, since the publication of the report, ten years ago, I am convinced that were it possible to compare an equal number of cases which had been subjected to the action of miotics properly administered over a similar period, the comparative merits of miotics and iridectomy would be shown to be far greater in favor of the former. Unfortunately, I am not in a position to make such a study, or to state in exact terms what such ratio of comparison would be, for I have not as yet at

\* Read in the Section on Ophthalmology of the American Medical Association at the Fifty-seventh Annual Session, 1906.

1. Wills Eye Hospital reports, vol. 1. No. 1.



my command a sufficiently large number of cases which have been followed over a long enough term of years. The difficulty of collecting a large number of cases of chronic simple glaucoma is very great. The disease is comparatively uncommon, and since as a rule it affects those who are advanced in years, death often ensues before the observation can be extended over many years, even when the subjects of the disease remain constant in their attendance on one surgeon. Though lacking statistical evidence to support them, I venture to express my convictions at this time, for I believe that recent utterances by ophthalmologists of note have tended to discourage the use of miotics, so that many who are beginning their ophthalmologic career and others who have but little opportunity for clinical observation have come to regard them as altogether valueless. When no less an authority than Berry asserts that "altogether I believe miotics to be practically useless in chronic glaucoma," and such a careful observer as Cheyney states that in chronic glaucoma "loss of sight without operation is, of course, inevitable," it seems time if one has been assured of the value of miotics to state his convictions and to give whatever testimony he can in their favor.

To elucidate the subject, I consider the subject under the following heads: 1. Beginning cases. 2. Advanced cases. 3. Pronounced glaucoma in one eye, the other being unaffected, or with only a glaucomatous tendency.

#### I. BEGINNING CASES.

I designate as beginning cases those which have possessed the tendency to glaucoma for a number of months or years and are now manifesting some positive signs of the disease, the tension being, perhaps, more or less elevated, the cupping demonstrable, or some restriction or scotoma having appeared in the visual field.

It is at this stage that the authorities and the books say operate, for they contend that the best results follow operations which are done at this time, asserting that the longer operation is delayed after the diagnosis of chronic glaucoma is once confirmed the less favorable will be the results. They acknowledge that the operation will not control the glaucomatous process in all cases and that in some it will accelerate the course of the disease. They do not ignore that even in the most favorable cases there will be certain optical disadvantages resulting from the iridectomy, such as astigmatism and aberration, that the transparency of the lens will suffer in not a small proportion of cases, and that some eyes will be lost from infection. Despite all this, the advocates of iridectomy say operate, for they claim that there is no other alternative, that there is no other treatment, that eserine can not be relied on, that it can not control the disease and that blindness is inevitable.

These are the expressed views of some of the ablest ophthalmologists in the world, and they no doubt express their convictions, but do these surgeons or does any member of this section strenuously and conscientiously follow this advice? Is iridectomy insisted on and urged in every case of chronic glaucoma when once the diagnosis is confirmed? I am convinced that it is not, and that, though operation is advised in many cases, it is done in such a half-hearted manner and the prognosis is guarded with such an unfavorable outlook that the patient would be rash indeed who would decide to submit his eye to it. Under such circumstances the operation is frequently refused, and the ophthalmologist, with the conviction that he has done his duty and has put his conscience at rest by the advice which he has given, is

now ready to do the next best thing and orders miotics. Expecting nothing from these drugs, he employs them but indifferently and without method, and as a consequence observes the gradual deterioration of sight. Another surgeon, though equally pessimistic, but more conscientious, employs eserine and pilocarpin more persistently and methodically, and is surprised at the long maintenance of vision. He then begins to question his diagnosis and consider if, after all, the case is not one of optic atrophy with excavation, and not a true glaucoma, though the increasing hardness of the eye serves to convince him more and more that there has been no error and that the case is surely one of glaucoma. I believe that there is scarcely one who has not had this experience and who has not had the conviction forced on him that after all perhaps it was just as well that such patients refused operation.

But it will be said, Who can tell that any given case will progress so favorably? Such experiences are exceptional, and the majority so treated will, after a few months, develop subacute symptoms at least, and loss of sight will be precipitated. It has been my experience that if the disease is of a pure chronic type in the beginning, in the great majority of cases it will remain so to the end, provided miotics are continuously employed. On the other hand, I have observed that if there are any congestive symptoms in the initial stages or shortly thereafter, miotics are powerless to check the disease and early operation is indicated. From a therapeutic standpoint, at least, I would insist, therefore, on the necessity of a separation of all cases of glaucoma into two types, the one congestive, which, despite the use of miotics, presents symptoms of irritation and inflammation in even the earliest stages, and in which early iridectomy is indicated, and the other the non-congestive or chronic, which may continue for many years practically stationary under the employment of miotics.

I have had under my private care at least four cases for twelve years, and for ten years twice that number, and others for lesser periods, on whom iridectomy was not performed, who still retain full vision, though somewhat restricted fields, and it is probable from the progress of the disease that the deterioration in vision will not be much more pronounced at the end of another ten years. As an example of this type I cite the following history:

*History.*—Woman, aged 62, consulted me first in June, 1897, for gradually failing vision. The eyes had never been inflamed or painful, and the glasses which she had worn both for near and far, had always given satisfaction until recently. The patient was strong and healthy, though gouty, but for several years previous to consultation had been under a severe mental strain. She had always been a sufferer from nasal catarrh and had not the sense of smell for several years.

*Examination.*—Examination showed the eyes to be quiet, the cornea being clear and the conjunctiva healthy. The anterior chamber of both eyes was shallow, the pupils were 2.5 mm. in size, reacting well to light and accommodation stimuli. Both optic nerves were hyperemic, of a dirty dull red gray tint, and their excavations extended temporally to a broad scleral ring. Arterial pulsation was absent, but the veins pulsated on the disc. The sclera in both eyes felt rigid, but tension was not apparently increased.

With + S. 1.75 D. with + C. 0.50 D. ax. 30° O. D. V. equaled 5/5. With + S. 1.25 D. with + C. 0.75 D. av. 60° O. S. V. equaled 5/5.

The field of vision in both eyes was normal both for form and color, and there were no scotomata.

*Treatment.*—Eserine gr. .1 was at once prescribed and the strength gradually increased, as the iris and ciliary muscles grew tolerant of its action. The proper correcting lenses were also selected, and careful instructions given regarding



the restricted use of the eyes at near work. Alteratives and tonics were prescribed and the regimen of the patient's life carefully outlined. This plan of treatment has been carefully and conscientiously followed for eight years, the patient submitting herself every two or three months for observation and any necessary change of treatment.

**Results.**—Central vision still remains normal, though the visual fields have suffered a slight restriction nasally for both form and color. There are no scotomata, either by the ordinary perimeter tests or by the method of Bjerrum. Tension, too, has become perceptibly increased in both eyes and the excavations on the head of the nerves are more distinctly glaucomatous and the nerves are paler. The refraction has changed, the last test, 428.06, indicating that it required + S. 2 D.  $\ominus$  + C. 0.75 D. ax. 120° to bring the vision to normal in the right eye and + S. 2 D.  $\ominus$  + C. 0.12 D. ax 80° to bring the vision to normal in the left eye. The cornea has continued clear.

The eserin has been well tolerated, and having always been prepared with care and in fresh solution, and boracic-acid washes used persistently in conjunction with it, all irritation of the conjunctiva has been avoided. The salicylate of eserin is now being employed in a solution of gr. ii to the ounce.

It is true that the disease has progressed in this case despite the constant use of miotics and diligent care directed to every source which could influence the ocular condition, but the progress has been so slow that in all fairness it may be claimed that the disease has been at least controlled. All here can doubtless quote similar experiences, and in such instances has there been a regret in the minds of any that iridectomy was not resorted to? Before closing this paragraph, however, it should be made clear that if the disease at any time assumes an acute or subacute type iridectomy should at once be performed, and furthermore that if it is impossible to keep the patient constantly under observation, or if miotics can not be persistently and continuously employed operation should be resorted to also.

## II. ADVANCED CASES.

Under this class is considered the not uncommon type where vision in one or both eyes has been seriously compromised by the marked restriction of the visual field, either peripherally by cutting, or centrally by scotoma. All advocates of iridectomy caution about the danger of operating under such circumstances, as it has been a common experience that total blindness has not rarely followed surgical interference. Cases of this type have usually been regarded as hopeless, and blindness, within a few months at best, has been considered to be inevitable. That miotics may be of great service, even in this type, and may accomplish truly wonderful results, is attested by the following case, which I have had under continuous observation since April, 1893:

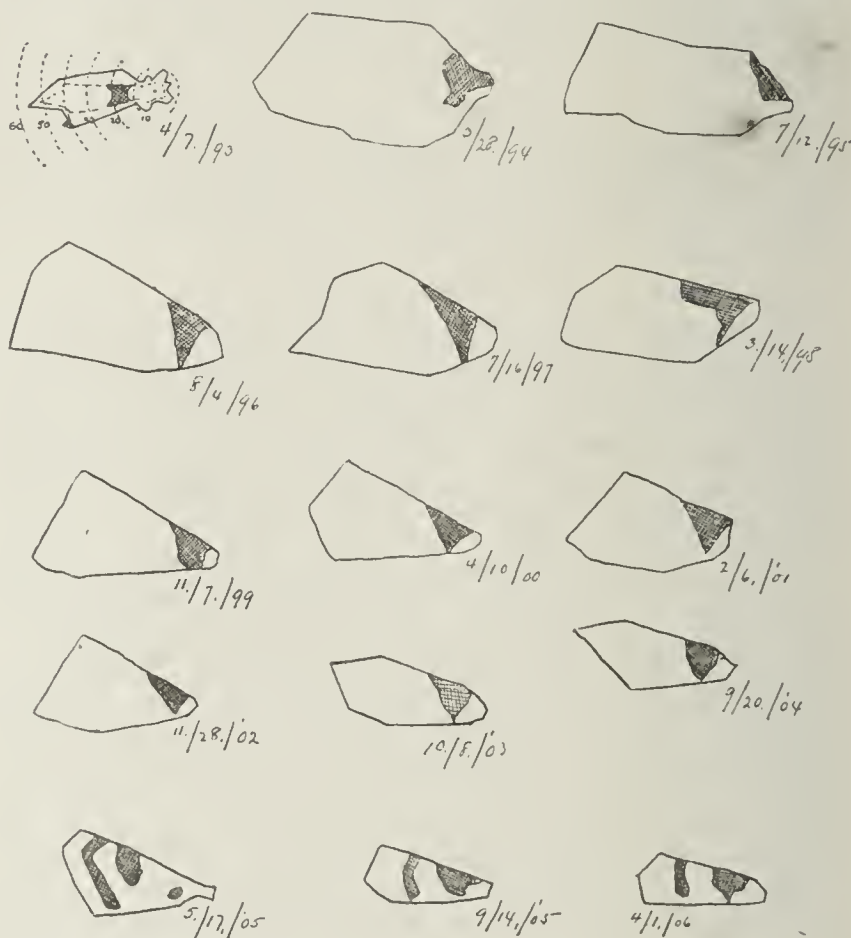
**History.**—Patient, a man aged 48, was practically blind in the right eye, while the vision in the left was reduced to but a segment of the visual field. The cause of the failure in vision was ascertained to be chronic simple glaucoma, which had followed an attack of grip three years previously.

**Examination.**—Both eyes were hard, there being no difficulty in estimating the degree of the hardness in both eyes as at least + 2. The anterior chambers were very shallow, the scleral vessels were dilated and engorged and the nerves were deeply excavated. The general condition was somewhat impoverished, digestion was poor and the nervous force of the individual negative. Nasal catarrh was complained of, and there were repeated attacks of rhinitis with sinus involvement; the conjunctiva, however, was clear. Vision in the right eye equaled the perception of hand movements in the temporal field; in the left eye central vision was normal, but as shown in the accompanying diagram, the field of vision was much restricted.

**Treatment.**—Iridectomy being apparently out of the question, on account of the marked limitation of the field, treatment with miotics was inaugurated, though it was felt that but two or three months would suffice to obliterate the small portion of the visual field which remained.

It should be stated in this connection that until this time, although the patient had been under continuous medical care, eserin had never been prescribed, but after the operation was refused, his treatment had consisted in tonics, boric-acid washes and a change of glasses. Under this plan of treatment, the loss in sight had been very rapid and the patient had estimated that should the left eye deteriorate as rapidly as it had during the few weeks before he came to me for advice, blindness would ensue in a month or six weeks.

The salicylate of eserin was accordingly prescribed, in a gr. ss to the ounce dose, conjunctival irritation being guarded against by the treatment which will be described later. Tonics were continued. Attention was directed to the nasal condition. Tobacco and alcohol were stopped, the use of the eyes at near work prohibited, and every effort was made to ameliorate the condition of the general health, and to gain a maximum effect from the miotics. In a few weeks, the eserin was increased to gr. i to the ounce, and a similar increase



The fields of vision in the left eye of a case of chronic glaucoma, showing gradual peripheral restriction and the extension of scotoma.

was made each month until in four months a gr. iv to the ounce solution of the drug was being employed.

**Results.**—The arrest of the glaucomatous process under this plan of treatment was most remarkable, for, as may be seen in Figure 1, the field became less restricted for a time and central vision remained normal. At the end of six months nitrate of pilocarpin in twice the strength was substituted for the eserin, and during the past thirteen years there has never been a day that either eserin or pilocarpin has not been instilled three or four times daily. Slight conjunctival irritation has arisen at times during this interval, but has always readily yielded to treatment. Until three months ago there was full central visual acuity, though as a study of Figure 1 will show, as the years went by the field of vision became more and more contracted and the paracentral scotoma has grown steadily larger. Three months ago, after a rather prolonged attack of dysentery, there were several recurring attacks of blindness in the left eye, which persisted for five to ten minutes. These were apparently caused by a temporary interruption in the retinal blood supply, and though they



were controlled by strychnia injections into the temple, and nitroglycerin internally, central vision has not arisen to more than  $5/7 \frac{1}{2}$ , and the field of vision has remained still more contracted. To-day, thirteen years after the patient came under my observation, vision is  $5/7 \frac{1}{2}$ , and the field is as indicated by the lowest chart in Figure 1.

That this truly remarkable result has been achieved by the use of the miotics I believe there can be no doubt. The very great increase in intraocular tension, the shallow chamber and the deep excavation render the diagnosis of glaucoma incontrovertible, while the rapid prevention of the loss in vision in both eyes which was occurring prior to the administration of the eserine indicates the power of this remedy in chronic glaucoma.

### III. PRONOUNCED GLAUCOMA IN ONE EYE, THE OTHER BEING UNAFFECTED, OR WITH ONLY A GLAUCOMATOUS TENDENCY.

Glaucoma is essentially a binocular disease, though a very long period may elapse before both eyes are affected. It not infrequently happens, therefore, that the ophthalmologist is called on to treat one eye in an advanced stage of glaucoma, while its fellow is either normal or presents changes which indicate in a general way merely a glaucomatous tendency. Experience has shown that when iridectomy is performed on the most affected eye, in glaucomas of a congestive type, that a glaucomatous outbreak is frequently precipitated in the other eye. On this account authorities advise the performance of iridectomy on the fellow eye as soon as the wound in the operated eye has healed, and believe that this procedure should be preferred even in cases of chronic glaucoma, where there are indications that if it is not already the seat of glaucoma it is liable to become so.

While my experience leads me to agree heartily with this advice in the treatment of all forms of congestive glaucoma, I do not believe that the same ruling should be made applicable to cases of chronic glaucoma, for I have never seen an acute attack precipitated in the fellow eye by an iridectomy on an eye which was the seat of a non-congestive type of glaucoma. In the cases of chronic simple glaucoma which are occasionally met with where a glaucoma of a congestive type, despite the continuous use of eserine, has developed from a chronic simple glaucoma, pure and simple, iridectomy is, of course, indicated and should be performed, but even under such conditions I have never seen an outbreak follow in the fellow eye when it had been properly guarded by miotics. It goes without saying, almost, that in event of operation in this class of cases the maximum effect of a miotic should be obtained some time before the operation, and that the administration of the drug should be continued in the fellow eye, even if it manifest no symptoms of glaucoma, as long as the patient lives.

The following history illustrates the progress of cases of this type:

*History.*—Miss H., aged 64, consulted me Nov. 22, 1904. Vision in the left eye had been poor for five years, but the deterioration had been much more marked the six months previous to consultation. There was a history of recurrent head pain of several years' standing, but unassociated with attacks of dimness of vision. The general health had always been good.

*Examination.*—Examination showed the right eye to be normal, but the left eye was found to be the seat of a sub-acute glaucoma, the nerve being atrophic with a deep glaucomatous excavation. Tension equalled + 1. The field in the right eye was normal, but was greatly diminished in extent in the left. With + S. 0.50 D.  $\odot$  + C. 0.50 D. ax.  $170^\circ$ , vision in the right eye was brought to normal; in the left, with + S. 0.50 D.  $\odot$  — C. 2 D. ax.  $30^\circ$ , it equalled but  $5/35$ .

*Treatment.*—A solution of eserine gr. .125 to the ounce was prescribed, this strength being rapidly increased until the pupil was brought to almost pin-point contraction. Despite this treatment, however, the field still further deteriorated and vision sank to  $3/60$ . An iridectomy was accordingly performed on the left eye, the right being kept under the full influence of eserine, both before and after operation.

*Results.*—The progress of the case since the iridectomy was performed has been favorable, vision in the operated eye remaining about the same ( $2/60$ ), while that in the right eye is still normal. At this time, two and one-half years after the operation, the right eye still remains free from any pronounced signs of glaucoma, no pathologic excavation having appeared and tension being apparently normal. The anterior chamber, however, is somewhat shallow. Eserine has been persisted in continuously and the strength of the drug gradually increased, so that two drops of a gr. i. to the ounce solution are being employed in the right eye at 8 a. m. and 10 p. m., and two drops of a gr. ss to the ounce solution at noon and 6 p. m.

The explanation of the favorable action of miotics in chronic glaucoma resides not only in their power to enlarge the angle of the anterior chamber by the thinning of the iris consequent on the contraction of the pupil, but also, as Wahlfors has suggested, in their action on the choroidal circulation, for when the ciliary muscle is stimulated the choroid is likewise influenced through the contraction of its tensor, and the muscular network of the membrane set in action, the pressure on the sclera relaxed, the mouths of the *venae vorticosae* opened, the amount of lymph within the eye lessened and tension made to fall.

Now chronic glaucoma is essentially, in the early stages at least, a disease of the posterior segment of the eye; its first symptoms are observable in the choroid and about the head of the nerve, and a long period may elapse before the anterior segment becomes appreciably affected. By reason of the double action just referred to, miotics are, therefore, peculiarly valuable in chronic glaucoma, while iridectomy, affecting, as it does, the lymph channels of the anterior segment of the eye alone, is comparatively useless. In acute glaucoma, on the other hand, the reverse is true, for in this type of cases the congestion of the anterior segment of the eyeball is present from the first, and iridectomy, by relieving this and by opening a permanent passage for the escape of lymph, is much to be preferred to miotics, which accomplish this but imperfectly and transiently.

In order to gain the full benefit from miotics in the treatment of glaucoma, it is necessary that they should be properly administered. It should be kept constantly in mind that glaucoma is a steadily progressing process, and that as the eyes, after a time, become habituated to the use of miotics their strength should be gradually increased. It must be remembered, also, that the effects of eserine and pilocarpine persist for two or three hours only, so that the dose should be repeated at the end of this period if their action over the pupil is to be constantly maintained. Finally, the dosage and the irritation occasioned by miotics should be taken into account.

Undoubtedly the objections to the use of miotics when they were first introduced, and which still remain in some quarters, were dependent on the employment of too strong solutions. When used in this way, cramp of the ciliary muscle, with resultant headache and other reflex symptoms, is often so violent that patients can not be induced to continue these remedies, while the occasional occurrence of hemorrhages into the anterior chamber and retina, which have been noted by some observers, has deterred many ophthalmologists from employing them.



It has only been within comparatively recent years that the profession has understood the art of commencing with small doses and gradually increasing them until the desired effect is attained, and then maintaining the action by still further, but less frequent, increase in the strength of the solution employed. As was originally suggested by Sir William Bowman, the initial dose of eserine should be weak. An excellent initial dose is gr. .1 to the ounce, the strength being gradually increased, so that at the end of a year the patient should be using gr. i to the ounce, at the end of the second year gr. ii and at the end of the third year gr. iii to the ounce solution. I have never found a stronger dose than this necessary, this strength sufficing to maintain the pupils at the desired point of almost pin-point contraction. Pilocarpine should be employed in twice the strength of eserine and is increased in solutions of equal proportions.

Wicherkiewicz has recently lauded a solution of eserine, pilocarpine and cocaine, in which he claims that the pilocarpine and eserine balance the mydriatic action of the cocaine, while the miotics maintain their power over the tension. The formula he employs is as follows:

Physostigminæ sulphatis.....gr. 1/7	01
Pilocarpinæ hydrochloridis.....gr. iii	2
Cocainæ hydrochloridis.....gr. iss	1
Aquæ dest. q. s. ad.....3iiss	10

The solution is employed at night only in chronic cases, but repeatedly in acute glaucoma. I have employed this combination several times daily in a number of cases, and have found it to act advantageously.

Gentle massage of the eyeball is of decided advantage and should be practiced several times each day, for five minutes at a time. In addition to these local measures, the patient should be instructed as to the number of hours daily the eyes should be used in near vision. All near work should, of course, be much restricted, and should be carried on only under the most favorable conditions regarding illumination, posture of the patient, etc.

Proper lenses should be adjusted to the eyes, both for near and far use, and the refraction should be frequently estimated and any error corrected, changes in the refraction being rendered frequent by the action of the miotics on the ciliary muscle.

As pointed out by Theobald, the astigmatism will often be found to be against the rule in chronic glaucoma, though I believe that this is rather the result of the stretching of the posterior part of the eye than, as Theobald states, the cause of the glaucoma.

A large number of hours daily should be spent in the open air, and, as the disease is undoubtedly frequently the ocular expression of chronic rheumatism and gout, the patient should be urged to spend the greater part of the year under the most favorable climatic conditions to combat that diathesis. The skin should be kept active, the gastrointestinal apparatus regulated, and any local source of inflammation or irritation, neighboring on the eyes, such as inflammation in the nasal passages or their accessory sinuses, should be allayed. Particular care should be given to the peripheral circulation, nitroglycerin and strophanthus being often of value. Zimmerman thinks that *adonis vernalis* is especially useful in chronic cases. Strychnia should be administered, not only on account of its action on the circulation, but also because of its influence on the optic nerve. On account of their antirheumatic properties, the salicylates are of decided value and should be frequently administered for continued periods.

Although miotics do tend to provoke a certain amount of conjunctival irritation, the excessive reaction which sometimes follows their employment is often mycotic, just as atropine irritation is mycotic, and can be prevented by care in preparing the solutions, while the continuous use of cleansing and sterile lotions in conjunction with the miotics will usually allay whatever slight irritation they occasion.

The miotics which are best adapted to control intraocular tension are the salicylate of eserine and the nitrate of pilocarpine. As pointed out by Landolt, this salt of eserine is more persistent in its effects and less changeable in solution than other salts of the drug, and is less irritating to the conjunctiva. Eserine, however, in addition to its action on the pupil, stimulates the ciliary muscle, and in cases where there is ciliary congestion, as in acute and subacute glaucoma, its use should be conjoined with cocaine, which neutralizes its contracting action on the blood vessels and diminishes the sensibility of the ciliary nerves. Pilocarpine may be substituted in such cases, as it has a much weaker action on the ciliary muscle than eserine, though its action on the pupil is also slighter, so that it must be used in twice the strength of eserine to gain the same amount of contraction.

It should be remembered that a moderate amount of pupillary contraction avails but little, and it should be the aim of the surgeon to keep the pupil continually contracted almost *ad maximum*. I prescribe a solution of pilocarpine for use during the day, and one of eserine of twice the strength at bedtime, thereby avoiding the blurring of vision which is occasioned by the action of the eserine on the ciliary muscle during the day, while the eye receives the greatest effect of the drug during the eight hours or more which elapse between the instillations of the drops during the night.

At times, though very exceptionally, a mydriatic effect will follow the instillation of pilocarpine. This has been determined by Liliensfeld<sup>2</sup> to be due to an impurity in the form of jaborine, an isomer of pilocarpine. I have noted this occurrence in one case, but the eyes suffered no injury, intraocular tension not being appreciably elevated.

[FOR THE DISCUSSION SEE PAGE 726.]

## THE CARE AND TREATMENT OF INEBRIATES.\*

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The therapeutics of inebriety turns like that of any other morbid condition on the definition of inebriety. In such conditions the relative element is largely involved, not merely as to quantity drunk, but also as to the character of the individual affected. Drunkenness is an old condition and made its appearance early in evolution among the social animals. Bees, wasps and ants become intoxicated on fruit ferments and recover from the intoxication with apparently the same experience of exhaustion as the human being. There is hardly a race which has not, independently of all others, obtained a method of intoxication, varying from the use of fungi, as is the case with certain Siberian aborigines, to that of distilled liquors.

2. Centralbl. f. prakt. Augenhk., May and June, 1901.

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



Distilled liquors were at first comparatively rare as a means of intoxication, and under the title of essences were sold almost entirely by druggists. With the development of the gin industry in the eighteenth century, the use of strong alcoholic drinks was rapidly popularized. Crude methods of distilling, however, had early been employed in rural distilleries and the percentage of alcohol abuse was through this, as it is in Italy to-day, much larger among the rural than among the urban population. Practically, the eighteenth century marks the abuse of alcohol in the urban population. The early object of using intoxicants was not to become merely stimulated, but to get drunk. Drunkenness implied no necessary stigma. Indeed, it was gravely debated in the seventeenth century whether it were not beneficial to get drunk at least once a month. The early claim for gin, which was the first great urban distilled liquor introduced to the English-speaking population, was that one could get drunk for 4 cents. The influence of this practice led to a certain belief in the manliness and even in the beneficial influence of drunkenness. Like other defective beings, the inebriate retains too much of this spirit, and at times has reversed it, ascribing all his delinquencies, like the one-sided sociologist, to alcohol. It is this element which furnishes one great obstacle to treatment and which necessitates classification of inebriates as a guide to management and therapy. Inebriates may be divided into congenital defectives, weak-willed instabilities, accidental inebriates, hysteric inebriates, periodical inebriates and inebriates with an acquired nervous constitution.

The congenital types are very frequently of the pseudo-criminal variety who indulge in alcohol as a means of shirking responsibility or of securing support and sympathy. The alcohol is simply an expression of moral defect and a dodge to secure sympathy. Such cases are the opprobrium of all treatment, like the congenital criminal type generally. These individuals are incapable of acquiring the secondary ego which admits the rights of others in property, happiness and opinion.

The weak-willed inebriates, like the weak-willed criminals, depend to a considerable degree on environment, which, in part, is constituted by the general condition of instability at the time he is subjected to temptation. In many of these weak-willed cases a general physical exhaustion accompanied by irritability underlies the yielding to temptation. These people are generally what is called lithemic and suffer from the alternate buoyancy and depression accompanying lithemia. Many of them also display a high degree of urinary acidity which culminates just before they yield to an intoxication. As alcohol very frequently in these cases restrains the eliminating power of the kidney and the poison-destroying power of the liver, it increases the factors which lead to its abuse. Furthermore, diet which increases the urinary acidity increases the craving for alcohol. In these cases, moreover, there is a tendency to the dreamful, exhausting sleep states which prevent proper recuperation from fatigue and increase the general nerve irritability and consequently decrease the balance constituting will power. These are the cases which so often mislead their friends and the sanitarium officials because of the apparent improvement under the hygiene of the sanitarium, which hygiene requires too much of psychic effort for the weak-willed, instable individual to maintain after leaving the institution. The trouble with this class of cases is that the periods of treatment

are too brief and the medical supervision too short to restore the proper balance, constituting will.

The third type includes inebriates made such by a great moral shock, who have previously been markedly strong-willed, but in whom the moral shock has upset the physical and intellectual balance constituting will. Here, as in the weak-willed instabilities, the tone of the will requires restoration and the patient, furthermore, needs the physical buoyancy overcoming mental and physical depression. The acid states and indicanuria are peculiarly present in this class of cases; liver, kidneys, skin and lungs need attention, as well as the general mental and nerve tone. Moral discipline is also very essential and requires peculiarly the application of the French principle that for every evil there is always compensation. There is in most of these cases an underlying depressed mental tone which needs special attention, since influence can thus be best exerted in restoring the normal tone of the will. Very frequently there is, as in melancholia, a paralysis of the social factors, causing the subject to disregard the claims of his family or of those dependent on him. A continuous appeal to these claims is often peculiarly needed. Here medical care of the rest-cure variety comes into play. In none of the types described can the promise of the patient to abstain from alcohol be depended on wholly, nor can his promise to subject himself to dietetic and other therapy be relied on.

The will in all three cases is at the mercy of any impulse which does not present to the subject the appearance of the violation of a contract. The various signings of the pledge, etc., have not acted in the direction of improving will power, but in the direction of counter suggestion to impulses. That such suggestion is potent at times under very favorable conditions there can be no doubt.

Hysteric inebriates are closely allied in type to the weak-willed inebriate, except that there is a deeper nerve defect. The hysteric inebriate finds a satisfaction, even voluptuous pleasure, in shocking the moral sense of his or her friends and in the notoriety thereby occasioned. This is peculiarly the case with the female "rounders," who in the English-speaking countries have, like Jane Cakebread, been arrested so many times for drunkenness. These cases are the more intractable as the appetite for alcohol replaces the sexual appetite. Many of them prefer the shock given their friends and the general public by intoxication to sexual indulgence. Individuals of this class are frequently found among young girls about the period of puberty. There is generally in these cases congenital defect which has interfered with the development of the secondary ego.

The periodical inebriate, strictly speaking, is not an inebriate at all as a rule. There is a widespread distinction between the true periodical inebriate or the dipsomaniac and the inebriate proper. An alcoholic patient, as Legrain remarks, becomes insane because he drinks; a dipsomaniac is insane before he commences to drink. Dipsomania may be complicated by alcoholic symptoms, but alcoholism never leads to true dipsomania. Alcohol is an intoxication which has as its cause alcohol, while dipsomania has its origin in a congenital defective condition and alcohol is a secondary factor, which may be replaced by any other intoxicant leaving the syndrome all its psychologic characters. Dipsomania proceeds in paroxysmal attacks and the appetite for intoxicants is absent between the attacks. The development of alcoholism depends directly on the greater or less degree of



consumption of alcohol. Dipsomania, therefore, is a periodical insanity characterized by irresistible craving for alcohol or narcotics during certain periods preceded and succeeded by nervous and mental change in the individual affected, intermingled with periods of sobriety. The alcoholic element is a mere manifestation determined at the outset of the attacks. The dipsomaniac would be insane during the drinking periods even if no alcohol were used. The condition, therefore, is akin to epilepsy. Dipsomania may be complicated by symptoms of alcoholism: depression, exhaustion, tremor, delusion, oppressive dreams approaching to somnambulism, hallucinations, etc. The treatment of dipsomania turns on the discovery of the conditions preliminary to the drinking period and the determination whether this can be prevented by dietetic and therapeutic methods, as is done in cases of epilepsy. The individual during the drinking periods is not legally responsible, since free determination of the will is impaired, not merely by the alcohol but by the underlying nerve state which in no particular is due to alcohol, albeit it may be aggravated thereby.

Underlying many complicated neuroses, some of which belong to the protracted neurasthenias, some to the true hysterical constitution and some to what may be called the paranoiac neurosis, are states produced by traumatism, by insulation, by electric shocks from live wires, by nervous states after the essential fevers, by conditions resulting from uterine and ovarian strain and defect and from severe strains in business with consequent anxieties.

In 23 cases in which degenerative shocks were charged to alcoholic parentage, both father and mother were alcoholics. The fathers in four cases had been temperate, industrious and affectionate ere being sunstruck; following this came periods of irritability, excessive drinking and spendthriftness. The mothers had remained free from the use of alcohol after the fathers' breakdown, but were nervously exhausted from the strain; one becoming depressed during pregnancy was given gin for the depression and became an inebriate after delivery. In three other cases dysmenorrhea developed during the nervous strain. The popular prescription for this, gin, was given with the result of producing inebriety. In two of ten cases where injury to the father had like results on both father and mother, dysmenorrhea resulted after a railroad accident and gin drinking to relieve this followed and became a habit. The fathers' nervous system broke down under the strain and they both became inebriates. In two other cases nervous exhaustion from typhoid fever produced the same outcome, inebriety, in father and mother. In the remaining cases inebriety was the product of nerve exhaustion after various protracted infections. The influence of local sources of nerve exhaustion, like eyestrain, nose and throat, ear and other strains and from the reproductive organs, must be here included. As with the insane, every source of nerve irritation requires attention in the inebriate and removal whether the same be eyestrain, reproductive organ strain, nose and throat strain, or strain seated elsewhere in the body. In the management of this class of inebriates the underlying nerve state has to be taken into account and the fact that this nerve state peculiarly deranges metabolism and elimination and thereby acts in a vicious circle. While much may be done for the neurasthenic and hysterical types, the paranoiac type is practically hopeless. Indeed, it often presents periodic symptoms leading to a

diagnosis of dipsomania or inebriety, which symptoms disappear in the insane asylums or in the penitentiary, leaving behind a clearly developed paranoia. In these cases, however, there is sometimes a good mental background which keeps the paranoiac tendencies in check and which may be aided by removing all sources of irritation. Unfortunately, however, strain tends to break down this mental background and the irritability of the condition predisposes to alcohol and at the same time the condition is peculiarly intolerant of alcohol. In all these types of cases protracted medical supervision is needed.

The management of inebriety, therefore, is management of a protracted disorder like typhoid, where any "specific" becomes an absurdity, since the patient, and not the disease, requires treatment. Strychnin is beneficial in nearly all nerve defects, because it enhances general circulation, gives tone to the heart and adds a certain buoyancy which offsets depression. For this reason strychnin and nux vomica have often been credited with curing inebriety. I prefer strychnin nitrate, 1/100 gr. to 1/50 gr., three times a day, either in solution or in pill. Other preparations useful occasionally are the hydrobromate of strychnin, 1/50 gr., and arsenate of strychnin, 1/100 gr., once or twice daily. Other good tonics for chronic alcoholism are the following:

R.	Tr. nucis vomicæ.....	f3ss	2
	Acidi phosphorici dil.....	3i	4
	Aquæ chloroformi .....	3i	30
	Aquæ dest., q. s. ad.....	3vi	90

M. Sig.: A sixth part three times daily.

R.	Tr. nucis vomicæ.....	3iv	15
	Acidi nitrici dil.....	3v	20
	Fluidextracti leptandæ.....		
	Fluidextracti taraxaci .....	āā 3vi	90
	Infusi quassiae, q.s. ad.....	3viii	240

M. Sig.: Two teaspoonfuls in half a glass of water two or three times a day.

Mandragora is an old remedy for conditions of depression, and, as it undoubtedly adds a certain nerve-toning element to a decided eliminative tendency, there is no doubt but that at times it would prove beneficial in certain cases of inebriety. Its nerve-toning and resultant sedative process, as well as its eliminative action, however, are greatly overestimated. It has an action on the heart resembling that of digitalis, but has not quite the toning effect on the arteries as strophanthus, with which it has been allied. It was a great favorite with the Greek and Roman alienists, and their claims for it have been revived in St. Louis, the home of proprietary preparations. Like all the nervous exhaustion states, inebriety is accompanied by motor disturbance. The inebriate requires restful sleep. Combinations of sulphonal, of trional, of veronal and tetronal with old vegetable narcotics, like pasiflora incarnata, hyoscyamus, conium, etc., are frequently beneficial for this purpose. The following is an excellent formula to produce sleep in these cases:

R.	Sulphonal .....	gr. xviii	1 16
	Fluidextracti conii.....	m. xviii	1 12
	Pulv. glycyrrhizæ, q. s.		
	Ft. caps. No. vi.		

Sig.: Take two at 6 p.m., two at 8 p.m. and two at 10 p.m. The next night half this quantity will probably suffice.

Lupulin in 10 or 20 gr. doses taken at bedtime will often serve as an efficient hypnotic.

Balneotherapy, on account of the stimulus of the circulation, is peculiarly beneficial in all its varieties. Cold sponging, given in such a way as to reach the spinal and



pelvic nerves, exercises a beneficial influence in many directions. In diet, red meats must be greatly reduced as well as the starches, while the fats should be increased. Food, as a rule, should be given frequently in small quantities, but should be very nutritious. Fresh acid fruits are of great value.

In regard to moral treatment the inebriate must place himself under medical control for a prolonged period; otherwise results will not be permanent. Separation from the family and from the previous environment in which the condition has developed is absolutely necessary in the vast majority of cases.

Inebriety is so varied in form, so subtle in operation, so intricate in development and so complex in causation, that its treatment is no easy task. No disease is more common and yet none so seldom recognized. It is more widespread than tuberculosis, yet nearly every state in our Union is taking measures to prevent and to treat consumption, but, save among a few enlightened people, drunkenness is regarded purely as a vice, a folly or a sin. People look on the drunkard as a good-for-nothing scapegrace. The preacher denounces him as willfully guilty of heinous sin. The judge punishes him as a criminal offender.

If a man is found in the streets of Chicago, Boston or almost any city in this country suffering from apoplexy, carbolic acid poisoning or "rat" poisoning, he is tenderly lifted into an ambulance and hurried to some hospital where he can be properly treated. If, on the other hand, a man is found unconscious from alcohol poisoning, the police pound him on the soles of his feet, endeavoring to wake him up, pitch him into a patrol wagon and throw him in a cell at the police station, from which he is afterward brought before a police magistrate and fined for committing a crime. This might, and does, occur daily, not only with mild inebriates, but with dipsomaniacs. Whatever their inherited tendencies, whatever their original weakness of will, whatever their inborn deficiency of moral control, whatever their natural susceptibility to alcohol, contumely and reproach, pains and penalties have been the only means which have been generally employed in the treatment of inebriates.

Dr. William Lee Howard, in "The Perverts," has so well expressed the truth I quote his remarks:

The public gazes at the club-footed child, or the deformed adult, and utters a sigh of sympathy or an expression of regret that the parents or friends have allowed the sufferer to go uncured, the deformity uncorrected. The child whose twitchings are the symptoms of St. Vitus dance is the cynosure of its playmates, and often the victim of their ignorant ridicule. The child's distressing uneasiness and odd muscular movements, however, are recognized as the effects of disease and the social attitude of young and old is adapted to this recognition. Does the public ever realize that any group of the cells which make up the human body are liable to be distorted, undeveloped or misplaced during their formative period? That, while we pity the man with the deformed bones, and appreciate the fact that the deformity is due to no fault of his conduct, the man who was born with an analogous psychic defect is shunned, ostracised, and meets with social dereliction? It is the same old story. The world is ever too eager to censure what it does not understand. What is objective it accepts; what is subjective it ignores or ridicules.

With its knowledge of modern corrective surgery, the world blames the parents who allow their children to grow up deformed, rightly holding them responsible for not having had the defect remedied. But if the child grows up with some defect in its controlling centers, if the nervous system is a little unbalanced, the neglect and ignorance of the parents increase the instability, and the result in the adult is some form of impulsiveness. For the objective signs of this impulsiveness

the helpless one is thrust aside, and the real offenders—the parents—meet with the sympathy of the world.

If this symptom of a nervous affection exists in the man of ordinary intellect; if this man periodically demonstrates his restlessness by resorting to alcohol to relieve his horrible feelings, it is called by the unthinking masses vicious drunkenness. This condition—the disease, inebriety, or its rabid form, dipsomania—rarely prevails in the man of ordinary mental powers.

The psychic conditions producing the unreasonable passion to consume enormous quantities of alcohol, morphin and allied drugs, is as distinct an affection as is the physical epilepsy seen daily on our streets.

I am charitable enough to believe, however, that the general public is only unjust and cruel through ignorance.

It was not so very long ago that an insane person was regarded as one possessed of the devil. Persons of unsound mind were starved, beaten and exposed to the cold when, if the patient survived this punishment, often of many days' duration, he was considered to be cured. In other cases these individuals probably "died cured."

All drugs, nostrums, and so-called cures are deficient in nerve restoration and moral renovation. Drunkenness is at once a moral and a physical evil. While we must look to the will, however weakened, of the inebriate, for an effectual and lasting cure, his physical system must be strengthened, his diseased condition of body treated, and his craving for alcohol overcome if possible. To aid in the accomplishment of such desirable ends, we need to employ various medicinal remedies, hygienic measures, modifications of diet, entertainment, moral influence, suggestion, etc. These means can best be employed in an institution especially equipped and designed for the treatment of inebriety.

In my opinion, sanitarium or institutions for the cure and treatment of these cases should be established and maintained by the state.

Some objections might be raised to the congregation of inebriates for treatment, but these are trivial as in the case of the insane and epileptics in comparison with the benefits. For instance, it has been urged that the moral tone is lower among a number of individual inebriates living together than where there is only one. Whatever weight can be attached to this objection is far more than counterbalanced by the emulation where there are different individuals, besides a sharpening of wit and a stimulation of thought, which are often of undoubted service in cultivating the intellect and elevating the tastes of the inmates.

In a properly managed institution the patient should not only have the advantages of the best medical treatment, baths, etc., but there should be lectures and discussions which would interest and stimulate thought, social gatherings, music, facilities for study, for the exercise of handicraft and for artistic work. With it all, however, there should be a kindly discipline and each patient's treatment, recreation, study, exercise and work should be carried out with regularity and system and under the guidance of a strong directing mind, by the unconscious force of a masterful friend.

Such an institution should be in the country with sufficient land to afford work for the patients which will give them the benefit of fresh air, sunlight and exercise. The labor assigned the inmates should be made as agreeable as possible. A man, for instance, who has always lived in the city, will learn something during his course of treatment, of agriculture, of horticulture, etc. Lectures should now and then be given on these subjects



so that the patient will return to his home with a wider knowledge than he possessed before, which in itself is of value.

The time spent in this country home would be of great benefit to the average man, especially the city-bred individual. There is something very restful and recuperative in virgin dirt. Nature soothes. Neurotic unstable people would surely gain strength and earthly virtue in life such as a country sanitarium of this sort would give them. A grove, a barnyard, a garden, a ploughed field, are far more healthful and not half so nasty as the average vaudeville or the many so-called attractions of metropolitan life.

The length of time a patient should remain in a place of this kind varies according to the individual, and the duration of the illness. Belief in a speedy cure is unconsciously fostered by the difficulties in the way of heads of families absenting themselves from their homes, from their business or other callings for a protracted period. Nature can not be cheated, and it is the duty of the medical adviser to state plainly to the patient and his friends that several months should be spent in the sanitarium. The so-called quick cures almost invariably result in relapses sooner or later.

I think this subject, "The Care of Inebriates" is a very important one, quite as important as the care of consumptives and it is our duty as medical men to create as rapidly as possible, a public sentiment toward the establishment of state institutions for the care and treatment of inebriates.

I wish that this Section on Hygiene and Sanitary Science at this meeting of the American Medical Association, would put itself on record as earnestly recommending such institutions.

## THE PSYCHIC TREATMENT OF INEBRIETY AND ITS RELATION TO SO- CALLED CURES.\*

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We apply the term inebriate to a class of persons who, involuntarily and not as a matter of choice, have become habituated to the use of alcoholic liquors in excess, either periodically or more or less habitually, and who, under these conditions, have lost their self-control and whose will power is entirely in abeyance to their appetite. I maintain, however, that in a large proportion of cases the will power is not destroyed, or so handicapped as to be beyond the power of resurrection, but is overcome and held in subjection by a master passion, which dominates the will. The indications, then, are simple; we must rouse the latent will power and make it aggressive; in other words, oppose the psychic to the physical nature. "The flesh lusteth (or striveth) against the spirit. We must reverse this order of things.

All forms of inebriety are not subject to this method of treatment. I exclude all cases complicated with organic disease, as the later forms of syphilis, or alcoholic lesions or other organic changes, etc.—complications not uncommon in this class of cases—conditions with which the will power has little or nothing to do and which must receive direct and appropriate medical treatment.

I consider the simple, uncomplicated form of inebriety, more especially in its earlier stages before serious lesions have occurred, and especially that earlier and formative stage which by common usage is often called "habit" or "vice." It is important, therefore, to note the fact that psychic treatment should be selective and applied only to appropriate cases.

### PSYCHIC INFLUENCE.

Every student of psychology is familiar with the "influence of mind over matter." We see this in the sick room, as physicians we know "a merry heart doeth good like a medicine," and we are strongly inclined to believe that the personality of the medical attendant has as much to do with his success, in either his institutional or private practice, as his professional attainments. When he can conscientiously do so it should be the effort of every practitioner to instil his optimism into the mind of his patient. It is related of a distinguished London physician that he was called to see the wife of a prominent and well-known member of society. The physician prided himself on what he was pleased to call his "bedside manners." After he had left the sick room the husband asked his wife how she liked the physician. She besought her husband not to call him again, as he reminded her of the undertaker!

The sooner we as physicians recognize the fact that our patients are other than blood and bone, sinew and muscle, and that we should consider something else than tongue, pulse, temperature and excretions, and that there is an intangible, impressionable, sensitive, immaterial nature, influenced by material conditions and environments, which we can depress or elevate, according to our relations to the patient, the better will be our success in dealing with certain classes of diseases, and in proportion as we fully recognize the importance of these facts and apply them in a limited number of cases and to a certain degree in all cases in which the patient is at all responsive.

From time immemorial illegitimate medicine and quackery has thriven along the line of psychic influence. Whether consciously or unconsciously, there has been a tacit, practical recognition of the fact, and it has been acted on and constitutes the capital stock of all forms of nefarious schemes which are shapen in iniquity and conceived in sin—schemes that endeavor to make gain out of those unfortunates who are afflicted with "all the ills that flesh is heir to," and can be brought under its malign influence.

Within a few years, comparatively, legitimate or, shall we say, orthodox medicine has put its head out of its shell, looked around, "taken in the situation" and recognized the influence that mental suggestion and various psychic influences may play in the rôle of therapeutics. It has learned that certain conditions from without affect certain conditions within, according to psychic law, and so constitute psychotherapy as a department of therapeutics. It has learned that there is a class of mental disease in which the will power and the mental condition can be greatly influenced, benefited and often cured by such treatment and the active manifestations of which are the symptoms or outcome of the mental conditions, removed.

### SUCCESS OF TEMPERANCE MOVEMENTS.

It is only by accepting the fact of the relation of psychic and physical law and the influential and causative relation the two hold to each other and their mutual interdependence that we can explain certain anomalous

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



conditions which are otherwise apparently contradictory. The inebriate is before us; he is a complex study; he is of all-around interest to us, not only body, but mind and will, his intellectual and emotional nature, his psychic as well as his physical makeup must be considered. We can not divorce the psychic from the physical. "What God hath joined together let not man put asunder." The study of mankind is man, but we have studied him from his physical, not from his psychic, side. "The body is more than raiment," and the body is simply the clothes that the man is wearing. Behind the veil of flesh is the real man himself: the sentient, emotional, controlling master of the body.

We can account for the success of the so-called temperance movements or instances of reformation in individual cases of well-known drunkards only by accepting as an explanation that of psychic influence. When under strong mental emotion the will becomes dominant, asserts itself and masters the alcoholic craving, the psychic overcoming the physical. As stated, I limit the application of psychic treatment to the simple, uncomplicated forms of inebriety in the early or initiatory stage, known as "vice" or "habit," and exclude all cases complicated with organic disease, which, of course, call for special treatment. Coincidentally, however, in all cases I should use, as far as possible, those influences that would affect beneficially the mental or emotional nature of the patient.

#### TWO CLASSES OF INEBRIATES.

We are now prepared, at least in a measure, to understand why cases of "alcoholism," so-called, are cured outside of the methods of the theory and practice of medicine. It will not do to decry the facts concerning the so-called "cures," because well-authenticated cases are continually before us in which men and women who are drunkards have reformed and remained sober as the apparent result of the "cure," or who have become so independently of any "cure" or treatment.

We are, therefore, driven to one of two conclusions, that there are two classes of inebriates: 1. Those in whom the will power is not seriously impaired—only latent—and who are free from serious organic lesions and who are amenable or responsive to psychic influence. 2. Those in whom the will power is radically impaired, who are the subjects of irremediable disease, progressive and eventually fatal, and over whose condition psychic measures can have no influence. Such, I believe, is the rational and, therefore, logical conclusion, if we would explain success in one case and failure of success in another under apparently similar conditions. We must classify the inebriate, therefore, especially if we desire to subject him to psychic influences, for I believe it is only applicable to a certain class of cases.

#### QUACKERY AND THE INEBRIATE.

All forms of irregular medical practice, "patent medicine" vendors, the dispenser of specifics and nostrums, quackery in various forms, flings bait to all inebriates. Its treatment, to a certain extent, is non-selective, necessarily so, especially when it is carried on through the mails or the press, by letter or advertisement. Let us analyze the method rather than the drugs of the so-called "cures." Whether unconsciously or not, the promoters of these various financial enterprises, for such they are, *per se*, act along the line of "mental suggestion," influencing certain psychic conditions, not directly or openly, but by the presentation and medium of certain

drugs or "cure-alls," by which the impression is conveyed that through the instrumentality of certain potent, infallible, special proprietary medicines a speedy cure will be effected.

The *modus operandi*, by which the "cure" is directed to affect the psychic centers of the individual and call out his latent will power, is ingenious as well as of interest. Consider, then, in detail how every move in the plan of these astute students of human nature is centered on the one object, to raise the individual along his emotional nature to that point where he shall exercise his will power and at least decide to "try the cure," by appealing to his confidence, hope, self-respect, pride, shame, fear, all the attributes of his moral nature that influence volition. The whole process is to him a "dark séance," over which the glamor of mystery is spread, the potent influence being concealed in the infallible, and precious, and mysterious drug or "cure." Hence the promoters of these "cures" differ from the regular specialist in psychotherapy, who practices directly on the psychic centers without the medium of drugs or other forms of therapeutic measures, and with the full consent and knowledge of his patient as to the methods used.

#### EXPLOITING A "CURE."

The average drunkard, when he is capable of any feeling at all and when his mental responses are not totally submerged or obliterated, is despondent, hopeless as to a cure or reformation, if he is not in a state of total indifference. The "infallible cure" promoter acts along psychic lines, using the "cure" as a blind and various measures as decoys to attain his end, meanwhile concealing his ultimate purpose.

*Confidence Won.*—First he must secure the confidence of the subject and the public in general in his truthfulness and ability, and so he announces that he has discovered an infallible, never-failing cure. He is very assertive, very positive, presents first-class credentials, testimonials, etc., in evidence. He procures a long list of prominent names to certify to the great benefit of his special method, the Right Rev. So-and-So and the Wrong Rev. So-and-So, and the great and good of the earth to attest to the fact of the efficacy of his "cure."

*Hope Aroused.*—Confidence being attained, his next step is to instill hope, to show the poor inebriate, despised and trodden under foot, the scum of the earth, that he has a real disease, that he is not the victim of a "vice" or "habit," that he is not a case for the law or the clergy, but for the doctor; that, having a disease, he is a respectable member of society; that he is, therefore, entitled to move in the highest circles (not necessarily alcoholic). Moreover, he has a disease of such rarity and extreme interest and value, hitherto unappreciated except by this special syndicate, that ordinary medicines, suitable for ordinary, every-day, commonplace disease, will not do, and so the quack proposes to recover him of his leprosy by using the rarest of medicaments and the most valuable of drugs; in short, that this poor, forlorn and necessarily hopeless outcast is to be treated with a "gold cure" or pearls dissolved in vinegar, or powdered diamond dust in capsules, if that were possible. He must have the rarest and best; the world has made a mistake and only now is his worth appreciated. Does not self-pride, and especially hope, the strongest mental stimulant one can put into the heart of man, come up under these conditions, which are purely psychic?

*The Offer Accepted.*—One of old said, "According to



your faith be it unto you," and this patient is rapidly approaching that point. His confidence has been secured and his hope stimulated; the promoter's pseudo-sympathy, mock compassion, pseudo-philanthropy, positive assertiveness and assumed confidence have secured their end. He is successful as a confidence operator, and can shake hands with the "gold-brick man" and the vendor of "green goods." His subject now has a will, a desire to "try the remedy." Here is the case of the spider and the fly; the former has asked him to walk into his parlor, for "it is the prettiest little parlor that ever you did spy," and he is ready to accept the invitation. He is assured of a positive cure in a short time at a moderate cost and absolute secrecy, no detention from business, a cheap, painless, absolute, prompt cure. The burden of years is to be removed in a few hours or days. What more could he ask?

*A Cash Transaction.*—But certain preliminaries are necessary; mind you, the quack wants gold, spot-cash gold; he is not under any psychic spell. He agrees to put so much gold into the blood of the patient, but the contract is that the patient must first put so much into the promoter's pocket.

*The "Institution."*—This trivial matter being settled, the prospective patient starts for the "institution," arrives at the station and receives a prearranged ovation from those who have already become inmates of the "institution." All this stirs up his self-respect and pride, and that "fellow feeling" which "makes one wondrous kind," and that communism of the unfortunate which constitutes its own fraternity asserts its influence.

*The "Graduate."*—After a short treatment he "graduates," mind you, from the "institution," which hereafter he must regard as his *alma mater*, not a hospital or a sanitarium. Being graduated, "he is eligible for membership" in one of the numerous "gold-cure clubs," which he is invited to join. Environment after cure, influence of association and following up the subject should not be lost sight of.

So far so good. All this has been along optimistic lines, but before the man leaves the "institution" another element in his psychic makeup is appealed to, and that is fear, to the effect that if he should get intoxicated and fall away, and thus disgrace the "institution" and dishonor his *alma mater*, he must never return, and he will be cast out of the synagogue and ever thereafter be regarded as a "publican and sinner."

#### PSYCHIC VALUE OF THE "CURE."

Although I have thus treated the so-called "cures" in a satirical vein, the illustrations are founded on fact. I ask if the methods used as described are not all along purely psychic lines, and do they not act by calling out the prominent elements of the emotional and intellectual nature, confidence, hope, fear, pride, self-respect, all of which strongly stir up the will to action, to assert and maintain its authority? Does not this method also explain how "cures" occasionally result, irrespective of the action of drugs, or when the latter play a feeble, irrational or illogical part?

The methods used we certainly decry as a species of mercantile trickery and unprofessional, and deny the action of any drug as a factor in the "cure." But can we so easily explain away the results, although these may be temporary or incomplete?

We appreciate the well-known psychic laws through which these results can be obtained, although masked and covered by false methods and operated under false

colors. To the public and the patient the psychic side of the "cure" or "reformation," the real influence, is out of sight, and so is out of mind and evidence, and the prominence is given to the drug or cure exhibited, because in this the financial part of the venture is assured, which alone can succeed as a secret proprietary medicine, operated and controlled by a few individuals or a syndicate, as the case may be.

#### VALUE OF DRUGS IN THE "CURE."

The question naturally arises, What part do drugs play in the general scheme of the "cure"?

1. They act along the line of "mental suggestion." Drugs have a psychic value. If we announce a disease we must proclaim a "cure," a medicine, a drug. The public stomach and mind are so constituted with reference to medicine that the stomach always has the priority; one can not cure without medicine, and one can not substitute an influence for a substance, a dose of psychic for a dose of physic. The public will not tolerate any such substitution. Indeed, we of the regular profession not infrequently give a drug for its psychic value. The "bread pill" or the oft-used *placebo* will rise up and condemn us. "Tell it not in Gath; publish it not in the streets of Askelon."

2. The drug may act also as a therapeutic handcuff; by obscuring the vision and nauseating the stomach a temporary disgust for liquor may be produced and the insane craving held up for the time being. Thus something is being done for the patient and that of itself is of psychic value, and all this is essential to hold the imagination of the patient to the idea advanced and give the contract force. But all drugs that may produce a distaste for alcoholic liquors only exert a temporary control and can not be indefinitely prolonged, if of any active value.

3. In the so-called "cures" the drugs are not used in accordance with the rules and practice of rational medicine and are illogical as to their application. To assert that 100 individuals in all conditions of age, sex, temperament, stage of disease, etc., are to be treated in the same way, at the same time, same dose and same method, without regard to idiosyncrasy or other causes that influence the treatment of disease and the selection of remedies, is not in accordance with medical practice or even common sense. Such treatment is given on the principle that we all take a pinch of snuff and, therefore, we all sneeze. But these so-called "cures" are put up in definite, uniform shape as to usage and quantities, and are sold to individuals or "institutions" who desire to practice the "cure." The whole use of drugs in these cures is illogical and is not based on the practice of rational medicine.

4. Moreover, I do not believe that there is, or from the nature of the case ever will be, any so-called "cure" or specific for the treatment of inebriates, in the same sense that quinin is a specific for malaria or the iodids and mercury for syphilis.

I do not desire to give undue prominence to these so-called "cures" or specifics, nor to any organizations that are operating without the pale, and yet claim to be acting within the lines, of orthodox or rational medical practice. They are not so doing, either in their methods or their practice; the former are irrational and the latter is unethical. My sole motive is to show that the reason of their apparent success is not due to any drug or specific remedy, but that it is through the psychic conditions evolved, and so that, finally, when we are brought face to face with the "cures" or reformations result-



ing from irregular methods, or without the intervention of any method or drug, we can explain the result in these cases satisfactorily, inasmuch as they are in accordance with psychic laws, which are independent of any therapeutic agency through the action of drugs.

Mystery is the great stock in trade of all forms of irregular medical practice. I have endeavored to pull aside the curtain and reveal the secret. The "cabinet trick" loses interest and vanishes away when we are familiar with the mechanism that produces the optical delusion. Publish the formula and the charm of the secret specific and nostrum will be lost.

The basis of all medical humbug and charlatanism consists in operating on the credulity of the public and securing results by appealing to all the attributes of its moral nature. I do not bring forward as an inducement any mercenary motive when I allude to the alarming array of figures as to the consumption and cost to the public of the "patent medicines" and "cures" with which every civilized community is flooded.

#### PSYCHOTHERAPY.

We are beginning to recognize psychotherapy as a valuable adjunct to general therapeutics. If the quack and the medical humbug—illiterate, unscrupulous, unscientific—have met with success even in their rough and ignorant manipulation of this, the most delicate and refined of all our methods of therapeutics, what a future is in store for those who, fully educated and thoroughly conversant with this branch of medicine, win new laurels in the field of mental therapeutics, especially in inebriety. Nor must we fail to learn the lesson, although it may come to us from an irregular source.

#### SUMMARY.

Let me summarize in brief the points emphasized:

1. The so-called "cures" or specifics for alcoholism or inebriety do not attain their effect through the action of drugs, but through the influence of psychic law, which is the primal factor in the "cure."
2. The action of drugs is indirect and secondary, but by mental suggestion may have a psychic value.
3. The class of alcoholics or inebriates who are susceptible to such influences is limited to such persons as are responsive and in the earlier or formative stage of the disease.
4. The originators of the so-called "cures" are illogical in their use of remedies and, therefore, untrue in their assertions, and in their practice are not in accord with rational therapeutics or the theory and practice of medicine. They are not ethical nor in any sense humanitarian and, therefore, should be excluded from all the protection afforded legitimate or regular medical practice and should be placed under the laws which regulate and control proprietary or "patent" medicines.
5. There is not any medicine, drug, preparation or "cure-all" which is a specific in the treatment of alcoholism or inebriety in the same sense that quinin is a specific for malaria or mercury for syphilis.
6. In a certain class of selected cases of inebriety it is proper to use psychotherapy as a therapeutic agent, especially in the earlier stages before complications develop and when the patient is responsive to such treatment. In cases complicated with organic disease appropriate medical treatment should precede or accompany psychotherapy if the latter be deemed advisable.

[THE SYMPOSIUM ON ALCOHOL, OF WHICH THE PAPERS OF DRs. BUTLER AND MASON ARE A PART, WAS BEGUN IN THE JOURNAL FEBRUARY 2, AND CONTINUED FEBRUARY 9 AND 16. THE DISCUSSION IS ON PAGE 728.]

## THE PLAGUE IN AMERICAN CITIES.\*

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Secretary of California State Board of Health.  
SACRAMENTO, CAL.

To the American physician of the last generation "plague" meant but very little. If he had a particularly active imagination and especially if he had read some of the thrilling accounts of the terrible epidemic, he saw an infected city where the workmen were stricken at the bench, the banqueter at the table; where the ties of kinship were forgotten in the general alarm; where people fell dead on the streets without warning, and where the well were too few to remove the dead. This picture could hardly be too strong for the truth, but it was general and carried nothing of a special nature. Physicians saw nothing of the cause of the disease, nothing of the symptoms—only the result.

Our text-books almost wholly ignored the question, and our teachers referred to it, if at all, as something we would never see unless we traveled in the far East. We were brought up and trained in the belief that America was exempt from its visitations, and that it was useless spending time studying a disease we should never meet. We were rudely awakened, especially we on the Pacific coast, when in 1900 the first cases were recognized in San Francisco. We found our fancied security was false, and that it not only could but had invaded our shores. Whence the first case came, or when, we can not tell, nor does it much matter, but the fact of its having secured a footing and gone for a certain length of time unrecognized is of great importance. It serves to point out and to emphasize the danger in which we are continually, and the need of thorough instruction in regard to the disease, its diagnosis, its methods of dissemination, cause and treatment.

It is not my intention to treat of these things, but to point out to the profession the danger of the situation and urge that steps be taken to meet it.

With our present close relations with the countries where plague is always in existence, relations which will in the future grow closer as our commerce extends, we stand facing a problem, the solution of which must be grasped at once. Much is being done by the United States Public Health and Marine Hospital Service to prevent a fresh importation of the disease. The system of inspection of cargoes and passengers at infected ports and again at home ports by physicians of this service is a great safeguard and will do much to protect us, but careful and watchful as these men are, they can not close all avenues of danger, and we must be prepared at any time, in every part of the country to meet and to suppress its invasion. To be so prepared the natural history of the disease must be better known.

#### THE PLAGUE BACILLUS AND TRANSMISSION OF THE DISEASE.

The plague bacillus discovered by Kitasato is the undoubted cause of the disease, and with the aid of the microscope the diagnosis is comparatively easy, thus removing one great obstacle. The means of development and dissemination must be thoroughly studied, for on the understanding of these processes our success depends. Some things in regard to the disease we fully understand, but other and important ones are at least doubtful. We know that the pneumonic type is violently

\* Read in the Section on Hygiene and Sanitary Science at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906.



contagious, every droplet of sputa being thronged with germs. We know equally well that in the plain bubonic type there is slight danger of contracting the disease directly from association with the patient. We know also that there is always a great mortality among rats at the time or preceding an epidemic. What is the connection between the two? Is it direct or through an intermediary insect? Is the disease a place infection, the germs living in the befouled soil and under favorable conditions developing in great virulency? In what way and to what extent is it spread by merchandise? These and many more are questions that must be answered before we can hope to cope intelligently with the question. That merchandise, as claimed by some, especially Kitasato, in accounting for its late appearance in Japan, is sometimes responsible, there can be no doubt, but as it becomes infected only through the virus, it is not a probable cause, except in such as may be accessible to rats. Infected clothing is a recognized cause, and it is especially dangerous when it is folded and packed away from the disinfecting influence of light and air.

#### EXPERIENCE IN CALIFORNIA.

Our experience in California leads me to believe that the disease is spread almost wholly by means of animals, of which the rat is the chief but not the only one. Several cases have occurred outside of San Francisco, where there was no death among rats. Squirrels, however, were dying freely in the vicinity and all the cases could be traced to exposure to them. One recent case, after a two years' rest, was in a young man in a healthful and sanitary part of Oakland. He had not visited San Francisco nor been exposed to imported goods or infected clothing. He had, however, four days before, hunted squirrels in the infected district. That the squirrels are infected with plague is not as yet proven, but circumstances point strongly that way, and it seems only reasonable that the United States Government should investigate this point, for if it proves to be a fact it is of the utmost importance to the whole country.

While probably California, owing to her location on the Pacific coast and the close communication with the Philippine Islands, Hawaii and the far East, is more liable to invasion of plague, she is doubtless less liable to a severe epidemic. Her long, warm and dry summers and the absence of a cold season, when the population of the filthy quarters of the city are confined to the houses, her population, as a rule, being well nourished and healthful, and above all, her excellent sanitary conditions, will tend to a minimum number of cases.

#### THE RÔLE OF FILTH.

While filth is not the immediate cause of the disease, it is possible that the germ may live and multiply in it. If not: "Filth and overcrowding imply close proximity of the sick and the healthy; an atmosphere saturated with the emanations of the sick; a lowered tone of the general health; abundant saturation of soil and surrounding media with animal refuse, filling them as a nidus for what might be termed natural culture of the germ; abundance of body vermin of all kinds; abundance of other vermin, such as rats and mice; carelessness about personal cleanliness, about wounds of the head and feet, about clothing, and about food, dishes and water. One can understand how, in such circumstances, the germ can multiply and spread."

It is not safe, however, for any community, no matter how favorable their sanitary and other conditions

may be, to depend on them for protection. Plague is a rodent disease and wherever man goes, rats will follow, and it is quite possible for them to carry the disease long distances before it shows in man. Any vessel that sails the sea may become the bearer of the plague rat, and unless the utmost care is exercised that rat may land, and become a center of infection. These rodents do not stay quietly in the ports of entry, but take trains for other parts, there to infect their kind and then mankind.

#### PROPHYLAXIS.

Our only safety is an active interest in the disease and a solution of the many questions pertaining to it. The lack of exact knowledge as to its means of dissemination and avenues of inspection often make the efforts at controlling it ineffective, and severe epidemics result. Still, much is known that is useful in preventing an outbreak and in limiting it in its early stages. Every health organization, whether state or city, should be in possession of these facts and ready to use them at all times. In cases of great exposure they should constantly watch the rats, and all found dead should be examined. Their entire extermination is a question of the near future. On the physician, however, must always rest the great responsibility of discovering and recognizing the disease in men, and this is no easy matter. Often, in the beginning of an epidemic, the disease easily passes for some other, especially in the pneumonic form. Even the bubo may not excite suspicion, and naturally would not, in one who had not given the subject especial study.

The disease is widespread over the world and may infect any port at any time, and our only safety lies in an early and public recognition of the disease, and immediate active measures for its suppression.

[FOR DISCUSSION SEE PAGE 728.]

### THE PHYSICIAN AND THE NOSTRUM.\*

EDWARD BOK.

Editor of *The Ladies' Home Journal*.

PHILADELPHIA.

During the four years that we have been engaged in the work of arousing public interest in the evil of "patent medicines" it has been my pleasure, in common with others, to have received hundreds of approving letters from physicians all over the country and scores of complimentary resolutions from medical bodies. And it is my sincere hope that the few words I shall say to you this evening, in my first appearance before a medical body, may not be accepted as being in any way unappreciative of those marks of approval. I appreciate and value them.

But I feel that the time has come, if we are to succeed in the fight in which we are engaged, to be perfectly frank as regards the relation of the medical profession to proprietary medicines. I am going to try to point out to you that in two distinct ways the medical profession is to-day absolutely hindering us laymen in our fight and clogging the wheels of further progress: First, in your inactivity where you should be active, and, secondly, by your direct cooperation with the "patent medicine" traffic.

Every man knows that the life of a nostrum depends on publicity, and one of the first things we did in our

\* Read, by invitation, before the Philadelphia County Medical Society, Dec. 12, 1906. A report of the papers and discussion at this meeting on the Symposium on the "Suppression of Quackery" appeared in *THE JOURNAL*, Jan. 19, 1907, p. 248.



fight was to see to what extent the press could be persuaded to close its columns to the advertisements of "patent medicines." It was not easy, for the business office of a paper or magazine is very powerful. Yet to-day scarcely one of the reputable monthly magazines will accept a "patent medicine" advertisement, and the same is true of the prominent weeklies. The best of the farming papers are to-day immune from this advertising. Pressure is being brought on the religious press that will soon result in a general clearing up of those papers. Progress with the daily newspaper has been slower; still, there are forty-three daily papers, large and small, to-day that will not accept "patent medicine" advertisements. Now, gentlemen, remember that such a step means a great deal in the revenue of a periodical. I know a magazine that could easily increase its advertising revenue six figures a year if it accepted "patent medicine" advertisements. I have no doubt that if the *New York Times* and *Philadelphia Ledger* admitted this business these two papers could increase their revenue by at least fifty thousand dollars a year. Many of these papers and magazines have taken this stand on principle; others because of the pressure brought on them by their readers. The public at large has been writing to its newspapers insisting that those advertisements shall stop; the church people have been writing to their papers; the farmers have been writing to their papers—all classes of the public have been busy; all classes, gentlemen—except the physicians.

Look at your average medical paper—reeking with the advertisements of proprietary—so-called ethical—preparations. And not only advertisements, but reading notices palpably intended to deceive. The very class of papers that should have been the first to cleanse their pages is to-day the last to make even a move in that direction, and stands to-day, in this respect, as a discredit to honest journalism.

Now, what is the result? I go to the publisher of a newspaper and ask him to clean his columns of "patent medicines," and he points, as he has done in many cases to me, to the medical press. "Why, man," he argues, "these preparations can't be so bad as you fellows make out, or they wouldn't be advertised in these medical papers. These medical publishers know better than you do what is good and what is bad in these 'patent medicines,' and what they allow to go into their papers I guess we can safely stand for." That is why it is so important that the medical press should be cleansed of these advertisements: it is in the influence, the example that they exert on the lay press, and it is an argument on the part of the lay publisher that is very difficult to combat. It is this argument that again and again is used by lay publishers in writing to their protesting readers, and then these readers send the letters to me and ask, "Is this true? Are these advertisements permitted in good medical papers?"

Now, you know that it is true, and you know also that it should not be so, and yet what have you, physicians, done to stop it? You have, in your societies, passed resolutions, a very easy and comfortable thing to do and about as ineffective as it is comfortable. I have myself seen these resolutions received by the medical publishers, and disposed of with a grin—in the wastebasket. But what have you done as individuals? For let me tell you, as an editor, that the editor or publisher of a paper of any kind is mighty sensitive to the individual protest of his readers. When letter after letter comes in harping on the same subject, take my word for

it: that editor or publisher is going to sit up and listen. Those letters are from the people on whom he depends for his support, and he is not turning a deaf ear to the source of his livelihood.

Let me give you an illustration of how this works. One of the most prominent daily newspapers began to get letters from its readers objecting to its "patent medicine" advertisements. The first few letters made no impression on the publisher, but as they kept coming in he realized that he had to make some sort of a show of being good. So he declined the most flagrant. When this fact became known to one after another of the "patent medicine" manufacturers, they argued that if this newspaper found it necessary to trim its sails to appease the public, it was idle for them to advertise at all to a public in that state of mind. So they stopped, and they have stopped so effectively that the publisher of another newspaper, which readily takes any "patent medicine" advertising it can get, told me a few weeks ago that, while his paper had carried in the first eight months of 1905 over sixty-two thousand dollars' worth of "patent medicine" advertising, this year for the same eight months he had carried eighteen thousand dollars' worth. That is what can be done.

Now, while the people at large have been busy with their papers, I have not heard of a single, well-ordered and coherent movement on the part of the medical profession individually to do the same work with its papers. You have talked beautifully, but what have you done? The best proof of the fact that you have done practically nothing is shown in the condition of your papers, and yet, gentlemen, it was your duty, more than the duty of any other body of men, to do this. It is no excuse to say that physicians are too busy. There are men in other professions just as busy as you are. You have been inactive. You have allowed us laymen to work with our papers while you have sat idly by, or made desultory attempts, where you should have taken a vigorous individual stand and stopped it. And you can stop it if you make the honest effort. You are the supporters of these papers; without you they can not exist, and on you, directly and solely, rests the responsibility of the present situation that we as laymen can scarcely go any farther with compelling the cleansing of our papers so long as those papers can point to the medical press as its companion in perfidy.

You have two ways open to you:

Either insist as subscribers and readers that these papers shall cease these advertisements:

Or stop, as physicians, from prescribing these medicines yourselves and thus make this advertising unprofitable. Or both.

And this brings me, naturally, to my second point: your direct co-operation with the "patent medicine" curse—a co-operation that I confess, gentlemen, is nothing short of appalling. I give you my word for it that as one result of my investigation of this question there has come to me an amount of evidence as to the unintelligent prescription of secret proprietary medicines on the part of physicians that, if published, would tend to cause an amount of unrest and distrust on the part of the public that is mighty unpleasant to think of.

It is not for me, gentlemen, to diagnose the reason why physicians habitually prescribe proprietary preparations. Several of your own writers claim because it is easier; others because physicians are lazy, and still others that your medical colleges do not adequately teach the writing of prescriptions. I do not know, for I am not



competent to say, but what I do know is that this prescribing of these preparations seems to be on the increase to an alarming extent. You own Doctor Jacobi says that in twenty-five years the percentage has grown from one in fifteen hundred prescriptions to 20 and 25 per cent. He also says that in a single New York drug store investigation showed that "70 per cent. of the prescriptions sent in by reputable physicians contained either nostrums, pure and simple, or as a part of a compound." Doctor Billings, of Chicago, says that in his city the records of one drug store showed 42 per cent. of prescriptions prescribing proprietary medicines, and in another 50 per cent. In Boston, 38 and 48 per cent.

Now, gentlemen, I will not gainsay that there are good proprietary preparations and that a physician, after a diagnosis of a case, and knowing his patient, and being fully aware of the exact ingredients in such an ethical preparation, is perfectly justified in prescribing it, if he feels that it meets the conditions of that case. Whether such a course is detrimental to scientific medicine is for him to settle with himself.

But there is a time when he is not justified in such prescription, and when he closely borders on the criminal line, and that is when he prescribes a preparation of which he either does not know the ingredients or, what is even worse, when he has erroneous information as to those ingredients.

And yet this prevails to-day in the medical profession, and prevails to an extent that is almost impossible of belief to the layman. When I heard the first mutterings of this condition of things I gave it no credit. While I knew that physicians were human and made their mistakes in common with us all, I could not believe that they could make *that* mistake. But instance after instance came to me until I could no longer turn aside, and I determined to find out. And recently I did.

Conditioned that I should not reveal my source of information, nor give names of remedies or physicians, I was given an opportunity to examine 100 prescriptions that had been filled. Of those 100 prescriptions, 42 prescribed a proprietary drug or article in part or in whole. I selected 30 of these, and called on each of the physicians who had written those prescriptions. Now, gentlemen, those physicians were men of excellent standing, some very high in their profession, and how many of those 30 physicians, would you say, gave me an accurate, or anything approaching an accurate, analysis of the ingredients of the nostrums which they had prescribed? How many? *Two*, gentlemen, *two* out of all the thirty! The rest either did not know, or—what is even more dangerous—thought they knew when they did not.

One of these prescriptions called for a certain headache remedy, given to a woman who was in an exhausted condition, who had weak heart action, and who, having read of the dangers of headache remedies, did not trust her own judgment, and called for her family physician. He gave her a remedy, saying that he knew it to be harmless, that it was entirely free of the powerful drugs of which she had read. Within a half hour of taking the remedy the woman's lips began to get blue, she went into unconsciousness, and it required all that two doctors could do to bring the woman back to consciousness. The remedy contained 61.5 per cent. of acetanilid! The physician, when I saw him, showed me his proof on which he had based his knowledge, the statement of the manufacturers, whom he said were reputable people!—a statement, as I happen to know, written by a man who never went to a medical college,

a man whose word every physician would scorn to accept did he know him. When I showed him my analysis he was dumfounded, and confessed he hadn't known. *But, gentlemen, he should have known. It was his duty to know!*

Another prescription called for a certain tonic that the physician told me was one of the most reputable tonics known to the profession; its ingredients of quinine, beef and iron were universally known and nearly all physicians prescribed it. One of its greatest virtues was, he told me, that it was non-alcoholic. I proved to him that the tonic did not contain even a trace of beef or iron, but that it did contain 22 per cent. alcohol. He could not gainsay my authority; he was surprised and confessed that he had not known. *But, gentlemen, shouldn't he have known?*

One of these prescriptions gave to a child a remedy calculated to soothe its restlessness. It did so, so effectively that the parents changed their physician, went to another, who prescribed another remedy, and the child lay in a stupor for two hours. I saw both of these physicians; they confessed to me they did not understand the case. But I did, gentlemen, for both of these physicians had given that child morphin concealed in "ethical" proprietary preparations, and when I proved this to them they were amazed and confessed they hadn't known. *But, gentlemen, should not a physician, prescribing for a child, know?*

Five of these prescriptions called for a certain tablet supposed to build up the system in extreme cases of weakness, and especially given to women at certain periods of physical drain and exhaustion. All of the physicians assured me that these tablets were among the few ethical preparations that could be absolutely trusted, and each showed me a printed formula of their contents. These tablets, I was told, contained among other things iron peptonate, two purely vegetable compounds, and extract of nux vomica. "The best on the market," said one of these physicians to me. As a matter of fact, those tablets contain not the slightest trace of iron peptonate or nux vomica, but do contain two principal ingredients—starch and liquorice! And yet, gentlemen, these same tablets, I have learned from careful and authoritative sources, are to-day being prescribed by a large number of the best physicians of Philadelphia, and when I have asked several of them on what authority they were accepting their ingredients I was shown a printed formula by the manufacturing concern!

Some time ago, finding it necessary to know about a certain nostrum advertised to the public, and having no time to make an analysis, I consulted five physicians in order to reach a necessary decision. All five physicians told me that the preparation contained a dangerous amount of cocain in it; that it was well known for containing that ingredient. I made my decision—only to find that I had made a wrong decision. The preparation contained not a trace of coca or cocain and never had. *Gentlemen, these physicians did not know. But they should have known, or else not have said what they did.*

And so I might go on; not isolated cases, not a case here and a case there, but a condition that is dangerously general.

Now, what is the result? The physicians are doing precisely what we are asking the people not to do: not to use these "patent medicines," because they do not know what they contain. What effectiveness can I make to such an argument when people write to me by



the score citing instances of revealed ignorance on the part of the physician of the preparation which he prescribes, and rightly say to me, "How do you explain this?"

Can I explain it, gentlemen?

Dr. Jacobi calls this practice not far from criminal, and I would rather have him say it than say it myself. But it is a mighty serious condition, and nothing confronts us laymen in our fight so insurmountably as this argument that can be advanced against the medical profession.

We are trying to separate the public from the nostrum, and have in a measure succeeded. But what are you doing? Now, let me bring this question home to you—home to the physicians of Philadelphia. Are you aware of the fact that this practice of prescribing nostrums has so insidiously grown on you that while in 1905 an examination of several thousand prescriptions written by Philadelphia physicians showed 41 per cent. to call for "proprietarys," this year, so far, the average shows 47 per cent.? Are you going to do more and more each year what we are asking the people not to do? If you are going to prescribe "patent medicines," why should the layman pay your fee as a physician in addition to the cost of the medicine which he can buy himself? We are preaching to the public to stop the nefarious habit of self-doctoring, but physicians, by such methods as these, are driving people to doctor themselves, driving them to the quacks and the charlatans. There is no question that the whole practice has grown out of thoughtlessness. But has not this thoughtlessness gone far enough?

Evidently, gentlemen, the Council on Pharmacy and Chemistry of your national association was created none too soon. But even without access to the analyses of the council, the physician has no excuse. Opportunities are open to him to learn the ingredients of the medicines he prescribes, and if he has no time to find out he has no right to prescribe what he does not know.

And so, gentlemen, you who should be with us laymen in our efforts to stamp out this evil, are not only making our fight the harder, but you are actually hindering us. We look to you for help, as I think you will agree we have a right to do in our effort, and what do we get from you?

*Unctuous words, but unclean hands.*

Now, I ask: Is this fair? Is it playing the game, gentlemen?

You are here to-night to discuss the question of the suppression of quackery, but it seems to me you have chosen the wrong topic. Your question should be the suppression of the *physician* in his *aid* of quackery.

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**Tuberculosis Exhibitions.**—The past year was remarkable for the interest taken by the public in the subject of tuberculosis. This interest was due largely to the agency of the tuberculosis exhibits given in many cities. Numbers of people, for the first time, have had brought home to them, in a manner easy of comprehension, what this disease really is. These exhibits have shown to the public in a popular way what has been known to the profession for only a few years. Lectures, diagrams, photographs and models of sanatoriums, tents, etc., all have been used in impressing on the people the fact that tuberculosis is a communicable and preventable disease. As the *Journal of the Outdoor Life* says, the whole subject has been so dealt with as to make the laity clearly appreciate that the effort now being made to stamp out the disease is worth while.

## STUDY OF TROPICAL DISEASES IN THE PHILIPPINE ISLANDS.

P. M. ASHBURN, M.D.

Captain and Assistant Surgeon.

CHARLES F. CRAIG, M.D.

First Lieutenant and Assistant Surgeon.

UNITED STATES ARMY.

During the last quarter the following research work has been accomplished along special lines of investigation:

### A. DEVELOPMENT OF FILARIA PHILIPPINENSIS IN THE MOSQUITO.

Although we have not yet completed our work on this parasite and are not prepared to make a full report on the subject, which we hope to do later, we have, nevertheless, devoted considerable study to the subject since our last report and have demonstrated the following facts:

a. *Filaria philippinensis* undergoes a stage of development in the body of *Culex fatigans*.

b. This mosquito, in drawing blood from the infected patient, manages in some way to get about 40, 50 or more times as many filariæ as are found in an equal amount of blood obtained by a needle puncture.

c. A proportion of the mosquitoes thus infecting themselves seem to succumb to the infection; two of them that we have seen seem to have died acutely of rupture of the stomach, the blood that they had ingested escaping from the stomach and diffusing through the body and legs of the mosquito, coloring them red. A much larger proportion die later without this "hemorrhage."

d. Among the surviving mosquitoes there are many in which the filariæ do not develop, as they appear to be digested or to escape from the mosquito's stomach into the general body cavity, and there die and become absorbed.

e. The very great majority of the filariæ are dead by the third day after their ingestion by the mosquito. With one exception we have found but two developing filariæ after the third day, one in the six day stage of development, the other in the eleven day stage. In the exception noted we found 51 filariæ in the thorax of a mosquito at the end of eight days, in slightly varying stages of development.

f. Additional evidence of the conclusions we stated in our former communication concerning this parasite is furnished by three more patients sent to us by Contract Surgeon Albert L. Miller, U. S. Army, making five in all, four of them having been sent by Dr. Miller. All of the later cases show the correctness of our general statements based on the observation of the first case. The scarcity of the parasites in the blood and the lack of periodicity manifested by them is well shown in the accompanying table (see next page), giving examinations made in three cases, at regular periods during twenty-four hours.

### B. MORPHOLOGY OF DEVELOPMENT OF FILARIA PHILIPPINENSIS IN THE MOSQUITO.

After losing its sheath and penetrating the stomach wall of the mosquito, the parasite passes into the body cavity of the insect, where it is seen at first in a practically unchanged condition. By the third day, perhaps before, the parasite has worked its way forward into the thorax, where it is found shortened to less than two-thirds of its former length, but thickened. The tip of



the tail, i. e., the part posterior to the sudden offset we described in the worm as seen in the blood, takes no part in this change but remains as a "pigtail" like attachment to the large, plump body. The transition of the posterior V spot into the anus is very plainly visible. The anterior V spot apparently, and the central spiral viscus certainly, have disappeared. The measurements at this stage are: length, .210 mm. width, .010 mm.

By the sixth day the worm has still further thickened to .020 mm., being still much shorter than when it is in the blood; the "pigtail" is still present; the posterior V spot has now disappeared and an anus occupies its place; pressure will force part of the body contents out through the anus.

By the eighth day the worm has increased in length and become still thicker, the "pigtail" has almost disappeared, and an intestinal canal can be traced from the mouth to the anus; length, .500 mm., width, .035 mm. On the eleventh day the worm has increased in length to 1.24 mm. and in breadth to .040 mm. It is more actively motile and shows an alimentary canal clearly outlined from mouth to anus; the anus is well marked, the "pigtail" portion of the tail has disappeared, and the tail is blunt and tipped by two papillæ. No striation is visible. The head is truncated and the margin of the covering (prepuce) is very faintly serrated, no lips being visible. The worm is still within the thoracic muscles of the mosquito.

TABLE OF BLOOD EXAMINATIONS.

## CASE 1.

7 a. m., 3 filariæ in three blood smears.	Average per day and night. 7 a. m. to 7 p. m. 8 filariæ in 12 smears. 7 p. m. to 7 a. m. 8 filariæ in 13 smears.
10 a. m., 2 filariæ in three blood smears.	
1 p. m., 2 filariæ in three blood smears.	
4 p. m., 1 filaria in three blood smears.	
7 p. m., 2 filariæ in three blood smears.	
10 p. m., 1 filaria in three blood smears.	
1 a. m., 3 filariæ in four blood smears.	
4 a. m., 2 filariæ in three blood smears.	

## CASE 2.

7 a. m., 5 filariæ in three blood smears.	Average per day and night. 7 a. m. to 7 p. m. 8 filariæ in 13 smears. 7 p. m. to 7 a. m. 8 filariæ in 13 smears.
10 a. m., 1 filaria in four blood smears.	
1 p. m., 1 filaria in three blood smears.	
4 p. m., 1 filaria in three blood smears.	
7 p. m., 2 filariæ in three blood smears.	
10 p. m., 3 filariæ in three blood smears.	
1 a. m., 0 filaria in three blood smears.	
4 a. m., 3 filariæ in four blood smears.	

## CASE 3.

7 a. m., 2 filariæ in three blood smears.	Average per day and night. 7 a. m. to 7 p. m. 8 filariæ in 13 smears. 7 p. m. to 7 a. m. 10 filariæ in 13 smears.
10 a. m., 1 filaria in four blood smears.	
1 p. m., 3 filariæ in three blood smears.	
4 p. m., 2 filariæ in three blood smears.	
7 p. m., 4 filariæ in three blood smears.	
10 p. m., 0 filaria in three blood smears.	
1 a. m., 5 filariæ in four blood smears.	
4 a. m., 1 filaria in three blood smears.	

The day and night averages in the three cases are:

7 a. m. to 7 p. m., 24 filariæ in 39 smears.
7 p. m. to 7 a. m., 26 filariæ in 39 smears.

Photomicrographs of the developmental cycle in the mosquito have been secured, and as soon as we have worked out as fully as possible the life cycle of this parasite we hope to forward and publish a more complete report, but owing to the large mortality among the infected mosquitoes we can not form an estimate as to the time that the research may involve. At present we believe that the life cycle of *Filaria philippinensis* will be found to resemble closely that of *Filaria bancrofti*.

## C. DIAGNOSIS OF CHOLERA.

In examining postmortem material from cholera cases and stools from living cholera patients here and at Fort McKinley we have been impressed with the great liability to error under which a man would labor if he relied too much on laboratory methods in making early diagnoses in cholera cases. Pure cultures, or even

approximately pure cultures of the cholera vibrio are not easily obtained from the stools, and a preponderance of the vibrios in the stool such as to give the appearance microscopically of a pure culture we have seen in but one case.

The cholera red reaction we have obtained but once. This led us to inquire at the Bureau of Science as to the results usually obtained there, and we were informed by Dr. Edwards, the pathologist engaged in that work, that he very seldom gets the reaction in cultures made from the stools, but could usually get it in pure cultures if he used a special peptone (Grubler's "Adamkewitz"), but usually encountered failure if other peptones, including Wittes', were used.

## D. OBSERVATIONS ON THE ETIOLOGY OF DENGUE FEVER.

The occurrence of an extensive epidemic of dengue fever at Fort William McKinley, Rizal, has afforded us the opportunity of investigating the etiology of this interesting and puzzling disease. Although many investigators have endeavored to discover the etiologic factor in the production of this disease, and many organisms, from bacteria to protozoa, have been announced from time to time as the veritable cause of dengue, none of them has been generally accepted as such. In beginning our work on the subject we at first spent many hours in the examination of the blood, using both fresh and stained specimens, and were forced to conclude that no demonstrable organism can be found in this fluid; blood cultures were then resorted to, the blood being drawn from a vein of the arm under strict aseptic precautions, and in this way many cases were examined; as a result of our work along this line we were forced to conclude that no organism was found constantly enough in these cultures to warrant us in regarding it as having an etiologic relationship to the disease. Some of the cultures remained sterile, although kept for weeks, but the majority of the cultures became infected by organisms which were obviously contaminations and of no etiologic significance.

Having thus failed to demonstrate any organism in either fresh or stained specimens of blood or in our blood cultures, we directed our attention to the possibility of producing the disease by the inoculation of blood from a dengue patient into the healthy man; fortunately for the success of our work we were dealing with a disease which is not dangerous to life, and for this reason felt justified in making such experiments.

Four members of the hospital corps serving here volunteered, and in all of them we succeeded eventually in producing dengue by the intravenous inoculation of blood from cases of dengue; in three of them by the inoculation of unfiltered blood, and in one of them by the inoculation of filtered blood. We desire to express our admiration of the courage and devotion to duty of these men, who, having no prospect of pecuniary reward, cheerfully placed themselves in our hands for experimentation. As more volunteers were needed, and as no more hospital corps men were available, we visited the commanding general of the Philippines division and requested that we be permitted to ask for volunteers from the line of the army. The commanding general suggested that a reward should be offered for volunteering and authorized us to offer \$25 in gold for each volunteer, including those on whom we had experimented, as well as the privilege of having his name placed upon a list for favorable consideration in the assignment of station and details. This offer was transmitted to the



commanding officers of troops in and about Manila and as the result of it we have secured many more volunteers than we need, and have therefore had to refuse a large number. Thus we have been enabled to continue our researches regarding the etiology of dengue, and as soon as they are completed, we will submit a detailed report of the results obtained.

#### CONCLUSION.

From the work which has already been accomplished, and that which we have in view, we hope to be able to demonstrate the following concerning the etiology of dengue fever:

1. That the cause of dengue is present in the blood of the infected individual, as the intravenous inoculation of healthy men with blood from a patient suffering from dengue is followed by a typical attack of the disease.

2. That the organism causing the disease is probably ultramicroscopic in size, as the inoculation of infected blood into healthy men after it has been passed through a filter which retains the smallest known organism, produces a typical attack of dengue.

3. That the incubation period is four days whether filtered or unfiltered blood be used in inoculation.

4. That the disease is not contagious.

5. That dengue is transmitted by at least one species of mosquito (*Culex fatigans*), as proven by experiment.

### Clinical Notes

#### ANGUILLULA ACETI (VINEGAR EEL) IN THE URINE.

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PHILADELPHIA.

It is certainly uncommon for the *Anguillula aceti* to enter the human bladder, yet there is at present sufficient evidence to show that such infection may occur. Stiles and Frankland<sup>1</sup> report the case of a young female in whose urine great numbers of the *Anguillula aceti* were found. These writers obtained the urine by catheterization and in this way proved conclusively that the *A. aceti* came from the bladder. Stiles has given rules for the determination of this nematode, but since the vinegar eel can be readily obtained from either vinegar for comparative study I have omitted its zoologic characteristics.

In 1902 Billings and Miller<sup>2</sup> reported their findings of the *A. aceti* in the urine from two patients; one a young female, and in the other the sex is not mentioned. These writers do not state that they obtained the urine by catheterization, which permits of a possible extraneous contamination of such urines, although in one of their cases repeated examinations showed the urine to contain these nematodes. Both patients suffered from acute cystitis and one from hematuria.

Sheiber,<sup>3</sup> in 1880, reported finding repeatedly nematodes in the urine of a woman, but regarded the parasite in question as probably the *A. stercoralis*. His report closely compares with my own observations since the

symptoms of cystitis subsided, and the nematodes were absent from the urine after repeatedly washing the bladder. Thayer<sup>4</sup> describes two cases where round worms were found in the urine, but in neither instance were they determined to be the *A. aceti*. Strong<sup>5</sup> has also discussed at length the question of infection of the bladder with round worms. I have reported two instances<sup>6</sup> where hematuria followed infection of the bladder by the *Rhabditis genitalis*.

During the past nine years there have been examined microscopically, by me or my assistants, both at my private laboratory, and at the laboratory of the Medico-Chirurgical Hospital, the Pennsylvania Hospital, and the Philadelphia Hospital over 17,000 specimens of urine. It is interesting to note in this connection that the *A. aceti* was found but twice (once possibly due to external contamination); the other in urine obtained by catheterization from the male bladder. The *Rhabditis genitalis* was also found twice.

*Patient*.—Mr. K., aged 52, a coachman, born in Ireland,

*Symptoms*.—He presented the general symptoms of acute cystitis; on the second day of his trouble there was great burning of the urethra, and an almost constant desire to void urine. Constitutional symptoms were absent.



ANGUILLULA ACETI (Vinegar Eel). 1. Mature female. 2. Mature male. 3. Young worm five days after "vinegar mother" was added to acid urine. 4. Young worms present 48 hours after inoculation. 5. Three days after inoculation of urine. (All forms, one to five, may be present in the urine when voided).

*Urinalysis*.—The physician in charge handed me a specimen of the urine which on examination gave the following: Color, brownish-yellow; specific gravity 1.020; reaction acid (strongly); albumin and sugar absent; developed on standing, a rather heavy precipitate which formed at the bottom of the liquid.

Microscopically, the sediment showed, in each drop, many specimens of the *A. aceti* which are best described by the accompanying illustration; it also contained many large and small epithelial cells, many leucocytes, few red blood cells, shreds of mucus, and much granular debris. In striking contrast with the microscopic findings of normal urine there was an absence of amorphous urates, and crystalline substances.

In order to avoid possible error that might arise from contamination of the urine after it had been voided, the patient was catheterized at three different times and in the urine thus obtained the *A. aceti* was found.

1. U. S. Bureau of Animal Industry, Bull. 35, p. 35.  
2. Amer. Med., May 31, 1902, p. 903.  
3. Virchow's Archiv., 1880.

4. Jour. of Exper. Med., Nov. 29, 1901.  
5. Johns Hopkins Hosp. Rep., x.  
6. Amer. Med., Jan. 3, 1903, 20.



The symptoms of cystitis ameliorated decidedly after washing the bladder with a solution of boracic acid, and after three daily applications of this treatment it was impossible to detect the *A. aceti* in the urine.

At the suggestion of my assistant, Dr. J. Hamilton Small, I obtained a specimen of urine from this patient's wife and to my surprise found it to contain the *A. aceti*. On questioning Mrs. K., I learned that she had been using vaginal injections, to each of which she had added a small quantity of vinegar, with the object of preventing conception. I was not permitted to catheterize Mrs. K., although at this time she too suffered from the symptoms of acute cystitis.

Among the five reported cases of infection of the bladder by the *A. aceti*, four of them presented the symptoms of acute cystitis, and in three hematuria was an early symptom. Albuminuria, when present, was due to an admixture of blood. In all the reports examined the symptoms of cystitis have subsided with the disappearance of the *A. aceti* from the urine, and in all, the course, while acute, was of short duration.

### COMPLETE REMOVAL OF FAUCIAL TONSILS.\*

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Aside from a broader knowledge of detail that results from a repetition of facts, it would be superfluous on this occasion to give an extended discussion of this subject, but, inasmuch as unanimity of opinion does not obtain throughout the profession as to the proper method of treatment of diseased faucial tonsils and the best mode of their removal, and being desirous of presenting a method which has proven satisfactory in my practice, I wish to direct attention to the following facts.

Owing to their intermediate position between the mouth and pharynx and their glandular structure, the faucial tonsils frequently become infected and chronically diseased by the passage of food or foreign matter into the ramifying glandular ducts which open on their exposed surface, and after a time their function of

tive measures in the form of gargles, sprays and applications to the distended ducts constitute the rational course of treatment. If there be a broad and devious path that leads to disappointment, both to the patient and attending physician, the above procedure which attacks the disease only superficially, or a partial removal of the tonsils, certainly points the way. On the contrary, however, a total extirpation of the tonsillar tissue offers naught but an ultimate cessation of both local and systemic derangements, and no one more fully appreciates this fact than I who was compelled to undergo operations by three different laryngologists before the tonsils were completely removed and a train of distressing symptoms permanently relieved.

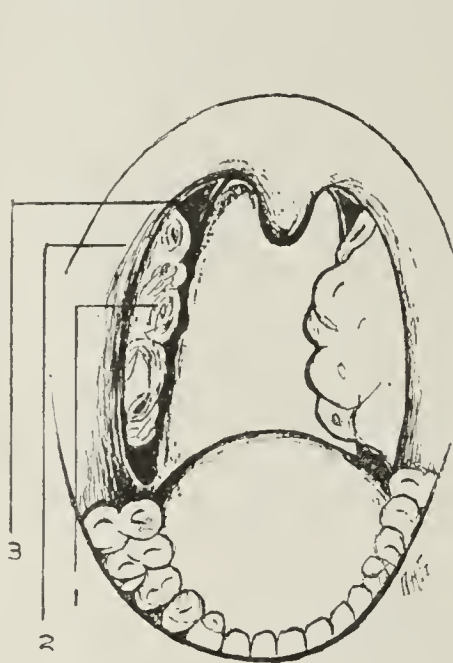


Fig. 2.—Enlarged Lacunar Tonsils.

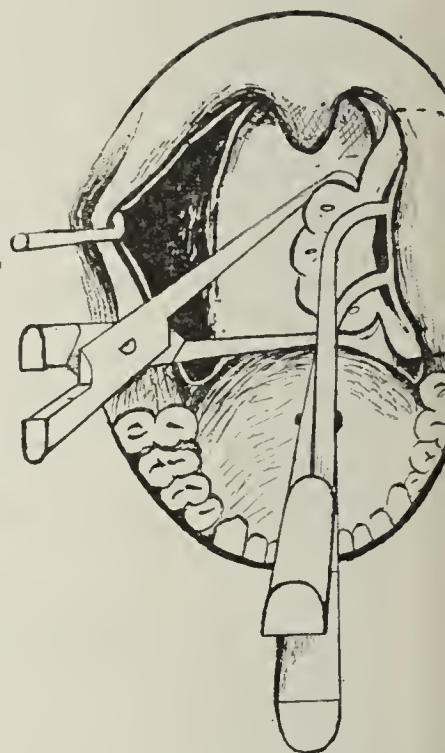


Fig. 3.—Separating anterior pillar.

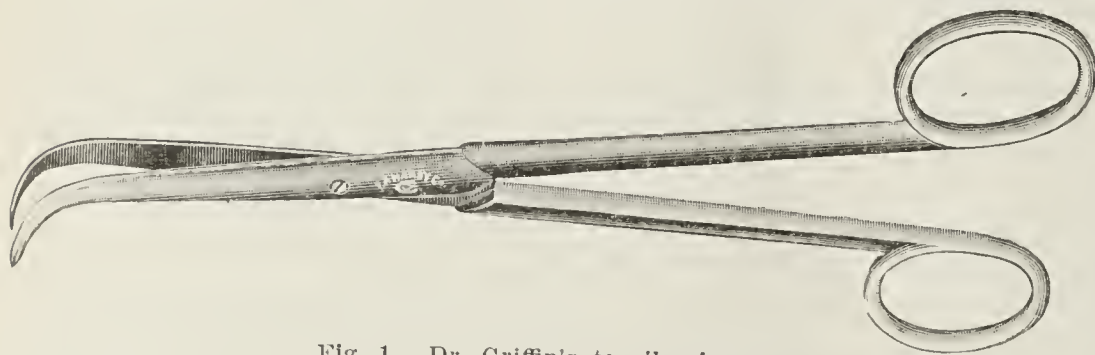


Fig. 1.—Dr. Griffin's tonsil scissors.

pharyngeal lubrication becomes so perverted that the ducts and glands finally become distended and indurated by the retention of a caseated secretion, composed mostly of desquamated epithelium, leucocytes and micro-organisms. The resulting ptomains of decomposition permeate the surrounding lymphatic system, leading to chronic inflammation of adjacent pharyngeal structures and often evidencing its systemic effect by the production of rheumatic symptoms.

Under these circumstances it would seem that only one method of treatment would be considered, but a perusal of many books on the subject indicates that pallia-

In common with the experience of fellow-laryngologists, I realized that with the armamentarium which obtained until a few years ago it was impossible to effect a complete operation until an instrument was devised whereby the adherent pillars could be separated from the tonsillar tissue, preliminary to its removal, especially when the tonsils were submerged. Thus it was, and still obtains in the practice of the unskilled, that in a majority of the cases there was a "recurrence" of tonsils, or, as the laity put it, "the tonsils grew in again," while the unfortunate sufferer experienced little or no improvement in his condition. To the informed, however, it is evident that the faucial tonsils do not recur after complete removal, and that the return of former symptoms is due

to a retention of some of the originally diseased tissue. How often in advising a removal of tonsils for the correction of a pharyngeal or aural disorder have I witnessed that expression of mingled surprise and disgust as the unfortunate patient replied, "Why, I had my tonsils removed by Dr. Blank and he charged me \$10." Thus it was, prior to a few years past, that the operation was regarded by both the laity and general practitioner as a simple procedure which any one could perform, but with improved instrumentation and details of technic the complete removal of tonsils is now justly regarded as a serious and exacting operation which demands as much dexterity and skill as any major procedure to

\* Read before the American Academy of Ophthalmology and Oto-laryngology, Aug 31, 1906.



secure proper results, and the compensation should be accordingly remunerative.

#### IMPROVEMENT OF TECHNIC.

Realizing the limitations of the knife, tonsillitome, and snare, several years ago, I devised a pair of scissors whereby the pillars could be severed from the tonsil, but even then I could not in all instances completely remove the base of submerged tonsils or the tissue which obliterated the supratonsillar space between the anterior and posterior pillars until I finally produced the present form of scissors (Fig. 1). By means of this device the complete operation of separating the adherent pillars and removing the entire tonsil, either right or left, can be effected by the use of a single cutting instrument, as shown in the illustrations.

Figure 2 pictures a characteristic throat in which the left tonsil is hypertrophied and the ducts distended, while on the opposite side are located the remains of an unskilful operation or the tonsil may represent a submerged variety. It will be observed that the edges of the anterior pillars are darkened (reddened), showing that a chronic form of inflammation exists behind them whereby the pillars become adherent to the tonsillar tissue.

With lightning rapidity, the artist has effected a complete removal of the right tonsils, as evidenced by the

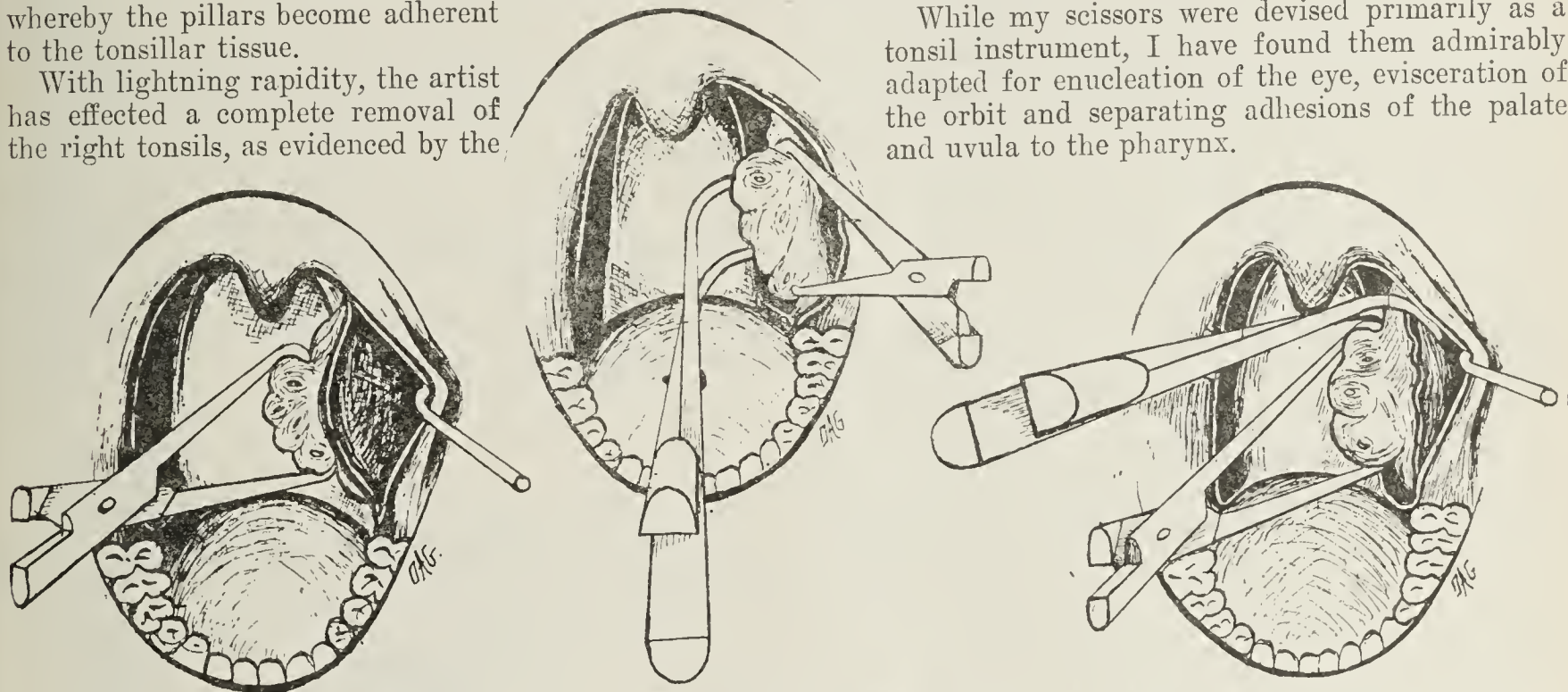


Fig. 4.—Anterior pillar separated and retracted.

Fig. 5.—Separating posterior pillar.

Fig. 6.—Removing left tonsil.

deep, empty tonsillar fossa which is more readily shown by a retraction of the anterior pillar (Fig. 3). In the remaining cuts, the details of the procedure are fully illustrated. When traction is applied to an adherent or submerged tonsil, the attached pillars are also drawn toward the median line so that the base of tonsil can not be reached until the pillars are severed from the tonsillar tissue. In Figure 3 the anterior pillar is being separated by means of the scissors, although a curved knife may also be employed, but dense tissue can not be as effectually cut. The dotted line indicates position of base of tonsil to which point the pillar must be loosened.

After the anterior pillar is separated (Fig. 4), the traction forceps are changed so that the tonsil is drawn forward and outward, when the posterior pillar is easily severed (Fig. 5).

After both anterior and posterior pillars are separated as illustrated in Figure 6, the opposite angle of the mouth is retracted by an assistant and the tonsil is strongly drawn from its fossa toward the median line, while the scissors are introduced into the supratonsillar space and pushed in deeply so as to reach the base of the

tonsil before beginning to cut. In this manner the cavity will be left smooth and clean. The incision is continued downward until the whole base of tonsil is separated. In some instances matters may be facilitated by reversing the scissors and cutting upward from the bottom after the supratonsillar attachment is separated, or they may be introduced from the front and the pillars pushed away by the flat surface of the scissors, while the curved portion is forced deeply into the tonsillar fossa, to reach the base of tonsil and complete the operation. In many cases, owing to gagging movements of the patient, it may be necessary to remove the tonsil in several pieces, but in favorable instances the whole mass can be separated at once.

In regard to the occurrence of hemorrhage, it has been my experience that the bleeding from a complete removal of the tonsils is not more profuse than when a partial extirpation is effected, inasmuch as the remaining soft tissues are favorable to a prompt contraction and retraction of the severed blood vessels, while an indurated mass which often remains after a partial removal tends to prevent a closure of the vessels and thus favors prolonged hemorrhage.

While my scissors were devised primarily as a tonsil instrument, I have found them admirably adapted for enucleation of the eye, evisceration of the orbit and separating adhesions of the palate and uvula to the pharynx.

#### COCAIN CATAPHORESIS IN SURGERY.

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NORTH PLATTE, NEB.

General anesthesia is dangerous and should be avoided in every case possible. Not only the immediate effects, the chance of sudden death, but the after effects on the kidneys, heart, etc., must be carefully considered by the surgeon who has the best interests of his patients at heart. The subject of local anesthesia in surgery is much neglected by those who make a specialty of the art.

I believe that nearly half the operations performed could be done with my method of cocain cataphoresis and with much greater safety and less worry to both physician and patient. I have used the method for removal of tumors of the breast, removal of lip for cancer, and in operations for hernia, hemorrhoids, birthmarks, moles, and epithelioma. In fact, it may be used for any operation that does not involve the great cavities of the body or the hollow organs or when the part to be operated on is not too far from the surface to be reached by the cocain.



## TECHNIC.

A piece of aseptic gauze, folded four times, is cut the size of the part to be anesthetized, and is laid on the skin, which has previously been made sterile. The gauze is then saturated with the following aseptic solution:

Cocain hydrochlorate .....	3iss
Adnephren or adrenalin sol. (1-1000) .....	3ii
Sterile water q. s. ....	3ii

The adrenalin in the mixture closes the small blood vessels and makes the operation nearly bloodless. The secondary hemorrhage which is reported to follow the use of adrenalin or adnephren only occurs in about one case in four, and then it usually comes on after all the stitches are in. If the edges of the wound are properly sewed both below the skin and in the skin itself, very little blood will escape, and in no case have I seen healing delayed by the use of any suprarenal extract or cocain, or by the combination of the two.

The gauze saturated with the cocain-adnephren mixture is covered with metal foil and connected with the positive pole of the battery. The circuit may be completed by the patient holding in his hand a wet sponge electrode connected with the negative pole, or better still, a large pad electrode may be used as the negative pole and attached by a bandage to the skin near the part to be operated on. If on a limb, for instance, it may be attached on the opposite side from the positive pole and both may be held in place by the same bandage. This makes the body circuit shorter and lessens the resistance. If this is done, however, care must be taken to see that the skin is perfectly dry between the two wet poles on both sides, otherwise the current will follow the wet surface and will not go through the skin at all.

The time required is from 15 to 30 minutes, and may be longer if necessary for deep effect, as in my experience with this method no effect whatever has been observed from the absorption of cocain, even with the strongest solutions long continued. It may be that the adrenalin causes the absorption to go on so slowly that no systemic effect is manifest, or it may be that the amount of cocain that penetrates the skin is too small to cause any noticeable symptoms. At any rate, no general symptoms occur. The phenomena manifested are entirely local.

A battery of 20 or 30 wet or dry cells should be used, connected in series. A rheostat to control the current is useful, but not absolutely necessary, as the current may be controlled in the absence of a rheostat by taking out or adding cells to the battery. The current should be as strong as the patient can stand without discomfort, and as he can always tell whether the current is running or not, a milliamperemeter is unnecessary, as any break in the circuit will be detected at once by him.

After the current is turned on the edge of the foil-covered gauze should be turned back about every five minutes and fresh solution applied as in order to get the best effect the gauze ought to be kept well saturated.

## TECHNIC ILLUSTRATED.

In using this method for hemorrhoids the gauze should be used over a cone-shaped metal electrode which should be large enough to have a dilating effect on the sphincter when pressed against the anus. This electrode should have a wooden or hard rubber handle and should be pressed firmly into the anus by an assistant. The sphincter will be considerably relaxed and the hemorrhoidal area anemic and deadened in from 20 to 30 minutes. If the hemorrhoids are large and pendulous the base of the tumor may be grasped gently between the blades of the forceps, each blade being wrapped with the gauze and the gauze saturated with the cocain solution. The handle of the forceps is then attached to the positive pole and the circuit completed, and in a few minutes the tumor can be cut off without pain.

In birthmarks the area should be anesthetized by the above method, then the mark is stuck full of straight needles run just below the surface, and about one thirty-second of an inch apart, a fine wire is threaded through the eyes of the needles and attached to the negative pole. The current is allowed to run until the spaces between the needles look cooked and white. This destroys the birthmark and does not leave a scar.

If moles are to be destroyed in this way any large coarse hairs growing in them must first be destroyed by the electric needle attached to the negative pole. For the benefit of those who may not know how to tell the positive from the negative pole, I will say that all that is necessary is to dip the ends of the battery cords in a glass of water. A large amount of hydrogen will come off at the negative pole and a small amount of oxygen at the positive pole.

This method of local anesthesia is preferable to the Schleich infiltration method because it is painless, introduces no volume of foreign material beneath the skin, covers a wide area if necessary and is without danger of the systemic effect which one sometimes gets with even the most careful use of the infiltration method. The anesthesia lasts over an hour, so that there is plenty of time to give the area operated on a second cleaning after the anesthesia is complete and before beginning the operation, which goes a long way toward producing an ideal septic result.

Every hospital ought to be equipped for this kind of work and surgeons should use it whenever possible instead of general anesthesia.

## OPEN-AIR COUCH FOR INVALIDS.

J. MADISON TAYLOR, M.D.

PHILADELPHIA.

Many diseased conditions, acute as well as chronic, are being treated by an extended life in the open air. The usual form of couch is the steamer chair or hammock. No matter how much protection is used on them in the way of blankets, rugs, etc., the air circulates too freely under as well as over the patient. In cold weather the chill of this double exposure is excessive. I offer a



Open-air couch, simple wood frame boxed in, partly or wholly, with or without handles, detachable or hinged; openings under legs and feet to introduce hot bricks or hot water cans in extreme cold weather; opening in rear to hold extra wraps and various articles. Head rest may be adjustable or boxed in for warmth. Slight elevation (removable) under knees to prevent sliding forward; top, on which patient lies, may be made of canvas stretched across, cheaper than a mattress.

device which is comfortable, light, portable, cheap and does not permit the cold air to circulate under so freely. It can be artificially heated if necessary. Various modifications and improvements will suggest themselves.

**False Doctorin'.**—An ancient villager, during an illness, refused to see a doctor, relying instead on a certain quack medicine. The vicar urged on the man's wife that the conduct was almost equivalent to suicide.

"Yes, sir," replied the wife; "I know it; and many a time I have prayed against it in the church service."

"I don't quite follow you," remarked the clergyman; "are you talking about the prayers for the sick?"

"O, no, sir; I mean when we say in the litany, 'From all false doctorin', good Lord deliver us.'"—*Saint James' Gazette.*



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 611.)

(A list of all accepted articles is published on one of the advertising pages of The Journal in the first issue of each month.)

### RED BONE MARROW.

Red bone marrow is a glycerin extract of the red marrow of bones; it contains about 2 per cent. of proteids and about 85 per cent. of glycerin.

It is a brownish liquid of an agreeable aromatic taste.

**Actions and Uses.**—The value of this preparation is believed to depend on a power to stimulate the formation of the red blood corpuscles.

It is recommended in simple and pernicious anemia.

**Dosage.**—4 to 8 Cc. (1 to 2 fluidrams) in water, milk or wine, three times a day.

Prepared by Armour & Co., Chicago.

### SAJODIN.

#### MONOIODOBEHENATE OF CALCIUM.

Sajodin,  $(C_{21}H_{42}ICOO)_2Ca$ , is the calcium salt of moniodobehenic acid.

It is prepared from erucic acid,  $C_{22}H_{42}O_2$ , by addition of hydrogen iodide, forming moniodobehenic acid,  $C_{22}H_{43}O_2I$ . This is converted into the calcium salt.

Sajodin is a colorless, odorless and tasteless powder, insoluble in water. On heating it generates an abundance of iodine vapor; on exposure to light the superficial portion becomes yellow without material decomposition.

It should contain 26 per cent. of iodine and 4.1 per cent. of calcium.

**Actions and Uses.**—Although containing a smaller quantity of iodine than potassium iodide, sajodin is claimed to be equally efficient. It is said to have been proven exceptionally free from the unpleasant and deleterious by-effects of the iodides.

It is used for the same purposes as potassium iodide.

**Dosage.**—1 to 3 Gm. (15 to 45 grains) daily.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany, and Farbwerke vorm. Meister, Lucius & Bruening, Höchst a. M., Germany (Continental Color & Chemical Co., New York). Patent and trademark pending.

### SANTYL.

#### SALICYLIC ESTER OF SANTOL. SANTALOLIS SALICYLAS.

Santyl,  $C_6H_4OH.COO(C_{15}H_{23}) = C_{22}H_{23}O_3$ , is the salicylic acid ester of santalol.

According to the German patent the neutral esters of sandalwood oil are produced by heating the oil with the respective acid anhydrides and subsequent purification of the product.

Santyl is a yellowish oil with only a faint balsamic odor and taste; specific gravity 1.07 at 15° C. (59° F.); it boils under 20 mm. pressure at 121° C. (250° F.) to 126.6° C. (260° F.) with partial decomposition; insoluble in water, but soluble in about 10 parts of alcohol.

It is incompatible with alkalies and with the usual incompatibles of sandalwood oil and of salicylates.

Santyl should possess the physical constants given above. On saponification with alcoholic sodium hydroxide it should yield approximately 40 per cent. of salicylic acid and 60 per cent. of santalol.

**Actions and Uses.**—It is said that santyl passes the stomach unchanged, but is slowly split up in the intestines into its constituents, santalol and salicylic acid. Santyl is claimed to have the same actions as sandalwood oil, except that because of the slow liberation of santalol, it produces no irritation of the gastrointestinal tract nor of the kidneys and urinary passages, nor any unpleasant odor or eructations.

It is claimed to be useful like santal oil for gonorrheal urethritis.

**Dosage.**—1.5 Cc. (24 minims) usually given in three capsules of 0.5 Cc. (8 minims) each, three times a day.

Manufactured by Knoll & Co., Ludwigshafen, a. R., Germany (Knoll & Co., New York). German patent No. 173,240. U. S. patent applied for. U. S. trademark applied for.

### SUPRARENALIN.

#### EPINEPHRIN HYDRATE.

The active alkaloid of suprarenal gland. See Suprarenal Alkaloid.

An organic base is used for the final precipitation. Suprarenalin is a finely crystalline, light yellow substance, odorless and very slightly bitter. It melts at 205° to 207° C. (401° to 404.6° F.) It is only slightly soluble in cold water or alcohol, but readily soluble in acids and fixed alkalies. It is insoluble in ether.

**Actions and Uses.**—See Suprarenal Alkaloid.

**Dosage.**—Locally, 1-1000 to 1-15,000 solution. Internally, 0.3 to 2 Cc. (5 to 30 minims) of the 1-1000 solution every 2 to 3 hours. Hypodermically 1 to 15 drops of 1-1000 solution, diluted with sterile water.

Manufactured by Armour & Co., Chicago. U. S. patent No. 829,220.

### SUPRARENAL LIQUID.

#### LIQUOR SUPRARENALIS (P. D. & CO.).

Suprarenal liquid is an aqueous extract of suprarenal glands, preserved with 0.8 per cent. of chlorbutanol (chloretone). Each Cc. (16 minims) of the solution represents 1 Gm. (15.4 grains) of the fresh glands.

**Actions and Uses.**—See Suprarenal Alkaloid.

**Dosage.**—The preparation is used undiluted for spraying, especially for mucous membranes.

Prepared by Parke, Davis & Co., Detroit, Mich.

### SUPRARENALIN OINTMENT.

An ointment containing 0.1 per cent. of suprarenalin, dissolved in a petrolatum base.

**Actions and Uses.**—It is recommended for application to mucous membranes, as the eye or the nose. The action is said to be slower but more lasting than that of the solution.

Prepared by Armour & Co., Chicago.

### SUPRARENALIN SOLUTION.

A 1-1000 solution of suprarenalin sulphite in normal saline solution, free from other preservatives.

**Dosage.**—See Suprarenalin.

Manufactured by Armour & Co., Chicago.

### SUPRARENALIN TRITURATES.

Triturates composed of suprarenalin, milk sugar, and boric acid, in such proportion that each 0.03 Gm. (½ grain) triturate dissolved in 15 minims of water, yields a 1:1000 solution.

**Actions, Uses and Dosage.**—See Suprarenalin.

Prepared by Armour & Co., Chicago.

(To be continued.)

**Naming of Carbon Compounds.**—Form: This is a prefix denoting derivation of formic acid (methanoic acid)  $HCOOH$ ,

thus formaldehyd is  $HC \begin{smallmatrix} :O \\ | \end{smallmatrix}$  formamid is  $HC \begin{smallmatrix} :O \\ | \end{smallmatrix} .NH_2$ .

—Pharm. Rev., August, 1906.



THE JOURNAL OF THE  
AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, FEBRUARY 23, 1907.

THE TREATMENT OF DIABETES WITH EXTRACTS OF  
THE MUCOSA OF THE DUODENUM.

In a previous editorial on the "hormones" we referred<sup>1</sup> briefly to the substance, "secretin," which Bayliss and Starling found as the specific product of the action of dilute acid on the mucous membrane of the duodenum, the function of which is to stimulate the secretion of pancreatic juice. Its effect on the external secretion of the pancreas is so very striking that the question at once arises: Does secretin have a similar stimulating effect on the internal secretion of the pancreas? In case the answer to this question is affirmative, then we may have in secretin a means of stimulating the impaired glycolytic processes in diabetes, since, according to the observations of Cohnheim, the internal secretion of the pancreas has as its function the activation of the glycolytic enzymes of the liver, muscles and other tissues. If, for purposes of discussion, we assume that secretin does increase the amount of formation of internal secretion by the pancreas, and that glycosuria depends on deficiency of this internal secretion, then we might have three possible causes of defective glycolysis and the resulting glycosuria: First, the duodenum might fail to form secretin; second, the pancreas may be so disordered that normally formed secretin can not stimulate it to an increased formation of its internal secretion; third, the liver and muscles may not contain the glycolytic enzymes which the pancreatic secretion normally activates. Therapeutic administration of secretin, prepared by treating the duodenal mucous membrane of swine or other animals with dilute acids, could have a favorable influence only in case the glycosuria depended on the first of these possible causes; conversely, if favorable results followed administration of secretin to diabetics, we should have grounds for looking for an unsuspected source of defective sugar metabolism, namely, defective formation of secretin by the duodenal mucosa.

The discovery of secretin, therefore, opens up an entirely new field of investigation in connection with diabetes, which has already been entered on by English observers who have been stimulated by the studies of Bayliss and Starling. The results that have been obtained so far are very suggestive, although still too few to be considered as at all conclusive. The first experi-

mental administration of secretin in diabetes is credited by Starling to Spriggs, but the result in the one case reported was negative. Soon after, however, Moore, Edie, and Abram<sup>2</sup> obtained a marked lowering of sugar excretion in three cases of diabetes, although a similar favorable result was not obtained in all the cases in which this treatment was tried; more recently they report a few more positive results.<sup>3</sup> As they are careful to point out, even if secretin does increase the internal secretion of the pancreas, it can not be expected that secretin will have any effect in such cases of diabetes as are associated with marked pancreatic lesions. However, the fact that in a considerable number of cases diabetics are found to respond to the administration of secretin with a decreased elimination of sugar would seem to indicate that possibly it is true that in some instances diabetes may depend on a deficiency in the formation of secretin by the duodenal mucosa; presumably these would be the cases in which the pancreas is found at autopsy to be anatomically normal.

In support of this suggestion is the report of experiments made by Bainbridge and Beddard<sup>4</sup> to determine the formation of secretin in the duodenum of diabetics. These investigators, although unable to obtain favorable clinical results by use of secretin,<sup>5</sup> did demonstrate that in five out of six cases of diabetes little or no secretin could be obtained from extracts of the duodenum, although the duodenum of individuals dying from other diseases always yielded secretin. It is of importance that in all the six cases studied in this way the pancreas was found structurally normal. This observation is highly suggestive, since it offers a new and plausible explanation for those instances of diabetes in which the pancreas has been found normal at autopsy. It is also particularly interesting in that a new possibility for a successful therapy for certain cases of diabetes offers itself. Of course, even if absence of secretin is found to be the etiologic factor in the type of cases specified, it can not be hoped that secretin administration will have any considerable influence in those cases that depend on severe anatomic changes in the pancreas. We may also note that the secretin hypothesis throws absolutely no light on the problem of the importance or non-importance of the islands of Langerhans in the etiology of diabetes, for it is perfectly possible that secretin stimulates both parenchyma and island cells alike. It may be well, in closing, to emphasize the fact that these observations must be looked on as only the first preliminary gropings into a new field of research, and that we must await their further development and corroboration before entering on systems of treatment or hypotheses as to the etiology of human diabetes.

2. Biochem. Jour., 1906, 1, 28.

3. Ibid., 1906, 1, 446.

4. Biochem. Jour., 1906, 1, 429.

5. Foster recently reported similar unsuccessful results from the use of secretin in diabetes, while Dakin and Ransom obtained a transitory lowering of the sugar excretion in one case. Jour. of Biol. Chem., 1907, 11, 297.

1. THE JOURNAL A. M. A., Feb. 9, 1907, p. 524.



## THE FACTORS OF SAFETY.

The lectures given under the auspices of the Harvey Society constitute a notable series. This unique society is proving itself a most useful agency for the purpose of popularizing in the proper sphere the ideas and the knowledge of productive workers in various departments of scientific medicine. On account of its general interest the lecture by Dr. Meltzer<sup>1</sup> on "The Factors of Safety in Animal Structure and Animal Economy" merits special notice. The subject is in certain ways a novel one, and the distinguished lecturer deserves congratulation, not only for the originality of the choice of his subject but also on the highly successful manner of its presentation. The wonderful capacity of the animal body to adapt itself to various changes of structure and condition, internal as well as external, has formed the theme of many addresses and receives more or less attention in connection with discussions of diverse pathologic processes, more particularly the reparative and inflammatory, but if we mistake not the question whether or not the animal machine is provided with factors of safety in the large sense that this term is used by Meltzer has received little or practically no systematic consideration from the physiologic point of view.

Meltzer passes in review numerous organs and complex tissues, nearly all of which he finds are provided with apparently large margins of safety, over and above the maximum required by the normal activity. This is brought out in an especially striking manner in the case of the reproductive organs. In the central nervous system, however, the amount of tissue presiding over functions of vital importance is comparatively scanty, this tissue being, however, exceptionally well protected against injury on the one hand and against lack of blood on the other. It is pointed out, furthermore, that the potential energy of many organs, e. g., the heart, far exceeds the needs of normal life; that in the case of many functions the mechanisms necessary are doubled and even trebled; that the function of one organ may be assisted by other organs; and that living tissue is provided with a most important factor of safety which is peculiar only to living things, namely, the mechanism of self-repair. The only exception of note to the last statement is found in the higher tissue of the central nervous system, the nerve cells possessing but insignificant power of reproduction.

Finally, as regards the supply of food and of energy, Meltzer also shows that abundance, even affluence, appears to be a prominent feature. To the question raised in the beginning of his lecture, "are the structures and functions of the living body provided with factors of safety?" we see that Meltzer is able without difficulty to give a positive, affirmative answer. That these factors of safety promote the integrity of life, the perpetuation of species, and have an important bearing on the process of natural selection needs no emphasis.

Meltzer's valuable lecture contains much food for thought. Thus the somewhat exceptional status of the central nervous system as compared with other organs from the standpoint of factors of safety presents a puzzling problem, satisfactory solution of which now appears beyond our reach.

## SENSATIONALISM AND CRIMINAL SUGGESTION.

There has been no little discussion in the last few days as to the advisability of printing the details of criminal trials; marked differences of opinion have arisen as to whether such publication is likely to do good or harm. A distinguished body of clergymen went so far as to announce publicly that they thought the detailed publication of the proceedings of a recent notorious murder trial were apt to be beneficial rather than harmful to the community, because they taught the lesson that "the wages of sin is death." The old idea that ignorance means innocence—an idea so long harbored by many well-meaning persons—is doubtless responsible for not a little evil. When young folks are kept too sedulously from knowledge which they must have some time or other, and which will come to them pruriently, if not given directly and candidly, the result is sure to be harmful. Whether or not this important principle applies to such information as is obtained from the sensational details of a murder trial involving the worst kind of sexual problems, however, is extremely doubtful.

What must be remembered particularly in this discussion, and what is most likely to fail of appreciation by any but physicians who have been particularly interested in psychic manifestations, is the power of suggestion to familiarize minds of minor resisting power with evil and perhaps to lead them to the commission of it, while the lack of such suggestion would have left them free to follow their own devices. It might be thought, for instance, that the publication of the details of suicides would tend to lead others who have thoughts of self-destruction to avoid such emotional strains and distressing circumstances as might predispose them to it. On the contrary, we know that the reports of suicides constantly suggest to other persons who lack mental stability to go and do likewise. If some special form of self murder be indulged in and its features are exploited by the newspapers similar cases are practically always reported from other parts of the country during the course of the next few weeks. This is particularly true with regard to the double crimes of murder and suicide that have become so frequent in recent years.

With regard to other crimes besides murder and suicide the power of suggestion is likely to be even stronger. There is a natural abhorrence from the taking of human life that represents society's strongest safeguard against such fatal incidents. On the other hand, there is a morbid tendency for most of the sexual crimes, especially in individuals of abnormal mentality, that makes read-

1. Page 655 this issue.



ing about them and the consequent increased familiarity with them an impelling motive toward actual experience. This is the side of human nature that is particularly likely to be affected by detailed reports of sensational trials. If all men were perfectly normal then the lesson of such stories would be read aright and the moral effect would be rather for good than for evil. As it is, a very large proportion of the community can not be considered quite normal. It is especially these more or less morbid persons, however, who have a special pathologic curiosity that tempts them to luxuriate in details of criminal proceedings. It is this which brings so many of them, even though they are women, and the ordinary feelings of shame might be expected to deter them, into the publicity of a court room in order to indulge their morbid feelings.

In a word, besides the younger people who have not enough experience to guide them to what may or may not be good for them to read, we have always with us a large number of "children of a larger growth," who will never be quite grown-ups in the sense of stability of character and rectitude of purpose, who must be protected from the morbid suggestion which comes to them from a sensational press. It is this side of the present discussion that physicians, better than any others, can appreciate, and all the weight of their influence should be thrown into the scale to save people from evils that are quite as sure to do them harm as would be contact with contagious disease or insanitary surroundings.

#### FROM EXORCISM TO PERSUASION.

Some form of psychotherapy has undoubtedly been in use since the beginning of the race. The priest-doctor, when dealing with a mind diseased, would try first exorcism, hoping thus to expel the devil or demon that was possessing the patient. Failing in this he would employ some such pharmacotherapy as the administration of asafetida; and the prognosis was indeed bad when an evil spirit could remain in a body saturated with this substance.

The thoroughly scientific Hippocrates appreciated and no doubt experienced the value of suggestion. In the middle ages Paracelsus, "who was not altogether a quack," employed "magnetic healing." Mesmer, a century ago, was able to convince the most brilliant and intellectual minds in Europe of his powers. Then came animal magnetism, the assumptions made for the theosophy of Madame Blavatsky, spiritualism, Dowieism and Eddyism as curative agencies. So that to-day hundreds of "faith cures," "mind cures," mental healing and the like infest our civilization.

Nevertheless, these charlatanries have had their uses, in that they have attracted the attention of wise and honest men to such study of mental processes as might lead to the formulation of a rational psychotherapeutics. Thus the labors of Beard, Myers, Charcot and their col-

leagues evolved hypnotism. It was presently found, however, that this might prove a dangerous agency in the hands of the incompetent or of the unscrupulous; by its means another psychosis might be substituted for that which it was sought to dissipate.

The superb "psychoanalytic" of Janet and the labors of such men as Dubois and Jastrow followed, so that suggestion, by which we seek to influence the subconscious mind, is now much in vogue as a psychotherapeutic measure. In contradistinction to this is the method of "education, explanation and persuasion," which Barker<sup>1</sup> has advocated and used with success.

It appears to Dr. Barker that the main difference between suggestion and persuasion lies in their relation to the higher psychic functions. In suggestion these higher functions are either not utilized or they are inhibited (the suppression and substitution of Janet). In persuasion, on the other hand, they are called into action, the mind being won over by the presentation of suitable reasons and not "by the exertion of authority, force or fear."

Which of these methods is correct? In the present transitional state of our knowledge and experience, the scientific physician must judge. The psychotherapy must be as varied as the variety of cases to which it is applicable. For one individual persuasion may be appropriate, for another suggestion; there are cases in which even hypnotism may have to be induced.

Psychotherapy is applicable in hysteria with its most varied and protean manifestations; in psychasthenia and neurasthenia; when there is psychic incompleteness or physiologic insufficiency; for the obsessed (or the possessed, as Barker would prefer to term them); in nervous crises; in such gastropathies as anorexia and "nervous dyspepsia;" in insomnia; in psychoneuroses and in all abnormal states of a functional sort which have not as a basis organic or structural lesions. Even with regard to the latter, however, we may often combat functional disturbances associated with organic diseases, such as tabes and heart and lung affections.

A very essential preliminary to a rational psychotherapeutics is an exhaustive diagnosis. It is worse than absurd to try to dissipate, by suggestion or persuasion, a headache which is dependent on an insufficient eye muscle, a nasal spur, or an inflamed sphenoid; or a pain in the chest which is due to an incipient tuberculosis; or one in the pelvis which has for its origin a lesion which only the surgeon can remedy by operation.

#### TO ABOLISH SMALLPOX QUARANTINE.

The resolution<sup>2</sup> of the Minnesota State Board of Health not to use quarantine after Jan. 1, 1908, in the attempt to control smallpox has the aspect of an extreme

1. Barker: Experience with the Simpler Methods of Psychotherapy and Re-education, Amer. Jour. Med. Sci., October, 1906.  
2. Minnesota news, this issue, page 705.



measure. The idea of not quarantining smallpox patients will naturally come as rather a shock to the average layman, and it is surprising that the proposition absolutely to do away with this precaution (after a certain date when the public comes to realize its meaning) has caused so little stir and comment. To any medical man who considers the subject, however, it is self-evident that quarantine ought to be unnecessary. An accidental case of smallpox should have no terrors for a well-vaccinated community. It should be no more serious in its consequences than the half dozen other diseases that are about equally contagious and which no one dreads. The experience of certain well-vaccinated people, those of Prussia, for example, shows that even the mildest cases of varioloid are practically unknown if the one reasonable precaution is taken. The abolition of strict quarantine does not necessarily mean that there should be no notification or placarding of infected places. The public should have fair warning, as heretofore, but the restrictions in personal liberty should be done away with. We presume some such course will be followed in Minnesota next year when the rule goes into effect. The recent activity of health boards in various parts of the country has stirred up opposition and the antivaccinationists are at present unduly active. There is even danger that wholesome vaccination regulations will be repealed in some sections, and bills have even been introduced in one legislature making the demand for a vaccination certificate a crime. It is not that the antivaccinationists are not afraid of smallpox, but they seem to be more afraid of vaccination. As it is, health officials are seriously embarrassed and smallpox spreads. The abolition of legal quarantine would put the public more on its guard and lay the responsibility on the antivaccinationists. The public might come to demand general vaccination more urgently if it felt that to be the only real protection, being no longer able to trust in the inefficient and deceptive quarantine method. This, we take it, is the view taken by the Minnesota board. It sees no use in trying to check smallpox by quarantine if vaccination can not be generally enforced. There is much justice in this view. If we are not allowed to protect innocent children by the one sure method that has stood the test of a hundred years, we can not protect them any other way. The common claim of the antivaccinationists is that smallpox is a filth disease controllable by general sanitation and cleanliness. We would be glad to see cleanliness enforced among the antivaccinationists themselves, but its impracticability is self evident. Even if it were not so, a trust in it on their part would be an admirable object lesson so far as smallpox is concerned when compared with vaccination. No state in this country grants health boards the powers they would require to stamp out filth diseases absolutely, and smallpox is not really one of that type. The Minnesota board's resolution has much to be said in its favor and it will be interesting to observe its effects.

#### CONSENT TO OPERATION.

The decision<sup>1</sup> of the Supreme Court in the case of Pratt vs. Davis emphasizes the necessity of surgeons

having a clear understanding of their legal liabilities in undertaking important operations and the prudence of requiring explicit consent of the patient or his legal representative before beginning an operation. The decision covers three principal points of interest to surgeons: 1. What is sufficient consent to an operation? 2. How much is implied in consent once given? 3. What is the privilege and duty of the surgeon in emergencies arising in the course of an operation undertaken with previously obtained consent? When a patient is in full possession of his mental faculties his personal consent to a surgical operation on himself is a necessary prerequisite. It is obvious that this consent should be obtained after a clear presentation of the necessary facts in the case, and it would seem to be a judicious precaution to obtain such consent in writing. Unfortunately, the testimony in the case cited showed an attempt at deception that seems to have been imprudent even if it might at the time have seemed justifiable. It would appear from the decision that whatever may be the implication involved in consent to one operation, it can not be held to extend to a second operation, but explicit consent to this should be obtained. The decision on the third point is of great importance as it tends to put the duties of the surgeon in the course of an operation already undertaken in a clearer light. It is the duty and the legal right of the surgeon in the presence of unexpected conditions arising in the course of an operation to use his highest skill and judgment even if the consent of the patient or of his representative can not be obtained. It is also right and the duty of the surgeon to act in accordance with the best teachings of surgery in emergencies in which consent can not be obtained, even to the extent of performing operations.

#### THE ECONOMIC VALUE OF LIFE.

The average American gives so little heed to the vast economic waste that goes on yearly, due to the maiming or killing of workmen, that it has become a trite truism that in the United States the cheapest commodity on the market is human life. That this should be so is a grave economic, not to say social, error. Far-sighted employers are beginning to realize that the warp and woof of our economic fabric is weakened and destroyed when working conditions are such as to be a standing menace to the life and safety of the workers. Not only in the operation of machinery, however, is there danger. The exigencies of modern industrial life have produced many trades that are distinctly dangerous to the workers in them. Lead poisoning is a positive sequel to employment in factories where storage batteries are made; ptialism is of the commonest occurrence among the women and girls working in hat and silk factories—and the list could be extended indefinitely. We feel, therefore, that the exposition which was held recently in New York City,<sup>1</sup> where were shown the many devices on the market for the protection to life and limb of industrial workers, was most opportune. It is high time that the indifferent public be awakened to the enormous loss

1. The Exposition of Safety Devices and Industrial Hygiene held at the American Museum of Natural History, New York City, Jan. 20 to Feb. 12, 1907.



entailed by these needless sacrifices. Men are of more value than things—life is a greater asset than property—and any nation that persists in remaining blind to these facts must sooner or later fall behind in the race for commercial supremacy. Concretely it may be worth remembering that in New York City alone there is a daily average of nine violent deaths from preventable causes. In the United States, declares the American Institute for Social Service, we kill in industrial accidents every four years 80,000 more people than fell in battle and died of wounds on both sides during the four years of the Civil War. These figures help us to realize the price we pay for our commercial prosperity and give some idea of our wasteful prodigality in that plentiful commodity—human life. Devices that lessen the liability to accident and expositions that awaken the public conscience to the need of the installment of such devices are to be welcomed. It is to be hoped that the time is not far distant when the worker in the mine or in the factory may earn his living with a reasonable degree of safety to life and limb.

#### PSYCHIATRIC CLINICS IN HOSPITALS FOR THE INSANE.

Resolutions have been introduced by the speaker of the Illinois House of Representatives condemning the psychiatric clinics in one of the state insane hospitals. He has, moreover, used his privilege as speaker to refer it to the committee which controls the appropriations for such institutions. The ostensible ground of objections is the use of the inmates of the institution in these clinics under the assumption that such use is an ignominy and a hardship to those unfortunates. Considering the fact that the institutions are designed primarily not merely for the benefit of their inmates but for the prevention and cure of the growing evil of mental disorder in the state, the view of their functions as embodied in this resolution seems a narrow one. Only by a better knowledge of insanity on the part of the medical profession can we expect to wage a successful campaign against the spread of mental disease, and the use, for professional instruction, of the material at the state's command, would seem to be most reasonable. The assumption is, moreover, unjustifiable that by such utilization the recipients are subject to humiliation or abuse. Those attending such clinics for the acquirement of scientific knowledge are not such as would utilize the opportunity for trifling. In fact, the publicity that these clinics involve as to the treatment and management of the insane is an insurance against the mistreatment and neglect that have been charged, justly or unjustly, against our asylums in years past. The more the medical profession generally can know of the inside of these institutions and of the treatment given there, the better for the welfare of the patients in them and for the interest of the public which supports them. It is not hard to see how the scientific utilization of these institutions for the benefit of the patients and of the public might be inimical to the interests of those who consider them mainly as places for the bestowal of political patronage—and that idea has been at least one of the causes of nearly every asylum scandal in this country—but of its

ultimate value to the insane there can be no question. In this connection it may be of interest to note that the former head of the institution, who was superseded by the present incumbent, lives in the speaker's district. The more public the institutions are to those who are sanely and honestly interested in their work the better for all concerned and especially for the inmates. The hospital specifically concerned in the resolution is under the management of one of the most competent and progressive alienists in the country, and the clinics against which the resolution is directed were started solely for the purpose of enlarging the usefulness of the institution, not only to the inmates but also to the state which maintains it. It is in the direct line with the recommendations of the State Board of Charities and has been indorsed by Governor Deneen. It would be a pity if any resolution, with cheap pretense of philanthropy, incited either by gross ignorance or some ulterior political motive should be given any serious consideration by the legislature. The study of insanity is one of the most serious problems of the day, and humanity can be best served by utilizing every legitimate means of acquiring knowledge of it. The resolution exhibits neither sense nor humanity, but, as a distinguished practitioner says in a letter to the governor, calls us back to eighteenth century madhouse methods. Psychopathic clinics have proved their value abroad, and their more general adoption in this country, wherever competent men can be found to conduct them, would be of signal service to humanity.

### Medical News

#### ARKANSAS.

**Society Meetings.**—At the annual meeting of the Fourth Councilor District Medical Society, held at Monticello, December 19, the society freely discussed the matter of sewerage system, septic tanks, cesspools, etc.—At the annual meeting of the Yell County Medical Society, held in Dardanelle, December 11, Dr. M. A. Worsham, Centerville, was elected president; Dr. S. E. Miller, Dardanelle, vice-president, and Dr. A. H. McKenzie, Dardanelle, secretary-treasurer.—At a recent meeting of the Union County Medical Society, held in El Dorado, the following officers were elected: President, Dr. John Moore, Lisbon; vice-president, Dr. S. E. Thompson; secretary, Dr. J. B. Wharton; treasurer, Dr. J. M. Sheppard; delegate to the Arkansas State Medical Society, Dr. H. H. Neihus; alternate, Dr. E. T. Hamm.—The Drew County Medical Society, at its annual meeting in Monticello, December 19, elected Dr. W. A. Brown, president; Dr. Sidney Harris, Wilmar, vice-president; Dr. A. S. J. Collins, secretary-treasurer, and Dr. J. R. Tarrant, censor.

#### ILLINOIS.

**Sanatorium Opened.**—The Edward Sanatorium for the Treatment of Incipient Tuberculosis, Naperville, built and endowed by Mrs. Eudora Hunt Spalding, Chicago, is now open, 10 patients having been admitted. The present capacity of the sanatorium is 15. No charge is made for treatment.

**Personal.**—Dr. Henry G. Schmidt, Elgin, has been appointed physician to a mining company in Torreon, Mexico.—Dr. and Mrs. Joseph R. Waln, Peoria, have gone to Florida for two months.—Dr. Joseph H. Roy, Kankakee, was thrown from his buggy in a collision with a trolley car February 8, and painfully injured.—Dr. Ernest B. Mammen, Bloomington, is about to take a trip to Europe.—Dr. Cassius M. Craig, Champaign, has returned home after several weeks spent in a Chicago hospital, where he underwent operation.

**Society Meetings.**—At the annual meeting of the Wabash County Medical Society the following officers were elected: Dr. Robert J. McMurray, St. Francisville, president; Dr. Sereno W. Schneck, Mount Carmel, vice-president; Dr. Richard S. Manley,



Mount Carmel, treasurer, and Dr. George C. Kingsbury, Mount Carmel, secretary. The society adopted resolutions endorsing the position taken by the American Medical Association and the Illinois State Medical Society regarding the compensation for life-insurance examination.—The Physicians' Club of Lincoln held its annual session January 18 and elected the following officers: Dr. William W. Houser, president; Dr. Walter W. Coleman, vice-president; Dr. Harry S. Oyler, secretary-treasurer, and Drs. Lucian L. Leeds, James L. Lowrie and Calvin C. Montgomery, trustees.—At a meeting of the Christian County Medical Society, held in Taylorville, January 17, the following officers were elected: President, Dr. J. J. Connor, Pana; first vice-president, Dr. J. H. Dickerson, Taylorville; second vice-president, Dr. Dwight F. Morton, Taylorville; secretary-treasurer, Dr. D. D. Barr, Taylorville; censors, Drs. E. H. Douglas, Taylorville; J. N. Nelms, Taylorville, and William T. Bridge, Stonington; finance committee, Drs. T. A. Lawler, H. M. Woolf, Taylorville.

**Bills in the Legislature.**—Among the bills introduced in the senate and house is one providing for a state sanatorium for tuberculosis; one to regulate the practice of osteopathy; a bill to amend the embalmer's bill; one to amend the law in relation to coroners; one to provide for the testing of the sight and hearing of the pupils of public schools; one to regulate the sale of narcotics and drugs; one to promote the care and curative treatment of the insane; one to provide for moral and humane education in public schools; one making appropriations for the Illinois State Colony for Epileptics; one to establish an institution for the surgical treatment of children; one to prohibit the collection of second-hand bottles or jars; one making it unlawful to sweep cars or coaches while occupied by passengers; one regulating the manufacture and sale of proprietary drugs and medicines; one preventing fraud in the sale of dairy products; one prohibiting the sale of adulterated or misbranded food and drugs; one to regulate the practice of barbering in the state, and one for the licensing of cold-storage warehouses and the marketing of goods placed in cold storage.

**Antituberculosis Campaign.**—A lecture by Dr. William A. Evans of Chicago on "Tuberculosis" was delivered before an audience that packed the Auditorium in Jacksonville. The lecture was given under the auspices of the Woman's Club and of the Jacksonville Society for the Prevention of Tuberculosis. Very great interest in tuberculosis is being manifested in Jacksonville. This is largely due, no doubt, to the aggressive campaign instituted by the society above mentioned. This society, in addition to having lectures delivered on the subject also publishes, for free distribution, a terse little pamphlet setting forth, in easily understood language, the prophylaxis and treatment of the disease.

#### Chicago.

**Physicians on Ambulances.**—On February 18 physicians were for the first time assigned to city ambulances. Sixteen physicians are employed at a salary of \$100 per month. The service is under the charge of Dr. George Hunt of the health department.

**Mortality.**—Deaths from all causes for the week ended February 16 numbered 698, equivalent to an annual death rate per 1,000 of 17.27. Pneumonia caused 156 deaths; consumption, 72; heart diseases, 60; scarlet fever, 39; nephritis, 37; acute intestinal diseases, 28; cancer, 24; nervous diseases and violence (including suicide), each 22; diphtheria, 11, and measles, 4.

**Infectious Diseases.**—The report of the health department for the week ended February 16 shows a continued decrease in the number of infectious diseases. The diphtheria cases reported number 150, or 60 less than for the previous week; scarlet fever, 386, a reduction of 234, and measles, 130, a decrease of 14. The total number of infectious diseases for the week was 704, or 324 less than was reported for the previous week.

**Personal.**—Dr. Edwin W. Ryerson has been appointed attending orthopedic surgeon at St. Luke's Hospital and orthopedic surgeon at the Children's Memorial Hospital.—Dr. Samuel L. McCreight and family, who spent the winter in Los Angeles, have returned to Chicago.—Dr. Charles Adams has been very ill this week.—Dr. William A. Evans, who has been seriously ill with influenza at Grace Hospital, is improving.

**Health Department Inquires About Fourth Disease.**—Dr. Charles J. Whalen, commissioner of health, has prepared circulars to be sent out to physicians in the city who have reported cases of scarlet fever and measles, requesting reports on the cases and facts concerning symptoms that will aid in

explanation of the phenomena called "fourth disease" or "Duke's disease." It will be remembered that in an editorial, Feb. 9, 1907, page 526, THE JOURNAL took the stand that the "fourth disease" has not been established as a clinical entity. Dr. Whalen hopes that this inquiry may contribute to the knowledge on the subject.

#### IOWA.

**Personal.**—Dr. Charles E. Ruth, professor of the principles and practice of surgery and clinical surgery in Keokuk Medical College, Keokuk, has resigned, on account of his wife's health, to take effect at the close of the present session of the college.—Dr. David S. Fairchild, Sr., Clinton, is recovering from the effects of septicemia caused by the infection of a finger during an operation.—Dr. Frank H. Cutler, Cedar Falls, has been appointed lecturer in electrotherapeutics at the University of Iowa, College of Medicine, Iowa City, a new position recently established.—Dr. Abel Ford, a retired practitioner of Le Grand, was thrown from a sled recently and sustained concussion of the brain. He is expected to recover.

#### KENTUCKY.

**Typhoid Epidemic.**—Typhoid fever is reported to be epidemic in Bath County, where numerous cases have occurred with several deaths.

**Tuberculosis Hospital Work Hampered.**—The Fiscal Court of Jefferson County failed to make a levy for the maintenance of the Tuberculosis Hospital, which will greatly handicap the work of this much-needed institution.

**Personal.**—Drs. Henry V. Pennington, London, and George S. Brock, Bush, have gone to Europe.—Dr. David T. Stuart, Paducah, has accepted the presidency of the Blake Hospital, Hang Chow, China, and sailed from Seattle, February 5.

**Empowered to Revoke.**—By order of the General Assembly, the State Board of Health is empowered to revoke the license of any physician proved guilty of having performed an abortion, and also of any physician who becomes addicted to liquor or drug habits to a degree which disqualifies him to practice with safety to the people.

**Milk Certified.**—The Jefferson County Medical Society milk commission is now "certifying" to the purity of the milk from three dairies; all precautions prescribed by the commission in regard to the production, care in handling, shipping, cows, barns, etc., being carried out. The latest development in the milk situation is the advertisement by a distributor of "certified" milk, the purity of which is certified by two physicians and a veterinarian probably under salary. The city health department is preparing also to certify dairies which come up to the requirements of the Jefferson County commission's standards. The arousing of public opinion by the crusade against swill feeding and in favor of pure milk will give a better supply in general.

**Society Meetings.**—At the quarterly meeting of the Kentucky Midland Medical Society, held in Louisville, January 10, Dr. Charles W. Kavanaugh, Lawrenceburg, was elected president; Dr. Nevil M. Garrett, Frankfort, vice-president, and Dr. George P. Sprague, Lexington, secretary-treasurer.—At a meeting of the Graves County Medical Society, held in Mayfield, January 15, the following officers were elected: Dr. Benjamin F. Morris, Mayfield, president; Dr. John F. Kirksay, Sedalia, vice-president, and Dr. Herbert H. Hunt, Mayfield, secretary-treasurer.—The Clark County Medical Society, at its meeting at Winchester, January 12, elected the following officers: Dr. Samuel W. Willis, president; Dr. Howard Lyon, vice-president; Dr. Ernest Cole, secretary-treasurer, and Dr. Samuel W. Willis, delegate to the state society, all of Winchester.—A meeting of the Central Kentucky Medical Society was held in Danville, January 24, and the following officers were elected: President, Dr. John M. Acton, Lancaster; vice-president, Dr. John C. Bogle, Danville, and secretary-treasurer, Dr. J. Thomas Price, Harrodsburg.

**Colleges Merge.**—An announcement was made February 14 of the consolidation of the medical departments of Kentucky University and University of Louisville. In consideration of the sum of \$40,000 the University of Louisville purchases the buildings of Kentucky University, its good will and equipment, and the two faculties are combined. The faculty of the new school will be composed of the following physicians: J. G. Sherrill, A. D. Willmoth, W. O. Roberts, T. L. Butler, surgery; Henry Enos Tuley, William B. Doherty and R. L. Edmunds, obstetrics; T. C. Evans and J. M. Ray, eye, ear, nose and throat; Adolph Pfingst and Edward Palmer, physiology; S. F. Woody and R. B. Gilbert, pediatrics; J. B. Marvin and J. G.



Cecil, medicine; W. E. Grant and J. M. Bodine, anatomy; Louis Frank and Turner Anderson, abdominal surgery; L. L. Solomon, Virgil Simpson and H. A. Cottell, materia medica and therapeutics; H. M. Goodman, chemistry; C. W. Hibbitt, gynecology; O. H. Kelsall, genitourinary diseases; Bernard Asman, diseases of the rectum. Kentucky University will continue its present session until its close in its present quarters, when its class will be graduated and diplomas issued by the University of Louisville. The present buildings will then be used by the University of Louisville as its academic department.—An announcement has just been made of the consolidation of the Louisville Medical College and the Hospital College of Medicine, the latter being the Medical Department of Central University. The buildings of the Louisville Medical College will be used, the buildings formerly used by the other college reverting to the university. The consolidated college will be known as the Medical Department of Central University. The details of the merger have not been completed, but it is very likely that Dr. L. S. McMurtry will be president of the combined faculties. The following physicians will compose the faculty of the new college: P. R. Taylor and William Cheatham, eye, ear, nose and throat; L. S. McMurtry and A. M. Cartledge, gynecology and abdominal surgery; F. C. Wilson, S. J. Meyers and B. F. Zimmerman, medicine; S. G. Dabney and Ellis Duncan, physiology; E. G. Burnett, nervous diseases; Edward Speidel and H. B. Ritter, obstetrics; H. H. Grant, G. A. Hendon, W. C. Dugan, Irvin Abell, surgery; J. E. Hays and C. W. Kelly, anatomy; Harris Kelly, chemistry; H. N. Leavell, pediatrics; Bernard O'Connor, pathology and bacteriology.

#### MARYLAND.

**Society Elects Officers.**—A meeting of surgeons of Maryland Division of the Western Maryland Railroad from Baltimore to Cumberland was held at Hagerstown, January 22. Dr. D. Z. Dunnott, Baltimore, presided; about 40 attended and a permanent organization was effected with the following officers: Dr. Daniel Z. Dunnott, Baltimore, chief surgeon of the Western Maryland Railroad, president; Drs. J. McPherson Scott, Hagerstown, and E. H. Parsons, Piedmont, W. Va., vice-presidents; Dr. Joseph T. Hering, Westminster, secretary-treasurer.

#### Baltimore.

**Add to Endowment Fund.**—Johns Hopkins University received \$150,000 from the estate of the late Charles L. Marburg, \$100,000 of which goes to the hospital and \$50,000 to the university. The original endowment fund of the hospital was \$3,326,000 which, through careful investment and management has increased more than a quarter of a million dollars.

#### MASSACHUSETTS.

**Medical School Property Sold.**—The old Harvard Medical School site on Boylston Street has been sold to the trustees of the Boston University for \$596,000.

**Improve Water Supply.**—The State Board of Health has recommended that the water supply of Lynn be improved at an estimated cost of \$400,000, by the establishment of a filtration plant which will give 2,500,000 gallons of pure water per day.

**Floating Hospital Needs Funds.**—Owing to the demands on the Boston Floating Hospital, due to the unusual amount of sickness during the past summer, the hospital has incurred considerable debt. The trustees make an urgent appeal to the public for an appropriation of \$10,000 which is needed.

**Epidemic Diseases.**—Amherst College, with five cases of scarlet fever, one of which has proved fatal, has been ordered closed till March 1.—Wheaton Seminary, Norton, with 26 cases of the same disease, has also closed.—Rumors of an epidemic threatening Harvard University prove to have no basis.

**Hospital Reports.**—Carney Hospital reports 55,497 patients treated in the out-patient departments in the last year and 2,145 house patients. Of these, 1,174 paid full rates and only 550 paid nothing. The charity work, however, is rapidly increasing.—The New England Baptist Hospital reports its last year's work just ended. A new ward is to be erected. At present there are five free beds.—The New England Deaconess Hospital cared for 250 patients last year, one-third being free. The new hospital in Longwood is fast approaching completion.

**Disease and Death.**—For the ten weeks ended February 9, there were reported 2,424 deaths in Boston, an increase of 233 over the corresponding period of last year. There were 566 cases of diphtheria, with 39 deaths; 760 of scarlet fever, with 9 deaths; 76 of typhoid fever, with 15 deaths; 159 of measles, with 2 deaths; 409 of tuberculosis, with 241 deaths.

There were 387 deaths from pneumonia; 11 from whooping cough; 302 from heart disease; 64 from bronchitis, and 25 from marasmus. Of those who died 372 were infants under 1 year, 510 under 5 years of age and 684 more than 60 years old.

**Bequests.**—A gift of \$25,000 to the Lawrence City Hospital, under the will of the late Helen G. Coburn, Boston, for the maintenance of free beds for patients from Andover will be paid by virtue of a decision of Justice Morton of the Supreme Court.—By the will of the late Charles F. Farrington Harvard Medical School will receive \$50,000 to advance the knowledge of infectious, communicable and kindred diseases.—Should the heirs of the late George F. Fabian, Brookline, die without issue his estate, said to be worth several millions of dollars, will go to the Massachusetts General Hospital, Harvard University, Children's Hospital, Perkins Institute for the Blind, the Boston Home for Incurables and other institutions. As six heirs still live, the possibility of these institutions receiving any portion of the estate is believed to be remote.

**Society Meetings.**—The Haverhill Medical Society celebrated its twentieth anniversary February 7 by a banquet. Dr. Maurice D. Clark presided and Dr. Charles E. Durant was toastmaster.—At the semiannual meeting of the Essex North District Medical Society, held in Haverhill, January 2, resolutions were adopted favoring the work of the Council on Pharmacy and Chemistry of the American Medical Association.—At the winter meeting of the councilors of the Massachusetts Medical Society, held February 6, Dr. George C. Sears, Boston, chairman of the committee on state and national legislation, asked that support be given to the bill giving authority to school physicians only, to sign releases from vaccination of school children and to the bill similar to the national food and drugs law, for labeling proprietary medicines and food products. Dr. Ralph H. Seelye, Springfield, and Drs. Cook and Cabot, of Boston, were elected delegates to the American Medical Association, with Drs. Perley P. Comey, Worcester; Charles A. Porter and Richardson, Boston, alternates.

**Personal.**—Dr. Harry E. Sears, Beverly, has been appointed associate medical examiner for Essex County.—Dr. Walter J. Marley has resigned as superintendent of the Massachusetts State Sanatorium, Rutland, to take charge of the new State Sanatorium of Minnesota, at Walker.—Dr. Charles L. Moran, Boston, house officer of the south department of the Boston City Hospital, is ill with erysipelas.—Dr. William L. Thompson has been elected district physician to the Boston Dispensary.—Dr. Harry M. Stoodley has been appointed medical inspector of the Somerville public schools, vice Dr. Warren D. Ruston, resigned.—Drs. H. M. Adler, G. W. Hall, W. B. Robbins and C. T. Overlander have been appointed assistants in the clinical laboratory work of the Harvard Medical School.—Dr. Gilman Osgood, Rockland, has been appointed medical examiner for the second Plymouth district, vice Dr. Henry W. Dudley, Abington, deceased.—Dr. William L. Richardson, Boston, has been appointed a member of the board of trustees of Perkins Institute and Massachusetts School for the Blind.

#### MICHIGAN.

**Nurses' Home Open.**—The Nurses' Home, given by Mr. and Mrs. Charles H. Davis, Saginaw, has been opened in connection with the Saginaw General Hospital. The building is of vitrified brick, 44x72 feet, and three stories in height, steam heated, lighted by electricity and thoroughly equipped.

**Personal.**—Dr. Edward A. Florentine, Sidnaw, has moved to Saginaw and will practice with his father, Dr. Frank B. Florentine.—Dr. H. Beach Morse, Elk Rapids, has been appointed physician for Elk Rapids and Milton townships, Antrim County.—Dr. Howard A. Osborne, Detroit, is convalescent from a severe attack of scarlet fever.—Dr. Robert W. Alton, Portland, has returned after a three-months health trip to New Mexico.—Dr. William H. Dodge, Hancock, is taking a trip to Mexico and California.—Dr. James H. Hudson, Merrill, is at St. Mary's Hospital, Saginaw, for treatment.

**To Restrict Criminal Abortion.**—Dr. F. J. W. Maguire has drafted a bill which is now before the legislature, proposing to make it a criminal offense to solicit a physician to perform an abortion or for any one to procure an abortion on herself or on any other pregnant woman without the consent and advice of at least two physicians. The public education intended by this bill is admirable, and the good effects of such legislation would be by no means confined to those resulting from the conviction of persons violating the law. The physician would be largely relieved from insulting proposals for him to interfere with the course of pregnancy, and would be able to point to the law as the expression of a higher standard of morality than that of many of the laity.



## MINNESOTA.

**To Abolish Smallpox Quarantine.**—The Minnesota State Board of Health voted to abolish quarantine for smallpox after Jan. 1, 1908, because vaccination is a sufficient preventive of infection. This plan is the subject of editorial comment in this issue.

## MISSOURI.

**Anniversary Banquet.**—The Society of German Physicians of St. Louis celebrated the twenty-fifth anniversary of its organization by a banquet. Dr. Gustav Baumgarten, one of the founders of the society, spoke on the history of the society, and a silver writing set was presented to Dr. Edward Evers, who for 18 years has been the most efficient secretary of the organization.

**Personal.**—Dr. Charles E. McBride has been appointed physician for the Webb City district of Jasper County, vice Dr. Ernest H. Bair, elected coroner, and Dr. William J. Willim, physician for the Joplin district of the same county.—Dr. James M. Buchanan, St. Louis, has been appointed district medical examiner for the United States Civil Service Commission.—Dr. J. M. Marks, house surgeon of the Wabash Employé's Hospital, Moberly, has resigned, to be succeeded by Dr. C. M. McCumber of Chicago.—Dr. James A. B. Adcock, Warrensburg, has been re-elected secretary of the State Board of Health.—Dr. John F. Osborn has been appointed assistant health officer of St. Joseph.

**St. Louis Medical Society.**—On January 26 the society listened to a lecture by Dr. Herman Von Schrenk on "Present Problems in Plant Pathology." The lecture was made more interesting by stereopticon views and the exhibition of rare specimens.—The committee appointed for that purpose presented, at the meeting of February 9, resolutions on the death of Dr. A. Van Liew Brokaw.—A section on ophthalmology has been formed and held its first meeting, and the formation of other sections is contemplated.—The average attendance at the meetings the past year was 129.—The program at the meeting, February 9, was a symposium on heart block. Dr. H. D. Senior showed a number of calves' and human hearts with the bundle of His dissected out.

## NEBRASKA.

**Society Meetings.**—The Dodge County Medical Society held its annual meeting in Fremont, January 14, and elected Dr. John J. Metzinger, Fremont, president; Dr. Tandy Wigglesworth, Hooper, vice-president; Dr. Andrew P. Overgaard, Fremont, secretary; Dr. Edwin W. Martin, Fremont, treasurer, and Dr. Hamilton N. Morrow, Fremont, delegate to the state medical association.—The Elkhorn Medical Society met at Norfolk, January 16, and elected the following officers: President, Dr. David W. Beattie, Neligh; vice-presidents, Drs. Richard H. Rhoden, Fremont, and Homer L. Kindred, Meadow Grove; secretary, Dr. Wm. R. Peters, Stanton, and treasurer, Dr. W. H. H. Hagey, Norfolk.—The Colfax County Medical Society held its annual meeting at Leigh, January 16, and elected the following officers: President, Dr. Charles J. Alger, Leigh; vice-president, Dr. Charles D. Eby, Leigh; secretary-treasurer, Dr. Brice A. Corbin, Schuyler, and censors, Drs. Silas G. Allen, Clarkson, and Peter Cavanagh, Schuyler.—At the annual meeting of the Adams County Medical Society Dr. William H. Lynn, Hastings, was elected president; Dr. Eugene C. Foote, Pauline, vice-president, and Dr. Fred. L. Taylor, Hastings, secretary-treasurer.—The Richardson County Medical Society met in Humboldt, January 25, and elected Dr. William E. Shook, Shubert, president; Dr. Asa W. Montgomery, Stella, vice-president; Dr. Charles T. Burchard, Falls City, secretary-treasurer; Dr. John A. Waggener, Dawson, censor, and Dr. Edward C. Wittwer, Humboldt, delegate to the state association.

## NEW YORK.

**Cocain Bill Passed.**—The General Assembly has passed the Whitney bill, by the State Pharmacy Board, prohibiting the sale of cocain and eucain except on the prescription of a physician.

**Diphtheria in Ithaca.**—Since the outbreak of this disease in Ithaca there has been a total of 76 cases. Many of the students in Cornell University have left for their homes because of the epidemic.

**To Lessen Number of Deaths from Gas.**—Coroner Julius Harburg has had a bill introduced into the assembly prohibiting gas companies from using more than one stopcock on each gas pipe in use for consuming illuminating gas in buildings or rooms used for sleeping purposes.

**Personal.**—Dr. Roswell Park, Buffalo, has been appointed a member of the board of visitors of the United States Military Academy, West Point.—Dr. E. R. Davis, Portageville, was drugged and robbed in his office by two men February 6, who were later arrested and sentenced to imprisonment for 61 days in the Erie County penitentiary.—Dr. George I. McKelway has resigned from the surgical staff of the Flushing Hospital.—Dr. Simon F. Cox, Albany, has been appointed superintendent of the State Hospital for Tuberculosis.

**Cost of State Charitable Institutions.**—The report of the State Board of Charities for 1906 shows that \$1,945,089 was appropriated by the state to charitable institutions. It recommends that the legislature appropriate for the coming year \$1,415,000 for maintenance and \$467,920 for new buildings and improvements. A plea is made for the establishment of a new custodial asylum for the care of demented epileptics and feeble-minded persons who can not properly be cared for in existing institutions. At present there are 450 idiots and helpless demented in the Craig Colony who are out of place in an open institution. There are several hundred others scattered throughout the state who should receive custodial care and for whom there is no place in established institutions. There were 7,753 inmates in the almshouses of the state at the close of the year and the number seems to be increasing. The board recommends the building of a hospital pavilion for the Soldiers and Sailors' Home, as there are many cases of tuberculosis among the veterans requiring proper care. The record shows that there were 36,618 dependent children remaining in institutions at the close of the fiscal year.

**Proposed State Medical Law.**—The Medical Society of the State of New York has sent a letter to the members of the profession telling of the efforts the three societies had made to reach a conclusion as to the framing of a law providing for a single examining board which should examine all applicants for medical license. Questions relating to materia medica and therapeutics were to be excluded from the medical examination. The representatives of the eclectic and homeopathic societies did not approve of this. Senate bill No. 154 and Assembly bill No. 160 provide for a single examining board, absolutely abolishing as a matter of state recognition all distinctions between schools of medicine and meeting the disinterested view of the Educational Department of the State of New York. The State Medical Society gives the bills its unqualified approval, while the other schools have sent out letters of opposition in which the real issue is obscured. As a result, the Medical Society of the State of New York considers itself in duty bound to secure the passage of the bill for the following reasons:

1. The medical men of the state who really believe in high educational standards should assist and not oppose the Educational Department in New York in its effort to legislate for the best interests of the people of the whole state.

2. We are willing to let the citizens of the state choose the school or schools of medicine they prefer to patronize without legal interference and authority.

3. Medical laws are not designed to bolster up medical schools and medical sects, but are designed simply to establish a scientific standard that the quack and charlatan can not reach.

4. We believe the Board of Regents of the University of the State of New York, who will appoint the medical examiners under the proposed bill, are fair and impartial, and will not use the power of appointment to discriminate for or against any medical school or sect.

5. Unless a single board of medical examiners is established, the state, if consistent, must in time grant a board to vitopaths, somatopaths, hydropaths, osteotherapists, electropaths, osteopaths, midwives, opticians and every pseudo-school whose adherents clamor for it loud enough. Such a system would make ridiculous the whole theory of medical education. Where is the state to draw the line?

6. The long-desired unity of the medical profession and the honest affiliation of all medical men of all schools on a common basis of scientific fellowship can not become a reality until the state abolishes the distinction between their sects and schools, and sets a standard of merit in those subjects only wherein medicine is an exact science. Medical sects must not fear to stand the inexorable law of the survival of the fittest.

## New York City.

**Vacancy on Staff.**—There is a vacancy on the resident staff of Seton Hospital for Tuberculosis, Spuyten Duyvil. The position is a salaried one and applications should be made to Dr. Theodore J. Abbott, 123 East Seventy-eighth Street, New York City.

**Harvey Lecture.**—The ninth lecture of the Harvey Society course, by Dr. William T. Councilman, professor of pathology in Harvard University, at the New York Academy of Medicine, February 23, is on the subject, "The Relation of Certain Leucocytes to Infectious Diseases."

**Plans for Pathologic Building.**—Plans for the six-story and basement pathologic building which is to be a part of the new



Bellevue Hospital have been filed. The building is to have a frontage of 142 feet and a depth of 120 feet. The building will cost \$800,000, and is the second of the group for which plans have now been filed.

**Roosevelt Hospital Wins Suit.**—Roosevelt Hospital has won its suit against the city whereby it claimed exemption from taxes on \$150,000 worth of real estate not used for hospital purposes. The writ was sustained on the ground that the conveyance of the property to the corporation of Roosevelt Hospital was induced by the promise of an exemption by the city from the taxes.

**Infant Death Rate Lowered.**—The eighteenth annual report of the Babies' Hospital announces that the death rate among children under 1 year old in the city has fallen from 24.2 per 1,000 in 1888 to 17 per 1,000 in 1905, and among all children under 5 years of age from 101 to 55 per 1,000, these reductions representing an annual saving of 4,376 infants under 1 year and of 12,604 under 5 years of age.

**To Help Stamp Out Tuberculosis.**—The committee on prevention of tuberculosis of the Charity Organization Society, composed of a number of noted physicians and citizens, has made an urgent appeal for more funds with which to carry on the crusade against tuberculosis. The funds are entirely exhausted, and if the excellent educational work so well begun is to go on more money must be forthcoming.

**New Medical School.**—A postgraduate medical school has been opened in connection with the Williamsburg Hospital. There are already several matriculants. The school has established connections with a number of hospitals in Brooklyn. The directors of the hospital have purchased several parcels of property adjacent to the present hospital buildings for a new institution and for homes for nurses and doctors.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended February 9, 350 cases of tuberculosis, with 208 deaths; 314 cases of diphtheria, with 57 deaths; 261 cases of scarlet fever, with 12 deaths; 195 cases of measles, with 5 deaths; 65 cases of whooping cough, with 5 deaths; 61 cases of typhoid fever, with 7 deaths; 10 cases of cerebrospinal meningitis, with 16 deaths; 92 cases of varicella and 2 cases of smallpox, a total of 1,350 cases and 310 deaths.

**Public Lectures on Insanity.**—Dr. Allan McLane Hamilton will deliver the fourth of the series of public lectures on the above topic, arranged for by the Psychiatric Society of New York, at the Academy of Medicine, 17 West Forty-third Street, Saturday, March 2, at 8:30 p. m. The subject will be "The Development of the Legal Regulations Concerning the Insane." These lectures are intended to place before the medical profession and the general public facts with regard to mental disorders, which indicate the possibility and duty of initiating a wide movement toward general preventive measures.

**More Work for Clean Milk.**—Another meeting for the purpose of discussing the milk question has been held in Cooper Union, where three experts spoke in favor of Pasteurization. It was shown that until the conditions under which milk was produced could be improved, Pasteurization was the only safe course. It has been announced that a permanent committee of citizens formed to devise ways and means of improving the quality of the milk supply of the city has planned for the establishment of more Pasteurizing plants with depots in different localities throughout the city. It aims to secure a daily supply of from 20,000 to 30,000 quarts. If the amount required can not be supplied at present, it will be supplemented by inspected and certified milk. Assurances of financial support to the extent of from \$100,000 to \$200,000 have been made. It is hoped that after the city sees the good effects of this work it will come to the front and assume the burden. It has been shown by the committee that among children supplied with Pasteurized milk the mortality has fallen from 19 to 3 per 1,000.

#### NORTH CAROLINA.

**Personal.**—Dr. J. Howell Way is convalescent from his recent illness.—Dr. Julius A. Caldwell, Salisbury, was painfully injured in a runaway accident near that town, January 16.

**Society Meeting.**—At the annual meeting of the Robeson County Medical Association, held at Lumberton, January 2 Dr. Benjamin F. McMillan, Red Springs, was elected president; Dr. James D. Croom, Maxton, vice-president, and Dr. Neil A. Thompson, Lumberton, secretary-treasurer.

**Hospitals Under State Commission.**—A state commission, to be composed of the governor, attorney-general and superintendents of the three state hospitals for the insane and four business men to be appointed by the governor, will have joint con-

trol of the insane hospitals of the state under the recently enacted Bickett bill. They will also have authority to expend \$600,000 in proper additions to existing institutions.

**New Hospital for Durham.**—Several years ago Mr. George W. Watts, Durham, presented the city with a hospital, which represented an outlay of nearly \$100,000. He has recently announced his intention of erecting an entirely new Watts Hospital, at a cost of \$500,000, which will, it is said, be the most complete in its appointment of any hospital between Baltimore and New Orleans. Work was begun on the foundations January 1.

#### OHIO.

**Hospital Report.**—At the annual meeting of the staff of Mt. Sinai Hospital, Cleveland, it was reported that during 1906 479 patients were admitted. There were eight deaths on the medical side during the year and three deaths on the surgical side. Two hundred and seventeen major operations were performed. Anesthesia was given by the ether drop method 246 times without fatality. Dr. Frank E. Bunts was re-elected president; Dr. Carl A. Hamann, vice-president, and Dr. Walter G. Stern, secretary.

**Ill, Injured and Operated.**—Dr. George W. Sauer, formerly of Hanover, has been committed to the Masillon State Hospital from Stark County.—Dr. Ezla A. Dye, Vienna Crossroads, recently underwent operation for gallstones at the Springfield City Hospital.—Dr. Charles E. Gaines, Covington, had a narrow escape from death by an overdose of strychnin.—Dr. Elmore Y. King, Richwood, is reported to be critically ill.—Dr. Arthur H. Smith, Marietta, fell on an icy pavement January 29, fracturing his left arm above the elbow.—Dr. Grant S. Staub, Dayton, has been seriously ill with septicemia.—Dr. Edward J. Wilson, Columbus, was operated on for appendicitis February 1.—Dr. Frank L. Stillman, Columbus, was severely injured in a collision February 7, between an automobile and street car.—Dr. John H. Landis, Cincinnati, is ill with typhoid fever.

#### PENNSYLVANIA.

**Hospital Report.**—The biennial report of the Hazelton Hospital for the term ended Sept. 30, 1906, shows that 2,558 patients were treated in the institution. These were all surgical cases, as no medical work is done at the institution.

**Personal.**—Dr. William C. Gayley has declined reappointment as a member of the Hazelton board of health.—Dr. Lewis H. Taylor, Wilkes-Barre, is spending a few weeks in Florida.—Dr. Howard F. Pyfer, Norristown, sailed for Europe December 1 on the *Caronia*.—Dr. Robert W. Brady and family, Honesdale, have gone to Estero, Fla., to spend February and March.

**First Aid to the Injured.**—The Lehigh Valley Coal Company is about to introduce a system of first aid to the injured at its mines. A corps of men, about 20 in number, will be chosen at each colliery and will be taught by lectures and demonstrations the various methods of emergency treatment. Special instruction will be given in the use of the litter, carrying helpless patients, lifting over obstructions, etc. There will be competitive drills and a trophy will be awarded the best team. The work will be carried on under the direction of Dr. Walter Lathrop, Hazelton, and the litter drills, etc., under the direction of Mr. Dimon of the Lehigh Valley Company, and a former member of the hospital corps of the Army. The Philadelphia & Reading and Erie coal companies have already organized similar corps.

**Societies Elect Officers.**—The election of the Lancaster City and County Medical Society resulted as follows: President, Dr. George R. Rohrer, Lancaster; vice-presidents, Drs. C. P. Stahr, Lancaster, and B. F. Good; secretary, Dr. P. P. Breneman, Lancaster; treasurer, Dr. T. B. Appel, Lancaster; censors, Drs. G. W. Berntheizel, Columbia; O. Roland, Lancaster; J. Mitchell, Lancaster; trustees, Drs. A. G. Bowman, Lancaster; J. H. Musser, Lancaster, and J. J. Newpher, Mount Joy; reporter and librarian, Dr. P. P. Breneman, Lancaster.—The Monroe County Medical Society elected the following officers: President, Dr. George H. Rhoads, Tobyhanna; vice-president, Dr. C. S. Logan, Stroudsburg; secretary, Dr. W. E. Gregory, Stroudsburg; treasurer, Dr. J. A. Hagerman, Sciota; reporter, Dr. N. C. Miller, Stroudsburg.

**Elections.**—The following officers of the West Philadelphia Medical Association have been elected to serve for the ensuing year: President, Dr. James W. McConnell; vice-president, Dr. Sherman F. Gilpin; recording secretary, Dr. George M. Boyd; financial secretary, Dr. Charles E. Price, and treasurer, Dr. H. Boydston Smith.—The following have been elected officers of the Philadelphia Pediatric Society: President, Dr. David L.



Edsall; vice-presidents, Drs. Charles F. Judson, Herbert B. Carpenter, and J. Claxton Gittings; recorder, Dr. Charles H. Weber; treasurer, Dr. Howard C. Carpenter, and secretary, Dr. Maurice Ostheimer.—The following officers have been elected for the Northwestern Medical Association: President, Dr. Wilmer Krusen; vice-president, Dr. Clarence P. Franklin; secretary, Dr. Harry Hudson; treasurer, Dr. J. Thompson Schelt, and censors, Drs. Nathan G. Ward, Harry Lowenburg and Ray S. Dorsett.

#### RHODE ISLAND.

**Found Not Guilty.**—Dr. Cornelius J. Hasbrouck, Bristol, charged with wilfully reporting a case of scarlet fever as German measles, was found not guilty January 23, the court holding that the prosecution had not made out its case beyond a reasonable doubt.

**State Tuberculosis Sanatorium.**—The board of trustees for the State Sanatorium for Consumptives has been organized as follows: Chairman, Mr. Roland G. Hazard, Providence, and secretary, Dr. William H. Peters, Providence. The other trustees are Messrs. John C. Pegram and Henry Nugent, Providence, and J. Truman Burdick, Newport. Dr. Harry L. Barnes has been retained as superintendent at a salary of \$3,000 annually, and Dr. Charles B. Garrett as assistant superintendent. The institution has 105 patients at present and a waiting list. Many improvements of buildings and grounds have been made during the year.

#### TENNESSEE.

**Personal.**—Dr. James A. Anderson, Memphis, has been selected to succeed himself as superintendent of the Shelby Poor and Insane Hospital.

**To Protect Physicians.**—A bill has been introduced into the House of Representatives of Tennessee to provide for the allowance as preferred claims in the settlement of insolvent estates, of the account of attending physicians for medical services rendered during the last sickness of the deceased.

**Suit Against Physician Dismissed.**—The malpractice suit against Dr. Thomas O. Burger, McMinnsville, in which he was sued for \$10,000 damages for alleged failure to treat a complicated fracture of the elbow joint properly, was dismissed by the jury of the Circuit Court of Warren County after ten minutes' deliberation.

**Election.**—At a recent meeting of the Knox County Medical Society the following officers were elected: President, Dr. Charles E. Ristine; secretary, Dr. John F. Massey; treasurer, Dr. Ashley W. Ogle, and custodian, Dr. James F. Scott, all of Knoxville.—At a meeting of the Putnam County Medical Society, the following officers were elected: President, Dr. J. F. Dyer; vice-president, Dr. John B. S. Martin, and secretary-treasurer, Dr. L. D. J. Ensor, all of Cookeville.

#### TEXAS.

**Unclaimed Bodies for Dissection.**—Senator Masterson has introduced a bill in the Senate providing for the dissection of unclaimed bodies by medical colleges. A similar bill was introduced in the Senate two years ago, but was finally defeated.

**Communicable Diseases.**—Dr. Thomas V. Fryar, county health officer, reports two cases of smallpox in Corsicana.—Dr. Cadar P. Helms, New Boston, physician of Bowie County, reports a dozen cases of smallpox, all of the patients being negroes.—A number of cases of smallpox are reported among the negroes of Gainesville.—One case in a white family is reported from Lindsay.—Measles are epidemic at Monserate and Hallettsville.—Two cases of smallpox are reported east of Aubrey.

**Personal.**—Dr. V. P. Armstrong, Dallas, has been appointed assistant state health officer.—Dr. Sam Webb, Albany, has been appointed chief surgeon of the Central Texas Railroad Company, vice Dr. W. C. Jones, Walnut Springs, deceased.—Dr. Lewis W. Pollok, Temple, while assisting in a surgical operation was suddenly attacked by appendicitis, which necessitated immediate operation.—Dr. William L. Barker, San Antonio, has been appointed superintendent of the Southwestern Insane Asylum, and Dr. Thomas T. Jackson has been elected a member of the board.—Dr. I. Newton Suttle has been appointed local surgeon at Corsicana for the Cotton Belt System.—Dr. William M. Brumby, Houston, who has been appointed state health officer, assumed the duties of his new position January 20.—Dr. Holman Taylor, Marshall, has been appointed assistant state health officer.—The home of Dr. Henry E. Lee, Beaumont, was damaged by fire to the extent of \$1,500, January 2. No insurance was carried.—Dr. Joel A. Gibson has succeeded Dr. Christopher C. Nash, Beaumont, as health officer of Jefferson County.—Dr. William A. Watkins,

Kemp, has been appointed a member of the board of trustees of the Northwestern Insane Asylum. Dr. Charles L. Gregory, Gilmer, assumed charge of the institution as superintendent, February 4.

**Society Meetings.**—The Bosque County Medical Society held its annual meeting at Meridian and elected the following officers: President, Dr. Robert L. Kimmins, Iredell; vice-president, Dr. Joseph B. Honeycutt, Womack; secretary-treasurer, Dr. Joseph H. Alexander, Meridian, and delegate to the state association, Dr. Robert L. Kimmins. The society adopted resolutions of respect regarding the late Dr. William C. Jones, Walnut Springs.—The Central Texas Medical Association met at Waco, January 8 and 9. The following officers were elected: President, Dr. Joseph E. Dildy, Lampasas; secretary-treasurer, Dr. Milton P. McElhannon, Belton; chairman and secretary of section on practice of medicine, Dr. John W. Torbett, Marlin, and Dr. Thomas D. Frizzell, Powell; chairman and secretary of the section on surgery, Dr. Kenneth H. Aynesworth, Waco, and Dr. Allen J. Gilbert, Hillsboro; chairman and secretary of the section on eye, ear, nose and throat, Dr. James M. Woodson, Temple, and Dr. Roy H. Gough, Hillsboro, and chairman and secretary of the section on gynecology and obstetrics, Dr. W. L. Crosthwaite, Holland, and Dr. Richard McCormick, South Bosque. The president, secretary and Dr. Ira C. Chase, Fort Worth, secretary of the State Medical Association, were named as members of the legislative committee. The society adjourned to meet in July at Temple.—The Fayette County Medical Society met in La Grange, January 15, and elected the following officers: Dr. Robert A. McKinney, La Grange, president; Dr. Otto Ehlinger, La Grange, vice-president; Dr. Robert H. Seymour, Warrenton, secretary; Dr. Thomas W. Moore, La Grange, treasurer, and Dr. George W. Allen, Flatonia, censor.

#### VERMONT.

**College Term Opened.**—At the meeting of the fifty-fourth annual session of the Medical Department of the University of Vermont, Burlington, President M. H. Buckham presided and addresses were made by Dr. Henry C. Tinkham, dean of the faculty, and Dr. Fred. A. Lockhart, Montreal, Que.

**Personal.**—Dr. F. Thomas Kidder, Woodstock, has been appointed to represent the state in the National Legislative Council of the American Medical Association.—Dr. L. P. Sprague, Burlington, has been appointed food inspector and state analyst to work at the State Laboratory of Hygiene in conjunction with the State Board of Health and the National Pure Food Association.—Dr. George X. Roberts, Rutland, suffered severe loss by fire in his house, February 4.

**State Boards Organize.**—At the annual meeting of the State Board of Health at Burlington, Dr. Charles S. Caverly, Rutland, was elected president; Dr. Henry D. Holton, Brattleboro, secretary, and Dr. F. Thomas Kidder, Woodstock, treasurer.—At the annual meeting of the State Board of Medical Examiners, held at Montpelier, January 8, the following officers were elected: President, Dr. Frank H. Godfrey, Chelsea; secretary, Dr. W. Scott Nay, Underhill (re-elected), and treasurer, Dr. Elroy B. Whitaker, Barre.

#### WASHINGTON.

**The Fight Against Tuberculosis.**—An association for the prevention of tuberculosis has been organized in Seattle and is now raising funds for the erection of a sanatorium. A site has been selected on the shores of Lake Washington, and offers of liberal assistance are in the hands of the committee having charge of the work.

**Personal.**—Dr. E. M. Rininger, Seattle, has returned from the East.—Dr. Fonda Nadcau, Seattle, has sailed for Europe.—Dr. William G. Booth, Seattle, has recently returned from Europe.—Dr. Cornelius J. Lynch, North Yakima, will soon leave for the East and Europe.—Dr. Frank H. Luce, Davenport, has been attending the session of the legislature at Olympia.—At a meeting of the State Board of Health at Olympia, January 21, Dr. John M. Semple, Spokane, was elected president, and Dr. Elmer E. Heg, Seattle, secretary.—Dr. James J. McKone, Tacoma, is visiting in Andover, Mass.—Dr. Caleb E. Martin, Bellingham, has been reappointed physician of Whatcom County.—Dr. Ivar Jansen, Seattle, has been reappointed president of the local board of health.—Dr. Joseph E. Stauffer, Everett, has been reappointed health officer and physician of Snohomish County.

#### WISCONSIN.

**Consolidation of Colleges.**—Owing to the merger of the Milwaukee Medical College with the Marquette University, the faculty of the former institution has resigned. When the neces-



sary legal formalities have been completed it is understood that the faculty will be reappointed.

**State Medical School.**—The legislature has been asked for a two-sevenths mill tax for the support and development of existing colleges and departments. The University of Wisconsin asks permission to establish a college of medicine and requests an annual appropriation of \$50,000 for such a college equipped to do the first two years of medical work.

**Personal.**—Dr. Gustavus I. Hogue, Milwaukee, has sailed for Europe by way of the Mediterranean.—Dr. Hugo Philler, Waukesha, on the occasion of his sixty-ninth birthday, was the guest of honor at a dinner given by Dr. Byron M. Caples.—Dr. and Mrs. William H. McDonald, Lake Geneva, sailed for Europe February 3.—Dr. Stephen E. Gavin, Fond du Lac, sailed for the Mediterranean, February 7.—Dr. Alexander C. Fraser, Manitowoc, sailed for Europe February 7.—Dr. James G. Schall, Oshkosh, was recently operated on for appendicitis.—Dr. Quincy O. Sutherland, Janesville, has been reappointed a member of the State Board of Health.

**Communicable Diseases.**—Sheboygan reports 10 cases of typhoid.—The public school at Geneva has been closed on account of scarlet fever.—On account of an outbreak of scarlet fever at Medford the public schools have been closed.—On account of scarlet fever in the vicinity the school house in district No. 5, Little Suamico, has been closed.—An epidemic of smallpox is reported from Bloom township, on account of which schools have been closed.—An epidemic of smallpox is reported from Maple Creek.—The public schools of Cooksville have been closed on account of the prevalence of diphtheria.—Smallpox is reported among the Indians of the Lac Court d'Oreilles reservation and the post and village have been quarantined.

#### WEST VIRGINIA.

**Hospital to be Built.**—Dr. Henry C. Jones, Bluefield, has purchased 20 acres in the town of Logan, as a site for a hospital and sanatorium.

**Personal.**—Dr. William A. Cracraft, Elm Grove, is taking a trip to the West Indies.—Dr. Charles H. McLane, Morgantown, has been appointed health officer of Monongalia County.—Dr. Cyrus F. Boyer, Sr., Fairmont, who has been seriously ill, is reported to be convalescent.

#### GENERAL.

**Merger of Publications.**—The *Archives of Physiological Therapy* will hereafter be published as a part of the *Journal of Inebriety*. This latter, in addition to the various phases of its own field, will present the therapeutic effects of hot air, radiant light baths, electricity, massage, psychotherapy and other physiologic means.

#### FOREIGN.

**Official Investigation of Lead Poisoning in Austria.**—The members of the Austrian cabinet recently held a conference with 39 experts and representatives of the various trades in which lead is used, to study the subject of lead poisoning in its various aspects. The organization of the investigation is in the hands of Dr. Mataja, chief of the bureau of labor statistics, who sent out to the various trades a question blank to collect data for a crusade against lead poisoning.

**Prizes for Research on Alcohol.**—The Total Abstinence Association of German-speaking Physicians has offered a prize for the best work on the two following subjects: "Influence of Alcohol on the Length of Life and Metabolism of Starving Animals," and "Means to Deprive Alcohol of Its Toxicity in the Organism During Starvation and also Under Feeding with Sugar." Articles competing for the prizes should be received by Dr. Holtscher, Pirkenhammer bei Karlsbad, before April, 1908.

**Prizes for Essays on Prophylaxis of Lead Poisoning.**—The International Association for Protection of Workmen Against Occupation Affections offered in 1905 a series of prizes for the best essays on five various aspects of lead poisoning, as mentioned in these columns at the time. Sixty-three articles were received in competition, and 7 of the articles were awarded prizes; 10 were recommended as worthy of purchase and 19 were highly commended. Sommerfeld of Berlin received two of the prizes, while his articles on other aspects of the question received honorable mention or were recommended for purchase.

**Thirty-sixth German Surgical Congress.**—The next annual congress of the German "Gesellschaft für Chirurgie" will convene at Berlin, April 3 to 6, 1907, with an annex exhibition of instruments, etc. Professor Riedel of Jena will preside, but all business matters are in charge of Dr. Melzer at the Langen-

beckhaus, Ziegelstrasse 10/11, Berlin N., where the sessions will be held. The main addresses will be on "Surgery of the Heart," by Rehn of Frankfurt, who appeals to all members of the profession at home and abroad to aid him in preparation of his address, especially with data in regard to the remote results and present condition of patients after operative treatment of heart injuries; "Operative Treatment of Pulmonary Affections," by Friedrich; "Extirpation of the Prostate," by Kümmel, and "Fractures of the Femur, Especially in the Upper and Lower Thirds," by Bardenheuer and König. The program is to be limited to 70 communications and demonstrations, the former restricted to 15 and the latter to five minutes, with the speakers in the discussions limited to five minutes each. The former custom of a general reception of the members the evening before, the Begrüssungs-Abend, has been omitted this year on account of the progressive lack of attendance.

**Provision for Cancer Research at Aberdeen.**—It is announced that the Hon. A. McRobert, Cawnpore, India, has founded a fellowship at Aberdeen University for cancer research. At Mr. McRobert's death the sum of \$50,000 is to be available for this work, but that it may begin at once he has undertaken to provide \$2,000 a year. The endowment is to be called the "Georgiana McRobert Fellowship," and is founded as a memorial to Mrs. McRobert. In the event of any epoch-making discovery in connection with cancer research, the medical faculty of the university is to have authority to allot all or any portion of the capital as a reward to the discoverer, and also to the investigator or investigators whose work had, in the unanimous opinion of the medical faculty, contributed to the discovery. If for any reason the fund or the income thereof shall cease to be useful (or become unnecessary) for the original purpose, the medical faculty is to have the power to use them for the furthering of inquiry in like manner into the causes, prevention and treatment of any other so-called incurable disease afflicting the human race. Mr. McRobert expressed the opinion that the appointment should be from year to year, but that a retiring fellow should be eligible for re-election.

**Second International Congress for Protection of Child-Life.**—This congress is to be held at Brussels, Belgium, September 12-17, 1907, to discuss ways and means for prevention of infantile mortality. THE JOURNAL has frequently mentioned the French institutions called "gouttes de lait" (drops of milk), founded to give advice to mothers, to encourage breast feeding and to distribute milk if needed for infants. Similar institutions have been founded in Germany where they are known as "Säuglingsfürsorgestellen," and one has been in successful operation at Philadelphia for a long time, with others at other points in this country. The first international congress was called the "Goutte de lait" Congress and was held at Paris in 1905. The scope of the congress has now been enlarged to include all questions relating to the welfare of infants. Dr. G. W. Goler, 127 East Avenue, Rochester, N. Y., is the chairman of the national committee for this country. Inquiries concerning the congress can be addressed to Dr. E. Lust, rue de la Limite 27, Brussels, Belgium. The International Union of all institutions for protection of child-life is a permanent association that has its seat at Brussels and superintends the organization of the congresses and perpetuates their work. An exhibition of infant hygiene will be held in connection with the congress.

**Damages for Infection of Wet Nurse by Syphilitic Infant.**—The *Ann. de Derm.* for January contains the text of the decisions in two recent suits in France for damages brought by wet nurses infected by syphilitic infants. In the first the infant was the child of a medical student, externe at one of the hospitals, who failed to warn the wet nurse of possible contagion, and he was sentenced to pay damages of \$1,200 and costs. In the second case the wet nurse claimed damages from the mother of the child, from the director of the employment bureau that engaged her, from the physician connected with the employment bureau, who gave her a certificate stating that the infant was free from any contagious disease, from the physician sent to attend the infant by its mother, and, lastly, from the medical inspector sent by the police authorities, who failed to remove the child until after the nurse had been infected. None of them had informed the nurse of the condition of the infant. The mother of the child and her physician were condemned to pay conjointly the sum of \$1,600 to the plaintiff, with costs, but the others were acquitted, as signs of syphilis were not apparent at the early date when the infant was seen by the director of the employment bureau and his physician. The medical inspector was also exonerated, as no signs of the disease were apparent at his first visit, and as the nurse was already infected at the time on his second call, according to the regular order of visits.



## LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Feb. 9, 1907.

## The Opsonic Treatment.

The opsonic method, discovered in 1903 by Sir Almroth E. Wright in conjunction with Dr. Douglas, in spite of opposition and skepticism, is making considerable progress. The principal work is being done at St. Mary's Hospital under Sir Almroth Wright and at the London Hospital under Dr. Bulloch. Most of the other hospitals have also taken it up. The time and attention required by the method is so considerable that it is impossible for the ordinary bacteriologist of the hospital to perform the work; hence it is becoming customary for a hospital to have its official "opsonist," and for a physician in general practice to call an "opsonist" in consultation in the various diseases in which the method has been successfully used. The list of diseases now treated by the method is a long one; it includes cases of staphylococcal infection, such as furunculosis, acne and sycosis; pneumococcal infections, such as empyema, cystitis and suppuration of the antrum; diseases due to the *Bacillus coli communis*, such as cystitis and various local infections; gonococcal infections, such as gonorrhea and gonorrheal rheumatism; tuberculous infections, such as lupus, ulcerations of the skin and subcutaneous tissue, arthritis, cystitis, epididymitis, peritonitis, adenitis, laryngitis, iritis and phthisis; Malta fever and typhoid fever. In an address recently delivered at the Royal Institution, Sir Almroth E. Wright delivered a remarkable forecast of the medicine of the future. Up to the present, he said, the community has devoted most of its energy to trying to kill bacteria outside the organism by hygiene and disinfection; but disease germs still lie in wait in countless millions in our food and in the air we breathe; like the poor, they will always be with us. The next advance of civilization will be to fight the disease within the organism. The doctor of the future must be an "immunisator."

## The Outbreak of Cerebrospinal Fever in Belfast.

Notwithstanding the most vigorous precautions, the outbreak of cerebrospinal fever in Belfast continues to increase. Since its beginning in December, up to February 5, there have been 53 cases, with 25 deaths. Dr. Kolle of Geneva, who has produced a serum for the treatment of the disease, has sent a large quantity to Belfast. It is thought that the disease was introduced from Glasgow, where it has existed for some time. The type is very virulent; even in the most rapidly fatal cases purulent inflammation of the membranes of the brain and cord has been found. How the disease spreads is a mystery. It appears erratically in different quarters of the city, not like either an air-borne or a contact disease. At none of the hospitals has a student or a nurse contracted the disease. A medical student has died from it, but he had never seen a case. In Dublin, though the disease has not yet appeared, the corporation has decided to make it notifiable for a period of six months.

## Cerebrospinal Fever in Scotland.

During January 52 deaths from cerebrospinal fever occurred in Glasgow, and 105 cases have been reported to the health officers. Since May 21, when the disease was first made notifiable, until the end of December, 205 cases have been reported. The disease also exists in other towns in the west of Scotland. In Edinburgh, also, the disease is becoming prevalent; 9 deaths occurred in the first five weeks of 1907.

## Malaria in West Africa.

Commenting on the large amount of malaria which still exists in West Africa, Professor Donald Ross points out that many of the cases are due to neglect of precautions against the disease by the Europeans. Many other cases are due to the fact that sufficiently energetic precautions against malaria are not carried out. However, a considerable improvement has already taken place. In the report of the army medical department for 1906 it is stated that the admissions for malarial fever had fallen in West Africa to 588 per 1,000, from an average of 1,389 in the preceding eight years. The senior medical officer reports that "the improvement is due to the antimalarial measures adopted during the last three years."

## The Health of the Navy.

The recently issued report of the admiralty shows that the health of the navy was much better in 1905 than in the preceding years. There were 111,020 men in the force and the total number of cases of disease and injury was 81,568—734 per 1,000, which is a decrease of 119 per 1,000 as compared with the average of the previous eight years. Staff Surgeon A. Gaskell makes some notable criticisms on some of the

physical culture systems now in vogue. He deprecates the current popular admiration for the "strong" man with huge muscles and a biceps measurement of fifteen inches. He points out that there are two kinds of strength—physical and constitutional. The former is the strength of large muscles and is acquired by the use of dumbbells and such exercises, often at the expense of the constitution. Constitutional strength is practically synonymous with health and depends on the perfect working and development of all parts, especially the heart, and least of all the muscles. The uses of great physical strength are few. A man who has a heart strained by the improper use of dumbbells is of little use as regards endurance, however large his muscles. Even if his heart is not damaged his training in co-ordination may have been neglected so as to render his large muscles useless. From an experience of thousands of men the staff surgeon finds that the physically strong man stands the inroads of disease badly. The straining of the heart and circulatory system leads to valvular incompetence, atheroma, and aneurism. Straining of the lungs leads to emphysema and fibrosis.

## VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Jan. 25, 1907.

## Physicians' Fees to be Increased.

The increase in price in all articles of daily life has exerted its influence especially on the profession, who by long custom, are expected to "keep up appearances," and to live in a way which severely taxes the income of a physician. Therefore, in a mass meeting held recently, a resolution was adopted in which the necessity of raising the charges for professional aid was upheld, and all members of the Vienna medical faculty, together with the professors and consulting physicians, were requested to inform their patients of the new plan. Furthermore, it was decided to announce the fact to the general public by means of the daily press and private notices. At the same time the Vienna Medical Council took the matter in hand and published a new tariff, which is intended to serve as a basis for the calculation of medical fees. The tariff of the Aerkammer is meant to be a minimum tariff, below which no practitioner is expected to charge (in Vienna). The lowest fee for an office consultation is fixed at forty cents in poor districts and sixty cents for the better class of patients. At least double this is to be charged for a house visit. Night visits are to be charged as two day visits. Heretofore the general practitioner has rarely received more than forty cents for a consultation or sixty cents for a visit, while specialists rarely get more than \$1.25 for a consultation during office hours. The fees for a professor vary from \$2 to \$6, while as much as \$20 has been paid for consultations in the houses of patients of the middle classes. It is anticipated that the increase of the fees will at first seem to diminish the income of the practitioner, because he will be less often called for, but in time matters will become undoubtedly better, and that is the object of the new regulations.

## Pay Wards in the Vienna Hospitals.

The government, as possessor of the public hospitals, is trying a new scheme in order to do away with the chronic deficit of charitable institutions, but it is much to be regretted that the increase of the income is to come out of the pockets of the practitioners. The plan is as follows: A number of beds are to be set aside in each ward for the use of patients of the middle class, who can afford to pay at least \$1.25 a day, and small rooms with one bed only will be provided for those who are willing to pay \$2 a day for that accommodation. The drawback, at least as far as the profession is concerned, is the stipulation that only the members of the hospital staff shall treat the patients in these wards, and the family physician will not be allowed to continue his professional attendance on the patient who has entered the pay ward. This restriction meets, naturally, the severest opposition in medical circles, but several more or less vigorous protests from medical bodies, and even from the staff of hospital consulting physicians, have as yet been ineffectual.

## Precautions Against Claims for Unnecessary Operations.

The hospital directors have resolved to make each patient, who consents to undergo an operation, sign an agreement to permit the surgeon to remove any organ or part of it, or to sacrifice any part of the body during the operation, if he deems it absolutely necessary to do so. In the case of patients who, on account of age or mental condition, are not capable of understanding what the written agreement means, the nearest relatives have to give consent. This proceeding has become necessary because of two recent claims for damages for alleged unauthorized removal of parts.



## Pharmacology

### Simply a Matter of Common Honesty.

Under this title the *Pharmaceutical Era* (Jan. 17, 1907), comments on the answers of the officials of the Department of Agriculture to inquiries regarding the meaning of the Food and Drugs Act. The following phrases are frequently met: "Misrepresentations of all kinds are forbidden. If the firm is purely fictitious, the use of the name would undoubtedly be a misrepresentation. Many firms of standing have in the past handled goods of the best grade under their rightful name, but have created fictitious hypothetical and imaginary names purely for the purpose of dealing in inferior, adulterated and even spurious articles to which they are ashamed to have their honorable legal name attached. In other cases such names are assumed solely for the purpose of evading responsibility."

The interpretation of the new law is such as to require straightforward simple honesty and such interpretation should be made to cover all forms of misrepresentation. That this is the purpose of the officials is indicated by the replies of Dr. Lyman F. Kebler to queries involving the right to use names equivalent to those specified in the law. In answer to query 29 he states: "The law uses the word opium for the 'concentrated extract of *Papaver somniferum*' and the term 'opium' is the only one that can be used in declaring the presence of this drug on the label."

Q. 30.—Would it be satisfactory to use "Phenylacetamide" or the U. S. P. phrase "The monacetyl derivative of aniline" or the following formula,  $C_6H_5NH(CH_3CO)$  for acetanilide as indicated in regulation 17 (f)?

"A.—No. The law employs the word Acetanilide only for the chemical in question, and this is the only name that can be used on the label of any preparation indicating the presence of this ingredient. The word Phenylacetamide is the chemical name for two distinct chemicals and its use, therefore, would be misleading. The use of chemical formulas to designate the presence of chemicals can not be allowed."

Q. 31.—The active constituent of one of our products is trichlorethidene ethyl ether. Will it be satisfactory to use this name on the label giving the amount of the above chemical present in our product?

"A.—No. In enumerating the ingredients, the quantity or proportions of which must appear on the label of any preparations in which such ingredients may be present, the act uses only common names. Structural formula chemical names are not employed for any of the chemicals enumerated and their use for chemicals, in place of the common names is neither expressed nor implied. The name used in the law for chloral hydrate is chloral hydrate and not trichlorethidene glycol. The common name for trichlorethidene ethyl ether is chloral alcoholate, and this is the only name that can be used for the chemical in question, in connection with the Food and Drugs Act."

This is not only good law, but a clear statement of the principles of common honesty. The employment of unusual chemical terms for a public not familiar with such terms evidences a desire to conceal and to deceive. It must be admitted that physicians as a rule are not familiar with the complex terms of modern chemistry. The use by manufacturers of a term which can be understood only by a chemist when a simpler term would equally well designate the product is evidence of a desire to conceal the true composition and does not reach the ideal of common honesty set up by the law.

### Examination of Proprietaries in Germany.

The *Apotheker Zeitung*, Dec. 19, 1906, page 1071, gives the results of an investigation of sajodin by F. Zernik. This is one of many similar reports of investigation carried out in the Pharmaceutical Institute of the University of Berlin, at the request of the German Apothecaries Society. From this it will be seen that this society is doing work very similar to that of the Council on Pharmacy and Chemistry of the American Medical Association. The investigations of the institute are further utilized to determine the characters of new remedies as a preliminary to their eventual introduction into

the German Pharmacopeia. According to the report, sajodin is a calcium salt of mono-iodo-behenic acid intended as a substitute for the metallic iodids to replace iodized sesame oil or iodipin, which has the objection of oily consistence and somewhat unpleasant taste. The product is put out by the well-known Farbenfabriken vorm. Friedr. Bayer & Co., of Elberfeld, and also by the Farbwerk vorm. Meister, Lucius & Bruening, Hoechst, a. M. As a definite chemical compound its composition should be unvarying. The investigations of Zernik showed, however, a considerable variation in the amount of iodine which in some samples was much too low, while the calcium was too high. The amount of moisture also varied. On communicating these results to the manufacturers they acknowledged the defect and promised that henceforth a preparation with a guaranteed minimum of iodine should be put on the market. This variation in the product of a reliable firm shows the need of inspection and control of synthetic products even when made under most favorable condition and by firms whose name is usually taken as a guarantee of reliability.

### Sale of Cocain Nostrums Prohibited in Massachusetts.

According to the *American Druggist*, Oct. 29, 1906, the State Board of Health of Massachusetts has authority, by public notice in such trade journals or newspapers as the board may select, to forbid as unlawful the traffic in, or gift of, advertised remedies containing cocain or any of its salts, or alpha-cocain or beta-eucain or any synthetic substitute of the aforesaid. In pursuance of this authority, the board has given notice that the sale of Crown Catarrh Powder (Crown Pharmacal Company, New York), Dr. Agnew's Catarrhal Powder (Anglo-American Medicine Company, Chicago, Toronto and London), and Instant Cold Relief and Instant Catarrh Relief (I. C. R. Medicine Company, 168 Massachusetts Avenue, Boston) is contrary to the provisions of Chapter 386 of the Acts of 1906. Fines have been imposed under the law, although the defendants pleaded ignorance of the advertising of this remedy. The board has also forbidden the sale of Pretzinger's Catarrh Balm (R. Pretzinger & Bro., Dayton, Ohio), and Dr. Cole's Catarrh Cure (The Cole Medicine Company, London, New York, Chicago).

### Importation of Nostrums Into Italy.

The Italian minister of the interior has issued a circular giving the conditions under which proprietary medicines may be imported. The importation of these remedies, says the *Pharmazeutische Post*, is forbidden without special authorization by the Superior Sanitary Council. The application for such a permit must give the qualitative formula of the preparation with the place and method of manufacture (at least in outline) and the formula of constitution and doses must be placed on the package and in the directions intended for the public. The therapeutic uses must be specified and it is forbidden to attribute to any preparation therapeutic virtues other than those which really are possessed by its components. The product intended for importation must have conformed with all the regulations of the country from which the importation is made and the importer is required to produce documentary evidence of this fact.

### Incompatibility of Sodium Chlorid and Calomel.

The incompatibility of common salt and calomel is the subject of an investigation by Carracido (*Rev. de Med. y Cir. Pract.*, Aug. 14, 1906; abs. in *Münch. med. Wochschr.*, Oct. 30, 1906). Corrosive sublimate is formed by the reaction between these substances, but in such small amounts that no bad results are to be feared from it. In the opinion of Carracido such a formation of mercuric chlorid is essential for the development of the activity of calomel. Puerta states that the amount of corrosive sublimate formed is greater in proportion to the amount of sodium chlorid that is mixed with the calomel and to the height of the temperature.

### Nostrum Advertising in Religious Papers.

Dr. G. D. Thomas of Chicora, Pa., writes: "Regarding the discussion of the impropriety of the religious papers accepting 'patent-medicine' advertisements, permit me



to say that the Pittsburg (Pa.) *Christian Advocate* formerly contained such advertisements. Some five or six years ago I corresponded with the editor regarding the matter and he expressed his dissatisfaction with the situation and referred me to the business manager. I do not recall how often I wrote the latter, but I am sure I called his attention to the fraudulent claims of some of the advertisements in the paper. For over a year now they have been discontinued. I do not know that my writing hastened matters, but I believe it contributed in a measure to the change. If all physicians who are readers of these religious papers would take pains to protest repeatedly, all such periodicals would in time be cleaner in their advertising columns."

[In his letter our correspondent has gone straight to the mark. Papers and magazines, whether religious, medical or secular, are like public officials, exactly what the public makes them. Reforms must come from the readers. They must not be expected to come from the business management. If the readers and subscribers of religious papers want religious journals which are free from deceptive and dishonest advertising, they can easily get them, if they will make the management of such papers understand their wishes.]

#### Methods of Nostrum Vendors.

The methods of the nostrum vendors have a remarkable similarity in foreign countries as well as here. Neustätter (*Münch. med. Wochschr.*, Sept. 25, 1906), calls attention to the efforts to mislead medical men made by the promoters of antipositin, the notorious nostrum which has been put forward with such extravagant claims as a means of reducing corpulency. He quotes a circular which refers to the important articles that have appeared in the medical press regarding the remedy. The shamelessness of this proceeding, says Neustätter, is shown by the fact that the articles which have appeared have warned against the use of the nostrum. According to the analysis of F. Zernik (*Apotheke-Zeitung*, No. 81, 1906), this remedy consists of sodium citrate, 28.5 parts; sodium tartrate, 20; sodium bicarbonate, 18; sodium chlorid, 12; purified tartar, 9; tartaric acid, 6; dried carbonate of sodium, 6, and magnesia usta, 0.5. It would seem that the composition of the mixture has been changed since its first introduction.

## Correspondence

### The New Infectious Disease.

NEW YORK CITY, FEB. 2, 1907.

*To the Editor:*—Dr. Hirshberg, I fear, is not modest in claiming the credit of having discovered a new infectious disease (*THE JOURNAL*, Feb. 2, 1907, p. 416), and branding the work of those who long before him wrote on this subject as "so very obscure, faulty and incomplete." The paper of mine which Dr. Hirshberg quoted (*Amer. Medico-Surg. Bull.*, Dec. 26, 1896), speaks of an epidemic of a "Peculiar Form of Hyperpyrexia" which I observed in 28 children under 14 years of age. The fever developed very suddenly, ranged between 104 and 106 F., continued almost uninterruptedly for from two to three and a half weeks, and ended either by crisis or lysis, leaving the children in apparently perfect health. The rapidity of the pulse and respiration varied with the height of the temperature. There were no roseola, enlargement of liver or spleen, diarrhea, delirium, insomnia, or headache. Some patients presented mental dulness and disturbance of hearing and speech. I strongly emphasized the fact (giving full details) that very careful bacteriologic and microscopic examinations of the stools, urine and blood proved the absence of malaria, typhoid or influenza. I also mentioned that post-mortem examination of a tuberculous child who succumbed to this fever failed to show any lesions suggestive of malaria or typhoid. Finally I made an effort to differentiate this affection from several other similar fevers.

H. B. SHEFFIELD, M.D.

The preceding letter was submitted to Dr. Hirshberg who makes the following reply:

BALTIMORE, FEB. 6, 1907.

*To the Editor:*—Dr. Sheffield takes a very unkind attitude toward the simple announcement of an undifferentiated infec-

tious disease. Far be it from me to claim anything that justly belongs to another.

So far as I can find, there has been no claim made by me of "discovery." Nor do I wish any honor or credit for publishing observations, strictly objective. If the cases described in the several papers by me are the same as Dr. Sheffield's, there will be honor enough for me in having called the attention of the medical world to his paper of eleven years ago. But as his own letter points out a few of the many differences between his cases and mine, I shall briefly repeat them:

#### Sheffield's Cases.

Epidemic.  
Children under 14.  
Rapid pulse.  
Rapid respiration.  
Termination, crisis and lysis.

#### Hirshberg's Cases.

Sporadic.  
Young adults over 18.  
Slow pulse.  
Not accelerated.  
Gradual (lysis).

When I mentioned lack of data, I referred only to additional methods of examination which have crept into our technic in the intervening eleven years.

LEONARD KEENE HIRSHBERG.

### Esperanto—The International Language.

SACRAMENTO, CAL., Feb. 11, 1907.

*To the Editor:*—Kindly permit me to suggest and to urge the early establishment in *THE JOURNAL* of a department of Esperanto, on the following grounds:

1. Esperanto is the one and only proposed international language which has successfully borne the scrutiny both of scholars and of men of affairs.

2. The adoption of Esperanto as the international language would be the most powerful promoter of universal peace imaginable—ininitely more effective than Dreadnaughts or any other kind of "big stick" and immeasurably less expensive. In blood and treasure what does armed peace cost the world?

3. The adoption of Esperanto as the international language would be the most powerful promoter of the diffusion of knowledge of which it is possible to conceive. Free trade in knowledge! The freedom of the vast realm of science and art and literature for a few days' study! That imagination must be dull, indeed, which does not kindle at the thought!

4. A reading knowledge of medical Esperanto could be acquired in a few days by a physician of fair intelligence.

5. *THE JOURNAL*, as the official mouthpiece of the largest organized body of men in the world whose first duty it is to prevent death (and why not death by war as well as death by disease) and whose chief means of preventing death is the diffusion of knowledge, should be among the foremost in the great work so happily begun by Dr. Zamenhof.

W. A. BRIGGS.

[We willingly give space to the above letter, because we would like to see a universal language, but we fear that the majority of our readers will think that the propaganda of this idea is not the function of a medical journal.—ED.]

### A Summary of the Therapeutic Field.

NEW YORK, Feb. 5, 1907.

*To the Editor:*—Dr. J. W. Robinson, McCammon, Idaho, has kindly called my attention to two inaccuracies in my address, published in *THE JOURNAL* Sept. 1, 1906. (1) Nitrous acid should read nitrous oxid. (2) The sentence stating that chemically scopolamin is the same as *atropin*, etc., should read it is the same as *hyoscin*, etc. Other matter explanatory of difference in action of those alkaloids was unintentionally omitted from the typewritten copy, and as I was in Europe when the proof was forwarded I could not correct it.

THOMAS F. REILLY.

### Not Responsible for Discussion as Published.

CHICAGO, Feb. 18, 1907.

*To the Editor:*—My discussion of Dr. Ohlmacher's paper which was published in the last number of *THE JOURNAL* was published against my desire and without my knowledge. The report of the discussion was not proof read by myself.

JOHN C. HOLLISTER.



## Miscellany

### Supervision of Midwives.

In February, 1906, an investigation of midwifery practices both abroad and in this country was undertaken in New York City by a body of representative men and women. The results of this investigation are given by Miss F. E. Crowell, assistant secretary of the New York state branch of the Public Health Defense League, in *Charities and the Commons*, Jan. 12, 1907. Miss Crowell begins her article by a brief review of the history of midwifery, which she states is as old as the human race. During thousands of years the care of parturient women was practically in the hands of midwives. If an unusual or dangerous complication arose a physician was called to assist in the delivery, but the process of labor was considered a natural, normal occurrence, requiring no interference or aid except that to be obtained from women experienced in this work. Gradually as medical science developed and the art of obstetrics was taken up by physicians, the midwife, while she did not actually regress, at least stood still. Universities were closed to her and opportunities for improvement were denied, with the inevitable result that midwifery ceased to be regarded as a profession and there was a lowering of the standards which had hitherto prevailed among women who had devoted themselves to this calling. The introduction of the forceps gave physicians an advantage, and in the seventeenth century, in France, it became fashionable to employ a physician instead of a midwife. The women of the masses, however, have continued to demand aid from their sister women, and economic conditions have kept alive the calling of the midwife till to-day.

Early in the nineteenth century Europe seems to have accepted the fact that midwives constituted an inherent part of the social order—a force to be guided and controlled, rather than ignored and opposed. As a result, many European countries provided for the examination and licensing of these women; England alone refused to enact legislation affecting midwives till 1902. To-day the training and duties of midwives are practically the same in all European countries. They are admitted to lying-in asylums for poor women and are taught cleanliness and the physiology of labor theoretically as well as practically. The European midwife is under supervision during her entire lifetime. Her equipment is inspected, she is prosecuted in case of neglect, and for neglect her license may be revoked.

In this country little supervision is exercised over these women; in some states they are compelled to take an examination. In New York, Miss Crowell states that the majority of midwives are ignorant, untrained women who find in the natural needs and prejudices of the parturient women of their race a lucrative means of livelihood. In the investigation 500 women were visited, and of this number 51 were unable to read or write, while 30 per cent. were unable to speak English. Two hundred and one held foreign diplomas. This means that 40 per cent. of the number had been properly trained and had given evidence of certain required standards of proficiency. Forty-three per cent. held diplomas from so-called schools of midwifery in this country, or certificates from physicians, who, says Miss Crowell, for reasons best known to themselves, have in many instances seen fit to certify to the proficiency of ignorant, incompetent women. Of the 500 women visited Miss Crowell states that less than 10 per cent. could be considered capable, reliable women. In some cases Miss Crowell found that the diplomas from American schools had been given to women who could neither read nor write, but who had the price—\$66. There are four such schools in New York City, she states. Midwives holding these diplomas told Miss Crowell of being sent to their first case alone, of having to conduct the entire labor as best they could, and of their fear that they might, on their return, find the patient dead. The bags and equipment of the majority of these women, Miss Crowell says, would make fit decorations for a chamber of horrors. Rusty scissors, dirty string, a bit of cotton, a few corrosive tablets, old rags and papers, some ergot and vaselin, and a gum catheter, wired, were the usual contents. Many of the women had complete portable sterilizers

which they had been compelled by law to use in Europe, and when asked why they did not use them here, replied: "It is not necessary; nobody cares what we use; the bag is handier, and everyone uses it here." Some women who had no bags carried string in their pockets and scissors attached to their belts, or would depend on whatever they chanced to find at the patient's home. Of the entire 500 visited, Miss Crowell states that less than 10 per cent. could be qualified as competent midwives. A few women were found who washed the child's eyes with boracic acid, and a still more limited number who used the silver nitrate prescribed by the board of health.

Miss Crowell also calls attention to the evils of allowing a midwife to sign a death certificate in the case of a stillborn child. It is impossible to estimate, she says, how many of these cases are actually stillbirths and how many the result of criminal interference with pregnancy. Nearly all the midwives visited carried wired catheters, showing that they were in the habit of interrupting pregnancy, while some carried uterine curettes, dilators, pessaries, etc. In New York state there is special legislation regulating the practice of midwifery applying to Erie, Monroe, Niagara and Chautauqua counties, but Miss Crowell found that while this law has operated toward raising the standard of efficiency among midwives in those sections of the state, the enforcement of the limitations under which the licenses are granted is entirely neglected. In proof of this statement Miss Crowell relates interviews with some Buffalo midwives, whose obstetric bags were quite as dirty as that of the average New York midwife.

**Leprosy Conference in Argentina and Leprosy in General.**—The resolutions adopted by the delegates from the various provinces at this conference, held recently at Buenos Ayres, advocated compulsory notification and isolation of all cases of leprosy. The direct or indirect transmissibility of the disease was emphasized, and the appointment of medical officers at the ports to prevent the admission of lepers was also advocated, with research by experts on the various mosquitoes of the different provinces where leprosy is on the increase. The passage of a national public health bill was also urged. The *Semana Medica* has published some of the detailed reports of the delegates. In Corrientes the proportion of lepers has increased by 82.5 per cent. since 1898 and it is now 0.87 per thousand for the entire country. In British India it is cited as 0.33; in Hawaii, 15 per cent.; in Colombia, 7.5 per thousand; in Brazil, 0.19, and in Argentina 0.87 per thousand, but in certain provinces the proportion reaches 3.43 per thousand. A. B. Pont cited a number of instances of conjugal leprosy, and also of double and triple conjugal contagion. Many of the cases cited by others as inherited leprosy are much more probably due to direct contagion, he thinks. In his experience the children of lepers, if removed at once from the home environment, escaped the disease. On the other hand, healthy children suckled by leprous nurses acquired it. Apparently sporadic cases of leprosy always proved to be merely remote links in the leprosy chain. In the province of Corrientes the disease affects the well-to-do more than the poor. He urged sanitarium treatment of the lepers in an isolated colony on some island off the Atlantic coast, believing that clinical cure may in certain cases be attained by appropriate treatment.

An endemic focus of leprosy has recently been discovered in Switzerland; 6 new cases have developed since 1898, although only 17 are known in the entire country. Jadassohn urges isolation of lepers in the endemic focus in a special colony, allowing visits from friends. (*Cor. Bl. f. schw. Aerzte*, xxxvii, Nos. 1-2). He advises notification of all cases and investigation of the home conditions by experts to decide whether the patient should be isolated or allowed to remain at home under medical oversight, the general government to assume all or part of the expense of isolation, and to enact a general law along these lines in respect to leprosy, endemic or imported. Since the discovery of the focus at Memel, Germany has enforced strict regulations against leprosy. In France and some other countries physicians have urged the importance of regulation but nothing official has been done, and physicians do not know what to do with a leper patient when one is encountered. Eichhorst, for example, relates the



case of a boy sent from Brazil to school in Switzerland who developed symptoms of leprosy three months after his arrival in 1905. He would not be readmitted to Brazil if sent back.

**The Teaching of Anatomy.**—The position of anatomy in America, according to Prof. F. P. Mall (*Science*, Jan. 25, 1907), has varied according to the view taken of its purpose and scope. Under the influence of so-called practical methods it was made largely a stepping-stone to surgery, and the progress of anatomic science and its effective teaching to medical students was thereby hindered. The result was a decadence in American anatomy which found its most worthy representatives not among medical men, but among zoologists, biologists, etc. In some universities a thoroughly trained professional anatomist taught the subject in the department of pure science, while the position of teacher in the medical school with its wider opportunities for influence and usefulness was filled by a physician or surgeon engrossed with other professional interests. Naturally the result of this division was that much of the best work of Europe was known in this country to but few and the conception and sphere of anatomy were unduly restricted. A new development in medical teaching is going on. While anatomy is well represented in college and university departments not connected with medical schools, we must look for the highest development to anatomy in connection with medical education. In order to be more effective in the training of scientific physicians we are gradually making our anatomic instruction more and more inductive and this naturally reacts on the instructor in a beneficial way. The study of anatomy begins with the cell and ends with the entire individual and in a medical school should include histology, histogenesis and embryology, and should cover vertebrate anatomy in the fullest sense. Investigation should be encouraged for scientific reasons regardless of the immediate prospect of practical application. Medical schools are largely hampered in this respect by the fact that anatomic professorships are unendowed and are held by men who, not being professional anatomists, have rarely the time to devote to teaching students nor the requisite training to enable them to develop the department properly. The proper advancement of anatomy demands the coöperation of many more productive anatomists. The effort of the Association of American Anatomists devoted to the advancement of anatomic science will result in bringing the best men together, and it is to be hoped that those in authority in various communities will recognize the broader scope of anatomy and seek productive anatomists, when vacancies occur, so that this grand science may be raised to the level it has always held in Europe.

**An Estimate of Eddyism.**—Because of a decision rendered against an Eddyite, Judge Gray of Indiana was attacked through the public press. His answer is so terse and pointed that it is worth quoting:

"The argument that people get well under their ministrations, and that many people believe in the doctrine, proves nothing. Thousands of people got well without medicine or prayer or faith hundreds of years before Mrs. Eddy was born. Every educated physician knows that the inherent recuperative forces of the human organism tend to restore the afflicted. The doctor seeks to aid by furnishing favorable conditions. Nature heals a cut. It is only the simpleton who would sing or pray when the gaping wound ought to be sewed up. A broken leg will get well after a fashion, without treatment of any kind, but much sooner and better under intelligent coaptation. Prayer won't set a broken leg and it is humbug to talk about it. Prayer will not destroy the germs that cause consumption, malaria, typhoid, diphtheria or even the itch. The human organism cures, medicine assists. That some good people believe in Christian Science proves no more in its favor than the same fact proves the infallibility of Mormonism or Mohammedanism. Some people will believe anything, especially if afflicted in body and mind. Sometimes the more ridiculous the proposition the more intense the faith. And then, again, Christian Scientists claim that it is God that does the curing, and that they are the only fellows that can get him at it. What do you think of that? Now, if God is going to give direct assistance in curing the sick, why

should he not aid the Christian physician who probably knows more about science than a carload of so-called healers? Christian Scientists claim to be the only fellows that are obeying the 'dual commandment' to preach the gospel and to heal the sick. Better turn and reread that commandment again. Here it is: 'Go ye to the lost sheep of the house of Israel, and as you go, preach, saying, the kingdom of heaven is at hand. Heal the sick, cleanse the lepers, raise the dead, cast out devils.' This is the golden text of Christian Scientists. They scold the people because they only preach, while they do the whole thing. But they don't. They violate the commandment constantly. First, they are commanded to go to the lost sheep of the House of Israel. They don't do it at all. They never treat a Jew. Not much. The Jews are too smart to be caught that way. They work on the Gentiles exclusively."

Comment seems superfluous except to add that the points brought out by the judge are so self-evident that it seems strange that educated people can be found who will believe such preposterous nonsense as is the "philosophy" of the followers of Mrs. Eddy. It is a psychologic study of no mean proportion to determine what the etiologic factors are which bring about the mental state necessary to the acceptance of such an absurd combination of truth and fallacy.

**Official Report on Thyroid Treatment of Endemic Cretinism.**—THE JOURNAL called attention on page 848 of vol. xliii, 1904, to von Jauregg's success with thyroid treatment of cretinism on a large scale. His latest report on the subject is published in the *Wien. klin. Wochschr.* for Jan. 10, 1906, xx, No. 2, page 33. Three years and more have passed since treatment was commenced in nearly a hundred cases, and the results are tabulated under various headings. All degrees of cretinism and all ages were unmistakably benefited by the treatment, but the finest results were obtained with the younger children. Complete cure is the rule in the milder cases, without serious impairment of the hearing, when treatment is begun in early infancy (at six weeks in one case). The enlargement of the tongue and of the thyroid are the most positive signs of cretinism in the infant. The shape of the nose and the complexion are not characteristic at this early stage, and the myxedematous swellings are not observed until after the end of the first year. Early diagnosis of acquired cretinism is still more difficult. Backwardness in learning to walk and talk is the most reliable sign. In the endemic regions the parents are now being educated to watch for the early signs. One thyroid tablet is given every second day for a year or half a tablet every day, and the improvement gained persists and progresses after suspension. In some of the cases backwardness in learning to talk suggested the possibility of cretinism, although other signs were lacking. He did not hesitate to put the child on thyroid treatment with the usual prompt benefit, assuming that in an endemic focus this anomaly was possibly the insidious onset of acquired cretinism. In any event, his experience has been that the thyroid treatment is entirely harmless. He adds that sheep thyroids weighing more than 3 or 4 gm. should not be used, as they are liable to be pathologic. Goiter has been observed in sheep.

**New Researches on Treatment of Epilepsy.**—The *Archives de Neurologie* for September contains an article by Voisin and A. Rendu describing extensive experiences with the administration of bromids and deprivation of salt in the treatment of epilepsy. Their conclusions are to the effect that the interposition of a period of deprivation of salt and of bromid, in the midst of treatment with large doses of bromids, has a very beneficial effect in cases of "essential" epilepsy with numerous seizures. These brief periods of "dechloridation" rest the organism without entailing the inconveniences observed with other technics. They also prevent too intense action of the bromids, which in time does more harm than good as the necessary nervous reaction becomes exhausted. Increasing the amount of the bromids on an ordinary diet gives the same results as are obtained with small doses of bromids on a salt-free diet. They give 4 gm. of potassium bromid for 10 days, then 10 gm. for 10 days, with the ordinary diet during these two



periods, followed by 10 days without either salt or bromid. These doses apply to adults and generally also to young people from 16 to 18. The various details of their experiences are tabulated, showing that this dosage was worked out on the basis of wide experience with larger and smaller doses, the former proving unnecessary and the latter inadequate.

**The Brain Cortex and Blood Pressure.**—W. Lewandowsky and E. Weber (*Med. Klinik*, ii, No. 15) find that there is in the cortex of dogs and cats a limitable region, irritation of which causes rise of blood pressure and that it is not coextensive with the motor zone, but in cats is situated more anteriorly. The blood pressure induced by its irritation affects especially the splanchnic circulation, driving the blood toward the periphery. They have not been able, experimentally, to demonstrate relations of the cortical regions to limited regions of the body, but think it probable that such exist. Such phenomena as unilateral differences of temperature and edema in hemiplegia, when a secondary effect of the muscular paralysis can be excluded, make it seem probable that similar centers exist in the human subject.

**The Arsenical Treatment of Diabetes.**—H. Verdalle, Bordeaux, in *Archives Générales de Médecine*, March 20, 1906, claims that the treatment of diabetes by the saline arsenical waters of Bourboule is very effective, especially in the type characterized by hyperfunctioning of the liver. It affects alike both the glycosuria and azoturia, regulates the nutrition and causes marked improvement in the general health, often succeeding when alkalies have failed or have even been harmful. While the treatment at the local source of the waters is advisable, the exploited waters can also be of use, but, nevertheless, under the direction of a physician. Verdalle reports a number of cases and claims that in no case had the treatment at the watering place produced any inconveniences or accidents when properly carried out.

## Association News

### THE ATLANTIC CITY SESSION.

#### Arrangements for the Fifty-eighth Annual Session Well Under Way.

The following brief extract taken from the preliminary report of the Committee of Arrangements to the Board of Trustees, Feb. 1, 1907, at Chicago, is published for the purpose of announcing the general and section headquarters. The report also includes the names of the chairmen of the executive and auxiliary committees. Arrangements are already well under way, and everything is progressing very favorably. Atlantic City is preparing to give those who attend the coming session in June even better accommodation than heretofore, there being more hotels and larger ones than when the Association last met in Atlantic City. Special attention is being given to locating the section headquarters in hotels directly on the beach front and contiguous to the Boardwalk. The section meeting places are being grouped as closely together as rooms providing commodious accommodation can be obtained. It will be the endeavor of the Trustees' committee, ably assisted by the auxiliary committee, to provide for the members of the Association the greatest amount of comfort, within a short radius, and at a minimum expense, as is shown by the following memoranda:

#### HEADQUARTERS.

GENERAL HEADQUARTERS, MARLBOROUGH-BLENHEIM.

PRACTICE OF MEDICINE: Hotel Dennis.

SURGERY AND ANATOMY: Hotel Chalfonte.

OBSTETRICS AND DISEASES OF WOMEN: Haddon Hall.

DISEASES OF CHILDREN: Hotel Traymore.

NERVOUS AND MENTAL DISEASES: Hotel Brighton.

OPHTHALMOLOGY: Hotel Seaside.

LARYNGOLOGY AND OTOTOLOGY: Hotel Strand.

PATHOLOGY AND PHYSIOLOGY: Hotel Shelburne.

HYGIENE AND SANITARY SCIENCE: Hotel St. Charles.

PHARMACOLOGY AND THERAPEUTICS: Hotel Marlborough.

CUTANEOUS MEDICINE AND SURGERY: Hotel Marlborough.

STOMATOLOGY: Hotel Traymore.

General headquarters for registration, information, commercial exhibits and scientific exhibits, will be on Young's Pier.

### LOCAL COMMITTEE.

The following is the local or auxiliary committee:

CHAIRMAN FOR BOARD OF TRUSTEES A. M. A.: Philip Marvel, M.D., 1616 Pacific Ave.

LOCAL CHAIRMAN: W. Blair Stewart, M.D., Pacific and North Carolina Aves.

SECRETARY: Edward Guion, M.D., 1408 Atlantic Ave.

TREASURER: J. A. Joy, M.D., 1920 Pacific Ave.

HALLS AND SECTION MEETING PLACES: Wait P. Conaway, M.D., 1723 Pacific Ave.

COMMERCIAL EXHIBITS: Edward Guion, M.D., Atlantic Ave.

(All correspondence concerning the reservation of space for exhibits should be addressed to the American Medical Association, 103 Dearborn Avenue, Chicago.)

REGISTRATION: E. H. Harvey, M.D., 20 N. Florida Ave.

BUREAU OF INFORMATION: Milton S. Ireland, M.D., 25 S. California Ave.

BADGES: Clara K. Bartlett, M.D., 10 N. Carolina Ave.

HOTELS: W. E. Jonah, M.D., 1616 Pacific Ave.

FINANCE: Eugene L. Reed, M.D., Pacific and Virginia Aves.

GENERAL ENTERTAINMENTS: Emery Marvel, M.D., 811 Pacific Ave.

SECTION ENTERTAINMENTS: J. W. Snowball, M.D., 1519 Pacific Ave.

LADIES' ENTERTAINMENT: Mrs. A. D. Cuskaden, 2 S. Michigan Ave.

PROGRAM AND PRINTING: George Scott, M.D., 1109 Pacific Ave.

SCIENTIFIC EXHIBITS: E. J. Porteous, M.D., 811 Pacific Ave.

RECEPTION: (To be named).

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### FORMULA OF CASTORIA.

WASHINGTON, D. C., Feb. 9, 1907.

*To the Editor:*—Can you give me any information regarding the composition of castoria, manufactured by the Centaur Company, New York? I wrote to this company nearly a year ago, but have received no answer. Castoria is extensively used in Washington as a laxative and "soothing" agent. I am told that in addition to its laxative effect it makes babies sleep. A patient who has observed this effect in her own child told me that her sister kept her baby "under the influence" of castoria all the time.

B. M. RANDOLPH, M.D.

ANSWER.—According to the patent, the formula is as follows: To 135 pounds of senna leaves add 35 gallons of water at 65 C., in which has been dissolved 48 ounces of sodium bicarbonate. Exhaust the senna by percolation until 240 pounds are obtained. In this dissolve 210 pounds of sugar and 4 ounces of Rochelle salts, then add spirits of gaultheria, 18 pints, and spirits of pepo, spirits of chenopodium (wormseed), spirits of peppermint and spirits of anise, of each 2 ounces. The patent on the process having expired by limitation some years ago, it was discovered that the name also reverted, along with the process, to public use, and various parties began the manufacture of castoria. The owners of the original patent began legal proceedings against the infringers and succeeded in all but one instance in prohibiting any one from making castoria or vending any article under that name except that made by them. In one instance the case was carried to the United States Supreme Court, which, in an opinion written by Justice Brewer, held that the patent on the process having expired, the name "Castoria," being the only name to designate the article, became a common name and therefore free for use. The design, style and signature of the package being copyrighted can not be imitated, hence the tremendous effort on the part of the original manufacturers to familiarize the public with the signature of a person who manages the business for the present owners. Dr. J. G. Reinberg, McBain, Mich., in *THE JOURNAL*, March 17, 1906, reports the case of a child, aged 10 months, who became comatose and whose pupils did not react to light after having received half a teaspoonful of castoria.

### POISONING FROM OIL OF TANSY.

SHILOH, OHIO, Feb. 4, 1907.

*To the Editor:*—During the past six months several cases of poisoning from oil of tansy have been reported in *THE JOURNAL*, and I wish to add another. I was called to see a young married woman, aged 20, and found her in a semiconscious condition, from which she was rather easily roused. She vomited considerably and the vomitus contained some bright red blood, which evidently came from the stomach. Respiration and pulse were increased and the pupils were dilated. The woman complained of severe abdominal pain, for which I administered morphin, gr. ⅛, hypodermically. Further treatment consisted of rest in bed, calomel followed by a saline, and then a mixture of pepsin and bismuth to relieve the vomiting, which recurred at intervals for several days. The woman made a complete recovery in about twelve days. She acknowledged having taken a dram of oil of tansy with the intention of producing abortion; this result, however, was not attained.

N. P. MCGAY, M.D.



## ANOTHER CURE FOR INCURABLE DISEASES.

Dec. 26, 1906.

*To the Editor:*—Your address has been given to me by Dr. \_\_\_\_\_ of our city, who thinks that you may be able to assist me in reaching Dr. Denslow mentioned in the newspaper clipping enclosed. I have been waiting for some months, hoping to see the matter reported in our American medical papers, but now take this action in an effort to be able to reach Dr. Denslow by letter. I am suffering from locomotor ataxia and have just been compelled to give up my employment. I have been very much helped up by the hope that Dr. Denslow may be able to cure me, or at least better my condition to enable me to do my work. \* \* \*

The clipping is as follows:

## LOCOMOTOR ATAXIA CURABLE.

London, April 18.—A cure for locomotor ataxia has been discovered, according to the *Express*, by Le Grand Norton Denslow, an American doctor living in London. Already, the paper says, Dr. Denslow has effected several remarkable cures. He promises to take the medical profession into his confidence as soon as he perfects the details of the discovery. The disease has hitherto been considered incurable, though it has been possible to stay its progress.

ANSWER.—To this letter (from a layman), so characteristic of the average unfortunate sufferer who grasps at any hope of relief, and written because of an alleged news cablegram that bears so many ear-marks of fraud, we replied, regretting very much the necessity of discouraging our correspondent, that the announcement of a cure for incurable diseases is a not uncommon preliminary to a further advertisement of some "patent medicine." (Our readers will remember the Bioplasm clipping, so similar in some respects, on which we commented in *THE JOURNAL*, Nov. 18, 1905, page 1587.) We said further that we would endeavor to learn something further from London.

We now learn from our London correspondent that on June 9, 1906, an American, giving the name of Le Grand N. Denslow, was summoned before the police magistrate of Marylebone and fined \$150 and costs for falsely using the title of doctor of medicine. It is stated that the evidence showed that the defendant had taken rooms at 38 Harley street, and that he had advertised widely that he was able to cure locomotor ataxia. It is further alleged that he offered treatment at 500 guineas (\$2,625), and also announced he would soon raise his price to 1000 guineas (\$5,250), as the cure cost him \$750. The defense claimed that Denslow was no charlatan, but was a fully qualified and highly educated medical man, and that he supposed he could use the title of "doctor" so long as he did not imply that he was an English doctor. It was stated that he held numerous medical qualifications and that he had practiced in America since 1876.

The only name resembling the above is found in the 1902 edition of the Medical Directory of New York, New Jersey and Connecticut, in which the name of LeGrand Norton Denslow appears as located at 49 W. 44th St., New York, and as a graduate of the College of Physicians and Surgeons of New York in 1876. In the edition for 1904 the same name appears with the address given as 86th St. and Broadway, New York City. There is no such name entered in the same directory for 1905 nor for 1906, neither does it appear in the new American Medical Directory. Although the names are similar, it is impossible to say positively whether or not they belong to the same individual. Our readers can draw their own conclusions from the facts submitted.

## A PHYSICIAN'S EXPERIENCE WITH THE AUTOMOBILE.

CAZENOVIA, N. Y., Feb. 13, 1907.

*To the Editor:*—In *THE JOURNAL*, February 9, a letter gave the cost of running an automobile as a doctor's conveyance, and, while the figures are no doubt correct, it seems to me rather more than one should pay for the service rendered. I have a machine which cost as it stands, including lamps, etc., about \$450. The car has been in use since May, 1906, has never been out of service for repairs but once, and has cost from \$9 to \$12 a month. The doctor, with some mechanical ingenuity, who really wishes to use a car of light weight as a substitute for horses, and who is willing to do his own repairing and adjusting, may figure his running expense at \$15 a month for a mileage equal to two good horses. One must remember that the highways were built for horse-drawn vehicles, and if a machine is driven at high speed, the driver must expect to pay well for his fun. As a rule my car is driven ten or twelve miles an hour, which is as rapid as comfort and safety will permit in this hilly country. The time required to keep the car running properly is about three hours a week. This does not include the time spent in washing the machine.

F. D. KEPPEL.

## BARTLETT METHOD OF CATGUT STERILIZATION.

HOLYOKE, MASS., Feb. 14, 1907.

*To the Editor:*—Kindly give me in your Queries and Minor Notes column the address of Dr. Bartlett, originator of the Bartlett method of catgut sterilization? S. A. MAHONEY.

ANSWER.—Dr. Willard Bartlett, 4257 Washington Boulevard, St. Louis.

## The Public Service

## Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Feb. 16, 1907:

Maus, Louis M., deputy surgeon general, ordered to inspect all posts in the Department of Texas.

Brown, O. G., asst.-surgeon, granted two months and 20 days' leave of absence.

Wilson, Compton, asst.-surgeon, resignation of his commission as an officer of the Army has been accepted by the President, to take effect Feb. 15, 1907.

Buck, C. D., asst.-surgeon, having completed the duty for which he was ordered to this city, will return to his proper station, Army General Hospital, Presidio of San Francisco; granted 12 days' leave of absence.

Krebs, Lloyd Le R., asst.-surgeon, granted five days' leave of absence.

Ileard, Geo. P., asst.-surgeon, leave of absence extended 30 days.

Deshon, George D., surgeon, detailed member Army Retiring Board to meet at Omaha, Neb., vice Lieut.-Col. John M. Banister, deputy surgeon-general, hereby relieved.

Devereux, J. R., asst.-surgeon, resignation of his commission as an officer of the Army has been accepted by the President, to take effect June 30, 1907.

Gregory, Junius C., asst.-surgeon, relieved from temporary duty at Presidio of Monterey, Cal., and will proceed to San Francisco, and take station at that place, resuming his duties in the Army Transport Service.

Rich, Edwin W., asst.-surgeon, appointed member of examining board to meet at Madison Barracks, N. Y.

Sievers, Robert E., contract surgeon, left Fort William Henry Harrison, Mont., and arrived at Fort Keogh, Mont., for temporary duty.

Brown, W. E., contract surgeon, returned to duty at Fort Walla Walla, Wash., from leave of absence.

Chase, Alpha M., contract surgeon, left Fort Sam Houston, Tex., on leave of absence for one month.

Pinquard, Joseph, contract surgeon, returned to duty at Fort Leavenworth, Kans., from leave of absence.

Stone, Frank P., dental surgeon, returned from Fort Bliss, Texas, to Fort Sam Houston, Texas; ordered to Fort McIntosh, Texas, for emergency work.

## Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Feb. 16, 1907.

Schwartz, L. H., acting asst.-surgeon, detached from the *Celtic*, when placed out of commission, and ordered to the Naval Hospital, Norfolk, Va.

Heiner, R. G., asst.-surgeon, ordered to additional duty at the Naval Proving Grounds, Indian Head, Md.

## Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 14, 1907:

White, J. H., surgeon, directed to proceed to Jump Point, La., for special temporary duty, on completion of which to rejoin station at New Orleans.

Cofer, L. E., P. A. surgeon, relieved from temporary duty at Ellis Island, N. Y., effective Feb. 3.

Cofer, L. E., P. A. surgeon, granted leave of absence for 16 days, beginning Feb. 4.

Cofer, L. E., P. A. surgeon, directed to proceed to Coatzacoalcas and Salina Cruz, Mex., and San Francisco, for special temporary duty, on completion of which to rejoin his station at Honolulu, Hawaii.

Glover, M. W., P. A. surgeon, granted 5 days' leave in January, 1907.

Glover, M. W., P. A. surgeon, leave of absence granted for one month from Jan. 12, 1907, amended to be effective from Jan. 23, 1907.

Bogges, J. S., P. A., surgeon, on the return of Asst.-Surgeon E. H. Mullan, relieved from temporary duty at Perth Amboy, N. J., and directed to report to the medical officer in command, Stapleton, N. Y., for duty and assignment to quarters.

Salmon, T. W., asst.-surgeon, granted leave of absence for two days in January, 1907, under Paragraph 191 Service Regulations.

Ashford, F. H., asst.-surgeon, granted leave of absence for one day in January, 1907, under Paragraph 191, Service Regulations.

Miller, W. W., asst.-surgeon, granted leave of absence for one day in January, 1907, under Paragraph 191, Service Regulations.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for thirty days on account of sickness, from Jan. 1, 1907.

Foster, S. B., acting asst.-surgeon, granted leave of absence for 11 days from Feb. 9, 1907.

Glascok, A., acting asst.-surgeon, granted leave of absence for one day in January, 1907, under Paragraph 210, Service Regulations.

Goldsborough, B. W., acting asst.-surgeon, granted leave of absence for 14 days from Feb. 4, 1907.

Kennard, K. S., acting asst.-surgeon, granted leave of absence for one day in January, 1907, under Paragraph 210, Service Regulations.

Moncure, J. A., acting asst.-surgeon, granted leave of absence for thirty days from Feb. 10, 1907.

Wetmore, W. O., acting asst.-surgeon, granted leave of absence for six days in January, 1907, under Paragraph 210, Service Regulations.



Wilson, J. G., acting asst.-surgeon, granted leave of absence for two days in January, 1907, under Paragraph 210, Service Regulations.

Woods, C. H., pharmacist, granted leave of absence for thirty days, from Jan. 7, on account of sickness.

Allen, G. C., pharmacist, directed to report to Surgeon W. G. Stimpson, chairman of board, for physical examination to determine his fitness for promotion to grade of pharmacist of the first class.

Rogers, Edward, pharmacist, directed to report to Surgeon P. H. Bailhache, chairman of board, for physical examination to determine his fitness for promotion to grade of pharmacist of the first class.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Feb. 15, 1907:

#### SMALLPOX—UNITED STATES.

Connecticut: Stamford, Jan. 1-31, 1 case.  
Georgia: Augusta, Jan. 29-Feb. 5, 2 cases.  
Illinois: Galesburg, Jan. 26-Feb. 9, 26 cases.  
Indiana: Indianapolis, Jan. 27-Feb. 3, 3 cases; Lafayette, Feb. 4-11, 6 cases; South Bend, Jan. 26-Feb. 9, 5 cases.  
Iowa: Clinton, Jan. 27-Feb. 3, 1 case.  
Kansas: Kansas City, Feb. 2-9, 1 case.  
Louisiana: New Orleans, Jan. 28-Feb. 4, 3 cases (2 imported).  
Michigan: Detroit, Feb. 2-9, 2 cases; Kalamazoo, Jan. 26-Feb. 2, 2 cases.  
Missouri: St. Joseph, Jan. 26-Feb. 2, 30 cases; St. Louis, Jan. 26-Feb. 11, 3 cases.  
New York: New York, Jan. 26-Feb. 9, 3 cases, 1 death.  
South Dakota: Sioux Falls, Jan. 26-Feb. 2, 2 cases.  
Texas: Houston, Jan. 12-Feb. 2, 11 cases.  
Washington: Spokane, Jan. 19-Feb. 2, 11 cases.  
Wisconsin: La Crosse, Feb. 2-9, 1 case; Milwaukee, Jan. 19-Feb. 9, 14 cases.

#### SMALLPOX—FOREIGN.

Africa: Cape Town, Dec. 15-22, 1 case.  
Brazil: Pernambuco, Dec. 15-31, 48 deaths; Rio de Janeiro, Dec. 30-Jan. 6, 1 case.  
Canada: Sherbrooke, Feb. 9, 4 cases.  
China: Hongkong, Dec. 1-22, 4 cases, 3 deaths; Shanghai, Dec. 23-30, 1 case.  
France: Paris, Jan. 12-19, 14 cases, 1 death.  
Great Britain: Hull, Jan. 12-19, 2 cases.  
India: Madras, Dec. 15-21, 2 deaths.  
Netherlands: Rotterdam, Jan. 19-26, 5 cases.  
Russia: St. Petersburg, Dec. 27-Jan. 12, 6 cases, 3 deaths.  
Spain: Seville, Dec. 1-31, 40 deaths.  
Africa: Senegal and Niger, Nov. 1-30, 35 cases, 26 deaths.  
Mexico: Vera Cruz, Feb. 8, 1 case (imported).

#### CHOLERA.

India: Bombay, Jan. 1-8, 4 deaths; Rangoon, Dec. 22-29, 23 deaths.

#### PLAGUE.

Brazil: Pernambuco, Dec. 15-31, 1 death; Rio de Janeiro, Dec. 30-Jan. 6, 20 cases, 5 deaths.  
India: Bombay, Jan. 1-8, 26 deaths; Rangoon, Dec. 22-29, 23 deaths.  
Peru: Callao, Jan. 5-12, 2 cases, 1 death; Chiclayo, Jan. 1, 5 cases, 3 deaths; Mollendo, 1 death; Paita, City and vicinity, Jan. 1, 6 cases, 1 death; San Pedro and Pacasmayo, 10 cases, 4 deaths; Trujillo, 14 cases, 5 deaths.

## Marriages

CHARLES A. CRANE, M.D., to Miss Mabel Putt, both of Canton, Ohio, recently.

FRED H. HUNTLEY, M.D., to Miss Maud Williams, both of Manton, Mich., February 6.

S. YOUREE ALEXANDER, M.D., to Miss Florence Jacobs, both of Shreveport, La., February 6.

WALTER M. REEDY, M.D., Seranton, Pa., to Miss Mary Teresa Healey, of Dunmore, Pa., February 7.

DAVID W. WENSTRAND, M.D., Milwaukee, Wis., to Miss Gertrude Walters, of Chicago, Dec. 24, 1906.

JOHANNES G. OOSTERBECK, M.D., to Miss Blanche Pemberton, both of South Bartonville, Ill., February 6.

JAMES F. GAFFNEY, M.D., Lowell, Mass., to Mrs. Ethel Roberts Sawyer, at Providence, R. I., February 6.

FRANK ERNEST SOHLER, M.D., San Francisco, to Miss Luella May Bremner, of Santa Rose, Cal., February 2.

CHARLES MCKINNEY NICE, M.D., Palos, Ala., to Miss Helen Gilberta Adams of Germantown, Pa., February 5.

RALPH FREDERICK BACON, M.D., Milwaukee, Wis., to Miss Mabel Rebecca Hoyt, of Brooklyn, N. Y., Oct. 16, 1906.

FRANK TERRY BROOKS, M.D., Greenwich, Conn., to Miss Madeline Conkey, of New Hampshire, at Honolulu, H. I., January 21.

## Deaths

Sir William Hales Hingston, M.D. McGill University Medical Department, Montreal, 1851; L.R.C.S., Edinburgh, 1852; LL.D., D.C.L., F.R.C.S., England; for many years dean of the medical profession of the Dominion of Canada; professor of clinical surgery at Laval University, Montreal; surgeon-in-chief of the Hotel Dieu, Montreal; formerly mayor of Montreal; president of the provincial board of health in 1876 and 1877; senator of the Dominion of Canada; knighted in 1895; died at his home in Montreal, February 19, aged 78.

Henry Joseph Gaffney, M.D. Medical School of Harvard University, Boston, 1870; government inspector of Indians at Charlottetown, P. E. I., but since 1872 a resident of Salem, Mass.; a member of the Massachusetts Medical Society, Essex South District Medical Society; fellow of the Royal College of Physicians, London; a member of the local board of overseers of the poor for five years, and of the school board for nine years, died at his home in Salem, February 10, suddenly, from heart disease, aged 59.

John de Barth Walbach Gardiner, M.D. University of Georgetown, University of Maryland School of Medicine, Baltimore, 1863; surgeon in the Confederate service in the Civil War; who was admitted to the Medical Department of the Army as lieutenant and assistant surgeon in 1875; was made captain and assistant surgeon in 1880, and was retired on account of disability in line of duty in 1891, died at his home in Pleasant Hill, Md., February 5, aged 64.

William C. Pickett, M.D. Jefferson Medical College, Philadelphia, 1895; a member of the American Medical Association; demonstrator in neurology in Jefferson Medical College and later professor of nervous diseases in the Medico-Chirurgical College; a member of the Major Staff of the Hospital Physicians; president of the Philadelphia Neurological Society, died at his home in Aldan, Pa., February 5, from acute articular rheumatism, aged 37.

Alexander C. Burns, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1877; chief of the surgical staff of the City Hospital, Huntington, W. Va., for 15 years; once a member of the board of education of Getaway, Ohio, and later a member of the Huntington board of education, died suddenly at his home in Huntington, February 2, from cerebral hemorrhage, aged 58.

William H. Kennedy, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1904; deputy clerk of Snohomish County, Wash., from 1891 to 1896, and afterward a practitioner at Montague and Ravenna, Mich.; a member of the state and county medical societies, died in Mercy Hospital, Muskegon, February 6, from myocarditis, after an illness of ten weeks, aged 38.

Charles C. Merrill, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1863; surgeon in the Army throughout the Civil War; for several years a member of the staff of the Newburg Insane Hospital, Cleveland, Ohio, and thereafter a practitioner of Marshallville, Ohio, died at the home of his brother in Kankakee, Ill., February 5, aged 74.

John Blackwood Strachan, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1852; surgeon in the Confederate service throughout the Civil War, and said to have been the oldest practitioner of Petersburg, Va., died at his home in that city, February 6, after a prolonged period of invalidism, aged 77.

Horace Campbell, M.D. College of Physicians and Surgeons in the City of New York, 1899; a member of the state and county medical societies; coroner of Chehalis County, Wash., and chief of staff of the Hoquiam Hospital, died suddenly at Hoquiam, February 1, from fatty degeneration of the heart, aged 34.

James Francis McCarthy, M.D. Minnesota Hospital Medical College, Minneapolis, 1883; a member of the American Medical Association and a leading member of the medical profession of Dubuque, Iowa, died in Iowa City, February 10, five days after an operation for hernia, aged 49.

Oscar Gaudet, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1861; a Confederate veteran; for four terms coroner of St. James Parish, and one of the most esteemed citizens and practitioners of Paulina, La., died at his home, February 7, aged 68.

Luke M. Doyle, M.D. Rush Medical College, Chicago, 1897; of Burnside, Chicago, a member of the American Medical Association, died in Wesley Hospital, Chicago, February 19, from appendicitis, after an illness of one week, aged 32.



**H. H. Barncastle, M.D.** Memphis (Tenn.) Hospital Medical College, 1891; a member of the state and county medical societies; of Haughton, La., died in the Shreveport (La.) Sanitarium, February 8, after a prolonged illness and two weeks after an operation on the liver.

**Franklin Wheeler, M.D.** College of Physicians and Surgeons in the City of New York, 1852; a member of the state and county medical societies, died at his home in Farmington, Conn., February 10, from cerebral hemorrhage, after an illness of five days, aged 79.

**Thomas Edwin Nott, M.D.** Medical College of the State of South Carolina, Charleston, 1852; who served throughout the Civil War as surgeon in the Confederate service, died at his home in Spartanburg, S. C., January 19, after an illness of a year, aged 76.

**Louis Dwight Shipman, M.D.** College of Homeopathic Medicine and Surgery of the University of Minnesota, Minneapolis, 1896; a member of the faculty of that institution, died at his home in Minneapolis, February 5, from diphtheria, aged 31.

**Henry Harris Davidson, M.D.** New York Medical College, New York City, 1864; at one time coroner of Suffolk County, N. Y., and health officer of Northport, L. I., died at his home in that village, from pneumonia, February 5, aged 67.

**George Wasson Grove, M.D.** Tulane University of Louisiana, Medical Department, New Orleans, 1890; of Kansas City, Mo., died in St. Joseph's Hospital in that city, February 8, four weeks after an operation for appendicitis, aged 54.

**Samuel W. Rutledge, M.D.** Homeopathic Medical College, St. Louis, 1876; sometime member of the State Medical Board of North Dakota, died at his home in Grand Forks, February 3, from kidney disease, after a long illness, aged 54.

**Marshall E. Leatherman, M.D.** College of Physicians and Surgeons, Baltimore, 1873; a specialist in genitourinary surgery, of Washington, D. C., died at the home of his father in Frederick County, Md., February 8, aged 55.

**William Henry Pearce, M.D.** Ohio Medical College, Cincinnati, 1845; who retired from practice in 1860; died at his home in Eureka Springs, Ark., from nervous shock, 14 hours after a street railway accident, January 23, aged 91.

**Isaac E. Myers, M.D.** Western Reserve University Medical College, Cleveland, 1867; a veteran of the Civil War, died at his home in Shelby, Ohio, February 9, from cardiac dropsy, after an illness of two years, aged 67.

**Charles Wesley Benson, M.D.** University of Maryland School of Medicine, Baltimore, 1860; of Baltimore, died at the Union Protestant Infirmary in that city, February 10, after an illness of six weeks, from diabetes, aged 69.

**Henry Z. Gill, M.D.** Jefferson Medical College, Philadelphia, 1857; a veteran of the Civil War, and a member of the American Medical Association, died at his home in Long Beach, Cal., February 6, aged 76.

**James Thomas Marsh, M.D.** Washington University, Medical Department, St. Louis, 1860; a member of the American Medical Association, of Liberty, Mo., died February 9, from pneumonia, aged 73.

**John Andrew Warde, M.D.** Medical College of Ohio, Cincinnati, 1890; of Dubuque, Iowa, died at Mercy Hospital in that city, February 7, from spinal meningitis, after a long illness, aged 40.

**Frederick C. Segelke, M.D.** Milwaukee Medical College, 1902; formerly of Tea, S. D., died suddenly in Milwaukee, February 2, from the effects of an overdose of morphine, aged 27.

**Joel E. Whitmar, M.D.** University of Wooster, Medical Department, Cleveland, 1873; a veteran of the Civil War, died at his home in Millersburg, Ohio, February 4, aged 63.

**Louis D. Levi, M.D.** Louisville (Ky.) Medical College, 1879; died at his home in New Albany, Ind., February 9, from influenza, complicated with diabetes, aged 47.

**Jesse B. Lung, M.D.** College of Physicians and Surgeons, Keokuk, Iowa, 1877; died at his home in Brooklyn, February 9, after a short illness, aged 71.

**George Liebrock, M.D.** Homeopathic Medical College of Missouri, St. Louis, 1878; died at his home in Mascoutah, Ill., January 24, aged 78.

**John M. Modricker, M.D.** University of Berlin, Germany, 1858; of Wabash, Ind., was run over by a buggy, and died February 10, aged 73.

**Oscar Morrill Ide, M.D.** College of Physicians and Surgeons, Chicago, 1894; died at his home in Chicago, January 19, aged 35.

**S. Pruyn Patterson** (Years of Practice, W. Va.), died at his home in Huntersville, W. Va., January 14, aged 68.

## Medical Organization

### DR. McCORMACK'S CAMPAIGN IN ALABAMA.

**W. H. Sanders, M.D.**

Health Officer of Alabama.

MONTGOMERY, ALA.

Dr. McCormack completed a campaign in this state January 18, having visited twenty-two places and delivered about forty addresses to the people and the profession, and one to the joint houses of the legislature. In estimating results, the effect on the people, on the profession, and on the members of the legislature will be referred to.

Popular addresses on the part of physicians have been very uncommon in this part of the country, hence considerable difficulty was encountered in persuading the people that an address from a doctor could be otherwise than dry and uninteresting. In fact, a considerable percentage of the members of the profession shared this view. The result was that, while fair audiences were obtained at most places, at none of them did the houses overflow as they should have done and as they would have done had the addresses been repeated at any of the places where they were delivered. The effect of the addresses on those laymen who heard them was profound and highly salutary. Indeed, the enthusiasm of the lay hearers was deeply aroused by the graphic view of the profession, its aims, its struggles, its unselfish and altruistic work, and withal its bickerings and jealousies, so luminously and effectively told by the speaker. Everywhere the expressions of appreciation and approval on the part of the lay hearers were lavish, cordial and emphatic. As specimens of hundreds of expressions used, the following are quoted: An Episcopal rector said: "Doctor, if you will remain here until Sunday I will insist on your occupying my pulpit." A lady said: "Doctor, that is the best sermon I have heard in a long time."

When the subject was opened for discussion, as was done after the addresses, preachers, lawyers, teachers, editors and business men spoke in vigorous and glowing terms of the sentiments that vitalized and warmed the address, pronouncing them both a revelation and an inspiration.

The effect on the members of the profession who heard Dr. McCormack was strong, wholesome and reassuring. While the profession in this state is logically and completely organized, yet inertia is the anesthetic that is paralyzing, more or less, the energies of the doctors, and that is, therefore, robbing organization of some of its richest fruits. The addresses were well calculated to rouse them out of this torpid condition, opening up, as they did, new fields in which their energies might be employed and new methods by which those fields might be cultivated. His scheme for graduate study was unique, practical and captivating, and will, no doubt, be adopted and followed by many county societies.

The value of harmony and coöperative study was clearly and forcefully pointed out to the doctors, and it is to be hoped that they will act on the suggestions offered and resolve to make organization bear in this state the rich fruits of which its author and founder, Jerome Cochran, had such clear and luminous visions nearly forty years ago.

The address to the legislature profoundly impressed the members and pointed out to them as they had never seen before the absolute need of a thoroughly organized public health system and the wisdom of providing it with such support as will enable it to accomplish its purposes. Numerous expressions of unqualified endorsement of what had been said were heard on the part of the members, and undoubtedly the way to broader and better legislation was greatly clarified. Just after the address was delivered Senator McWhorter, a prominent member of the profession of the state, and now president of the State Medical Association, offered the following resolution, which was unanimously adopted:

*Resolved*, That the thanks of the Legislature of Alabama be tendered Dr. J. N. McCormack for his very able and illuminating address, which has thrown a flood of light on the problems of preventive medicine which we as legislators will be called to deal, and which impressed on us the fact that the domain of legitimate legislation has been immensely widened in the light of modern science and by the labors of the medical investigator.

As a speaker Dr. McCormack is magnetic, persuasive and convincing. Although he speaks for one hour and a half, or thereabouts, he holds the attention of his audience from beginning to end with the grip of a vise, beguiling his hearers into being unconscious of the flight of time. As a crucial test of the speaker's capacity in this respect the following incident is mentioned. At one of the meetings eight or ten boys, ranging around 15 years of age, perched themselves on some ascending



stands provided for flowers at the very rear of the auditorium. Knowing the genius of boys of that age for creating a disturbance at such places and times, and for rendering themselves a first-class nuisance, I apprehended that much annoyance would proceed from that quarter of the auditorium, but to my amazement those boys sat as still and listened as attentively as the grown people. A bright woman to whom this incident was related very philosophically defended the disposition of boys to misbehave when not entertained by saying that they are honest enough to show it, while grown people are deceitful enough to hide it. On this occasion, however, neither did the boys have an opportunity to show their honesty nor the grown people their politeness, for all were broadly informed and highly entertained.

To sum up, nothing but good can result from Dr. McCormack's campaign of education in Alabama.

#### County Societies in Public Health Affairs in Virginia.

*To the Editor:*—In THE JOURNAL, Dec. 29, 1906, Dr. Parnall asks for information regarding the appointment of members to local boards of health on recommendation of the county societies, or similar medical organizations. In Virginia county boards of health consist of the chairman of the board of supervisors, the clerk of the county court and three physicians appointed by the judge on the recommendation of the county medical society. This body selects its own secretary, who is county health officer. At this particular time the health officer of Elizabeth City County, who is enforcing the state law in reference to the vaccination of school children, is meeting opposition on the part of some antivaccinationists. He is secured against the threats of these faddists by the knowledge that their efforts can be effective only through the aid of his medical brethren.

W. A. PLECKER, Hampton, Va.

[The Virginia law which Dr. Plecker outlines is certainly an effective and judicious one. It practically places the control of the health matters of the county in the hands of the county medical society. Such an organization in any state ought to be productive of an immense amount of good. We fear the largest possible benefit is not realized in Virginia, however, since there is in that state no connection whatever between the local county medical societies and the state society. In fact, so far as our information goes, there are only 12 county medical societies in existence in Virginia out of 100 counties. With such a law as Virginia is fortunate enough to possess, and with an active society in each county in the state, all held together by the state society, it would be possible to accomplish results in Virginia which would be unsurpassed in any state. —Ed.]

#### Co-operation with Pharmacists.

Dr. J. R. Caldwell, secretary of the Ohio County (W. Va.) Medical Society, reports a joint meeting with the Wheeling Druggists' Association, held in Wheeling, February 15. The following program was given by members of the two organizations, followed by a lunch and social period:

Drug Poisoning. A Personal Experience.....	Dr. S. L. Jepson.
Dangers of Drug Substitution .....	Mr. M. A. Wallace.
What Constitutes Proprietary Remedies.....	Mr. C. Menkemeller.
Druggists' Short-comings.....	Dr. J. O. Howells.
The Integrity of the Druggists.....	Mr. W. W. Irwin.
What Constitutes a Progressive Up-to-Date Druggist.....	Mr. B. Dawson.
The Ethics of Prescription Writing.....	Dr. C. A. Wingerter.
The U. S. Pharmacopeia and National Formulary vs. Proprietary Articles.....	Mr. John Coleman.
The Druggist as an Assistant to the Physician.....	Mr. John Ehrle.

This meeting offered an excellent opportunity for a discussion on subjects of direct interest to both physicians and druggists and must have been productive of much good. The example of this and several other societies in this matter is worthy of general imitation.

#### Program for the Season.

A very neatly gotten up program is sent us by Dr. H. C. Frontz, Huntingdon, Pa., secretary of the Huntingdon County Medical Society. This society was organized in 1872 and now has a membership of 30. The folder names the officers and members of the society, members of various committees, membership dues, dates of annual meetings of county and state societies and American Medical Association, with a program for meetings of the society from March, 1907, to January, 1908.

#### Section for Pathology Study.

On December 6 a meeting of the Erie County Medical Society was held to organize a section for the study of pathology. Two meetings have been held since that time, at which interesting papers were presented. The permanent specimens are eventually to become the property of the Erie County Medical Society and will form a valuable collection for future reference.

## Society Proceedings

### COMING MEETINGS.

Assn. of American Med. Colleges, Richmond, Va., March 18, 1907.  
Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.

### MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

(SECTION OF CLINICAL MEDICINE AND SURGERY.)

### AMERICAN PHARMACEUTICAL ASSOCIATION.

(BALTIMORE SECTION.)

*Joint Meeting, held in Baltimore, December, 1906.*

#### Proprietary Preparations.

DR. HARVEY W. WILEY, Washington, D. C., outlined his views from the standpoint of an official connected with the Foods and Drugs Act. He stated that the remedies offered to the public are either nostrums or proprietaries, or they are recognized by the United States Pharmacopeia or National Formulary, or they are synthetics and proprietary articles protected by patent rights. Dr. Wiley has never regarded any medicine as a cure, but as an aid to Nature in its efforts to restore health. Although every state has enacted laws controlling the practice of medicine and pharmacy, with which the physician or pharmacist must comply before a license to practice can be secured, there is no law to prohibit any man from dispensing a so-called cure-all, irrespective of his qualifications or whether he has paid any license fee or passed any examination. Dr. Wiley holds that if it is right to protect the public against the lack of ability of the pharmacist and the physician, then that protection should be upheld regarding everybody manufacturing for sale or selling nostrums, etc. The law should require that everybody who proposes to practice medicine or dispense a remedy should be required to pass the same examinations as do physicians and pharmacists.

The old doctrine was that an ethical remedy was one that published its formula, but many formulas offered to the medical profession have been found to be absolutely false. Therefore, the Council on Pharmacy and Chemistry is investigating the remedies which are not mentioned in the United States Pharmacopeia or National Formulary, eliminating those which are false or which are represented under false statements and character. Dr. Wiley believes that all new remedies should be subjected to the same rigid tests, and should be made to occupy the same position, and that no remedy should be recommended to the profession or to the public that will not meet the provisions laid down by the council.

Dr. Wiley also stated that the success of every "patent medicine" or nostrum rests on its containing dope or on its being advertised under false pretenses. The people are led to imagine that they have diseases they have not in order to induce them to take these medicines. Such advertising is vicious and the deception practiced criminal. Dr. Wiley is of the opinion that this question must be fought out on the following lines: Practitioners of medicine and pharmacy must be put on the same plane. Because a man has a quack remedy is no reason why he should have privileges under the law. By securing efficient legislation the day of quackery will soon pass. Dr. Wiley deems it strange how the law protects the fakir and the quack in some respects. If a man drinks straight whisky, a stamp must be on the package; but the maker of fake whisky does not have to buy stamps, because the government furnishes them. It is said that the government paid \$500,000 in one year to furnish these stamps for fake whisky manufacturers and for inspectors to put them on.

#### Nostrums and Proprietaries vs. United States Pharmacopeia and National Formulary Preparations.

DR. C. U. SMITH, Baltimore, said that the manufactured coated pills inaugurated the era of proprietary medicines. Prior to this time the profession of pharmacy was on a high plane, and the physician depended on his professional skill to aid him with his therapeutics. Following closely on the manufactured pill came the elixirs with their elegant appearance and agreeable taste. Then the retail druggist and the manufacturer began the compounding of different combinations,



gradually dropping the name of elixir and substituting trade names. Later the synthetics became prominent. These preparations, although patented, have never been looked on by the profession as proprietaries. They have displaced medicinal agents of indefinite strength and unreliable physiologic action. Dr. Smith believes that ethical preparations of this kind have done much for progressive pharmacy and therapeutics.

The commercializing of the pharmaceutical and, to a certain extent, of the medical profession, has, in Dr. Smith's opinion, been fruitful in multiplying non-ethical nostrums. Many of the nostrums brought before the medical profession present in their literature impossible pharmacologic and chemical formulas. Dr. Smith approves of the excellent work that is being done by the Council on Pharmacy and Chemistry of the American Medical Association in exposing the fallacy of the claims made for some of these preparations.

Dr. Smith also called attention to the fact that many old, tried and valuable drugs have been displaced by newer drugs, chemicals and proprietaries. He thinks that many factors contributed to this revolution: First, the demand for more elegant and palatable preparations. Second, many of the new remedies are distinct advances in therapeutics and pharmacy. Third, higher or better education in medicine has had an appreciable effect on the excessive use of drugs. Fourth, the fact that the average medical graduate is poorly educated in pharmacy, pharmacology and therapeutics has led to the wholesale use of ready-made prescriptions by such men. The majority of medical graduates are lamentably weak in prescription writing. Dr. Smith is convinced that the use of manufactured prescriptions is unscientific, degrading and harmful. Nothing has had more to do with the degeneration of professional pharmacy than the extensive use of proprietaries. The art of prescription writing is almost lost, and the pharmacist has become largely a nostrum vendor. It hurts the doctor financially, as he puts these remedies into the hands of the laity, and physicians are largely responsible, through the nostrum evil, for making drug fiends of their patients and others.

As a remedy for these conditions, Dr. Smith suggested the better education of the student in pharmacy, pharmacology and therapeutics. The course should be practical, and more attention should be paid to the newer methods of therapeutics, and excessive drugging should be discouraged. The student should be made better acquainted with the preparations of the Pharmacopeia and of the National Formulary, where he may find most of the combinations of merit that have become popular. A closer relationship between the state branches of the American Pharmaceutical Association and the state medical societies in affiliation with the American Medical Association would assist materially in checking the nostrum evil and in improving our materia medica and therapeutics.

Mr. H. P. Hynson was the next speaker. His paper will be published in *THE JOURNAL* later.

#### DISCUSSION.

MR. JOHN B. THOMAS, Baltimore, believes that the time has come when the physician will appreciate that it is best for him to use the preparations of the United States Pharmacopeia and National Formulary and to forget all about proprietary medicines. He said that the local pharmacist is not only willing but glad to prepare any of the preparations of uniform composition and strength, thereby assuring the doctor that his prescription will always be the same, no matter where it is compounded. If the physician will prescribe under the Latin pharmaceutical title he will prevent, to a certain extent, the public and patient from gaining knowledge that can be of any possible good to either. He referred to an epitome of the United States Pharmacopeia and National Formulary which is about to be published by the American Medical Association and which he believes will be of great advantage to all.

Believing that it would be interesting to know what percentage of proprietary remedies are used, and also the percentage of physicians using them, he collected statistics from a number of pharmacies in Baltimore, each pharmacist being requested to go over 500 prescriptions written consecutively. The result is as follows:

#### NORTH BALTIMORE.

Prescriptions examined, 500.  
Physicians prescribing same, 144.  
Proprietary preparations prescribed, 160, or 32 per cent.  
Physicians prescribing proprietaries, 29, or 20.13 per cent.

#### EAST BALTIMORE.

Prescriptions examined, 500.  
Physicians prescribing same not stated.  
Proprietary preparations prescribed, 230, or 46 per cent.  
Physicians prescribing proprietaries, 53 (can not compute).

#### SOUTH BALTIMORE.

Prescriptions examined, 500.  
Physicians prescribing same, 75.  
Proprietary preparations prescribed, 241, or 48.2 per cent.  
Physicians prescribing proprietaries, 43 or 57.33 per cent.

#### CENTRAL BALTIMORE.

Prescriptions examined, 500.  
Physicians prescribing same, 115.  
Proprietary preparations prescribed, 106, or 21.2 per cent.  
Physicians prescribing proprietaries, 50 or 43.47 per cent.

#### ANOTHER PHARMACIST, CENTRALLY LOCATED.

Prescriptions examined, 500.  
Physicians prescribing same, 180.  
Proprietary preparations prescribed, 56, or 11.2 per cent.  
Physicians prescribing proprietaries, 41, or 22.77 per cent.

#### WEST BALTIMORE.

Prescriptions examined, 500.  
Physicians prescribing same not mentioned.  
Proprietary preparations prescribed, 153, or 30.6 per cent.  
Physicians prescribing proprietaries, 75 (can not compute per cent.).

Dr. S. K. BOND, Baltimore, said that although he does not, as a rule, use proprietaries, he is occasionally compelled to do so. He suggested more frequent revision of the National Formulary and the advisability of numbering its preparations so that patients would not be given an opportunity to read prescriptions.

Dr. CHARLES CASPAR, Baltimore, presented a number of preparations described by the National Formulary which corresponded to certain proprietaries, and directed attention to their physical characteristics. He said that these preparations can be prepared equally well, chemically and physically, in any pharmacy.

Dr. A. D. McCONACHIE, Baltimore, said that the ignorance which is responsible for the use of many proprietaries should be overcome by a more thorough knowledge of prescription writing.

#### PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Regular Meeting, held Jan. 9, 1907.*

The President, Dr. Charles K. Mills, in the Chair.

#### Roentgen Diagnosis in Gastric and Intestinal Disease.

Dr. HENRY HULST, Grand Rapids, Mich., stated that the tendency in Roentgen ray diagnosis has been away from the screen and toward the plate. Both methods, however, have their advantages, the screen for general orientation and motion, the plate for detail and permanent record. Bismuth is needed, but the aim should be to use no more than suffices for the purposes of the examination. Position exerts a marked influence on the location of the stomach and intestines. The greater the ptosis the more pronounced the effect. The diaphragm is notably higher on the side on which the person examined lies, and diaphragmatic breathing is greatly in excess to the other side. The horizontal position permits the heart, diaphragm, stomach and colon to ascend, and causes the stomach also to gravitate towards the fundus. This position tends to replace the prolapsed stomach. Examination for gastrop-tosis in the recumbent dorsal position is therefore misleading. To bring out the existing ptosis it is necessary to put the patient in the erect (sitting or standing) position. Pressure against the hypogastrium pushes the stomach upward; to a less extent, the diaphragm and heart also. Voluntary retraction of the lower abdomen produces a like result and is attended, moreover, by a reflex enlargement of the lower thoracic aperture. This is the exact reverse of what takes place in enteroptosis in which the diaphragm descends, together with the other organs, and the lower thoracic aperture diminishes in size.

This suggests the existence of a definite relation between the shape of the body and the position of the internal organs. The Becker-Lenhoff index is but one tentative expression of



this relation. In proportion as people are well-built their stomachs approach a certain type. Dr. Hulst asserts that good figures are rare, especially among women, and that normal stomachs must, therefore, be rare also. The more of a Venus a woman, the more of an Apollo a man, the more perfectly their stomachs correspond with the normal type; but, the author feels that the line is instinctively drawn at enteroptotic Venuses and gastropotic Apollos.

#### Use of Roentgen Rays in Diagnosis.

DR. E. W. CALDWELL, New York City, stated that all Roentgen ray examinations are made by means of shadows which are obtained by interposing the object examined between a source of rays and a fluorescent screen or a photographic plate. Dr. Hickey's definition of a skiagraph was quoted as "a record of density, produced by the Roentgen rays, and made in accord with the laws of projection." No one can be safely trusted to interpret a skiagraph until he has learned to regard it, not as a view, but as a projection, and to be constantly on his guard against erroneous impressions of perspective. This tendency to consider the skiagraph or so-called *x*-ray photograph as a photographic view has led to much of the dissatisfaction with the Roentgen ray, and sometimes caused its veracity to be called in question. The Roentgen ray, it is claimed, does not lie, but one who incorrectly interprets its shadows may seem to be lying when he is only mistaken. Considering the skiagraph as a projection and not as a view, the absurdity of the requests for side views of shoulders and hip joints, familiar to every Roentgen-ray worker, is apparent. Transverse projections of these parts superimpose the shadows of both sides as well as everything between, and the rays must pass through the body in its long diameter. Such projections are, therefore, in most cases, useless.

With all their imperfections, Dr. Caldwell regards stereoscopic Roentgen projections as extremely valuable in many cases; and, in spite of the difficulty of technic, he feels that they must come into more general use. Since in Roentgen work nothing is gained by the print, he thinks it better to use the glass plate and avoid the loss of detail incident to the transfer to printing paper. Whether plate or print is used, it must be remembered that the shadows of similar objects are similar in color. Reference was made to the skiagraph of a supposed vesical calculus, the shadow of which, however, was dark and due to gas trapped in the rectum.

DR. CHARLES LESTER LEONARD said that the practitioner should demand the employment of the Roentgen method of diagnosis by a Roentgenologist whose ability and experience fit him to make diagnoses by its aid, which the practitioner himself can not make. Anatomy, viewed from the Roentgenogram, is entirely different in its expression from any other view. Pathological anatomy is likewise very different and its interpretation demands an experience and study that can only be secured by those devoting time to it.

DR. MIHRAN K. KASSABIAN said that the Roentgen ray is the only means of differentiating rare, obscure and simulating conditions, such as fractures, epiphyseal separations and displacements from dislocations.

#### Roentgen Rays in Dermatology.

DR. RUSSELL H. BOGGS, Pittsburg, made a plea for a more conservative use of the Roentgen rays in dermatology. In order to apply the rays successfully he said the operator must be able to decide whether Roentgen treatment is the best method available, and then be able to give the dosage necessary to produce the desired physiologic action. He suggests that if every operator would first learn the action of the rays by making radiographs of the more difficult portions of the body, results would be more uniform. As the rays are only indicated in certain lesions, and should not be employed in a routine manner, each case should be carefully studied and then the method of treatment decided on. In the treatment of chronic eczema, stubborn cases of acne, psoriasis, keloid and lupus vulgaris, Dr. Boggs has found the Roentgen method efficient. As an epilatory agent the method is superior to any other in the treatment of parasitic diseases, such as favus and tinca, sycosis and blepharitis. Considering the large amount of

ringworm and favus among school children in the poorer districts and the failure of prophylactic measures to prevent their spread, it seems to the author almost imperative that these cases should have *x*-ray treatment by an experienced operator. The danger is pointed out of having the rays applied by resident physicians, nurses or engineers.

#### Radiotherapy in the Treatment of Malignancy.

DR. GEORGE C. JOHNSTON, Pittsburg, considers malignancy in the abstract as a condition of cell anarchy, expressing thereby the total disregard of the individual cells for physiological law. This disregard is shown by the invasion of new territory and by remarkable multiplication. These new cell formations possess low resistance and poor reparative power, and when exposed to a dose of Roentgen ray, which in normal tissue would produce but transitory irritation, they undergo tissue death. The author shows that in the treatment of internal growths failure frequently occurs because in spite of every device an undesirable surface effect is produced before the deepest portions of the growth have received sufficient Roentgen ray. There is pointed out the constantly successful results of superficial malignant conditions in qualified hands and here the greatest value of the ray is shown in those conditions less favorable for successful surgical removal, such as epitheliomas in and about the alæ of the nose, on and about the eyelids, and about the eyes. It is stated that the treatment of carcinoma in the hands of certain operators has cast much discredit on the method, hundreds of absolutely unsuitable cases having been submitted to *x*-ray by inexperienced physicians. While he claims it as true that many primary circumscribed carcinomas have been successfully treated by Roentgen ray alone, yet he regards the wisdom of such treatment doubtful, believing it better to combine surgery and *x*-ray, submitting the patient to a series of anti-operative radiations, followed by extirpation of all infected tissue, and this again followed by a series of post-operative radiations. The objections that have been advanced to anti-operative radiations he states are theoretical only, and believes that an experienced surgeon will find no difficulty in operating on a patient who has been exposed to *x*-ray.

#### MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*One Hundred and First Annual Meeting, held in Albany, Jan. 28-30, 1907.*

*(Continued from page 632.)*

#### Pathology of Non-tuberculous Joint Infections.

DR. E. H. NICHOLS, Boston, classified these joint affections as serous, ulcerative, joint tending to become ankylosed, joint showing tendency to formation of new bone, fungous type with overgrowth of membrane and papillomatous growth extending into cavity. The majority of cases of the serous type can be cured by operation. The ulcerative type calls for moderate use and an attempt to increase the circulation by massage, etc. This course of treatment is also applied to the joints showing a tendency to the formation of new bone.

#### Pneumococcus and Typhoid Infection.

DR. ROSWELL PARK, Buffalo, said that joint affections occur as a purely toxic synovitis and as embolic or truly septic. Of typhoid joint affections there might be mono-poly-articular forms. Even the spine and temporomaxillary articulations may be affected by typhoid complications. If the joint complication is due to pneumococcus it is painful; if due to typhoid it is not painful. Hip involvement causes the patient to assume a peculiar position and these cases should be handled with care, as a joint already affected can be dislocated easily. Typhoid joint complications are not as infrequent as is supposed. The conditions in pneumonic joint complications are not very different from those in typhoid. Some cases occur early with very serious complications. Statistics collected by a physician in Liverpool show that of 31 patients 24 died.



### Symptoms and Diagnosis of Syphilitic and Gonorrheal Affections of Joints.

DR. REGINALD H. SAYRE, New York, thought that many syphilitic joints are taken for tuberculosis, rickets, scurvy, etc. The presence of a discharge, and a history of attacks shortly antedating the joint affection, and microscopic examination of fluid from the joint, are aids in diagnosis. A cure following antisiphilitic treatment does not necessarily mean that the patient was syphilitic. Gonorrheal synovitis may be primary or secondary. Gonorrheal infection may affect the spine, and in such cases the antigonorrheal serum may be useful.

### Staphylococcus and Streptococcus Joint Infections.

DR. LUCIUS HOTCHKISS, New York, said that the tendency to classify all acute joint inflammations as rheumatism is a source of danger in pyogenic infections. One should not condone the error of continuing to treat with salicylic acid those acute cases which are not promptly and favorably influenced by it, and in which prompt incision and drainage is the clear indication. Many of the acute pyogenic infections in their early stages have symptoms in common. All are acute in onset, are accompanied by pain, increased heat, redness, joint distension and obliteration of the contour, with altered position and function. The constitutional symptoms are elevation in temperature, rapid, feeble pulse, headache and sometimes delirium and coma. The acute sero-purulent forms of synovitis not specifically due to the streptococcus or the staphylococcus should be carefully differentiated by inquiry into the history, course, and onset, and if any doubt exists recourse should be had to aspiration and bacteriologic examination. High temperature in joint infections generally, when not accounted for by complications elsewhere, should arouse a suspicion of the presence of pus and make exploratory aspiration imperative. Only early recognition of the true condition in severe cases of acute septic arthritis can be of the slightest help toward averting certain disaster. During the course of septicemia joints may be affected and the local disturbance be so slight as not to attract the attention of the patient and hence, in such cases, it should be the rule to examine the joints daily. Though the diagnosis of acute pyogenic joint infections may often be simple, the differential diagnosis between etiologically different forms is often difficult. It is not sufficient to differentiate between serous or catarrhal synovitis, but we should endeavor to ascertain the cause. In cases where a focus of septic osteomyelitis is suspected, aspiration, combined with the use of the Roentgen ray, may be necessary to solve the mystery. Above all, the diagnosis to be practical in saving life and limb must be made early.

### Syphilitic Lesions of the Eyelids.

DR. FRANK J. PARKER, New York, said that the appendages of the eyes may be the seat of any or all of the lesions of the different lesions of syphilis. The most common are the exanthemata. On the eyelids they are of rapid growth and may occur at any age and period of the infection, and while they frequently involve the entire lid they result in little destruction of tissue. As a pustular eruption in congenital syphilis they are most frequent in infants. It is not uncommon to find the diffuse gumma on the eyelids in the early stages of the diffuse eruption. Among the rare forms of extra-genital infection we find chancre of the eyelids which may easily be mistaken for lupus, epithelioma, a suppurating hordeolum or chalazion. The right eye is the one most liable to infection. The condition is more common in males than in females.

Ocular infection may frequently be due to accidental causes. A physician may become infected by the coughing of a patient during a throat examination; five such cases are reported by Fournier. Infection may occur as other extra-genital infections are liable to do from the use of public towels, sponges, etc. The chancre most frequently is located on the conjunctival surface and rapidly involves the entire lid. Chancre of the eyelids is always accompanied by enlargement of the preauricular or the submaxillary gland. If treated early, and there is no destruction of tissue or deformity the prognosis is good. A case of syphilitic granuloma of the lower lid was

reported and another of chancre on the margin of the upper lid.

### Cancer; Retrospective and Prospective.

DR. ROSWELL PARK, Buffalo, described the attitude of the medical profession and of the public toward the cancer question, and related the difficulties encountered in getting state help in founding the Cancer Laboratory at Buffalo, which has been in existence about eight years. It is the first laboratory of the kind established. After outlining the work done by investigators in other laboratories, he concluded that it is evident that the advances in our knowledge of cancer made during the past two years are mainly attributable to the discovery of the transplantability of tumors in small animals, a possibility until recently denied. The establishment of this laboratory has pointed the way and shown the correctness of the view that the great problem of the origin and nature of cancer can only be solved by an elaborate and well supported attack from all directions, a conclusion which has been confirmed by the various other institutions that have followed this one. He exhibited a map showing the steady increase in mortality from cancer in the State of New York and an elaborate study of the city of Buffalo. The map might serve as a model for similar work in other cities and should be carried on in every city having a health board or a registry of deaths. He was sure that if any unprejudiced person would visit the laboratory and become acquainted with what is being done, he will feel that the work is one that the state should be proud of and that is deserving of the heartiest public support.

### Inflammation of Thoracic Duct.

DR. HENRY P. DE FOREST, New York, reported a case of inflammation of the thoracic duct. The clinical history showed that there was first ptomain poisoning from eating shell fish. Then aggravated symptoms followed from partaking of a cold-storage fowl, thereby greatly lowering the resistance in the intestinal tract, and thus permitting the ptomains, as well as the bacteria, to gain access to the system. Marked leucocytosis was present, the number of whites reaching nearly 100,000. When each valve was overcome, there would be a chill and finally the abscess perforated into the jugular vein, the symptoms of septicemia developed during the last week of life. Necropsy showed all the organs to be normal, except the kidneys and liver. A mass the size of a bolonga sausage was found containing an abscess cavity large enough to admit the finger. The mesenteric glands were greatly enlarged. This mass was at the receptaculum chyli and the condition extended up to the jugular vein. Several distinctly nodulated masses were found, all about the size of a finger. Pus could be squeezed from the thoracic duct into the jugular vein.

### Underfeeding and Its Associated Ills.

DR. DUDLEY ROBERTS, Brooklyn, expressed the conviction that the cure of chronic functional ailments is usually to be found in the correction of the mental and physical hygiene of each patient. All dietetic problems are essentially individual problems and must be worked out on this basis. Generalized reductions in dietary standards based on the prevalent assumption that we eat too much are to be deprecated. This broad condemnation of our dietary standards is not justified by any demonstrated facts or warranted by the current high average of health and efficiency. Overeating at a particular meal, either daily or occasionally, are dietetic errors of a different kind. In the general clamor about the danger of overeating we have lost sight of the danger of underfeeding. After careful elimination he concludes that the only absolute criterion as to whether a patient is underfed or not is the effect of an increased diet. An individual afflicted with those ills known to be due to underfeeding, and who has the physical constitution suggestive of this state, is entitled to the experimental test of an increased dietary. From an analysis of hospital and private cases the underlying causes of habitual underfeeding are the saving of time and money, loss of appetite and complaints referred to the stomach. The author considered different types of cases due to this cause, the gastric type, the intestinal type, the anemic type and nervous types.



## Book Notices

THE EAR AND ITS DISEASES, a Text-book for Students and Physicians. By S. S. Bishop, B.S., M.D., LL.D., Honorary President of the Faculty and Professor of Diseases of the Nose, Throat and Ear in the Illinois Medical College, etc. Illustrated with 27 colored lithographs and 200 additional illustrations. Cloth. Pp. 439. Price, \$4.00 net. Philadelphia: F. A. Davis & Co., 1906.

The author has rewritten his earlier text-book in which stress was laid more on disease of the nose and throat; the 18 chapters on the ear have been increased to 36, and only the essentially related conditions of the nose and throat are touched on in four chapters. Five chapters are devoted to a presentation of the anatomy of the ear, for which he has made and utilized many good preparations, although it is regrettable that the half-tone reproductions are not better. The many cuts borrowed from Politzer show the usual inferiority to the German originals, and the colored plate of the drum-heads is still very crude and almost caricatures the exquisite "*Belcuchtungsbilder*." The colored frontispiece furnishes an admirable teaching diagram, although the right ear seems connected with the left side of the nose, and other confusing details need to be explained away. About 80 of the 200 illustrations are of instruments, about 30 being noted as "the author's."

The statistical summary of 21,000 cases remains as in the work of eight years ago, and has not been supplemented by more recent data. The operative results of the author or others are not cited; but he quotes many individual cases and illustrates a dozen wounds at different periods after operation. His descriptions of mastoid operations corresponds with the earlier work of Schwartze and Stacke, as set forth by C. R. Holmes in 1892, and he is evidently conservative as to unnecessary chiseling—his radical operation being far less radical than the simple or "modern" operation of our New York colleagues. If he realized that the antrum is a part of the tympanum and called his "Stacke operation" a tympanic exenteration, omitting the overworked term radical unless to note those cases in which all mastoid structure is removed, there would be less to criticize in his presentation of mastoid exsiccation. It will be better to imitate his conservatism rather than to amputate almost all of the temporal bone for fear that it may become diseased. When he urges that all pathologic tissue be removed and illustrates at least one case of thorough tympanomastoid exenteration, the author gives sound advice, undismayed that others may claim that they are (needlessly) more radical than he.

His list of indications for operation is fairly instructive, but he himself reads between the lines in many instances, as witness several of his cases reported in his chapter on influenza mastoiditis, which were brought through without operation. His excessive use of ice can not be commended, nor can counter-irritation of the mastoid be approved. He makes no mention of the rongeur in mastoid work and speaks only of the de Villbiss instrument for enlarging the trephin opening to explore for brain abscess. In this search for pus in the brain he generally uses the aspirating needle, as he does in the lateral sinus; it is to be hoped that it will be as utterly discarded as the gimlet for opening the mastoid. The description of a sinus-thrombosis operation is principally quoted from E. Meier and hardly suggests much personal experience. In fact, the consideration of intracranial extensions of ear disease occupies but seven pages, and is not up to the general standard of the work. More satisfactory are the chapters on the influence of general constitutional disorders and of drugs on the ears.

Throughout the work Dr. Bishop claims to present his own experience and findings rather than to round out a treatise by citing the varying views of authorities; so his quotations, though numerous, are far from exhaustive and not always representative. His condemnation of certain measures, like Charcot's use of quinin for the relief of Meniere's symptoms, shows that he knows the matter rather by hearsay and does not realize that Charcot strove to utilize the injurious action of large doses of quinin in order to convert into a destructive lesion one that was only irritative.

The most characteristic section of the work is still the author's inflation procedure with the air tank and his advo-

cacy of astonishing pressures. He quotes Politzer as stating the pressure for "my method varies, as a rule, between 15 and 60 pounds;" also "during thirteen years only 14 cases of ruptured drum-heads are known. In the case of a normal membrana tympani a pressure of from 45 to 60 pounds is required to cause rupture"—assertions which can not be found in Politzer's later writings. His text-book (Fourth Amer. Ed., 1903) gives the pressure as from 0.1 to 0.4, atmosphere (from 1.5 to 6 pounds) or more.

It is with unabated astonishment that one reads: "The author has never ruptured a drum-head by compressed air," and further: "A case of tubal stenosis resisted 90 pounds with the nasal bulb, but 50 pounds pressure carried a spray into the middle ears through the catheter." "If more than from 15 to 30 pounds be used with the catheter-beak not properly adjusted, there is a possibility of forcing the air into the sub-mucous tissues and producing a dangerous emphysema. We have never seen any such results from this cause; but three deaths are recorded." When we remember that the cheeks and mouth can only resist a pressure of from 5 to 7 pounds, and the palate probably little more, we can understand some of the harmlessness of the inflation without the catheter, and must admire the providential safeguards that protect the middle ear from most of the stress of such dangerous pressures, which in caissons and elsewhere have been frequently known to rupture the drum-head. Used with only some 10 pounds of pressure, as seems usual with Dr. Bishop, his procedure may be effective and safe.

RECENT ADVANCES IN THE PHYSIOLOGY OF DIGESTION. Delivered in the Michaelmas Term, 1905, in the Physiological Department of University College, London. By E. H. Starling, M.D., F.R.S., Jodrell Professor of Physiology. With twelve illustrations. Cloth. Pp. 156. Price, \$2.00 net. Chicago: W. T. Keener & Co., 1906.

These lectures consist almost entirely of a popular form of discussion of the various features of digestion, in connection with the important investigations which have been carried out in the laboratory of the author at University College, and which in turn rest on, or were incited by, Pawlow's researches. The most striking feature of the work of Starling's school is on the interaction between the different sections of the alimentary tract. These, he demonstrates, are not regulated and incited so much by nervous mechanisms as Pawlow had believed, but rather by chemical substances which are formed under the influence of the products of digestion in one part of the tract, and which are absorbed into the blood and produce a stimulation of some other portion of the tract. Thus, under the influence of the acid chyme on the upper part of the small intestine, the intestinal mucosa produces a substance called "secretin," which causes a rapid secretion of pancreatic juice, and also, probably, of bile. These stimulating substances are called by Starling "hormones" (from *ὁρμαω* arouse or excite), a name which will probably become conspicuous in the physiologic literature of the future. The hormones, as yet discovered, do not belong to the chemically complex substances like toxins and enzymes, but seem more comparable to the alkaloids and similar substances of definite composition. Starling compares them to the drugs of the pharmacopeia, saying: "The practice of drugging would seem therefore to be, not an unnatural device of man, but the normal method by which a number of the ordinary physiological processes of the organism are carried out."

The physician will find in this book a fairly clear and relatively brief discussion of the most recent advance in the physiology of digestion, or what Starling calls the "growing border" of the subject, and it should be of great interest for those who are concerning themselves particularly with the subjects of gastrointestinal disturbances. The investigations discussed in this book are very valuable, as supplementing and checking the results obtained in Pawlow's laboratory, which have exerted such a profound influence on the modern conception of the functions of the digestive tract. The style of discussion is reasonably clear, although one is impelled to ask to what sort of an audience the lectures were delivered, for in places the author spends time in presenting the simplest elementary facts about the physiology of digestion, such as should be familiar to a high-school graduate, while for the most part the level of



the discussion requires a well-trained mind to comprehend the full significance of the subject. Many American surgeons would be delighted to question the position taken by Starling in considering the gall bladder as an organ of considerable importance as a reservoir for bile to be discharged at each meal.

**PHOTOSCOPY (Skiascopy or Retinoscopy).** By M. D. Stevenson, M.D., Ophthalmic Surgeon to the Akron City Hospital, etc. Illustrated. Cloth. Pp. 126. Price, \$1.25 net. Philadelphia: W. B. Saunders Company, 1906.

This is a most valuable book and one which even the most advanced ophthalmologist may read with profit. The new term photoscopy which the author uses instead of the more familiar terms, retinoscopy, skiascopy, shadow test, etc., means to "look at light," and he uses this term to draw the attention of the reader to the fact that it is essentially a *light* test. He considers the shadows as secondary and keeps one's attention directed toward the light area seen in the pupillary space and its rate and direction of movement under different conditions of refraction mirrors, etc. The importance of emphasizing the real value of the light area in this test can not be too strongly stated. The average book tends to direct attention to the shadow, which is manifestly incorrect and leads to errors, as the shadows occupy the peripheral irregular portion of the cornea, while the light area is to be found at the center, the part through which the light rays must pass when the pupil is of normal size. The shadows, however, are the more prominent in appearance, and it requires careful concentration of one's attention on the light area to avoid being influenced by the striking shadow effects. If one will only heed the author's insistence on the importance of this light area in all cases, the results will speak for themselves. The matter is presented clearly and is well classified and arranged. The print is large and distinct and the work abounds with practical illustrations.

**THE NERVOUS SYSTEM OF VERTEBRATES.** By J. B. Johnston, Ph.D. Professor of Zoology in West Virginia University, with One Hundred and Eighty Illustrations. Cloth. Pp. 370. Price, \$3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

This work will be cordially welcomed by zoologists, anatomists and scientific neurologists. It is written from a biologic rather than a medical point of view, so the average general practitioner will deem it to be somewhat outside his sphere. It is based largely on original investigations by the author, published here for the first time, and it is profusely illustrated. The author accepts the neuron theory with certain modifications, admitting the occasional fusing of nerve cells with each other and the anastomosis of dendrites of different cells. He states that that part of the neuron theory which claims that nerve cells make connections with one another only by contact, is definitely disproved. As to the neurofibrillæ, he doubts the view that they constitute a special conducting substance in the nerve cell, but considers it more reasonable to regard them "as a dense portion of the colloid substances in the cytoplasm of nerve cells, whose definite form and arrangement are conditioned on the intimate structure of the protoplasm as a whole." He does not accept the "auto-genetic" or "peripheral" theory of nerve regeneration advocated by Bethe, Ballance, Stewart and others, but states that the later researches of Cajal give positive evidence that the nerve is regenerated by outgrowth of the proximal stumps of the cut fibers.

**PROGRESSIVE MEDICINE.** A Quarterly Digest of Advances, Discoveries and Improvements in Medical and Surgical Sciences. Edited by H. A. Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College, assisted by H. R. M. Landis, M.D. Paper. Pp. 349. Philadelphia: Lee Bros. & Co.

This volume discusses fully the literature of the subjects mentioned. Dr. J. Dutton Steele, in his discussion of the diseases of the digestive tract and allied organs, devotes considerable space to occult bleeding as a sign of gastrointestinal disease and to the physiology and pathology of the gastric secretion. Skiagraphy in the diagnosis of gastrointestinal diseases also comes in for its share of attention. This subject is something comparatively new and, therefore, of more than passing interest. Dr. William T. Belfield has charge of the department on genitourinary diseases and presents a most excellent résumé on this subject. Diseases of the kidney are considered by Dr. J. R. Bradford, Dr. J. C.

Bloodgood discussing anesthesia, fractures, dislocations, amputations, surgery of the extremities and orthopedics, while Dr. H. R. M. Landis contributes as usual, the practical therapeutic referendums. Much matter has been collected in this volume which will, no doubt, prove useful to the practical physician.

**ANATOMY, PHYSIOLOGY, PATHOLOGY, DICTIONARY.** Edited by W. A. Evans, M.S., M.D., A. Gehrmann, M.D., and W. Healy, A.B., M.D. Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, under the editorial charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. IX. Series 1906. Price, \$1.25. Chicago: The Year-Book Publishers.

This volume reviews the advances of the year in anatomy, physiology and bacteriology. The abstracts are short, as a rule, and comprise the practical results arrived at by various authors. Pathology is made to include much that seems to fall properly under the head of clinical laboratory methods. A somewhat unique feature of the book is the dictionary of new words which shows in a striking manner the impress that medical progress is making on language. Over a hundred new words and phrases are explained in this section. The volume sustains the reputation of the series for conciseness, accuracy and practical value to the physician.

**OPERATIVE TREATMENT OF PROLAPSE AND RETROVERSION OF THE UTERUS.** By J. I. Parsons, M.D., M.R.C.P., M.R.C.S., Physician to the Chelsea Hospital for Women, Late Surgeon Royal Maternity Charity, Fellow of Royal Medical and Chirurgical Society, Obstetrical Society of London. Cloth. Pp. 90. Price, \$1.25 net. London: John Bale Sons and Danielson, Ltd. New York: William Wood & Co.

This monograph gives the results of the author's experience in twenty years' work in a special hospital for women. Parsons takes up first the anatomy and physiology of the pelvis and the organs contained therein, the general causes of displacement, and the treatment. In prolapse, he injects into the broad ligament a solution of quinin, gr. xii, sulphuric acid dil., m. xxx, and distilled water, 3i, in order to produce adhesions by the ensuing inflammation and effusion of lymph. After injecting the solution the uterus is placed in antelexion and kept in that position by a pessary. He claims for this operation that there is no pain afterward, no loss of blood, no shock, and no interference with subsequent pregnancy. The technic for this and for other operations is illustrated.

**LECTURES ON MIDWIFERY FOR MIDWIVES.** By A. B. Calder, M.B., M.R.C.S., Lecturer on Midwifery to London County Council, to St. Mary's Midwifery Training School, Fulham, etc. Cloth. Pp. 274. Price, \$2.00 net. New York: William Wood & Co.

This book consists of lectures to classes in midwifery. It considers briefly the anatomy and physiology of the pelvis and pelvic organs, the mechanism and management of labor, infant feeding, abnormal conditions affecting the mother or child, and the hygiene of the lying-in chamber. The book concludes with chapters on the midwives' act and the rules of the central midwives' board of Great Britain. It is a little too comprehensive for nurses and hardly complete enough for use as a text-book for medical students.

**SKIN AND VENEREAL DISEASES, NERVOUS AND MENTAL DISEASES.** Edited by W. L. Baum, M.D., H. T. Patrick, M.D., and W. Healy, A.B., M.D. Practical Medicine Series. Comprising Ten Volumes of the Year's Progress in Medicine and Surgery, under the general editorial charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume X. Series 1906. Cloth, Pp. 254. Price, \$1.25. Chicago: The Year-Book Publishers.

This volume is the last of the series of ten issued in 1906. It gives a good résumé of the advances made within the past year in the subjects with which it deals. The book is carefully edited and written with the evident idea in view of being of value to the general practitioner. The arrangement of the work and a number of good illustrations serve to make it a practical and useful volume.

**THE HARVEY LECTURES,** Delivered Under the Auspices of the Harvey Society of New York, 1905-06. By Prof. H. Meyer, Prof. C. von Noorden and others. Cloth. Pp. 337. Philadelphia: J. B. Lippincott Company, 1906.

This volume contains the thirteen lectures given in the first course of the Harvey Society. A majority of these lectures have appeared in THE JOURNAL at different times since their delivery.



## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

MAINE Board of Registration in Medicine, Common Council Room, Portland, March 5. Secretary, Dr. W. J. Maybury, Saco.

MASSACHUSETTS Board of Registration in Medicine, Room 15, State House, Boston, March 12-13. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

CONNECTICUT Medical Examining Board (Regular), City Hall, New Haven, March 12-13. Secretary, Dr. Charles A. Tuttle, New Haven.

CONNECTICUT Eclectic Medical Examining Committee, State Capitol Building, Hartford, March 12. Secretary, Dr. George A. Faber, Waterbury.

CONNECTICUT Homeopathic Medical Examining Committee, New Haven, March 12. Secretary, Dr. Edwin C. M. Hall, New Haven.

IOWA Board of Medical Examiners, Des Moines, March 19-21. Secretary, Dr. Louis A. Thomas, Des Moines.

OKLAHOMA Board of Medical Examiners, Guthrie, March 26-27. Secretary, Dr. J. W. Baker, Enid.

**Maryland December Report.**—Dr. J. McP. Scott, secretary of the Board of Medical Examiners of Maryland, reports the written examination held at Baltimore, Dec. 12-15, 1906. The number of subjects examined in was 9; percentage required to pass, 75. Of the 63 applicants who were present, 26 participated in the examination for the first time, and of these 20 were successful. Thirty-four applied for re-examination in branches in which they had previously failed; of these 15 were successful, working off all branches. Primary examinations require a general average of 75 per cent. Those re-examined are required to make 75 in each branch. Three took the examination for second year students and have completed studies in anatomy, chemistry, materia medica and physiology. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Howard University .....	(1906)	75, 80	
Georgetown University .....	(1904)*		
George Washington University.....	(1905) 81; (1906) 75, 80, 83		
Maryland Med. Coll., (1904)*; (1905) 79; (1905)*; (1906)*			
University of Maryland, (1902)*; (2, 1904)*; (2, 1905)*; (1905), 83; (2, 1906)*; .....	(1906) 75, 80		
Baltimore Med. Coll.....	(1904) 75; (1906) 89; (2, 1906)*		
Coll. of P. and S., Baltimore, (1902)*; (1903) 84; (1906) 88, 88			
Leonard School of Med., Raleigh, N. C.....	(1905) 83		
University of Pennsylvania .....	(1894)*; (1906) 79		
Johns Hopkins Med. School, (1903) 86; (1905) 85; (1906) 87			

#### FAILED.

George Washington University.....	(1906) 70
Maryland Med. Coll., (1904)*; (2, 1905)*; (1906) 59, 64; (3, 1906)*.	
Baltimore Med. Coll.....	(1905)*; (1906) 69; (2, 1906)*
University of Maryland.....	(1905)* (1906) 73; (2, 1906)*
College of P. and S., Baltimore.....	(1904)*; (1906)*
Baltimore University .....	(1902)*; (2, 1903)*
Leonard School of Med., Raleigh, N. C. ....	(1905) 68
Jefferson Med. Coll. ....	(1906)*
University of the South.....	(1904)*

\* Re-examined, no percentage assigned.

† One candidate was dismissed from examination for cheating.

The following questions were asked:

#### ANATOMY.

1. Give origin, insertion and nerve supply of the following muscles: Biceps (flexor cubiti), pterygoids, sartorius, gastrocnemius. 2. Name and give location of the ductless glands. 3. Name cavities of the heart and describe the valves. 4. Superficial and deep origin, course and distribution of the facial nerve. 5. What structures pass (a) through the jugular foramen, (b) through the foramen magnum? 6. Describe the hip joint.

#### SURGERY.

1. Describe the treatment of fracture of the patella. 2. Describe the fractures commonly designated (a) Pott's fracture, (b) Colles' fracture. Give treatment of each. 3. Tetanus: Give its cause, diagnosis, treatment and modes of prevention. 4. Otitis media: Define, classify, and give cause symptoms and treatment. 5. Acute glaucoma: Define, describe and give cause and treatment. 6. Describe amputation at middle third of forearm, naming important structures severed.

#### PATHOLOGY.

1. Name and describe the organisms most frequently associated with the following disease: Typhoid fever; malarial fever (estivo-autumnal type); tuberculosis. Give method of staining of each. 2. Describe in their order, and explain the cardinal signs of inflammation and state the terminations of inflammation. 3. State the difference in the gross pathology of acute lobar and bronchopneumonia and name the organism most frequently associated with each. 4. Give the avenues of entrance and elimination of the specific organism of typhoid fever. Name what you consider the most characteristic anatomic lesion and describe in detail the microscopic method of obtaining the Widal reaction. 5. Give the gross pathologic anatomy of cerebral apoplexy. 6. Explain what is meant by the terms physiologic and pathologic leucocytosis respectively. State whether a leucocytosis is present in the following diseases: Typhoid fever; malarial fever; appendicitis; acute military tuberculosis.

#### GYNECOLOGY AND OBSTETRICS.

1. Describe the care of the new-born child and how you would nourish it the first two or three days, there being an absence of the mother's milk. 2. Name several conditions of the mother that unfit her to nourish the infant. 3. Give the various dimensions of the pelvis and describe what presentations are best adapted to them. 4. What indications require the use of the forceps, give your method of using them, and the danger of their use to mother and child. 5. Describe the mechanism of a breech presentation and how would you dispose of the cord during the expulsion of the child. 6. Describe the method of delivering a face or frontal presentation.

#### PRACTICE.

1. Define: (a) Pertussis, (b) pleurodynia, (c) herpes zoster, (d) pyonephrosis, (e) cholelithiasis. 2. Name symptoms of: (a) variola, (b) acute colitis, (c) locomotor ataxia. 3. Differentiate between: sero-fibrinous pleurisy, lobar pneumonia and tubercular consolidation of the lung. 4. By what symptoms could you arrive at the earliest positive diagnosis of typhoid fever? 5. Treatment of: (a) chorea, (b) ulcerative stomatitis. 6. Give diagnosis and treatment of early stage of pulmonary tuberculosis.

#### CHEMISTRY.

1. Define the terms "normal salts," "acid salts," "basic salts." Give the chemical composition of physiologic "normal salt solution," with the approximate amounts of each ingredient. 2. Give the formula for the general properties of and the usual source in nature of carbon monoxid and carbon dioxid respectively. If inhaled describe how they act chemically as poisons. 3. Give the chemical composition (formula) and general properties of plaster of Paris. Explain in detail the process of setting of plaster. 4. Give the general properties of and name the antidote for carbolic acid ( $C_6H_5O$ ). Construct its graphic formula and show what relation it bears to benzene ( $C_6H_6$ ). 5. Name the chief chemical constituents of gallstones and give in detail a test for the detection of bile in the urine. 6. Give in detail a test for the detection of lactic acid in a specimen of gastric contents.

#### MATERIA MEDICA.

1. Give the chemical name of Epsom salts, Rochelle salts, glauber salts. 2. Mention the ingredients and give the dose of pulvis glycyrrhizae compositus. 3. Give the composition dose and pharmaceutical name of Basham's mixture. 4. Name three drugs belonging to each of the following classes: (a) Narcotics, (b) diaphoretics, (c) ecboics. 5. What is the antidote for arsenic and how is it prepared? 6. Give the derivation of opium. What amount of (a) powdered opium, (b) tincture opium, (c) camphorated tincture of opium would equal in effect one-fourth grain morphin sulphate?

#### THERAPEUTICS.

1. Define therapeutic incompatibility, chemical incompatibility, and give illustrations of each. 2. Describe hypodermoclysis and the conditions in which it is practiced as a therapeutic means. 3. Write a compound prescription for an adult suffering from insomnia. 4. Write a prescription containing at least two drugs, for an adult suffering from acute articular rheumatism. 5. Mention three drugs to accelerate the action of the heart and give the dose of some official preparation of each. 6. Name three drugs used to retard the action of the heart and give the dose of some official preparation of each.

#### PHYSIOLOGY.

1. Define secretion and excretion. What organs of the body are purely excretory? 2. What disturbances of digestion result from and absence of bile? 3. Enumerate the functions of the cerebellum. 4. Name the fluids of the alimentary canal. Where is the succus entericus formed? 5. How many kinds of muscular tissue are found in the body? Describe each. 6. Describe the main forms of intestinal movement and give some of the conditions that would affect such movement.

**Maryland Reciprocity Report.**—Dr. J. McP. Scott, secretary of the Board of Medical Examiners of Maryland sends us a report of physicians licensed through reciprocity during the year 1906. The following colleges were represented:

College.	Year Grad.	Reciprocity with.
George Washington University.....	(1905)	Dist. Colum.
Georgetown University .....	(1897)	Dist. Colum.
Georgetown University .....	(1901)	Delaware
National University, Washington, D. C.*.....	(1902)	Dist. Colum.
University of Maryland.....	(1881)**	
Baltimore Med. Coll. ....	(1901)	Virginia
Maryland Med. Coll. ....	(1903)	Vermont
University of Minnesota.....	(1897)	Dist. Colum.
Cleveland Homeo. Med. Coll.....	(1873)	Ohio

\* Merged with Medical Department of Columbia University in 1903.

\*\* Applicant was granted a permit to register by virtue of practice in Maryland prior to 1892.

**Increased Entrance Requirements.**—The faculties of the Department of Medicine of the University of North Carolina and of the College of Medicine of the State University of Oklahoma announce that after January 1, 1910, they will require, in addition to a four-year high school education, a preliminary year to be devoted to physics, chemistry, biology and languages.

**Indiana October Report.**—Dr. W. T. Gott, secretary of the Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Oct. 23-25, 1906. The number of subjects examined in was 16. The total number of candidates examined was 73, of whom 67 passed (including 2 osteopaths), and 6 failed. The following colleges were represented:



## PASSED.

College.	Year of Grad.	Anat., including Hist. and Embr.	Pathology and Bacteriology.	Physiology	Etology and Hygiene.	Medicine.	Mat. Med. and Therapeutics.	Gynecology.	Physical Diagnosis.	Ophthalmology and Otolary.	Surgery.	Chemistry.	Medical Juris- prudence.	Neurology.	Laryngology and Rhinology.	Obstetrics.	Pediatrics.	Total Points.
George Washington University.....	1906	92	90	60	48	89.6	90.5	55	45	28	100	50	18	30	20	84	15	915.1
College of P. & S., Chicago.....	1906	85	85	55	42	87.	87.4	40	48	18	90	50	20	27	17	84	18	853.4
College of P. & S., Chicago.....	1906	79	95	65	50	83.8	81.8	56	42	27	95	40	20	30	20	86	19	889.6
College of P. & S., Chicago.....	1906	75	85	55	38	76.4	78.5	52	42	29	100	50	18	30	20	76	18	842.9
College of P. & S., Chicago.....	1906	88	100	61	50	91.5	95.	52	45	26	100	50	20	30	20	87	20	935.5
College of P. & S., Chicago.....	1906	89	88	62	48	86.9	83.2	52	44	28	90	50	18	30	20	75	8	872.1
College of P. & S., Chicago.....	1906	87	85	61	45	87.	88.	48	45	26	100	50	20	30	20	84	17	893.
College of P. & S., Chicago.....	1906	75	90	55	42	84.1	85.7	50	40	21	95	40	18	30	20	81	19	845.8
College of P. & S., Chicago.....	1905	81	100	60	46	89.8	94.5	52	40	24	90	40	20	30	20	76	14	877.3
College of P. & S., Chicago.....	1905	62	50	58	48	65.	74.8	55	42	22	80	35	18	23	20	85	17	754.8
College of P. & S., Chicago.....	1903	76	80	60	48	82.	83.5	48	42	25	95	50	20	28	18	82	17	854.5
College of P. & S., Chicago.....	1901	75	90	55	30	86.6	90.	50	45	26	100	50	20	30	15	87	17	866.6
Chicago Homeo. Med. Coll.....	1903	81	90	61	48	85.	96.	48	42	26	100	50	20	30	17	96	20	910.
Rush Medical College.....	1906	83	98	65	50	90.5	92.5	56	42	20	95	50	18	25	17	99	16	917.
Rush Medical College.....	1905	88	92	60	50	83.5	83.5	52	44	28	100	50	18	27	20	75	14	885.
Rush Medical College.....	1906	77	85	54	45	88.3	90.	58	45	28	100	50	18	30	20	84	18	890.3
Rush Medical College.....	1906	90	98	62	50	86.	94.	52	44	28	100	50	20	30	20	75	17	916.
Rush Medical College.....	1905	79	80	59	48	88.1	86.4	50	42	28	100	50	20	26	20	92	18	886.5
Rush Medical College.....	1902	89	95	55	50	95.	92.9	52	44	27	100	50	20	30	20	86	14	919.9
American College of Med. & Surg.....	1905	88	88	58	50	94.	95.	56	46	30	100	50	20	30	20	87	20	932.
Illinois Medical College.....	1906	81	95	63	40	85.6	84.4	45	40	20	95	50	20	30	20	96	18	883.
Illinois Medical College.....	1906	90	86	65	48	89.5	90.	48	45	28	95	50	20	28	18	91	19	910.5
Illinois Medical College.....	1905	76	88	54	45	76.9	85.7	45	42	20	95	50	20	27	20	85	18	847.6
Hahnemann Medical College, Chicago.....	1896	73	75	42	40	84.	90.	52	49	25	88	40	18	26	15	85	19	821.
Hahnemann Medical College, Chicago.....	1893	60	80	24	48	81.	84.	45	44	28	80	50	20	30	20	95	15	804.
Northwestern University.....	1906	78	92	50	38	86.5	87.8	50	45	24	85	45	20	30	18	75	20	844.3
Northwestern University.....	1906	89	95	65	50	91.5	92.5	50	60	28	90	50	20	30	20	87	17	935.
Northwestern University.....	1905	91	100	67	50	95.	93.	59	48	30	100	50	20	30	20	89	18	960.
Indiana Medical College.....	1906	92	95	66	50	84.5	88.8	48	45	25	100	50	20	30	20	87	17	918.3
Indiana Medical College.....	1906	92	90	57	43	87.	88.3	50	45	27	100	50	20	28	20	87	14	998.3
Indiana Medical College.....	1906	75	70	41	48	77.	76.5	48	45	28	100	50	20	30	20	79	18	825.5
Medical College of Indiana.....	1894	68	80	59	50	84.8	86.9	48	46	28	95	38	18	28	20	85	15	849.7
Ft. Wayne College of Medicine.....	1905	75	98	58	48	85.3	89.	55	40	27	100	50	20	30	20	95	17	907.3
Hospital College of Medicine, Louisville.....	1906	76	45	59	42	83.	81.	40	38	22	85	50	15	27	18	69	9	759.
Hospital College of Medicine, Louisville.....	1906	77	95	56	48	85.1	82.3	50	46	28	100	50	20	30	18	81	18	884.4
Hospital College of Medicine, Louisville.....	1906	78	95	57	50	77.4	79.	48	42	26	100	50	20	30	20	77	18	867.4
Hospital College of Medicine, Louisville.....	1906	73	70	25	30	76.	81.7	46	42	28	80	40	18	27	20	86	13	755.7
Hospital College of Medicine, Louisville.....	1906	90	95	65	48	85.7	82.5	52	44	30	100	50	18	30	18	77	18	903.2
Hospital College of Medicine, Louisville.....	1906	63	80	58	46	77.3	76.	35	30	22	90	40	15	27	18	64	10	751.3
University of Kentucky.....	1906	91	80	57	38	83.3	96.6	42	38	23	80	50	20	25	17	77	14	823.9
University of Kentucky.....	1906	90	90	43	40	83.1	85.4	48	40	27	95	38	20	25	15	77	19	835.5
Kentucky School of Medicine.....	1906	76	70	51	44	79.1	81.8	46	40	23	100	45	18	26	20	88	14	821.9
Kentucky School of Medicine.....	1906	72	75	57	35	76.9	82.2	45	38	22	85	45	15	30	18	83	19	798.1
Kentucky School of Medicine.....	1906	76	65	57	40	75.7	75.5	55	38	29	95	40	18	30	20	83	18	815.2
Kentucky School of Medicine.....	1897	95	90	58	50	94.5	92.9	50	42	28	100	45	20	30	20	100	17	932.4
University of Louisville.....	1906	82	82	63	45	86.3	87.	50	42	28	95	50	20	30	15	82	13	870.3
University of Louisville.....	1905	78	65	38	45	78.8	81.6	50	35	26	90	50	18	25	20	77	8	785.4
Louisville Medical College.....	1906	80	85	60	45	86.5	85.8	45	42	28	100	50	18	27	20	88	19	879.3
Louisville Medical College.....	1906	75	60	53	40	75.6	82.5	50	42	26	85	48	20	26	17	84	13	797.4
Louisville Medical College.....	1906	90	90	62	50	86.	86.	52	45	26	95	50	20	30	20	91	19	912.
Louisville Medical College.....	1906	81	100	60	50	84.	91.8	58	48	28	95	50	20	30	15	82	18	910.8
Louisville Medical College.....	1906	81	60	58	40	77.4	79.	50	35	24	95	45	20	18	18	75	18	793.4
Louisville Medical College.....	1906	79	88	57	50	82.9	85.	45	40	24	95	50	18	30	18	83	18	862.9
Baltimore Medical College.....	1906	85	88	58	50	80	82.9	55	45	30	100	45	18	25	20	75	18	876.9
University of Maryland.....	1906	75	40	30	30	82.5	86.3	60	50	30	100	45	18	25	20	85	18	794.8
Harvard Medical School.....	1899	92	85	65	50	88.2	89	58	45	30	90	40	20	30	20	88	18	908.2
University of Michigan.....	1906	87	100	61	50	85.8	89.4	58	46	28	100	48	20	25	20	83	19	820.2
St. Louis University.....	1906	88	65	53	50	86.8	83.8	50	40	22	90	50	20	30	18	62	12	820.6
Columbia University.....	1900	35	85	58	46	84.4	84.9	37	40	23	100	50	18	30	20	91	13	815.3
Cornell University.....	1904	92	90	67	46	89.	89.8	50	42	26	100	50	20	27	20	83	17	908.8
Medical College of Ohio.....	1903	91	90	61	50	85.2	85.8	45	44	28	100	40	20	30	15	85	13	883.
Miami Medical College.....	1906	75	98	58	50	78.2	78.	52	48	29	95	45	20	30	20	81	16	873.2
Eclectic Medical Institute, Cincinnati.....	1906	78	80	58	50	98.	95.	56	45	28	95	45	20	30	18	84	20	900.
Medico-Chirurgical College, Philadelphia.....	1906	89	94	65	50	90.	87.8	58	45	28	100	45	20	30	20	94	13	928.8
University of Pennsylvania.....	1899	91	100	65	50	91.	90.	52	42	26	100	50	20	26	20	79	18	920.

## FAILED.

Illinois Medical College.....	1906	50	65	20	37.5	74.	74.	58	45	30	100	47	15	30	20	69	14	748.5
Indiana Medical College.....	1906	..	30	..	10.	74.1	74.7	30	38	20	27	20	10	15	8	21	2	379.8
Medical College of Indiana.....	1904	68	20	18	40.	67.8	76.9	40	38	22	90	28	18	20	20	72	17	655.7
Indiana Medical College.....	1906	64	30	38	42.	75.6	77.1	36	40	24	100	50	20	30	20	76	9	731.7
Eclectic Medical College of Indiana.....	1906	25	5	57	25.	50.	60.	25	20	22	90	30	20	25	17	71	8	550.
Eclectic Medical Institute, Cincinnati.....	1906	47	40	25	15.	80.	80.	30	38	20	75	15	20	26	15	71	10	607.

An International Association of Medical Museums.—It is now well recognized that a medical museum having its specimens properly catalogued and classified that they may be readily found and used when needed, is an important adjunct to the teaching facilities of the medical college. It is, therefore, interesting to know that a movement has been started with every prospect of success to organize an International Association of Medical Museums. Dr. James Carroll, curator of the Army Medical Museum, is the chairman of the committee on organization and the meeting will be held in May at Washington. The object of such organization is given as follows:

- The promotion in a general way of the efficiency of the medical museum as a compendium of scientific facts, a storeroom of material for research work and as a medium for teaching.
- Stimulation of the study and increase of the knowledge of gross pathology.
- Discussion of plans of cataloguing and classification and methods for the preparation and preservation of specimens.
- Arrangements for the exchange of specimens and for the specialization of certain museums along particular lines in which they may enjoy the best facilities, provided this can be done without detriment to the interests of any of the museums concerned.
- Consideration of the feasibility of publishing an *Index Pathologicus* in the future.

Thirty-three museums have already applied for active membership. Further particulars may be had from Dr. Carroll.



Utah January Report.—Dr. R. W. Fisher, secretary of the Utah Board of Medical Examiners, reports the written examination held at Salt Lake City, Jan. 7-8, 1907. The number of subjects examined in was 8; percentage required to pass, 75. The total number of candidates examined was 10, all of whom passed. The following colleges were represented:

## PASSED.

College.	Year of graduation.	Anatomy.	Surgery.	Bact., Hist. and Med. Juris.	Physiology and Hygiene.	Chemistry.	Mat. Medica.	Obstet. and Gynecology.	Pract. of Pediat. and Pathology.	General Average.
Denver & Gross Coll. of M.	1906	85	83	81	87	85	80	85	82	83.5
Denver & Gross Coll. of M.	1905	92	90	84	91	75	75	89	84	85.
Denver & Gross Coll. of M.	1892	..	..	..	75	75	..	..	..	75
Colorado School of Med...	1904	87	87	89	90	75	85	80	80	84.2
Rush Med. Coll. ....	1906	88	89	77	79	85	85	87	87	84.6
Rush Med. Coll. ....	1904	90	81	81	82	85	85	85	92	85.1
Northwestern University...	1906	95	94	96	98	85	80	98	86	91.5
Univ. Med. Coll., Kansas City	1904	90	82	..	80	80	85	88	85	73.7
Creighton Med. Coll. ....	1906	88	81	75	85	75	75	80	85	81.3
Laval University, Quebec...	1901	81	83	76	75	60	80	80	75	76.2

Minnesota January Report.—Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, Jan. 2-4, 1907. The number of subjects examined in was 15; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 13, of whom 4 passed and 9 failed. Seven reciprocal licenses were granted at this examination. The following colleges were represented:

## PASSED.

College.	Year of Graduation.	Medicine.	Surgery.	Obst. and Gyn.	Material Med.	Anat. and Hist.	Physiology.	Chem., Toxicol. and Urinalysis.	Pathology and Bacteriology.	Prev. Med. and Medical Juris.	General Average.
Coll. of P. & S. Keokuk..	1889	81	78	78	80	95	87	83	63	74	79.8
University of Minnesota..	1905	79	65	91	65	78	85	75	76	74	76.4
Albany Med. Coll. ....	1900	90	73	80	66	96	86	88	75	78	81.3
Coll. of P. & S., New York.	1902	92	89	78	75	89	93	80	79	80	83.8

## FAILED.

Ft. Wayne Coll. of Med...	1905	69	55	75	65	64	75	66	57	75	66.7
Coll. of P. & S., Chicago..	1906	76	58	84	42	36	75	75	68	72	65.1
Sioux City Coll. of Med...	1902	73	..	..	33	..	45	..	..	..	50.1
Minneap. Coll. of P. & S.	1904	70	39	78	53	58	75	67	47	79	62.8
Minneap. Coll. of P. & S.	1906	75	23	86	45	56	75	67	62	72	62.3
Minneap. Coll. of P. & S.	1906	76	40	88	57	68	75	85	63	73	69.4
Minneap. Coll. of P. & S.	1906	78	43	78	68	90	80	80	68	72	73
Ecl. Med. Inst., Cincinnati	1899	58	32	73	75	23	70	20	19	69	48.7
University of Virginia...	1906	83	67	63	67	86	82	75	77	78	75.3

## LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Rush Med. Coll. ....	(1904), (1905)	Illinois
College of P. and S., Chicago.....	(1906)	Illinois
Chicago Med. Coll. ....	(1883)	Wisconsin
University of Michigan.....	(1902)	S. Dakota
Creighton Med. Coll. ....	(1906)	Nebraska
Royal University, Norway.....	(1892)	Wisconsin

Rhode Island January Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, Jan. 3-4, 1907. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 17, of whom 10 passed and 7 failed. The following colleges were represented:

## PASSED.

College.	Year Grad.	Per Cent.
Baltimore University .....	(1906)	75
Johns Hopkins Med. School.....	(1899)	92.8
Harvard University....	(1901) 77.9; (1904) 88.6; (1907)	75*
Long Island Coll. Hosp. ....	(1905)	79.4
University and Bellevue Hosp. Med. Coll.....	(1901)	80.6
University of Pennsylvania.....	(1892)	82.2
University of Vermont.....	(1905)	78.8
Soc. Apoth., London**.....	(1892)	85

## FAILED.

Baltimore University .....	(1904)	65.1
Maryland Med. Coll. ....	(1906)	58.2
Laval University, Quebec.....	(1904) 63.6; (1905)	68, 69.1
Nongraduates .....		48.5, 58.1

\* Passed all examinations and will receive degree at next commencement.

\*\* A licensing body, not a medical school.

## Discussions

## VALUE OF MIOTICS IN GLAUCOMA.

(Continued from page 680.)

## DISCUSSION.

DR. JOHN E. WEEKS, New York, said that miotics are frequently used in a desultory way, but that much better results may be obtained if their use is persisted in as advised by Dr. Posey. The treatment becomes very monotonous and is neglected by the patient, who drifts from observation and permits the disease to advance. Dr. Weeks said that he is in accord with Dr. Posey in the belief that treatment with miotics should be attempted in suitable cases of chronic glaucoma, and should be used so long as the patient is benefited. If for any reason the treatment can not be satisfactorily carried out, or if, on subsequent examinations, there is a diminution of the field for form or color, he would urge iridectomy. There are some cases beginning late in life in which the few remaining years of life can be bridged over by employing miotics. After iridectomy he uses miotics regularly in all cases in which there is any evidence of glaucoma, employing pilocarpin principally. The objections to operations, as mentioned by Dr. Posey, he does not think amount to much if the operator is skillful. The optical disadvantages are of little importance. Cataract before or after iridectomy in glaucoma is not uncommon. Infection after iridectomy is, of course, possible, but should be the rarest of accidents. Cases without congestion are favorable for the employment of miotics, but iridectomy is the procedure that promises most in all congestive cases. Dr. Weeks said that his experience with miotics prior to iridectomy has not been very encouraging. In one of his most satisfactory cases vision was retained for three years. In January, 1903, examination showed R. E., glaucomatous cupping, 1 mm.; T. Anterior chamber shallow. V.=20/20 with correction; field for form very slightly contracted above and to the nasal side; fields for color slightly contracted in the same quadrant. Pupil of normal size. L. E., glaucomatous cupping, 1.33 mm. Pupil oval, dilated. T.+2. Anterior chamber shallow. V.=1/8.

May 4, 1906.—R. E., V.=20/20—. Field for form almost normal in extent. Fields for colors much reduced. T.+ . Dr. Weeks advised iridectomy, which was performed May 9. The prospects for retention of vision are very good at the present time. In this case good central vision was retained in the better eye. If a similar case presents he will advise iridectomy earlier. In a case of similar nature the left eye had become blind from glaucoma and there was glaucomatous cupping, slight pus tension and some limitation of the nasal half of the field of vision of the right eye. The patient, a woman, wished to avoid operation, and Dr. Weeks advised pilocarpin solution, but after seven months of treatment, irregular during the last eight weeks, she was found on examination to be almost totally blind.

At present he is using miotics in a number of cases of simple glaucoma in timid individuals. He will urge iridectomy as soon as he sees evidence of failure in the vision or size of color fields. The results that he has obtained by iridectomy in simple chronic glaucoma have been so good that he is decided in favor of early operation in all cases in which the disease can not be arrested by a fair trial of miotics. He does not hesitate to operate when central vision is still normal in cases in which the symptoms are positive. In the cases in which there is loss of visual field near the point of fixation, if miotics do not control he does not hesitate to operate for fear of an untoward result, such as sudden failure of this part of the field after operation. He does not think that chronic glaucoma is any more "essentially a disease of the posterior segment of the eye" than are other forms of glaucoma. Both are due to a disturbance of the balance between inflow and outflow of the fluids of the eye. The difference is that in the congestive form the disturbance is more marked. The strictures regarding the use of miotics, he said, meet with his full approval.

DR. CHARLES S. BULL, New York, said that he agreed with Dr. Posey that operative procedures are always to be deprecated when other means are equally valuable. The point for us to determine is, Have we other means equally valuable?



Iridectomy will not control the glaucomatous process in all cases, he said, and iridectomy is well nigh valueless in chronic simple glaucoma, unless it be done early in the progress of the disease, the moment that the field begins to be contracted, the moment the signs of cupping of the disc begin and the moment that increased tension is recognized. If the operation be done at this time and under these conditions, Dr. Bull believes that an iridectomy will arrest the process in most cases. If, however, the ophthalmologist waits until all the symptoms are more developed, the field narrower and the cupping deeper, the operation will fail to relieve and will often accelerate the course of the disease. For some years in more advanced cases he has followed the line of treatment indicated by Dr. Posey, and has been at least satisfied with the results. He agreed with Dr. Posey that the surgeon who faithfully tries this method of treatment will be surprised at the long maintenance of useful vision. But this treatment is of no avail in any type of the disease except the simple, chronic, non-congestive type. It should not be forgotten that as the eye becomes habituated to the miotic its strength should be gradually increased. Moreover, the effects of the miotics are transient, lasting but two or three hours, and at the end of this period the dose should be repeated, for in this method of treatment it is all important that the pupil should be kept contracted ad maximum. He also agreed with Dr. Posey that we should begin with a small dose. If eserine is used, a strength of from one-tenth to one-fourth of a grain is strong enough, to be increased as the eye becomes habituated to the drug. The irritation caused by a strong solution should be carefully avoided. The salicylate of eserine is to be preferred to the sulphate. Together with this treatment the patient's habits of life should be modified, so far as possible, to the necessities of the ocular condition. All close work should be either forbidden or at least restricted, especially by artificial light. The patient should lead an out-of-door life, the bowels should be regulated and constant attention directed to the regulation of the peripheral circulation.

DR. G. E. DE SCHWEINITZ, Philadelphia, declared that many ophthalmologists are in accord with Dr. Posey in so far as his estimate of the value of miotics in the treatment of so-called chronic glaucoma and that many are totally opposed to iridectomy. In a discussion on a paper by Dr. de Schweinitz on "The Treatment of the Apparently Unaffected, but at Most but Slightly Involved, Eye in Cases of Monolateral Glaucoma," read before the American Ophthalmological Society five years ago, many ophthalmologists expressed the opinion that iridectomy or operation in general is worthless and that there must be recourse to miotics and to various internal remedies, although few were willing to agree that iridectomy was of practically no value and likely to do more harm than good. He said that one difficulty is the difference in opinion as to what constitutes chronic non-inflammatory glaucoma. While some believe it to be a chronic progressive optic nerve degeneration, others recognize as this condition only cases in which there is progressive failure of vision, excavation of the optic papilla, crowding of the vessels to the nasal side, halo around the nerve head and increased intraocular tension, which is not constantly present, but which may be present for short periods of time at various intervals during the day or night. With these symptoms there is entire absence of inflammatory changes, the anterior chamber being of fair depth, the pupil active and the sclera not congested. Dr. de Schweinitz supposed this is the type referred to by Dr. Posey. At the Lucerne congress, in 1904, Abadie expressed his opinion that iridectomy is harmful in this disease, which, he said, should be treated with miotics, or, if these fail, by sympathectomy. Dr. de Schweinitz said that there must be some middle ground between Berry, who says that miotics are useless in chronic glaucoma, and those who believe that iridectomy is valueless and does more harm than good. Dr. de Schweinitz said that Dr. Posey is not quite fair to Cheney when he quotes him as saying that "loss of sight without operation is, of course, inevitable in chronic glaucoma." What Cheney says is: "The age of the patient should largely decide for or against operative interference, and in a healthy individual, 40 years of age, for example, iridectomy might be advised and even urged, because loss of sight without iridectomy is inevitable." He goes on, however, and remarks that as age advances the necessity for urging operation is less

marked, and although it might be proper even after 65 or 70, one should not lose sight of the fact that the patient may die before his sight is lost. If one eye is blind and the disease has manifested itself in the other, Cheney would avoid operation, and presumably would use miotics if the patient was over 60 years of age, unless the progress of the disease in the first eye had been of exceptional rapidity.

Dr. de Schweinitz is satisfied of the value of miotics in this disease, no matter at what age it occurs, and believes that they should be given continuously so long as they do good. He also believes that operation should be governed, to a certain extent, by the arterial tension, and if the arterial tension be persistently high, operation should be deferred, lest a malignant glaucoma arise. In regard to Dr. Posey's statement that he regretted the lack of statistics, Dr. de Schweinitz referred him to de Wecker's monograph and to a paper which he himself read before the Section on Ophthalmology in 1899. Dr. de Schweinitz agreed with those who approved of the use of miotics in this condition and spoke particularly in favor of nitroglycerin, provided that there is increased arterial tension. He emphasized the necessity for keeping the patient under observation. If the patient is advanced in years he would hesitate to do iridectomy, especially if there is high arterial tension or symptoms of arteriosclerosis, even if vision fails under the use of miotics, unless the case changed from chronic glaucoma to the subacute or congestive form.

If there is a disease characterized by progressive atrophy of the optic nerve, cupping of the nerve head, contraction of the field of vision and no periods of increased intraocular tension, these cases would certainly not present the indications for iridectomy, nor would they seem to present those for miotics. In the majority of cases in which this syndrome is present, careful examination will reveal that there are temporary periods of increased intraocular tension, and this, de Schweinitz said, is also de Wecker's belief.

DR. W. H. WILDER, Chicago, said that he is coming to believe that no good is done chronic glaucoma cases by iridectomy, particularly that class of cases to which Dr. de Schweinitz has referred. Dr. Wilder believes that many of these cases of so-called glaucoma are injured rather than benefited by operation. He has seen the fields contract more rapidly after operation and the central acuity lessen. We subject our patients to the risk of an operation which he considers one of the most difficult in all surgery. He hesitates about operating in these cases, and he believes the time is coming when we will know that this simple glaucoma bears no relation to general glaucoma except that it has cupped disc and sometimes increased tension. He thinks that the practice of teaching that glaucoma is a disease entity rather than a syndrome should be discontinued. It is a condition more dependent on general causes than on local ones. The keynote of the whole matter is that ophthalmologists must study the changes going on in the vessels and the increased arterial tension. Constitutional treatment is of more importance, he said, than iridectomy.

DR. PETER A. CALLAN, New York, said that it is not always a question of whether we want to use miotics, but of the patient refusing operation, thus obliging us to use them. If something is not done in the majority of cases these patients go from bad to worse. He has a patient whom he has had under treatment for three years because the man was not willing to submit to operation, but in several other cases while the vision remains good the fields are slowly and surely contracting. If Dr. Callan had glaucoma in one eye and the other showed no more evidence than contracted field, he would have the eye operated on. He thinks that an iridectomy properly performed is in no way harmful. He does not use the Graefe knife with incision at the limbus; he said that we should get back from the limbus 2 or 3 mm. and secure an iridectomy not to exceed 4 or 5 cm. This is perfectly feasible, even with a very shallow anterior chamber. If the patient has one blind eye from glaucoma and in the other 20/70 vision, and is old, he would use miotics; but he feels that iridectomy does no harm whatever if done properly.

DR. WILLIAM C. POSEY, Philadelphia, stated that he does not doubt for a moment the value of iridectomy in cases of glaucoma, but the question is not that, but, rather, Are miotics of



positive service in these cases, and are we justified in relying on them? For example, what is our duty in such a case as this: A patient has glaucoma in the initial stage; vision normal, both centrally and peripherally; slight cupping. What is to be done? Advise operation at once, or are there other methods to be employed? Authorities predominate in favor of iridectomy. When questioned if there is any danger from the operation, one may say, Yes, some eyes are lost. But even if this disaster does not occur, vision is never quite so good after the operation as it was before. There is always an astigmatic error following the corneal incision, and in many cases there are changes in the anterior capsule and in the lens. When told of these disadvantages, patients want to know whether there is anything to be done aside from operation, and what Dr. Posey insisted on is that ophthalmologists are warranted in assuring them that there is. The patients should be warned, however, that the treatment must be carried on the rest of their lives. If this be done conscientiously, and care be given to the manner of living, etc., it is not too much to tell them that sight may be preserved for many years, perhaps as long as life lasts. The one indication for iridectomy in chronic glaucoma, in Dr. Posey's opinion, is the presence of inflammatory symptoms, and it has been his experience that if miotics be continuously and properly administered in cases of a purely simple chronic type, such symptoms will but infrequently arise. He declared that the purpose of his paper was to indicate the undoubted value of miotics in chronic glaucoma and to ask that they be given the general respect and use which they deserve.

## SYMPOSIUM ON ALCOHOL.

(Continued from page 687.)

### DISCUSSION.

DR. WILLIAM LEE HOWARD, Baltimore, said that even yet the average physician does not know the difference between inebriety and dipsomania. During the past year he had one or two little clinical experiences that were new to him. Both patients were Army surgeons. They were truthful men, and Dr. Howard had no reason to disbelieve any of their statements. Both came to him for the periodical sprees or the treatment for dipsomania. One man was 42, the other 47. Both men told the same history of going into Army life late, of not being accustomed either to the rules or to the climatic conditions. Neither had been accustomed to drink to any extent. The attacks of dipsomania were conditions unknown until they had been in the Philippines from a year and a half to two years. One man would go off and disappear for from five to six weeks, with only a faint, hazy recollection of his condition. During that time he would generally consume enormous quantities of liquor, as dipsomaniacs will. The other also had attacks of dipsomania, with some sexual excesses. The history of both of these men was that the heat of the climate, conditions, etc., seemed to unstring them; and both of them had succumbed to heat stroke and both had been in the hospital for intestinal troubles, so called, dysentery at least. Dr. Howard said it was evident that there was a physical basis for this disturbance of the nervous organization which caused them to disappear at periods. One was an Irishman. He resigned from the Army and returned to Ireland. He reports that he has not had an attack for six months, but at the same time he does not feel himself. Dr. Howard believes that in all cases of dipsomania a physical cause, such as auto-intoxication, should be looked for.

DR. JOHN HUNTER, Toronto, Ontario, spoke in regard to inebriates found in the streets paralyzed from acute alcoholism. He thinks it would be a very much more humane plan if, instead of throwing them into the police wagon, an ambulance be sent for to take them to a special ward in an emergency hospital; because these men are in a very much more dangerous condition physically than a man who breaks his arm or his leg. He believes that the moral effect on them would be a thousand times better than the effect produced by being cast into prison, fined a small fine or retained a number of days. The care of a hospital for a week or ten days is as

necessary for a person recovering from an acute attack of alcoholism as from a broken arm. Dr. Hunter referred to the evil influence on children who witness the common treatment of drunkards found by the police.

DR. CHARLES E. WOODRUFF, Detroit, said the reason why the Army does not do as the best railroads do and insist on total abstinence in important places is that the railroads themselves do not insist on total abstinence except in a very limited class of employes. The men who work the pick and shovel, the section hands, etc., the railroad does not care about; it is the men who have the lives of others in their hands, the engineer, the fireman, the train dispatcher, the telegraphers, conductors, brakemen, watchmen. They get very high pay and the company can make selection. The engineers get from \$200 to \$300 a month or more. Our soldiers get only \$13 a month, and we can not make a selection. If Congress would raise the pay of the common soldier to \$125 a month we could get 90 per cent. of abstainers in the U. S. Army, and the whole question would be settled.

## PLAGUE IN AMERICAN CITIES.

(Continued from page 688.)

### DISCUSSION.

DR. ELMER E. HEG, Seattle, Wash., said that so far as he knows there has never been a case of plague in Washington. He emphasized Dr. Foster's statements that plague must be always guarded against, especially by those in seaboard towns. Plague has been a nightmare to Dr. Heg ever since it has been in San Francisco. He agreed that plague may go half a mile or for thousands of miles, that it is carried by rats and fleas. So few physicians see cases that the great danger is in overlooking them and allowing the infected districts to continue and the disease to be carried from one place to another. Dr. Heg thinks that we do not know exactly the full extent of the animals that are liable to infection.

DR. T. B. BEATTIE, Salt Lake City, Utah, thinks that one point worthy of note brought out in the experience of California is the importance of avoiding concealment in the presence of serious epidemics of disease. At first the authorities in that state and in the City of San Francisco were inclined to conceal the fact after they had reason to know that the disease existed in the community, because of a false idea as to the protection of the interests of the community. While in most states the question of plague is not one that would seem to concern the health officer at this time, yet the lesson can be applied to all states and to the experience of all health officers in connection with that sentiment which obtains on the part of a good many members of the community—those who think their commercial interests are affected by the publicity attendant on the efforts of the health organization to suppress epidemics. Dr. Beattie stated that in the states of Utah and Colorado, during the epidemic of smallpox, the health authorities had very little support from the public, and were very seriously criticised for endeavoring to make known the prevalence of the infection. The consequence was that the press took it up, as they did in San Francisco, and very much confused the problem; and unquestionably, the result was a greater prevalence of the disease than otherwise would have resulted. Dr. Beattie also referred to the rebuke that was visited on the authorities in California when the fact once became thoroughly exploited throughout the country, and said that it was deserved.

DR. J. W. AMESSE, Public Health and Marine-Hospital Service, stated that he was on duty in San Francisco in 1900 as Dr. Kinyon's assistant when the plague first broke out there and that later, in Honolulu, Japan, China and Manila he had opportunity of seeing about two hundred cases. He believes that the rat is the primary host, and the flea the intermediary host. The rat, dying of the plague, and its coat containing numbers of fleas, these leave the dead body as soon as they possibly can and seek the nearest living body, which is usually the foot or leg of a native. In China almost every one goes with bare feet, the disease is endemic; but in China-



town, San Francisco, where the Chinese are well clothed and have plenty to eat and drink, the plague finds a very difficult foothold; in fact, it does not spread. Dr. Amesse believes that in four years there were but eighty cases of the plague in San Francisco, and this was attributed entirely to the fact that the Chinese were living under so much better auspices than their brethren in China, and to the further fact that they wore shoes, and thus afforded very little opportunity for the fleas to locate. Dr. Amesse earnestly endorsed the recommendations containing surveillance of seaboard towns.

DR. W. C. RUCKER, United States Public Health and Marine-Hospital Service, Vineyard Haven, Mass., said that one statement requires some further elucidation: that is, the question of the squirrels that were spoken of as carrying the disease. Dr. Foster, he said, evidently had not heard of the researches of Dr. Donald H. Currie, of the Public Health and Marine-Hospital Service, in this particular premise. Dr. Currie examined these squirrels very carefully and came to the conclusion that they were undoubtedly suffering from plague, and he found that an epidemic of plague was taking place in them. Dr. Rucker does not think that Dr. Currie has ever written this; he told him in personal conversation. From this Dr. Currie has formulated a theory that possibly there may be plague some day in the Mississippi Valley; possibly it may spread further east entirely by means of these rodents. These ground squirrels, which at that time were having an epidemic of plague in California, could easily carry the disease to other ground squirrels and across the mountains, and these in turn to the gophers inhabiting the Mississippi Valley, and they in turn would bring it to the ground squirrels on this side. Dr. Rucker saw nineteen or twenty cases of plague when on duty in San Francisco, and, like Dr. Amesse and every one else who has seen the disease, the transmission by the rodents is undoubted in his mind. In regard to the concealment of the disease, Dr. Rucker thinks that the idea that a community can better its commercial interests by concealing an epidemic disease is a very erroneous one, and that the concealment in the end causes greater harm to the commercial interests than if the officials had been frank and honest about it in the first place. The concealment of disease when it has been discovered leads always to the belief that the health authorities are dishonest, and then when they do come out and say there is disease one always says in his own mind: "There is more disease than is really stated, and since they have lied to us once they will lie to us again." Dr. Rucker thinks that health officers should bear in mind certain ideals which they must uphold, and said that they must not bow down to the mammon of commercial greed. When they find a thing they must fearlessly and honestly state exactly what they have in the way of an epidemic, and then the public will not think that there is more than is stated. Commercial relations will not be so much disturbed as if they had concealed the disease and then declared it after it had been found out.

## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

### Simple Elixir.

Edgar F. Heffner, Ph.G., in the *Pennsylvania Medical Journal*, discusses simple elixir as a vehicle in prescriptions intended for children. He was astonished to find occasionally a physician who thought simple elixir contained no alcohol, while the majority were of the opinion that simple elixir, and the medicinal elixirs of which it forms its basis, elixir calisaya, elixir gentian, etc., were of very slight alcoholic strength. The following prescriptions have come under his observation and are examples not only of pharmaceutical error, but also of incorrect prescription writing:

For a child four months old:

R. Sodii bromidi.....	gr. viii	5
Elix. simplicis.....	℥i	30

Sig.: Teaspoonful every half-hour or one hour, as needed.

For a 6-year-old child:

R. Potassii bromidi.....	gr. xlvi	3
Elix. valerianatis ammonii.....	℥iv	15
Elix. simplicis, q. s.....	℥iii	90

Sig.: One or two teaspoonfuls in water every one or two hours, as needed.

No physician would give a child four months old a quarter-teaspoonful of alcohol every half-hour, yet that is what the child would have been given had the prescription been filled as written. Compared with beer, it would have been the same as giving a tablespoonful, or equal to two teaspoonfuls of wine, or over half a teaspoonful of whisky or brandy.

Prescription No. 2 shows the same thing in a more frequently used form—the 6-year-old child would get with each two or four grains of bromid the equivalent in strength of one-half or one whole teaspoonful of whisky, which would effectively counteract the sedative effect of the bromid.

Says Heffner: "These examples need no extended comment as to the possible injurious effect of the alcohol on children, as we all fully appreciate them. It impresses on our minds the fact, however, that we must occasionally refresh the minds of our medical friends in cases of this nature, and the information, if given in the proper spirit, will be thankfully received by any physician needing it."

Heffner believes that the very common practice of giving bromids and similar sedatives in simple elixir is not a good one, as the effect of the bromid is seriously interfered with by the alcohol contained in the elixir.

The following is an example of a prescription fairly common in some localities:

R. Sodii bromidi	
Chloralis hydratis, āā.....	℥iv 15
Elixir simplicis, q. s.....	℥iv 120

Sig.: Two teaspoonfuls in water every half to one hour.

This at first makes a bright, clear solution, and the chemical incompatibility of chloral and alkaline bromids in alcoholic solution would be generally overlooked. On standing half an hour the chloral alcoholate will come to the top in a clear layer about one-fourth of an inch thick, and of a color very closely resembling the rest of the mixture. In one case the mixture was dispensed without a "shake" label, and the patient got nearly all the chloral in the form of alcoholate at the second dose. The use of an aromatic water and simple syrup as a vehicle in prescriptions of this nature would obviate any such danger.

### Neuralgia and Headache.

Williams, in the *Clinical Journal*, states that two factors suggested by the presence of a neuralgia are an unsatisfactory blood state and the existence of an irritant. Anemia is certainly the commonest representative of the first factor. Whether this be due to convalescence from acute disease, to chlorosis, or to deficient coagulability of the blood or other cause, it is very frequently attended by neuralgia, more especially about the head and lower part of the trunk on the same side.

The treatment in such cases of neuralgia resolves itself into the treatment of the anemia by hygienic, dietetic and medicinal measures. Outdoor life in a bracing climate is to be advised. The diet should be generous, including meat foods and wines in moderation, and plenty of fats. Fats seem to be concerned in some very special manner with the nourishment of the nervous system, and may be freely given in the form of butter and cream. Iron stands first among the drugs, and Williams believes that the citrates and tartrates are more efficacious than the stronger salts, such as the sulphates and chlorids. The latter are more apt to upset the stomach, while the former seem to be more readily assimilated. A useful formula is as follows:

R. Ferri et ammonii citratis.....	℥iiss	10
Liquoris potassii arsenitis.....	℥i	4
Infusii quassiae, q. s. ad.....	℥xvi	500

M. Sig.: One tablespoonful three times a day, after meals.



The following may be given later:

R. Ferri et quiniæ citratis sol.....	3v	20
Liquoris potassii arsenitis.....	3iss	6
Tincturæ nucis vomicæ.....	3ii	8
Aquæ aurantii floris, q. s. ad.....	3xvi	500

M. Sig.: One tablespoonful three times a day, after meals.

The iron preparations in both the above mixtures may be increased, and Williams is of the opinion that the presence of the quinin in the mixture and in even larger doses may help to subdue the neuralgia. When giving iron in any form it is of the utmost importance that the bowels be kept open. Aloes seem to enhance the value of the iron and may be given alone or with cascara. A daily morning dose of a natural or artificial mineral water is often advisable.

When the neuralgia is an obstinate feature of the condition it is usually necessary to administer something which has a direct influence on the pain when it occurs. In anemic patients and in those in whom defective nutrition is pronounced he has had better results from quinin and gelsemium than from any other combination:

R. Quiniæ hydrochloridi.....	m. lxxx	5
Acidi hydrobromici dil.....	3v	20
Tincturæ gelsemii.....	m. lxxx	5
Aquæ chloroformi, q. s. ad.....	3viii	240

M. Sig.: One tablespoonful every one-half to one hour until the pain ceases. Not more than four doses to be taken.

Even larger doses of gelsemium may be given. Williams thinks that the small doses frequently repeated are better than a single large dose.

In the gouty state with the neuralgic pains it is necessary to emphasize the advisability of examining for high arterial tension. If present the iodid of potassium is of special value in the treatment of the accompanying neuralgia. A frequent cause of neuralgia, especially in women, is the toxic state of the blood induced by chronic constipation. This condition must be treated by appropriate measures.

#### Flatulent Dyspepsia.

The *Medical Record* recommends the following:

R. Aquæ chloroformi	
Aquæ menthi piperitæ	
Aquæ dest., āā.....	3ii 60

M. Sig.: One teaspoonful before each meal.

#### Stye.

Bjorkman, in *Merck's Archives*, recommends the following for this condition:

R. Hydrargyri oxidi rubri.....	gr. xii	70
Petrolati		
Unguenti aquæ rosæ, āā.....	3iv	15

M. Sig.: Apply morning and night after thoroughly cleansing with a hot boric acid solution.

#### Cough in Phthisis.

Shoemaker recommends the following mixture for the irritative cough so frequent in this condition:

R. Codeinæ .....	gr. i	065
Acidi hydrobromici dil.....	3i	30
Syrupi aurantii, q. s. ad.....	3iii	90

M. Sig.: One or two teaspoonfuls every two to four hours for cough.

## Medicolegal

### Liability for Removal of Uterus Without Consent.

The Supreme Court of Illinois on the appeal of Pratt vs. Davis, an action by the latter party, by next friend, for trespass to the person, has affirmed the judgment of the Appellate Court affirming a judgment in the plaintiff's favor for \$3,000. The decision of the Appellate Court was reported at length in the *Medicolegal* department of THE JOURNAL, March 11, 1905, page 822.

In partial explanation of the case, the Supreme Court says that at the time of the wrong charged the defendant was engaged in conducting a sanitarium. The plaintiff, a married woman about 40 years of age, came to this sanitarium for treatment for epilepsy, in May, 1896. She had been subject

to epileptic seizures for a period of 15 years, but up to this time she had been able to perform her household duties and had borne four children, three since she first exhibited symptoms of epilepsy. The seizures had gradually been increasing in frequency. Following each of them she would be very weak in body and dazed and uncertain in mind for several hours. The evidence of those who knew her in her daily life was generally to the effect that her mind, except during the periods immediately following these attacks, was normal. The defendant made an examination of the pelvic organs, and found that the uterus was contracted and lacerated, and that the lower portion of the rectum was diseased. On May 13 he operated for these difficulties. Thereafter the plaintiff remained in the sanitarium without improvement several weeks and then returned home. On July 29, her brother-in-law, at the request of her husband, took her again to the sanitarium, and on the next day the defendant performed a second surgical operation on her, removing her ovaries and uterus. She continued at the sanitarium until August 8, and then was removed to her home. Neither operation was successful, so far as improving her health was concerned. She grew gradually worse mentally, and on August 25 was adjudged insane and sent to a state asylum. The cause of action was based on the removal of the uterus at the second operation. It was not claimed that the operation was unskillfully performed, but that it was performed without the authority or consent of the plaintiff and constituted a trespass to her person.

The declaration, so far as here material, averred that the plaintiff had placed herself under the care of the defendant, and that he, without her consent or the consent of any one authorized to act for her, anesthetized her and removed the uterus. There was no pretense that the plaintiff herself consented to the removal of the uterus. In fact the defendant testified that he told her just enough about her condition, and what he proposed to do, to get her consent to the first operation, and said, quoting his own language: "I worked her deliberately and systematically, taking chances which she did not realize the full aspect of, deliberately and calmly deceiving the woman; that is, I did not tell her the whole truth." And, referring to the first operation, he said: "She knew that the womb was to be operated on, and she was willing that should be done. Consent for further work was not obtained." Thereafter the defendant contended that the plaintiff was so mentally unsound as to be incapable of consenting or of giving intelligent consideration to her condition, and that her husband authorized the second operation. Whether the defendant was then mentally incapable of consenting was a question as to which the evidence was conflicting.

Ordinarily, where the patient is in full possession of all his mental faculties and in such physical health as to be able to consult about his condition without the consultation itself being fraught with dangerous consequences to the patient's health, and when no emergency exists making it impracticable to confer with him, it is manifest, the court goes on to say, that his consent should be a prerequisite to a surgical operation. Where the narr. (declaration) shows the act to have been a trespass to the person, or avers it to have been without the consent of the patient, it would seem to be unnecessary to go further and negative the fact that some other person, lawfully authorized to act for the patient, consented. The question of the consent of such other person, if in the case, might well be left to be presented by a plea in bar.

Furthermore, the Supreme Court is satisfied that the evidence as abstracted did not tend to show that the husband consented to the second operation. He testified that he did not, and that, when he first took his wife to the sanitarium, the defendant told him the operation would be a trifling one. The defendant said that, while he may have said this, "Davis said he was willing that I should do anything I thought necessary, only he made the request that I do as little as possible," and that he then told Davis, in substance, that two operations might be necessary. He also testified that while the plaintiff was at home her husband "told me she was no better. I told him to bring her back for the finishing work. I did not tell him what the finishing work would be. I had but one comprehensive talk with him. That was the



time he was there with the plaintiff." These two conversations were relied on by the defendant as authority given by the husband for the second operation. Without deciding what legal effect should be given to the husband's request or consent that a grave surgical operation be performed on his insane wife, the court thinks it manifest that the authority given by the husband in the conversation first quoted from was exhausted when the first operation was performed and the patient taken away. While it was true that the defendant said he told the husband in that conversation that he could not tell the extent of the surgery that would be necessary, and said that the defendant gave him carte blanche to do whatever he saw fit, it was yet apparent that neither then contemplated that the wife would be taken home after the first operation and later brought a second time to the sanitarium for the purpose of undergoing a second operation, and the court thinks it equally apparent from the defendant's testimony that the husband did not, at the time he was directed to bring his wife again for treatment, understand that any such operation as the removal of the ovaries and the uterus was to be performed, and that the mere fact that he, after that conversation, had his brother take the plaintiff to the sanitarium, was not to be regarded as tending to show consent to surgery of that character.

The defendant then contended that, in the absence of express authority to remove the uterus, the law would imply the necessary consent from the fact that consent was, as he said, obtained for the removal of the ovaries. But as there was no evidence which tended to show that any permission was obtained for the second operation, when the ovaries were in fact removed, the court holds that there was nothing to raise the implication in question.

Again, it was urged that the evidence showed no actual damages, that the judgment must therefore be made up of nominal damages and exemplary damages, and that this was not a proper case for the infliction of a penalty, wherefore the judgment should be reversed. The claim that there was no proof of actual damages was based on this statement found in the defendant's argument: "There is nowhere in the record a syllable showing any pain or suffering as a result of the removal of the uterus." But the Supreme Court says that some facts require no direct proof. That pain and suffering follow the removal of the uterus is one of such facts. The law infers pain and suffering from personal injury.

Finally, the Supreme Court says that where the patient desires or consents that an operation be performed, and unexpected conditions develop or are discovered in the course of the operation, it is the duty of the surgeon, in dealing with these conditions, to act on his own discretion, making the highest use of his skill and ability to meet the exigencies which confront him, and in the nature of things he must frequently do this without consultation or conference with any one, except, perhaps, other members of his profession who are assisting him. Emergencies arise, and when a surgeon is called it is sometimes found that some action must be taken immediately for the preservation of the life or health of the patient, where it is impracticable to obtain the consent of the ailing or injured one or of any one authorized to speak for him. In such event, the surgeon may lawfully, and it is his duty to, perform such operation as good surgery demands, without such consent. The case before the court, however, does not fall within either of these two classes.

#### Insufficient Presentation of Case for Revocation of License— Court Not Body of Medical Experts.

The Supreme Court of Rhode Island furnishes, on the appeal of Macomber vs. State Board of Health, some suggestions for those seeking to have licenses revoked for "gross unprofessional conduct" or "conduct of a character likely to deceive and defraud the public," as in this case. It says that it was evidently the intention of the State Board that the court should infer, from the language of various advertisements, that the statements therein contained were untrue, that the claims made were extravagant and therefore likely to "deceive and defraud the public," and that the physician by allowing

his name to appear on some of them, or by distributing some of them to his patients or to inquiring parties, had been guilty of such conduct. Unfortunately, however, the State Board had not seen fit to offer any testimony to show that any one of the statements set forth was untrue in fact, or even that it was extravagant or misleading, or tending to "deceive" or "defraud the public." The evidence was submitted to the court as if the court were a body of medical experts fully qualified to pass on the numerous medical questions involved. It is hardly necessary to say that this court disclaims such qualification and can not take judicial notice of such matters, but is bound to form its judgments in such matters solely on the evidence adduced before it. Again, the court says, with regard to a device advertised about which the State Board of Health seemed to desire it to infer that it was a deception and a fraud, that the board was satisfied to place before the court the evidence of a single application of this device to a person not shown to have been suffering from any disease, and not shown to be of any expert capacity in the observation or investigation of devices of that character, and desired the court to infer, from the apparently negative character of this single experiment, that the repeated application of this device, according to the directions given by its inventor, was of no value to the patient, and therefore was a fraud and tended to "deceive and defraud the public." This evidence was purely negative, and did not assist the court in coming to any conclusion regarding the value or want of value of the device in question. As to its mechanical efficiency, whether or not it was capable of producing an electric current or "thermal electricity," it would have been very simple to have subjected the device to the examination of well-known electrical experts, under the conditions named in the circulars, and to have shown whether or not any such electrical energy was produced. The most cogent evidence to show that the physician had been guilty of "gross unprofessional conduct and of conduct of a character likely to deceive and defraud the public" would have been evidence from some one or more persons that he or they had been actually deceived and defrauded, had been led into expense without adequate benefit, or had been told that they would be cured of any of the various diseases mentioned, and had taken the treatment without results, or with bad results, or that the statements made as to cures actually effected were in fact untrue.

#### THE MINORITY (DISSENTING) OPINION.

[While the above is the official report, we believe it well to give briefly the dissenting opinion of one of the judges.

Judge Blodgett said that he could not agree with his professional brethren that the evidence did not show "that any one of the statements set forth is untrue in fact or even that it is extravagant or misleading or tending to 'deceive or defraud the public.'" He believed that the evidence established each of these propositions. In the first place it was undisputed that the appellant, Macomber, used the device known as the "Electricure," and that he distributed generally, and gave to the secretary of the State Board of Health, the "Blue Book" (Exhibit 15), which contained the following statements: "The Electricure . . . Absolutely Cures Consumption, Female Complaints, Paralysis, Rheumatism, Heart Disease, and all Acute, Chronic and Organic Diseases, no matter what their name or origin. . . . Let no invalid despair or seek the sea, the mountain or a foreign shore in search of health—perchance to die—when it can be surely found at home by the intelligent use of the Electricure, for cures are wrought by it that under the old system of medication are impossible."

It appeared that the promise was, not of benefit or of alleviation, but of "absolute cure;" that it was not limited to certain diseases, but embraced "all Acute, Chronic, and Organic Diseases, no matter what their name or origin;" that the device did not act by suggestion or through the imagination, but was "the most adequate life agent of the century." More comprehensive claims could hardly be made on behalf of the fabled Elixir Vitæ of the ancients.

Now, it was evident that the representation that this device "absolutely cures . . . all Acute Chronic and Organic Dis-



cases, no matter what their name or origin" was either true in all respects, untrue in all respects, or true in some cases and untrue in other cases. If, therefore, this court could not sit as a body of medical experts and assume that such representations were untrue in any respect, without evidence, could the court sit as a body of medical experts and assume that such representations were true in all respects, without evidence? The representations were disproved by evidence of a single exception. They were not sustained except by proof in all instances, and surely he must indeed be wise in the science and skilled in the art of healing who would assume the burden of affirmative proof in such a case. Hence it required an even higher degree of expert knowledge to assume the correctness of such a contention in every case than to deny its correctness in a given instance. But the record was not wanting in testimony that these representations were false.

For these reasons and others that appeared in the evidence, and in view of the fact that the statute which prohibits conduct "likely to deceive or defraud the public" does not require actual proof of such fraud, Judge Blodgett upheld the decision of the State Board of Health.]

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

February 9.

- 1 \*Fresh Air Treatment in Hospital Wards. W. G. Thompson, New York.
- 2 \*Resection of the Sigmoid Flexure. J. J. McGrath, New York.
- 3 \*Conservative Surgery in Severe Inflammatory Affections of the Uterine Adnexa. H. N. Vineberg, New York.
- 4 \*Cause of Common Baldness. D. L. Parker, Detroit.
- 5 \*Potent Etiologic Factors in Backward Children. M. Neustaedter, New York.
- 6 \*Extensive Leucoplakia Beginning in Childhood, Accompanied by Follicular Keratosis of Skin and Followed by Carcinoma of Tongue. M. B. Hartzell, Philadelphia.

1. Fresh Air Treatment in Hospital Wards.—Thompson presents the following conclusions: Ward heating and ward ventilation should be capable of independent adjustment at all times. The night temperature of the ward should be at least 5 degrees F. below the noonday temperature, which should not be above 68 or 70 F. The ward windows should have transoms and one or two movable separate panes. The window should be light enough to be easily handled. The wards should communicate with balconies or porches. The building of very large wards should be discouraged. The windows of the ward, even on the coldest day, should be opened at least twice daily. Day rooms should be provided for convalescents. The ward should have at least one accessible heater. The house staff and nurses should receive instruction concerning ventilation and should be made to put it into practice in the wards.

2. Resection of Sigmoid Flexure.—McGrath, after describing the details of his method, points out some of its advantages. When the suture is applied at the mesenteric border and tied, the mesenteric "dead space" is obliterated and the serous mesenteric layers are brought down into close contact with the wall of the gut—two conditions that are absolutely essential to the successful end-to-end intestinal anastomosis. The ends of this same mesenteric suture are used to accomplish the union of the two ends of gut, the tractors being used to facilitate the application of the suture so far as possible and the union being finally completed with the Lembert stitch. In order to prevent "pursing" of the suture, a back-stitch is made at every fifth or sixth thrust. This method is simple and efficient and no button or other mechanism is necessary to its accomplishment.

3. Conservative Surgery of Uterine Adnexa.—Vineberg reviews the history of 51 cases. There were two deaths. Of these 51 patients, 43 are practically cured and have menstruated regularly and normally since the operation. Vineberg emphasizes the fact that every effort should be made in the case of women under the climacteric age to cure the patient without sacrificing all her pelvic organs and without bringing on the artificial menopause.

4. Cause of Common Baldness.—Parker states that common baldness accounts for more than 90 per cent. of all cases of baldness. He discusses in this paper a theory that makes common baldness depend for its existence on a double cause, one being the remote or fundamental cause represented by the absence of upper chest breathing, a condition that allows a poisonous substance to develop in the lungs; the other, the direct or exciting cause, represented by the effect produced by this poisonous substance circulating in the blood.

5. Etiologic Factors in Backward Children.—Neustaedter concludes after carefully studying 95 cases of backward children in one school that it is the addiction to alcoholic stimulants or strong decoctions of tea or coffee, or to the smoking of cigarettes, or to a combination of two or all of the poisons enumerated that far outweighs in etiologic importance all of the physical defects combined. After discussing in detail the effects of these substances he declares that the use of alcohol, tobacco and coffee or tea is an immediately exciting cause of backwardness in children.

6. Extensive Leucoplakia Beginning in Childhood.—When first brought to Hartzell the patient was 11 years old. There was present an affection of the skin which consisted of irregularly shaped, variously sized patches of dirty gray spines on the sides of the neck, and hempseed sized, flat, slightly elevated, scaly lesions scattered over the back. These lesions were regarded as keratotic. Besides the cutaneous disease, the entire mucous membrane of the lips, tongue and cheeks was a bluish white. The skin disease had lasted 18 months. The duration of the leucoplakia was not certain. After treatment the skin affection disappeared, but the leucoplakia was scarcely affected. About four years later an epithelioma of the tongue was discovered. The growth was removed, but a few hours later the patient unexpectedly died from what was supposed to be pulmonary embolism.

#### Boston Medical and Surgical Journal.

February 7.

- 7 \*Tumor of the Spinal Cord Leading to Destruction of the Lumbar Region, Hydrocephalus, Double Optic Neuritis and Painless Labor. E. W. Taylor, Boston.
- 8 Control of Syphilis and Venereal Diseases. P. A. Morrow, New York.

7. Tumor of the Spinal Cord.—The essential features of Taylor's case are as follows: A young, pregnant woman was suddenly seized with radiating pains down both legs, in September. The pain increased, and walking became difficult on account of the pain. The urine was at first under control. Later, the pain extended to the bladder and rectal regions, and in the latter part of December difficulty in micturition supervened, necessitating the occasional use of the catheter. Beginning mental disorder appeared at this time; pain extended into the back. There was beginning paralysis of the legs, standing alone being impossible; the urine was passed only with extreme difficulty; sensory disorders in the legs developed; loss of power in the legs rapidly supervened, together with disappearance of the reflexes. There was increase of mental confusion, disorientation as to time and place; extreme constipation, and complete urinary incontinence. Thereafter headache, much restlessness and discomfort, stiffness of the neck, and sensitiveness on moving the head occurred; there was also increasing headache and beginning optic neuritis, going on later to blindness. In the middle of January a painless labor occurred, the patient giving birth to a healthy child. There was a prickling sensation in the arms, but without paralysis. During February there was persistence of complete transverse lesion of the cord, with no faradic response in the muscles of the legs. Very marked mental disturbance supervened with final loss of the power of speech, and increasing apathy. Death occurred six months from the onset of the first pain. There was found at the postmortem an extensive tumor of the spinal cord, destructive in the lumbar region, and associated with internal hydrocephalus.

#### New York Medical Journal.

February 9.

- 9 \*Open-Air Treatment in Psychiatry. W. Mabon, New York.
- 10 The Scranton Typhoid Epidemic. J. M. Walnwright, Scranton, Pa.



- 11 \*Perforation of the Bowel in Typhoid. J. A. Scott, Philadelphia.
- 12 Radical Operation for Empyema of the Antrum of Highmore. L. Réthl, Vienna.
- 13 \*Etiological Factors of Invalidism Following Childbirth. J. C. Applegate, Philadelphia.
- 14 \*Atypical Manifestations of Paludism. J. J. France, Portsmouth, Va.
- 15 Degenerative Types of Myocardial Disease. H. Brooks, New York.
- 16 Beriberi, Its History, Symptoms, Causation and Treatment. J. P. Francez, Carencro, La.

9. **Open-Air Treatment in Psychiatry.**—Nabon says that the experience of the Manhattan State Hospital for the past five years shows conclusively that the open-air treatment is particularly beneficial to the following classes of the insane: 1, The tuberculous; 2, the feeble and untidy; 3, the retarded convalescents, and 4, the acute insane, in whom the psychosis is associated with anemic blood states, delirium and loss of sleep.

11. **Perforation of the Bowel in Typhoid.**—According to Scott, perforation of the bowel in typhoid fever is more common than is generally supposed, occurring once and a trifle over in every three deaths. The most common time of perforation is between the fourteenth and the twenty-first days. In 92 per cent. of the cases in his series the perforation occurred between the second and fifth week inclusive. The earlier cases are probably perforation in a relapse; now and then perforation may occur without evidence of previous illness. Perforation occurs in cases of all grades of severity from the ambulatory to the hemorrhagic type. It is most common in those with moderate (25 per cent.) and severe (50 per cent.) infection (75 per cent.). It is more common in the hemorrhagic than in the mild cases (from 10.8 per cent. to 8 per cent.). The ileum is the common site of perforation (88 per cent.); the majority occur within twelve inches of the ileocecal valve; the appendix and colon, respectively, are the next most frequent sites of perforation in this series of cases. Pain of some kind is present in 75 per cent. of all cases. In 50 per cent. of the cases the onset is sudden and severe and of increasing intensity, localizing itself to a special zone. In 20 per cent. of the cases the pain is of slow onset, not localized, with general distribution. In some cases (12 per cent. of this series) no pain is complained of, and the usual symptoms of perforation are absent. Tenderness and rigidity are present in from 75 to 65 per cent., respectively, of all cases, and are usually combined; in some cases either one or the other may be wanting, rigidity especially may be absent in cases with rather a pendulous and relaxed abdominal wall.

13. **Etiologic Factors of Invalidism Following Childbirth.**—Applegate is inclined to the belief that the predominant etiologic factors are "faulty technic" and too little regard for the "minor details" in the conduct of pregnancy, labor and the puerperium. The major details are of necessity, as a rule properly cared for.

14. **Atypical Manifestations of Paludism.**—France cites cases to show that chill, fever and sweating are not always the mode of onset of malarial infection; that the seat of pathologic change or congenital defect is often the point of attack of plasmodial invasion; that periodicity is one of the pathognomonic symptoms of all forms of paludal infection; and that women are oftener the victims of malarial infection than men.

#### St. Louis Medical Review.

February 2.

- 17 Medicinal Treatment of Trigeminal Neuralgia with Report of Two Successful Cases. G. W. McCaskey, Fort Wayne, Ind.
- 18 Abdominal Injuries. H. C. Dalton, St. Louis.
- 19 Pathologic and Clinical Diagnosis of Sarcoma. M. G. Seelig, St. Louis.

#### Lancet-Clinic, Cincinnati.

February 9.

- 20 Typhoid Fever. I. H. C. Cook, Hattiesburg, Miss.
- 21 Business Aspect of Medicine. G. Strohbach, Cincinnati.

#### Texas State Journal of Medicine, Fort Worth.

January.

- 22 Plea for Individual Scholarship. M. L. Moody, Greenville, Tex.
- 23 \*Rupture of the Diaphragm. J. E. Hodges, Houston, Tex.
- 24 Ovarian Secretions in the Economy of Woman. M. Duggan, San Antonio.
- 25 Surgical Operation of the Labium Frenum. T. G. Bradford, Dallas.

- 26 Study of Four Hundred Miscellaneous Urines with Special Reference to Cast Finding. M. A. Wood, Galveston.
- 27 \*Formaldehyd Gas as a Germicide and Insecticide when Generated from Formalin. J. T. Terrill, Galveston.
- 28 Dento-facial Orthopedics; Its Importance and Possibilities. J. G. Plffe, Dallas.
- 29 \*Report of Unusual Railway Injury. W. C. Jones.
- 30 Developments of Modern Surgery. J. M. Inge, Denton, Tex.
- 31 Chronic Malaria. J. T. FitzSimon, Castroville, Tex.
- 32 Digestive Disorders as Cause of Epileptic Seizures. T. W. Conerly, San Angelo, Tex.
- 33 Benefits to Young Children from Climatic Changes. E. J. Neathery, Sherman.

23. **Rupture of Diaphragm.**—Hodges reports the case of a man who was struck by a locomotive, receiving severe contusions of the left side extending from the clavicle almost to the crest of the ileum. The left foot was very cold, showing that the circulation was almost cut off, and there was a double fracture of the femur and a fractured rib. Two days afterward there appeared cellular emphysema over the region of the sixth rib, and it gradually became more perceptible. It was necessary to sustain the patient with stimulants, but these proved unavailing. The patient died. The necropsy disclosed the entire transverse and part of the descending colon and the stomach in the left pleural cavity, extending high up and obscuring the collapsed lung entirely. The diaphragm was found ruptured close to the attachment of the left crus, the rent being two and one-half inches in diameter. Just before death auscultation over the region of the cardiac apex revealed a fairly strong beat, but it seemed muffled, and following the beat was a peculiar gurgle and then a distinct splash. The findings at the postmortem explained the presence of these signs. The cardiac impulse against the distended abdominal viscera caused them to gurgle and move in the fluid contained in the pleural cavity with the production of a distinct splashing sound.

27. **Formaldehyd Gas as a Germicide.**—Terrill found on experimentation that the gas from ten ounces of formalin, two ounces of commercial sulphuric acid and five ounces of permanganate of potash in a properly closed room of 1,000 cubic feet space for four hours is sufficient for ordinary disinfection purposes. The method can be used by an inexperienced person, if clear directions are given, and the disinfection can be done in a day, the room being used again after two or three hours airing, especially after a little ammonia has been vaporized in it. As an insecticide, Terrill recommends a mixture containing double the quantities of each ingredient mentioned above, and six hours exposure.

29. **Unusual Railway Injury.**—An examination of Jones' patient, who was caught under the tender of a wrecked freight engine, disclosed the following injuries: The right leg was crushed above the knee, a comminuted fracture, with a considerable laceration of the soft structure, external to and opposite to the seat of the fracture. There was also a wound in the region of the perineum which extended from the os pubis down to and beyond the rectum, on to the coccyx, which was fractured. All the structures comprising the perineum were mutilated, lacerated or destroyed. The wound involved all the muscles of the pelvic outlet, the ischio-rectal region and the anal and genital triangles. Inside of the pelvis all the muscles attached to the ischium were lacerated and torn from their attachments and the bone denuded of its periosteum could be plainly felt. All the soft structures surrounding the rectum were torn asunder so that this organ virtually stood suspended in the pelvis. The rectum itself was not seriously injured. The integument, superficial fascia, and in fact all the structures in front of the bulbous portion of the urethra were destroyed, so that four or five inches of that organ were clearly visible, disclosing a rent of from three to four inches in the urethra in its longitudinal direction.

#### New York State Journal of Medicine, Brooklyn.

January.

- 34 Medical Treatment of Gastric Disorders in which Help of Surgeon is Demanded. C. G. Stockton, Buffalo.
- 35 Surgical Aspects of Chronic Gastric Disease. J. G. Mumford, Boston.
- 36 Stool Examination; Its Value and Practice. D. Roberts, New York.
- 37 \*Litholapaxy without Anesthesia. G. M. Muren, Brooklyn.
- 38 \*First Year of Amalgamation in the Medical Society of the County of New York. F. M. Crandall.
- 39 History of the Medical Society of the State of New York. J. J. Walsh, New York.



37. **Litholapaxy Without Anesthesia.**—Muren reports 16 cases of vesicle calculus in which, with one exception, litholapaxy was done without anesthesia. Every effort was made to get the patient in as good condition as possible before any attempt was made to crush the stone. This included bladder washings, the use of some urinary antiseptic and attention to the general health. The crushings were all done in the office. The results were excellent. Muren emphasizes that in performing this operation without general anesthesia, care must be exercised in selecting suitable cases. Unless some special contraindication exists fragmentation and removal may be repeated once a week.

38. **Amalgamation in New York.**—As an example of the advantages of the new régime in New York State medicine, Crandall, the president of the Medical Society of the County of New York, presents a report to show that union and the new system of organization have brought a larger membership and greater income than ever before, and that the percentage of members who have paid their dues has been unprecedented. Crandall summarizes the results of his investigations regarding the effect of amalgamation as follows: The receipts from membership dues the first fiscal year after amalgamation were \$2,189 greater than the average receipts for the five years preceding it, and \$1,803 greater than for the year immediately preceding it; that 6.8 per cent. of the membership was in arrears for dues on December 31, 1906, as compared with 21 per cent. in arrears at the end of the year preceding amalgamation; that 2,178 members paid dues for the first year after amalgamation as compared with 1,476 for the year immediately preceding it; that is, 702 more members paid dues in 1906 than in 1905; that this increase of 702 was but partially due to the members received from the association.

**American Medicine, York, Pa.**  
*January.*

- 40 \*Fractures of the Spine. W. P. McIntosh, Portland, Me.
- 41 \*Congenital Umbilical Hernia. H. W. Yates and J. E. Davis, Detroit.
- 42 \*A New Proctoscope. J. P. Tuttle, New York.
- 42½ Etiology and Diagnosis of Epidemic Cerebrospinal Meningitis. N. B. Foster, New York.
- 43 Urine Segregation by Means of Kidney Massage. D. M. Cowie, Ann Arbor, Mich.
- 44 Local Bloodletting in Treatment of Dropsy of Cardiac Origin. A. Devoe, Seattle, Wash.
- 45 Gastric Dyspepsias Amenable to Surgical Treatment. W. E. Ground, Superior, Wis.
- 46 Acute Otitic Cerebral Abscess with Notes on Technic and Diagnosis. C. Jackson, Pittsburg.

40. **Fracture of Spine.**—McIntosh reports two cases of fracture of the spine that terminated in recovery. In one case a fracture of the sixth cervical vertebra was accompanied by marked deformity and crepitus but no paralysis. No attempt was made to reduce the fracture until three months after the receipt of the injury. Reduction and suitable after-treatment resulted in a complete recovery. In the second case, one of fracture of the fifth and sixth cervical vertebrae, there was dislocation forward and to the right side with very marked deformity, bulging forward of the front of the neck, flaccidity and bulging of the sterno cleidomastoids, with paralysis of both sensation and motion, abolition of tendon reflexes, but no interference with thermogenic centers. The fracture was reduced and a plaster jacket was applied. The patient made a complete recovery, although the extensors and supinators of the right arm were still paralyzed two months from the time of receiving the injury and the neck was stiff from ankylosis. McIntosh reviews 21 cases recorded in the literature and 6 cases of fracture of the dorsal and lumbar vertebrae in which recovery took place.

41. **Congenital Umbilical Hernia.**—Of the three cases reported by Yates and Davis in which a radical operation was done at four hours, sixteen hours, and one hour after birth respectively, one patient died from shock, four hours after operation; a second five days after operation, from peritonitis, making a mortality of 66.66 per cent. The patient who survived the operation lived three months, succumbing to an attack of mucous colitis. This patient was subject to frequent attacks of gastrointestinal inflammation.

42. **New Proctoscope.**—Tuttle describes a pneumatic proctoscope in which the electric lamp is enclosed in a glass globe, thus obviating all burning of the rectal mucous membrane. The instrument and its use are described in full.

**Northwest Medicine, Seattle.**  
*January.*

- 47 Sanatorium Treatment of Tuberculosis and Its Relation to the State of Washington. F. H. Luce, Davenport, Wash.
- 48 \*Value of Tuberculo-Opsonic Index in the Diagnosis of Strictly Localized Tuberculosis. W. R. M. Kellogg, Seattle.
- 49 Treatment of Tuberculosis in the State of Washington. H. M. Greene, La Crosse, Wash.

48. **Value of Opsonic Index in Localized Tuberculosis.**—Kellogg has determined the opsonic index in over thirty cases with some interesting results. The cases which have thus far been specifically affected by treatment based on the opsonic index are those of bone and joint tuberculosis, tuberculosis of glands and subcutaneous tissues, and genitourinary tuberculosis. Kellogg thinks that this treatment does not seem to apply to tuberculosis of the lungs as this is not a truly localized condition.

**Annals of Surgery, Philadelphia.**  
*January.*

- 50 \*End-to-End Arteriovenous Angiorrhaphy. H. Lilienthal, New York.
- 51 \*Rotary Dislocations of Atlas. E. M. Corner, London.
- 52 \*Occlusion of Portal Vein Due to Surrounding Inflammatory Adhesions. G. Walker.
- 53 \*Obliteration of Stomach as Result of Gastric Ulcer—Duodenostomy. J. B. Bullitt, Louisville.
- 54 Typhoid with Double Perforation of Ileum and Perforation of Gall Bladder. O. G. T. Kiliani, New York.
- 55 Intestinal Intussusception. R. C. Coffey, Portland.
- 56 \*Resection of Ten Feet, Two Inches of Small Intestines, with Recovery. E. Staehlin, Newark.
- 57 Fractures of the Os Calcis and Astragalus. H. Cabot and H. Binney.
- 58 Old Fracture of the Tarsus. L. W. Ely, New York.
- 59 \*Colossal Dermoid Cyst of Ovary of Over Fifty Years' Growth. H. F. Brownlee, Danbury, Conn.
- 60 Extirpation of Hypernephroma, Weighing 4¼ Pounds, from An Infant. W. S. Cheesman, Auburn, N. Y.
- 61 \*Intraperitoneal Rupture of the Urinary Bladder. E. Quick, Appleton, Wis.
- 62 Drainage of Prevesical Space Through the Perineum in Suprapubic Cystotomy. W. T. Belfield, Chicago.
- 63 \*Drainage of Prostatic Abscesses Through the Ischio-rectal Fossa. W. C. Lusk, New York.
- 63½ Silverized Catgut. J. E. Blake, Brooklyn.
- 64 \*Gonorrheal Osteomyelitis. R. C. Cupler, Chicago.

50. **Arteriovenous Angiorrhaphy.**—Lilienthal reports an unsuccessful case of arteriosclerotic gangrene of the leg in which the artery was anastomosed with the vein without a corresponding counter-anastomosis of vein into artery. He says that one point demonstrated by this operation is that the danger of immediate traumatic aneurism following the implantation of artery into vein in the human subject has been overestimated.

51. **Rotary Dislocations of the Atlas.**—Corner discusses the value of skiagraphy in diagnosing rotary dislocations of the atlas and reviews nineteen recorded cases. He says that the five points on which to rely for a diagnosis are the position of the head, the positions and fixity of the transverse processes of the atlas, the examination of the pharynx, and the skiagraph of the lateral view of the neck.

52.—**Obstruction of Portal Vein.**—Walker reports the case of a woman who for fifteen years had occasional attacks of what was thought to be indigestion. She was awakened early one morning by a severe pain in the right hypochondrium which radiated toward the umbilicus and downward toward the pubis. It lasted for two hours. There was no vomiting, no jaundice, but severe constipation and some rigidity of the abdominal muscles. After this the patient lost flesh rapidly, her appetite became poor and she suffered alternately from constipation and diarrhea. Four weeks after the attack fluid was first noticed in the peritoneal cavity. This rapidly increased until the abdomen was markedly distended. The temperature was normal, the pulse was 92, regular, but poor in volume. Six liters of a clear straw-colored fluid were withdrawn from the abdomen. The fluid contained a large number of corpuscles and clotted readily. No mass could be palpated, but there was tenderness and muscular rigidity. In a short time the fluid began to return and after five weeks three liters were withdrawn. Ten days afterward the patient died. At the necropsy there was found an inflammatory growth about the size of an orange, which matted together the



duodenum, the head of the pancreas, the gall bladder and the under surface of the liver. This mass also surrounded the portal vein and common duct. The duct was patent, but the portal vein was entirely occluded for about three quarters of an inch. The gall bladder contained three gallstones, which evidently were responsible for the condition.

**53. Obliteration of Stomach.**—The patient whose history is recorded by Bullitt had constant pain in the stomach, whether the organ was empty or full, and vomited incessantly. Symptoms of pyloric obstruction manifested themselves. Efforts to wash out the stomach proved futile, the tube could not be made to enter the viscus. The patient began to have great difficulty in swallowing food. The abdomen was opened, and a mass, the size of a medium-sized oyster shell was detected buried in adhesions and occupying the site where the stomach should be. This was finally identified as the stomach. An enterostomy was done, the duodenum being utilized for this purpose. The method employed was essentially that of Witzel in making a gastrostomy. The patient immediately received milk and broth through a funnel attached to the tube. In ten months he gained 40 pounds. He now eats everything, including meats, cabbage and sauerkraut, taking the food into the mouth, chewing it thoroughly and then directing it into a funnel connected to a tube passed about six inches into the artificial mouth. For many months digestion and bowel function have apparently been uneventful. There is practically no leakage from the fistula. The patient keeps a rag stopper in the opening between feedings in order to keep the opening dilated. About six meals are taken a day. The patient's general condition is good, and Bullitt says that nothing further will be done at present.

**56. Resection of Intestine.**—In Staehlin's case the resection of the intestine was made necessary by strangulation of a large, indirect inguinal hernia.

**59. Dermoid Cyst of Ovary.**—In the case reported by Brownlee the cyst and its contents weighed 32 pounds. The condition had existed for 50 years.

**61. Rupture of Bladder.**—Quick reports the case of a man who sustained an intraperitoneal rupture of the bladder as the result of a severe abdominal injury and subsequently suffered from anuria and a progressive abdominal distension. He was operated on 254 hours after the accident, and was discharged cured on the tenth day. It is noteworthy in this case that the patient performed his work as a laborer an entire day after the accident, and was not compelled to take to bed until the second day was well advanced. Shock was absent.

**62. Drainage of Prevesical Space.**—The procedure practiced by Belfield is as follows: When the operator is ready to close the wound, the membranous urethra is opened in a grooved staff, the gorget introduced and the staff withdrawn. A small trocar with canula is passed from above along the anterior surface of the bladder and prostate into the groove of the gorget. The trocar being withdrawn, a few silkworm strands are threaded through the canula and along the gorget out through the perineal wound (a small perforated rubber drain may be attached and drawn through by the threads). A large, soft catheter with multiple perforations having been introduced into the bladder for perineal drainage, the suprapubic incision, bladder and abdominal wall are closed completely except where the threads protrude, the anterior bladder wall being anchored near the recti muscles. Urine which may leak through the bladder wound, and tissue fluids, find ready exit at the bottom of this space. In nine of the eleven cases in which this method was employed by Belfield the wound healed within two weeks; in the remaining two cases—prostatectomies in which oozing was allowed to block the perineal drain—the wound was reopened for the insertion of a larger drain.

**63. Drainage of Prostatic Abscesses.**—Lusk suggests draining prostatic abscesses through the ischiorectal fossa in cases in which the abscess has not ruptured into the urethra and when a tense elastic tumor bulges toward the rectum.

**64. Gonorrheal Osteomyelitis.**—Cutler reports a case of gonorrheal osteomyelitis of the upper end of the left humerus

coming on during the fifth week of an attack of acute gonorrheal urethritis. The diagnosis was confirmed by microscopic examination. Relief followed after a bone curettage.

#### Pennsylvania Medical Journal, Athens.

January.

- 64½ \*Advances in Surgery of Nervous System. T. H. Weisenburg, Philadelphia.
- 65 \*Late Cerebellar Abscess of Traumatic Origin. D. A. Webb, Scranton.
- 66 \*Fracture of Skull from Direct Violence Through Inferior Maxilla. A. G. Fell, Wilkes-Barre.
- 67 \*Present Status of Cranial Surgery. C. H. Frazier, Philadelphia.
- 68 Brain Complications Following Mastoiditis. F. W. Frankhauser, Reading.
- 69 \*Trauma of the Head. J. H. W. Rhein and E. Martin, Philadelphia.
- 70 \*Retarded Cerebral Development Due to Other than Cerebral Causes. E. Laplace, Philadelphia.
- 71 Tuberculosis of the Spine. J. K. Young, Philadelphia.
- 72 \*Analysis of Kidney Condition in 800 Cases of Scarlet Fever, Treated with Chloral Hydrate. B. F. Royer, Philadelphia.

64½, 65, 66, 67, 69, 70. See abstract in THE JOURNAL, Sept. 29, 1906, page 1049.

72. See abstract in THE JOURNAL, Oct. 13, 1906, page 1220.

#### Kentucky Medical Journal.

February.

- 73 \*Using Elasticity of Lung Tissue in Treatment of Disease of Thorax. E. W. Ford, Hartford.
- 74 Treatment of Acute and Chronic Suppuration of the Middle Ear. J. A. Stucky, Lexington.
- 75 Early Diagnosis and Treatment of Pulmonary Tuberculosis. W. F. Boggess, Louisville.
- 76 The Insurance Fee. A. T. McCormack, Bowling Green.

73. See abstract in THE JOURNAL, Oct. 27, 1906, page 1402.

#### The Therapeutic Gazette, Detroit.

January 15.

- 77 \*Analysis of Kidney Condition of 800 Cases of Scarlet Fever Treated with Chloral Hydrate. B. F. Royer, Philadelphia.
- 78 Treatment of Gonococcal Conjunctivitis with Special Reference to Silver Salts. G. E. de Schweinitz, Philadelphia.
- 79 Diagnosis and Treatment of Multiple Neuritis. F. X. Dercum, Philadelphia.
- 80 Cholemia in Neurasthenia. H. Richardson, Baltimore.
- 81 Action of Several Agents on Intestinal Peristalsis, Striped Muscle, and the Heart. I. Ott and J. F. Ulman, Philadelphia.
- 82 Review of Opsonins and Bacterial Vaccines. E. M. Houghton, Detroit.

77. This article also appeared in the *Pennsylvania Medical Journal* for January.

#### The Post-Graduate, New York.

January 1.

- 83 Medical Examination of Children from the View Point of the Specialist. H. D. Chapin, New York.
- 84 Demonstration of Medical Examination. G. R. Pisek, New York.
- 85 Examination of Children from the View Point of the Surgeon. E. W. Peterson, New York.
- 86 Examination of the Rectum in Children. K. K. MacAlpine, New York.
- 87 Method of Examination of a Child's Eyes. A. E. Davis, New York.
- 88 Examination of the Ears. W. C. Phillips, New York.
- 89 Examination of the Skin. W. B. Brown, New York.
- 90 Examination of the Nose and Throat in Young Children. H. B. Douglass, New York.
- 91 Parenchymatous Transformation of the Renal Structures. A. Pisanì, New York.
- 92 Penetrating Wounds of the Cornea. J. E. Virden, New York.
- 93 The Important Art of Prescriptive Writing. W. A. Weightman.

#### Virginia Medical Semi-Monthly.

January 25.

- 94 Uncinariasis. B. B. Bagby, Walkerton, Va.
- 95 Morphine Anesthesia. M. M. Moran, Plover Point, Va.
- 96 Specific Urethritis in the Male. A. B. Sinclair, Charlottesville, Va.
- 97 Adenoids—Their Cause, Effects and Treatment. J. P. Davidson, Richmond, Va.
- 98 Pulmonary Tuberculosis: Prophylaxis. W. A. Plecker, Hampton, Va.
- 99 Review of Puerperal Eclampsia. W. J. Innes, Brookneal, Va.
- 100 Collapsed Alæ Nasi and Its Correction. D. D. Wilcox, Petersburg, Va.
- 101 Significance and Treatment of Winter Colds. O. H. Snider, Atlanta, Ga.

#### Providence Medical Journal.

January, No. 1.

- 102 Present Status of Substitute Feeding of Infants with Practical Conclusions. E. D. Chesebro, Providence.
- 103 Home Treatment of Tuberculosis by Class Method as Carried Out in Providence, with Exhibition of Cases. F. T. Fulton.
- 104 Migraine. F. T. Rogers, Providence.
- 105 Rabies—Origin, Cause, Symptoms, Diagnosis and Treatment. P. D. Hadley, Providence.

#### Indiana Medical Journal, Indianapolis.

January.

- 106 Stomach Trouble. T. B. Eastman, Indianapolis.
- 107 Cornell University and Purdue University. T. Potter, Indianapolis.



**Journal of the South Carolina Medical Association, Greenville.***January.*

- 108 Practical Methods in the Prevention of Malaria. L. L. Williams, Baltimore.
- 109 Traumatic Epilepsy and Its Treatment. A. J. Buist, Charleston, S. C.
- 110 Pneumonia. G. A. Neuffer, Abbeville, S. C.

**Southern California Practitioner, Los Angeles.***January.*

- 111 Contribution of Ophthalmology to the Diagnosis of Arteriosclerosis. A. L. MacLeish, Los Angeles.
- 112 Berlin—Its Opportunities for Postgraduate Work. D. Fulton, Los Angeles.
- 113 Methods of Disinfection. W. W. Roblee, Riverside.
- 114 Case of Primary Ocular Diphtheria. F. W. Miller, Los Angeles.
- 115 The Doctor and the Child. G. E. Abbott, Pasadena.
- 116 Primary Carcinoma of the Bladder and Urethra in the Female. D. C. Ball, Santa Ana.
- 117 Health and Development of School Children. G. L. Leslie, Los Angeles.

**The American Practitioner and News, Louisville.***January.*

- 118 The Orang-Outang. B. Robinson, Chicago.
- 119 Diagnosis of Digestive Disorders. J. J. Moren, Louisville.
- 120 Our Neglected Insane. T. P. Satterwhlte, Louisville.

**Fort Wayne Journal-Magazine.***January.*

- 121 Clinical Importance of Abdominal Pains in Relation to Intrathoracic Lesions. B. Van Sweringen, Fort Wayne.
- 122 Simple Elixir as a Vehicle in Prescriptions Intended for Children. E. E. Heffner, Lock Haven, Pa.

**University of Pennsylvania Medical Bulletin, Philadelphia.***January.*

- 123 Coxa Valga or Collum Valgum. J. K. Young.
- 124 Roentgen Rays in Diseases of the Blood and Blood-Forming Organs, with Report of Cases. H. K. Pancoast, Philadelphia.
- 125 Primary Squamous Carcinoma of the Gall Bladder. J. Speese.

**Columbus Medical Journal, Columbus, Ohio.***January.*

- 126 Parotiditis as a Complication in Pelvic Surgery. E. Lanphear, St. Louis.
- 127 Is Materia Medica a Proper Subject for First Year Students? A. J. Girardot, Toledo.
- 128 The Logical Place of Materia Medica in the Curriculum. T. Sollmann, Cleveland.

**Central States Medical Monitor, Indianapolis.***January.*

- 129 Newer Facts Concerning Phagocytosis; the Opsonins. L. W. Famulener, Bloomington.
- 130 Pelvic Tuberculosis. E. Charles, Summitville, Ind.
- 131 Rural Hygiene. C. L. Botkin, Farmland, Ind.
- 132 Advantages of Knee-Chest Position for Deep Urethral and Cystoscopic Examinations. J. E. Morrow, Indianapolis.

**Medical Fortnightly, St. Louis.***January 25.*

- 133 Chronic Constipation and Its Treatment. G. F. Butler, Chicago.
- 134 Exophthalmic Goiter. H. P. Wilson, Indianapolis, Ia.
- 135 Talks to Recent Graduates. A. L. Benedict, Buffalo.

**Annals of Gynecology and Pediatrics, Boston.***January.*

- 136 Ectopic Pregnancy. H. F. Quackenbos, New York.

**St. Louis Courier of Medicine.***January.*

- 137 Looking Back—Résumé of Literature of 1906. E. A. Babler, St. Louis.

**FOREIGN.**

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**British Medical Journal.***January 26.*

- 1 \*Common Errors in the Diet and General Hygiene of Children. A. F. Voelcker.
- 2 \*Postpartum Hemorrhage. J. F. LePage.
- 3 \*Treatment of Myoma of the Uterus. J. F. Jordan.
- 4 \*Cesarean Section in a Case of Contracted Pelvis with Twin Pregnancy. G. H. Cowen.
- 5 \*Acute Illness Supervening During Menstruation. T. Holmes.
- 6 \*Obstructed Labor Due to Osteosarcoma of Pelvis. M. B. Ray.
- 7 \*Influence of an Excessive Meat Diet on Fertility and Lactation. B. P. Watson.
- 8 The Food Factor in the Twentieth Century. G. J. Sealy.
- 9 \*Multiple Myeloma. J. R. Charles and H. H. Sanguinetti.
- 10 Scurvy Occurring in a Diabetic. W. E. Jones.
- 11 \*Vaccination of the Cornea. J. A. Menzies and W. E. Jameson.

1. Diet and Hygiene of Children.—Boeleker is emphatic in stating that unless physicians recognize what actually takes place in their patients when they are not under the doctor's eye, they run a great risk not only of doing their patients

little or no good, but they bring discredit on their art and fail, often quite deservedly, in their treatment. He believes that at present there is a tendency on the part of physicians to pay too little attention to detail and to think too highly of diagnosis rather than of treatment. The paper contains much valuable information on the diet, feeding and clothing of children, on ventilation, exercise, sleep and baths, for which the reader is referred to the original, as an abstract would necessitate the complete reproduction of the paper.

2. Postpartum Hemorrhage.—LePage says a word in favor of compression of the abdominal aorta as a means of treating postpartum hemorrhage. Having rendered any further serious hemorrhage impossible, the next step is to increase the volume and current of the blood and to assist uterine contraction. This is done by raising the pelvis to cause the blood to gravitate toward the heart and brain, and to raise the arms and legs, bandaging them firmly to prevent the return of blood when they are lowered. Ergot and other remedial means may then be used. The uterus should be cleared of clots or retained portions of placenta.

3. Treatment of Myoma of Uterus.—Jordan favors abdominal hysterectomy because it enables the surgeon to do a thorough and careful operation, relieves him of unnecessary anxiety, gives the patient freedom from pain and insures an easy convalescence.

4. Cesarean Section.—In the case reported by Cowen, Cesarean section was done at term after the os was dilated enough to admit two fingers. Although the true conjugate was about three and one-third inches, the largest diameter of the fetal head could not be made to enter the brim by pressure in various directions from above. Twins were not suspected, being only found when the uterus was opened. One interesting feature in the case was that the uterus would not contract properly until the deep sutures were tied. The patient made an uneventful recovery.

5. Acute Illness During Menstruation.—Holmes reports 6 cases of acute illness coming on during an apparently normal menstrual period. In four of these cases a tumor was palpable over the ovary, and Holmes is of the opinion that hemorrhage from a Graafian follicle engorged with blood at the menstrual period may be the starting point of some of these cases, and that undue exertion might be the last factor in determining the rupture.

6. Obstructed Labor.—Ray reports a case of mixed cell sarcoma of the sacrum and coccyx in which the tumor obstructed labor to such an extent as to necessitate surgical intervention. The patient died from hemorrhage.

7. Influence of Excessive Meat Diet on Reproduction.—The method of conducting the investigation made by Watson was as follows: Twelve female rats and several males were put on a bread and milk diet, and the females were continued on this throughout pregnancy and lactation. These served as the controls. Seventeen females and five males were put on an ox-flesh diet, but were otherwise under exactly the same conditions as the animals given bread and milk. The animals were begun on a meat diet at various ages, from the second up to the fourth month, and some of them were kept on the diet for as long as five months. Of the 17 animals fed on a meat diet only 8 became pregnant, and of these 4 bore young within 21 days (the usual gestation period in the rat) of being put on the diet, so that only 4 actually conceived while on meat feeding. Of these latter one had been 24, one 25, one 27 and one 30 days on an exclusive ox-flesh regimen. The other 9 animals, although kept for several months, did not conceive, and this in spite of the fact that they were seen to copulate freely right up to the end of the experiment. Of the 12 animals fed on a bread and milk diet all became pregnant and had young; so that we may conclude that a meat diet is decidedly prejudicial to the occurrence of pregnancy in rats when the diet is begun when the animals are from two to four months old. As a result of these experiments Watson is convinced that a meat diet in rats affects prejudicially their powers of reproduction, as well as lactation, and these results suggest to him that the increasing consumption of animal food in Great Britain may be an important factor in the causation of the



decrease in the birth rate and the diminished powers of lactation.

9. **Multiple Myeloma.**—Charles and Sanguinetti report a case of multiple myeloma occurring in a man aged 72, in which no myelopathic albumosuria was present on the occasions when the urine was examined for this purpose. The patient died and the findings of a very carefully done postmortem are reported in full.

11. **Vaccination of Cornea.**—Menzies and Jameson report an instance of accidental vaccination of the cornea occurring in one of them (J.) following the breaking of a tube of lymph, a fragment of the tube striking the eye. The corneal lesion manifested itself on the following day. It persisted for about five weeks, recovery being retarded by the occurrence of a secondary ulceration.

The Lancet, London.

January 26.

12 \*Erythema Nodosum and Rheumatism. J. O. Symes.

13 Spirillum Fever in Uganda. R. U. Moffat.

14 Roentgen Rays in the Treatment of Carcinoma and Sarcoma. C. Williams.

15 \*Two Cases of Traumatic Rupture of the Kidney, in one of which a Single Kidney Existed. J. G. Andrew.

16 \*New Test for Sugar. H. J. H. Fenton.

17 Induction of Autovaccination in Tuberculosis and Other Chronic Glandular Infections by the Roentgen Rays. H. D. McCulloch.

18 \*Tracheotomy in Slight Respiratory Obstruction Associated with Febrile Toxemia. A. O. Bisson.

19 \*Glandular Extract from Immunized Animals as a Curative Agent in Plague. S. Mallannah.

12. **Erythema Nodosum and Rheumatism.**—Symes is of the opinion that there is much to support the view that erythema nodosum is a specific acute febrile disorder; that infection takes place through the tonsils or lungs; that after a prolonged incubation period and period of prodromal symptoms a specific rash appears, and that convalescence is accompanied by profound anemia and malaise; but, he says, the evidence of a relationship between an erythema nodosum and rheumatism is of a conflicting nature.

15. **Traumatic Rupture of Kidney.**—The two cases reported by Andrew resemble each other in the following points: 1, Both patients fell on the loin; 2, the injury in both cases was direct—one a fall on the edge of a stair, the other on the edge of a pail; 3, in both blood was present in the urine immediately after the accident; 4, in both the ruptured kidney could be felt by palpation, in each case extending round the abdomen toward the umbilicus and tender to touch; and 5, in both the swelling was clearly behind the peritoneum.

16. **Test for Sugar.**—The new test for sugar described by Fenton is said to be sufficiently delicate to detect 0.2 per cent. or less of sugar in any liquid. For the examination of urine the test is most conveniently applied in the following way:

Pour a small quantity (4 or 5 c.c.) of the liquid on to an excess of solid anhydrous calcium chlorid so as to form a semisolid, or pasty, mass. Add to this 10 c.c. of toluene containing two or three drops of phosphorous tribromid and then carefully boil the mixture for a few minutes, bearing in mind the inflammable nature of toluene. Pour off the toluene solution and, after cooling, add to it about 1 c.c. of malonic ester and a little alcohol. On neutralizing the mixture by adding alcoholic potash, drop by drop, a characteristic pink color will usually be observed. The mixture is now considerably diluted with alcohol and a few drops of water when, if sugar was originally present, the solution will exhibit a beautiful blue fluorescence.

The reaction appears to be a specific one for carbohydrates which contain six or more atoms of carbon in the molecule and may therefore be used to distinguish hexoses from pentoses or other lower sugars.

18. **Tracheotomy in Slight Respiratory Obstruction.**—In reviewing the cases described by Bisson it appears that in all of them the operation was beneficial. In the greater number the benefit proved only temporary, but there were cases in which the patient's life was saved. Most of the patients who died were very young.

19. **Glandular Extract in Plague.**—Mallannah records the results obtained from the use of glandular extract from immunized animals as a curative agent in plague. The various stages of his experiments are detailed in full, and the results are very encouraging.

Tropical Medicine and Hygiene, London.

January 15.

20 Oriental Sores: Leishman Bodies Incubation Period of Five Months. P. Manson.

21 Equinine—Its Suggested Use in Blackwater Fever. W. Hargigan.

22 "Bihimbo" Disease—The Nature of This Disease Met in Chaka District of the Uganda Protectorate. A. G. Bagshawe.

23 House Sanitation. D. Cooper.

The Practitioner, London.

January, 1907.

24 Influenza. T. C. Allbutt.

25 Clinical Aspects of Influenza. R. D. Powell.

26 \*Therapeutics and Prophylaxis of Influenza by Quinin. W. Broadbent.

27 \*A Possible Source of Influenza. D. Duckworth.

28 \*Thoughts on Influenza. J. Moore.

29 General Considerations on Influenza. S. West.

30 \*Respiratory Complications of Influenza. H. Mackenzie.

31 \*Influenza as It Affects the Nose and Throat. St. C. Thomson.

32 \*Influenza in Relation to the Digestive Organs. N. Dalton.

33 Influenza and Appendicitis. D. Armour.

34 Cardiac Complications of Influenza. J. Cowan.

35 The Nervous System in Influenza. W. Harris.

36 The Psychoses of Influenza. T. C. Shaw.

37 Ocular Manifestations Accompanying Influenza. H. W. Lyle.

38 Aural Complications of Influenza. A. H. Cheate.

39 Micro organisms of Influenza. W. d'E. Emery.

40 \*Influenza from a Public Standpoint. A. Newsholme.

26. **Quinin in Influenza.**—Broadbent considers quinin the best remedy in influenza. As a prophylactic he gives two grains every morning during the prevalence of the epidemic. For the cure of the patient his usual prescription is one dram of ammoniated quinin, and two drams of liquor ammoniæ acetatis, every hour, for three hours, and then every four hours. In the fulminating attacks of influenza in which the patient has become comatose, he states that hydrobromate of quinin given hypodermically in large doses completely relieves the unconsciousness.

27. **Possible Source of Influenza.**—Duckworth thinks that imperfectly ventilated rooms in hotels and elsewhere, and sleeping berths on trains, may be possible sources of influenza. Effective disinfection of the furniture, curtains and blankets in such rooms or sleeping cars would materially diminish the risk of infection.

28. **Treatment of Influenza.**—For the distressing rheumatoid or neuralgic pains of influenza Moore recommends a combination of salicylate of sodium with granular effervescent citrate of caffeine; or phenacetin, 3 to 5 grains; tincture of gelsemium, 5 minims, and chloroform water, one-half ounce.

30. **Respiratory Complications of Influenza.**—When the cough is dry and paroxysmal, Mackenzie gives heroin hydrochlorid in doses of from 1/36 to 1/12 of a grain, at intervals of from one to two hours. When the cough is frequent and severe he employs the following:

R. Morphine hydrochlor.....gr. ½	03
Apomorphine hydrochlor.....gr. ¾	045
Acidi hydrochlor. dil.....m. xx	1 25
Syr. pruni virginianæ.....℥ss	15
Aquæ.....℥ii	60

Ft. linct. Sig.: One teaspoonful as necessary.

When there is bronchitis, a mixture containing citrate of ammonia, citrate of potash and ipecacuanha wine is useful:

R. Liq. ammonii citratis.....℥ss	6
Potassii citratis.....gr. xv	1
Vin. ipecacuanhæ.....m. v	3
Aquæ.....℥i	30

Sig.: One teaspoonful three times a day.

31. **Cough in Influenza.**—Thomson prescribes the following for so-called "stomach coughs" frequently seen in cases of influenza:

R. Acidi hydrochlor. dil.	
Acidi nitrici dil., āā.....℥ss	2
Glycerini.....℥ss	15
Infusi quassiae.....℥vi	180

M. Sig.: A tablespoonful in a wineglassful of water three times a day.

32. **Influenza and Digestive Organs.**—Dalton says that the treatment of influenza of the gastrointestinal tract must be expectant. Strong measures should be avoided. Antipyretics and purgatives must be used with caution. Intestinal antiseptics should be tried and cardiac stimulants will be needed.

40. **Influenza from Public Health Standpoint.**—Newsholme says that it does not appear likely that any isolation of influenza patients on a sufficiently large scale to influence the result can ever be enforced successfully because the period of incubation is short; the disease is infectious in the earliest stage before its nature is recognized; the diagnosis is diffi-



cult, and many cases are so extremely mild that the patient is not obliged to remain indoors. He says that disinfection of invaded houses does not appear to be required. The contagion of influenza is very short lived.

**Bulletin de l'Académie de Médecine, Paris.**

- 41 (LXX, No. 44, pp. 609-634.) Distribution of Phosphorus in Food. (Phosphore dans les aliments.) Balland.
- 42 \*Etiology and Prophylaxis of Malaria. (Paludisme.) Kelsch.
- 43 (LXXI, Nos. 1-2, Pp. 1-102.) Bacillary Dysentery and Abscess in Liver. Dys. bac. et abcès du foie.) L. E. Bertrand
- 44 \*Sanitary Defense of Paris. (Défense sanitaire.) A. J. Martin.
- 45 \*Inflammatory Tuberculosis and Arthritism. (Les arthritiques, ou prétendus tels, ne sont souvent que des tuberculeux.) A. Poncet and R. Leriche.
- 46 Contagion and Endemic Diseases in the French Colonies, 1905. (Maladies endémiques, etc.) Kermorgant.
- 47 \*Statistics of Amputations of Breast for Cancer. (Cancer épithélial du sein.) Le Dentu.

42. **Prophylaxis of Malaria.**—Kelsch presents a number of arguments against ascribing too exclusive etiologic importance to the mosquito in respect to malaria.

44. **Sanitary Defense of Paris.**—Martin reviews the work done in 1905 by the disinfection and vaccination services and the like in Paris. There are four disinfecting stations, and disinfection was done at the house or station in 58,470 cases. The death rate has fallen from 22.33 per 1,000 inhabitants in 1892 to 17.4 in 1905. There were 2,694 less deaths from the transmissible diseases in 1905 than in 1892.

45. **Unrecognized Tuberculosis in Arthritics.**—Poncet and Leriche discuss the affections due to sluggishness in the nutritional processes. Any cause acting for a long time may slowly produce and even fasten on the offspring this sluggishness in the nutritional processes, they say. Any latent infection or intoxication may gradually modify the soil and induce this sluggishness in the nutritional processes, which is called, for want of a more accurate term, the "arthritic" or "rheumatic" tendency. The diplococcus of rheumatism, intestinal autoinfection and the tubercle bacillus are all liable to transform, in time, a healthy soil into arthritic soil. The lesions and affections called arthritic are frequently merely the expression of mild local tuberculosis, which in time vaccinate the soil against malignant tuberculosis. The tuberculous should be divided into two classes—patients with classic, active tuberculosis, specific from the standpoint of pathologic anatomy, and fatal in the course of a few months or years, and secondly, patients with non-specific tuberculosis, in whom the inflammatory tuberculosis induces merely an ordinary inflammatory reaction in the tissues—primary hyperemia, secondary inflammation and final sclerosis. They classify them as *les grands tuberculeux* and *les petits tuberculeux*.

47. **Survival After Removal of Mammary Cancer.**—Le Dentu says that 10 patients on whom he operated for epithelial mammary cancer from six to nineteen years ago are in good health to date. Seven others in the same group survived from three to sixteen years. Twenty others survived from five months to nearly fourteen years, and three in this group succumbed to intercurrent affections. These figures are the record of 53 private patients with mammary cancer, confirmed by the microscope, on whom he has operated.

**Presse Médicale, Paris.**

- 48 (XV, Nos. 1-2, pp. 1-16.) Technic of Applying Ions in Therapeutics. (Thérapeutique ionique.) P. Desfosses and A. Martinet.
- 49 Rational Use of Tarnier Retractor. (Ecarteur Tarnier). C. Jeannin.
- 50 \*Diagnosis of Tuberculosis of Genitourinary Apparatus from Microscopic Examination of Urine. (Diag. de la tub. de l'appareil gén.-urin.) J. Moscou.
- 51 \*Therapeutic Influence of Air in Rapid Traveling. (Influence de la course rapide.) L. Bakaleinik.
- 52 Karyogamy as Theory of Origin of Cancer. (Pathogenie du cancer. Théorie karyogamique.) L. Hallion.
- 53 Etiology and Pathogenesis of Nutmeg Liver. (Foie muscade.) E. Géraudel.
- 54 \*Prevention of Hematoma in Operating on the Scrotum. (Capitonnage dans les op. sur les bourses.) R. Siegel.
- 55 (Nos. 3-4, pp. 17-32.) Stenosis and Atresia of the Cervix in Multiparae. (Sténose et atrésie du col chez des femmes ayant eu des enfants.) F. Jayle.
- 56 \*Hygiene of the Staircase. (Hygiène de l'escalier.) A. A. Rey.
- 57 \*Teaching the Tuberculous not to Cough. (Procédé du pointage des quintes.) C. Mantoux.
- 58 \*Rectifications in Regard to the Aphasia Question. (Aphasie.) P. Marie.
- 59 Antityphoid Serum. (Sérum antityphique.) A. Rodet and Lagriffoul.
- 60 Importance of Examination of the Mouth in Case of Dubious Syphilis. (Examen de la bouche.) L. M. Pautrier.

50. **Microscopic Examination of Tuberculous Urine in Case of Genitourinary Tuberculosis.**—Moscou confirms Colombini's statements in regard to the frequent presence of misshapen leucocytes in the urine in case of a tuberculous lesion in the genitourinary apparatus. The leucocytes obtained by centrifugation are irregular in shape, indented, with the protoplasm outlined by small transparent bullae. It is impossible to distinguish the nucleus and the granulations in leucocytes thus deformed. These findings were constant in 18 out of the 22 tuberculous patients examined, but in the four other cases of unmistakable tuberculosis the leucocytes were apparently normal. Two other patients with gonorrhea or urinary calculi also presented the same changes in the shape of the leucocytes. The finding is not pathognomonic for tuberculosis, but may be useful as an accessory sign. Moscou also found that by modifying the medium the leucocytes resumed their normal appearance.

51. **Influence on the Organism of Rapid Passage Through the Air.**—Bakaleinik had occasion to take long trips on the Siberian Railroad and made a practice of riding on the front of the engine. He found by tests on himself and others that the extraordinary aëration of the lungs thus induced stimulated the metabolic processes and improved the general health. He advised a patient with apical tuberculosis to try it, and after 33 days spent in traveling on the locomotive, plus 45 days on a steamer, keeping all day in the prow, the patient is apparently entirely cured. He had previously taken the fresh air cure, etc., for months without benefit.

54. **To Secure Prompt Healing After Operations on the Scrotum.**—Siegel prevents the development of a hematoma after operations on the scrotum by applying the lips of the incision together, face to face, drawing them up above the surface of the scrotum, thus obliterating the entire cavity left after the operation. The walls applied face to face to the depth of the pre-existing cavity are fastened together by a row of U-shaped sutures taken through both, at the base of the projecting portion, close to the surface of the rest of the scrotum. Each of these stitches is tied over a small roll of gauze on each side. The lips of the wound are then sutured together as usual, and the U stitches are removed after the parts are healed, when the skin readily slides back into place. The article is illustrated.

56. **Hygiene of the Staircase.**—Rey refers to the staircase in large flat buildings, and shows how dark, unventilated staircases can be done away with. His plan is a logical sequence of his other proposals for the hygiene of houses, some of which have been mentioned recently in these columns. Instead of a dark, central court he would have the building in two or more parts, with a court running entirely through between them, thus ensuring light and air without loss of any more ground space. The staircase, he claims, should be built in this open court, not in the building proper. He also suggests that the steps should be cut rounding and thus narrower at the sides, to make them easier for children.

57. **Education in Regard to Coughing.**—Mantoux has found that an effectual means of suppressing useless coughing is to instruct patients in its uselessness and harmfulness, and then to have them note down on a sheet of paper every time they cough. He calls for the record at each visit, and it is astonishing, he says, how soon they learn to conquer the impulse to cough rather than have a long record to show him.

58. **Rectifications in Regard to the Question of Aphasia.**—Marie here replies to some articles published recently by Dejerine in the *Presse Méd.*, presenting arguments against the new views advanced by Marie. He takes up these arguments in turn and states that the data cited are directly confirmatory of his views, although Dejerine tortures them to make them say the contrary of what they really mean.

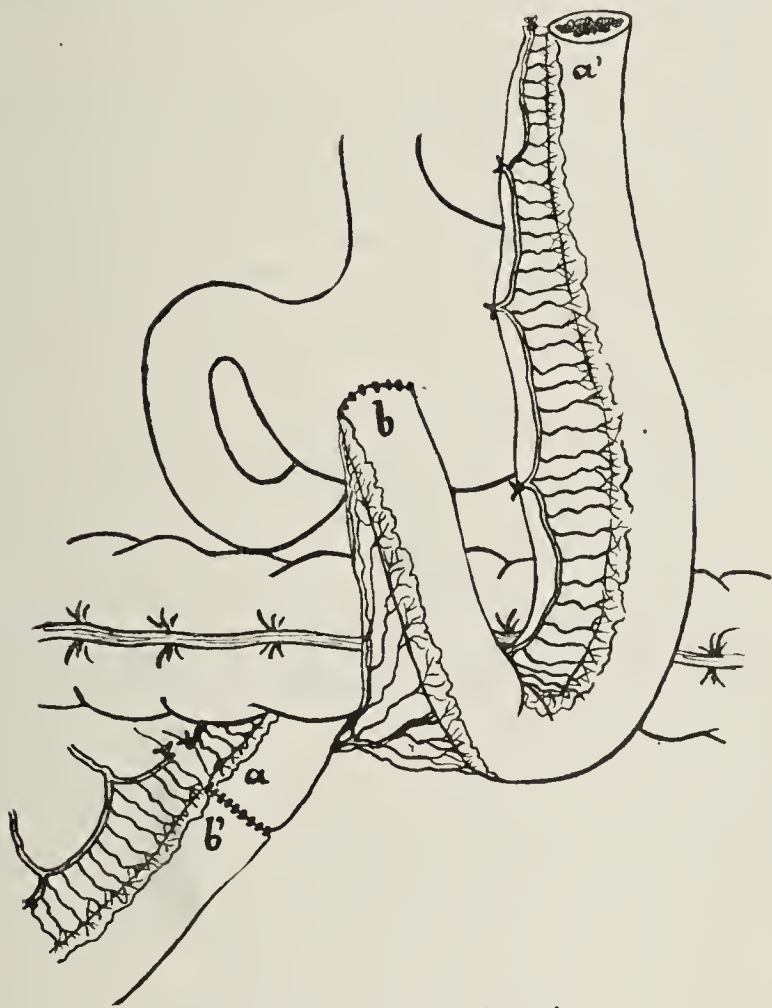
**Semaine Médicale, Paris.**

- 61 (XXVII, No. 3, pp. 25-36.) \*Pathogenesis of Congenital Icterus in Adults. (Ict. cong. de l'adulte.) A. Chauffard.
- 62 (No. 4, pp. 37-48.) \*Esophago-jejuno-gastrostomosis to Remedy Impassible Stricture of the Esophagus. (Nouvelle opération pour rétrécissement infranchissable de l'œsophage.) Roux.
- 63 \*Action of Dechloridation on Bradycardia and Its Interpretation according to the Myogenic Theory. (Action de la déchloruration sur le pouls lent permanent.) E. Enríquez and L. Ambard.



61. **Congenital Icterus in the Adult.**—Chauffard sifts the literature on this subject and reports the details of a case in which a young man exhibited icterus without being actually sick, without choluria or enlargement of the liver or gall bladder, while the stools showed the presence of bile, the urine of urobilin, and the spleen was much enlarged and fibrous. The persistent icterus was noted the day after birth, and, as the child grew, it became aggravated by fatigue. The diet did not seem to influence it. Chauffard regards the case as one of hemolytic icterus, the blood corpuscles having little resisting power, as he determined by various tests. The primordial and predominant rôle in the whole syndrome is played by the enlarged spleen. He, therefore, asks for recognition of congenital icterus in the adult from spleno-hemolysis as a separate morbid entity.

62. **Isolated Loop of the Jejunum to Connect Esophagus and Stomach.**—Roux reports a case in which this operation was successfully performed in his clinic at Lausanne. Tavel suggested some time ago that a piece of small intestine might be used for the purpose, and Roux was intending to experiment on animals when chance brought to the clinic recently a child with impassable stricture of the esophagus from the action of a



Esophago-jejuno-gastrostomosis.

caustic. As permanent relief was necessary, instead of merely making a gastric fistula, the upper part of the jejunum was mobilized, the connecting arteries ligated and severed, and the proximal end of the isolated loop was brought up through a subcutaneous passage to the neck, while the distal end was implanted in the anterior wall of the stomach. The stumps left in the jejunum after resection of this portion were united with a Murphy button. The isolated loop was cut considerably longer than the distance between the stomach and neck to allow for a sag in the loop as it entered the stomach, the arteries on this sag being left undisturbed. It thus served as a vascularized pedicle for the isolated piece of intestine. The technic is shown in detail in five illustrations, one of which is reproduced. In order to leave the intestine at rest, so far as possible, to allow it to grow to the subcutaneous passage, the esophagus sound was introduced and the upper end of the isolated loop, projecting from the incision in the neck, was tied around the sound and sutured to the skin just below. The fascia of the rectus was hollowed out a little to make room for the sagging lower end of the loop, and the epigastric incision was then sutured. At date of writing the wounds have healed,

the child has grown stronger and is up and about, and the isolated loop can be seen contracting vigorously at times. Very little mucus emerges from the orifice, and there is no regurgitation of stomach content. Peristalsis seems to be normal. Solid food introduced is passed rapidly along and disappears in the abdomen, apparently tolerated as well as if not better than fluid food.

63. **Action of Deprivation of Salt on Habitual Slow Pulse.**—Enriquez and Ambard report the case of a woman of 57 with pulse rate from 32 to 39 and arterial tension 23 cm. on the Potain sphygmomanometer. The patient complained of pains in the knees, dyspnea and dizziness during exertion. No treatment was instituted except banishing salt from the diet. In a week the dyspnea and dizziness had much subsided and by the end of seven weeks the pulse rate was 72, all symptoms had vanished and the patient had gained nearly 15 pounds in weight. This beneficial action of dechloridation on habitual slow pulse was observed likewise in a case reported last year by G. Brouardel and in another, unpublished, case of Weill-Hallé. Huchard has also reported a case in which the pulse rate increased on a milk diet and grew slow again when a mixed diet was resumed. This observer has long emphasized the importance of the cardio-renal synergy in the syndrome of the habitual slow pulse and advised an exclusive milk diet, as nephritis is very apt to complicate the cardiac trouble, and the milk diet wards off uremia. If the pulse rate increases on it, he regards this as a favorable consequence of the diuresis on the heart action. Enriquez and Ambard discuss whether the modification of bradycardia by deprivation of salt harmonizes with the new assumptions in regard to the functions of the bundle of His. They review a number of recent works in this line, especially those of Carlson, Meek, Lillie, Castaigne and Achard, showing the injurious action of solutions of salt on the cells in the test tube and in the living subject. This toxicity may be partially due to osmosis, but it seems to be principally a directly injurious action independent of the innervation. The effects of dechloridation in case of habitual slow pulse harmonize perfectly with these data, and analysis of the pathogenic conditions of the pulse reveals the curious and hitherto unique spectacle of the injurious action of the chlorids on a diseased muscle without any intermediation on the part of the nervous system. It demonstrates anew, they declare, the hypersensitiveness to the chlorids of the various tissues of the organism in the course of nephritis. In the case described the heart action passed through different phases of arrhythmia as the pulse rate gradually increased, duplicating in reverse order the phenomena noted by Erlanger as the result of compression of the bundle of His. The case further confirms Vaquez' assumption that many cases of arrhythmia are merely the consequence of a lesion in the myocardium severe enough to induce bradycardia, but not sufficiently serious to modify objectively the heart rhythm.

#### Beiträge zur klinischen Chirurgie, von Bruns', Tübingen.

Last indexed, page 340.

- 64 (L. No. 2, pp. 465-665.) \*Loose Incarceration of Intestine in Hernia. (Die schlaffe Darneinklemmung bei Hernien.) Wilms.
- 65 \*"Spontaneous" Rupture of Rectum. (Sogenannte Spontane Rupturen des Rectums.) H. Heineke.
- 66 \*Injuries and Suture of Heart. (Herzverletzungen und Herznaht.) C. Sultan.
- 67 \*Pulmonary Complications after Abdominal Operations. (Lungen-Komplikationen nach Bauch-Operationen.) A. Læwen.
- 68 Chronic Rheumatic Lymphangitis. (Eine besondere Art von Schmerzen am Unterschenkel und Fuss.) Wilms.
- 69 \*Treatment of Complicated Fractures. (Komplizierte Frakturen.) H. Rimann.
- 70 Suppuration in Gouty Joints. (Gelenkeiterung bei Gicht.) A. Læwen.
- 71 Cure of Portal Ascites by Omentopexy. (Ascites infolge Pfortader-Kompression, geheilt durch die Talma'sche Operation.) H. Meyer.
- 72 Tendon Covering for Diaphysis Stumps. (Amputation mit Sehnendeckung zur Erzielung tragfähiger Diaphysenstümpfe nach Wilms.) R. Sievers.
- 73 Meningeal Hemorrhages. (Zur Kasuistik der Meningeal-Blutungen.) J. Sommer.
- 74 \*Local Action of New Anesthetics on Motor Nerve Trunks. (Vergleichende experimentelle Untersuchungen über die örtliche Wirkung einiger neuer Lokal-Anästhetica-Stovain, Novokain und Alypin-auf motorische Nervenstämmen.) A. Læwen.



- 75 \*Spinal Anesthesia, By-Effects and After-Effects. (Lumbal-Anästhesie mit Stovain und Novokain, mit bes. Berücksichtigung der Neben- und Nachwirkungen.) H. Heineke and A. Låwen.

64. Loose Incarceration of Intestine in Hernia.—In elderly persons incarceration of a loop of the intestine is liable not to entail such severe symptoms as in younger patients. The size of the opening into the hernia has some influence, but the difference is mainly due to the lesser blood pressure in elderly individuals. The less the blood pressure the less serious the symptoms. In a case of compensated mitral stenosis the incarceration had lasted for eight days without entailing gangrene. In other cases in elderly persons the incarceration had lasted for five or six days without irreparable injury before the operation.

65. Spontaneous Rupture of the Rectum.—Heineke reviews the cases on record of rupture of the rectum without external violence, merely from exaggerated straining at stool. It has been observed hitherto only in women, or when the parts were the seat of some previous morbid process, or the floor of the pelvis was much relaxed. In a case personally observed, the rectum ruptured at a point 17 cm. above the anus, while the man was lifting a heavy weight. After 21 hours of peritonitic symptoms the abdomen was opened, but the collapse persisted so threatening that the operation was discontinued.

66. Injuries and Operative Treatment of the Heart.—Sultan reports a number of cases of trauma affecting the heart, including two in which this organ had to be sutured. One of the latter patients recovered. In case of diagnosis of injury to the heart and evidences of hemorrhage into the thorax he advises opening the thorax at once, incising in such a way that the incision can be extended to make a square flap to allow access to the heart at need. The effort to operate without opening the pleura, he thinks, is more theoretical than justified by facts as, in the majority of cases, pneumothorax accompanies the heart injury. He advises refraining from drainage, owing to the danger of superposed infection.

67. Lung Complications After Abdominal Operations.—Låwen states that the experiences at Leipsic confirm the theory that the larger proportion of pulmonary complications occur after operations above the umbilicus rather than after those in the lower half of the abdomen. Postoperative pneumonia was observed in 180 out of 9,755 patients operated on since 1895, with an average mortality of 65 per cent. In about a quarter of the cases the pneumonia was due to aspiration. Carcinomatous cachexia affords an unmistakable predisposition to lung complications. Pneumonia was observed only once after operations on the gall bladder, while it occurred in 36 per cent. of the gastrostomies on account of cancer, and in 6.6 per cent. of the 91 cases of resection of the stomach. Appendicitis and complicating peritonitis were responsible for 34 cases of pneumonia in 399 operations. Aspiration during the anesthesia is the usual cause, a tendency to thrombosis and embolism of the lungs being comparatively rare.

69. Treatment of Compound Fractures.—Rimann states that Trendelenburg aims to transform a compound into a simple fracture at once by closing the wound, and his mortality is scarcely half so high as that at other clinics where this principle is not followed. The tabulated results show a mortality of 3.7 per cent. of 238 cases of compound fracture treated in the clinic. The number of after-amputations is also less in proportion, while the patients were dismissed cured in two-thirds of the time required by other technics. The fractures were the result of impalement in 72 cases, of being run over by a wagon in 42, of crushing by a weight in 27, of injury in a machine in 15, of a kick from a horse in 14, and of a fall in 32. In 15.2 per cent. it was found possible to close the wound at once by a flap while in 11.5 per cent. a pedunculated flap had to be used, and in 9 cases a bridge. In 13 cases septic phenomena made extensive incisions and drainage necessary. The total list includes 12 fractures of a joint, 2 of the knee, 3 of the elbow and 7 of the ankle.

74 and 75. Spinal Anesthesia.—The experimental research and clinical experiences reported do not confirm the hopes as

to the harmlessness of this method of anesthesia with stovain, novocain or alypin, with or without addition of a suprarenal preparation.

#### Centralblatt für Chirurgie, Leipsic.

*Last indexed, XLVII, page 85.*

- 76 (XXXIII, No. 48, pp. 1265-1296.) Technic of Plastic Operation on Tendons for Lax Paralytic Talipes Equinus. (Sehnenplastik beim schlaffen paralytischen Spitzfuss.) S. Kofmann.
- 77 Support for Pelvis. (Beckenstütze.) E. Schultze.
- 78 (No. 49, pp. 1297-1320.) \*Plastic Operation on Peritoneum with Isolated Pieces of Omentum (Peritonealplastik mit isol. Netzstücken.) C. Springer.
- 79 Total Dorsal Dislocation of Wrist and of the Tarso Metatarso Articulation. (2 seitene Luxationen.) W. v. Brunn.
- 80 (No. 50, pp. 1321-1344.) Partial Resection of Spermatie Cord in Radical Operation for Inguinal Hernia. (Part. Resektion des Samenstrangs bei Op. des Leistenbruchs.) Z. Slawinski.
- 81 \*Incision in the Side of the Neck for Removal of Foreign Bodies in the Esophagus without Opening the Litter. (Trachelotomia externa.) F. Franke.
- 82 (No. 51, pp. 1345-1376.) \*Technic of Treatment of Fistula. (Fistelbehandlung.) V. E. Mertens.
- 83 Benzoin-Iodin Catgut. (Benzoin-Iodcatgut.) Mindes.

78. Plastic Operations on the Peritoneum with Isolated Pieces of Omentum.—Springer does not believe that isolated pieces of omentum are practicable for plastic operations on the peritoneum, as his extensive experimental work with dogs has shown that adhesions are liable to develop, with other drawbacks.

81. Removal of Foreign Bodies from Unopened Esophagus.—Franke made an incision in the side of the neck under chloroform and was then able to manipulate upward and remove through the mouth a set of false teeth which the patient had swallowed. It had lodged just below the larynx. In looking over the literature he has found only two cases in which this technic was followed, and yet in 366 cases of esophagotomy on record he is sure that in many instances it would have proved equally effectual, and have made the esophagotomy unnecessary.

82. Aspiration Treatment of Fistulas.—Mertens reports excellent results in the cure of persisting postoperative or traumatic fistulas under aspiration with the Bier suction apparatus. He relates a few instances of the cure, among others, in seven days of a fistula which had persisted for seven weeks without displaying any tendency to heal. In other cases the lack of any tendency toward healing under aspiration treatment for a few days justified the assumption of a foreign body lurking in the depths of the fistula; this was found and removed, after which the fistula rapidly healed. He applies the suction apparatus with its full force from the first, inducing the maximal aspiration of which it is capable. This sudden aspiration of blood to the region fills the blood vessels, tears the torpid granulations and thus freshens the entire surface of the fistula. Blood exudes until several cubic centimeters of blood have accumulated in the aspirating bell. After this the force of the aspiration is reduced and the apparatus is left in place for about 45 minutes as usual. The bleeding gradually subsides and at last only a little serum is aspirated. The same procedure is repeated on the two following days, and by the end of a week the fistula is generally completely healed.

#### Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 84 (XXXIII, No. 1, pp. 1-48.) Tendon Tumors in Children. (Sehnengeschwülstchen.) Pels-Leusden.
- 85 \*Treatment of Pleurisy with Effusion. (Exsudative Pleuritis.) A. Fraenkel. Clinical lecture.
- 86 \*Chronic Tuberculous Meningoencephalitis from Clinical and Forensic Standpoint. (Chron. Men-enceph. tub.) F. Landais.
- 87 \*Influence of Thyroid Gland on Development of Embryos. (Schilddrüse und Entwicklung des Embryos.) M. Bleibtreu.
- 88 Mechanical Action on Organism of Lowering of Atmospheric Pressure. (Mech. Wirkungen der Luftdruckerniedrigung auf den Organismus.) C. Jacoby.
- 89 Auditory and Motor Optic Sequelae of Convulsions. (Folgeerscheinungen nach Krampfanfällen.) A. Pick.
- 90 \*Injuries from Roentgen Treatment. (Roentgenschädigungen in der medizinischen Radiotherapie.) K. Engel.
- 91 Case of Paraurethral Gonorrhea. (Histologie der chronischen Gonorrhoe.) P. Cohn.
- 92 Harmfulness of Coffee. (Schädlichkeit des Kaffees.) E. Harnack.
- 93 Regulations Admitting Physicians to Practice in Foreign Lands. (Zulassung zur ärztlichen Praxis im Auslande.) J. Schwalbe.
- 94 (No. 2, pp. 49-88.) \*Influence of Roentgen Rays on Albumin Metabolism in Exophthalmic Goiter. (Eiweissumsatz bei der Basedowschen Krankheit.) C. Rudinger.
- 95 \*Report of German Sleeping Sickness Commission. (Expedition zur Erforschung der Schlafkrankheit.) R. Koch.



- 96 Study of Hexamethylenamin and Its Salts. (Hex. und seine Salze-Cystopurin.) P. Bergeil. Id. O. E. Loose.
- 97 \*Diseases Simulating Typhoid Fever. (Typhusähnliche Erkrankungen.) Jürgens. (Commenced in No. 1.)
- 98 \*Internal Treatment of Appendicitis. (Int. Behandlung der App.) M. Pfister.
- 99 Case of Glycosuria after Subsidence of a Goiter. (Glyk. nach Kropfschwund.) Boldt.
- 100 Simplification of the Heller Ring Test. (Hellerschen Ringprobe.) F. Sachs.
- 101 Epidemic Cerebrospinal Meningitis Two Hundred Years Ago. (Genickstarre vor 200 Jahre.) Radmann.

85. **Treatment of Pleurisy with Effusion.**—Fraenkel remarks that he has scarcely ever witnessed any benefit from the salicylates in pleural inflammation, but that their use is always indicated when there is a suspicion of a rheumatic basis. He pays tribute to Bowditch as the pioneer in the line of thoracentesis with aspiration, and advises puncturing in the fourth interspace on the right side and in the fifth on the left, between the maxillary and front axillary lines, with the patient reclining in case of a large effusion. If the effusion does not extend so high, the trocar must be introduced in the back, as high as possible so that the cannula will not interfere with the diaphragm. If respiration is much impeded, the patient should sit, the arm of the sound side hanging over the back of the chair, and the arm on the affected side raised or, still better, the hand placed on the shoulder of the sound side. He recommends administration of 0.005 or 0.01 gm. morphin hydrochlorate immediately before puncturing to suppress coughing. He advises never to withdraw more than 2 or 2.5 liters at a time, and to stop at once if the patient has an uncontrollable cough or complains of pain in the chest, or if the pulse grows weak. If aspiration is continued after a warning of this kind there is a likelihood of incipient pulmonary edema with "albuminous expectoration." After the puncture is the time when diuretics and "drugless" measures to promote the absorption of the effusion prove their usefulness. Fraenkel gives powerful diuretics at this time, and small doses of digitalis or strophanthus if the heart requires a tonic. He also applies revulsion, painting the affected side with tincture of iodine or rubbing in a piece of iodine salve the size of a walnut: (Tinct. iodine, 0.1 gm.; potassium iodide, 2 gm., and green soap and lanolin, each 10 gm.). The salve is especially useful in case of tuberculous pleurisy. The contraindications for puncture are few; ulcerative processes in the lungs, of course, impose caution. In case of cancerous degeneration of the pleura the aspiration may cause great pain, dyspnea or a tendency to hemorrhage, and the procedure must be abandoned or only small amounts of fluid withdrawn at a time. Systematic respiratory exercises are useful after the effusion has entirely vanished, to stretch the forming adhesions. The patients should be instructed to take from five to ten deep breaths every hour or so, and also to exercise the trunk by twisting it on its axis, bending sideways, raising the arms above the head, etc., with, later, cautious mountain climbing.

86. **Curability of Chronic Meningoencephalitis.**—Landois relates a case of chronic tuberculous meningoencephalitis in which the nodules shriveled by a cicatricial process, without cheesy degeneration. A permanent cure was at hand, when the patient met with a traumatism affecting his head, which whipped up the chronic, almost extinguished process into a fatal exacerbation.

87. **Influence of Thyroid Treatment on Development of Rabbit Embryo.**—Bleibtreu reports experiments which demonstrate, he thinks, that in gravid rabbits under thyroid treatment the tendency is toward arrest of gestation and reabsorption of the fetus. The disturbances in gestation observed closely resemble those seen when gravid rabbits are exposed to the Roentgen rays or are injected with cholin.

90. **Roentgen Injuries in Medical Radiotherapy.**—Engel writes from Koranyi's clinic at Budapest to discuss some of the by-effects of radiotherapy as reported in the literature and as personally observed. In some cases violent suffocation was observed after exposure of a cancer in the mediastinum, or general weakness and nausea. These functional disturbances he explains as probably of psychic origin. A papulous exanthem with high intermittent fever has been sometimes observed, with slight subjective symptoms, the syndrome being due, probably, to toxins formed by the destruction of tissue as it

preceded exfoliation. The prognosis is favorable. The action of toxins liberated by the exposures is probably also the cause of the fever noted in Roentgen treatment of leukemia and pseudoleukemia. In a personal case of leukemia reported, intense toxemia developed after 350 minutes of exposures in the course of 11 days. The patient was a man of 54, with enlarged glands and spleen, 2,223,000 red and 246,000 white corpuscles; the general condition was good. The spleen, the neck and the axilla on both sides were exposed to a hard tube for five minutes each daily. The reds dropped to 1,900,000, the whites to 110,000, but the exposures were continued until the figures were respectively 1,620,000 and 55,000, and treatment was suspended. The general condition rapidly deteriorated with weakness of the heart and diarrhea, and the patient soon succumbed. As the leukemia before treatment had shown a chronic tendency, the rapid deterioration under the treatment can be explained only by toxemia. There was no dermatitis. Krause has reported a case in which exposures up to 3,650 minutes had been given without harm. Schenck has also reported a case of rapid deterioration under Roentgen treatment of a febrile leukemia. Engel summarizes the cases of sudden death that have been published as occurring after a course of Roentgen treatment. To prevent all such mishaps he declares that no exposure should last more than two minutes, and the tube should not be nearer than 20 cm., or four minutes with the tube 35 cm. distant. The same surface should not be exposed more than twice or three times on the same day, and the exposed surface should be protected with tin foil and the vicinity with sheets of lead. The patient's susceptibility should be ascertained by tentative, brief, mild exposures at first, and the region exposed should be of small extent. After five or six exposures this treatment should be suspended for a week, during which time the blood picture should be carefully supervised. At the slightest indication of an undesired by-effect the exposures should be suspended and not resumed for a long time. In case of symptomatic improvement, treatment should be suspended at once, and the patient kept for a time under strict control.

94. **Roentgen Treatment of Exophthalmic Goiter.**—Rudinger concludes his study of the albumin metabolism under Roentgen exposures in two cases of exophthalmic goiter, with the advice to make a single tentative exposure of the thyroid in every case. The results may justify further treatment in this line, he says, especially if the previously abnormally increased breaking down of albumin is replaced by retention of nitrogen after the exposure, as in his cases.

95. **Report of German Sleeping Sickness Expedition.**—Koch confirms in this latest installment of his report the facts presented in previous installments, summarized in THE JOURNAL recently on page 49. A town has grown up around the camp of the party, huts and barracks erected by the natives for the sick, who flock to them for relief; 986 were under treatment at the date of writing. Koch finds the trypanosomes so constantly in examining the glands that he regards this finding as of the utmost importance not only for the diagnosis, but also as an index of the influence of the medication. Even in the 185 apparently almost moribund cases a number of the patients have been so much improved that consciousness has returned, they have regained control of their sphincters, and are able to walk without help. In every instance to date the improvement under arsenic has continued a progressive course with no retrogression. He thinks it probable that the trypanosomes in the body, destroyed by the drug, have an immunizing action. His theoretical research, he adds, has produced no tangible results to equal those obtained in the clinic. In two instances the specific trypanosomes were encountered in the salivary glands of the glossina; a condition similar to that observed with the malaria parasite and the anopheles. He is continuing his work with crocodiles, but has had no practical results so far.

97. **Diseases Simulating Typhoid.**—Jürgens describes eight cases in which the syndrome suggested typhoid fever, but autopsy or the course of the affection revealed appendicitis, military or general intestinal tuberculosis, or some other disease. In one case paratyphoid infection from contaminated meat



caused severe gastroenteritis, simulating typhoid fever during the first week, in a number of persons who had eaten the meat. He warns against allowing the etiologic findings to mislead the diagnosis. The clinical term "paratyphoid" is not correct, he says, as the affections induced by the paratyphus bacillus may have nothing in common with typhoid fever.

98. **Internal Treatment of Appendicitis.**—Pfister relates the favorable experiences at Erb's clinic with ice and large doses of opium in treatment of appendicitis. He recommends this treatment in every primary case except when the general condition indicates peritonitis.

#### Münchener medizinische Wochenschrift.

- 102 (LIV, No. 2, pp. 57-104.) Influence of Excesses of Student Life (beer and fencing) on the Heart. (Biertrinken und Fechten.) A. Bingel.
- 103 Thermodynamic Study of the Muscles. (Thermodynamik des Muskels.) K. Bürker.
- 104 Correlation in Heredity from Ophthalmologic Standpoint. (Korrelation bei Vererbung in der Augenheilkunde.) F. Best.
- 105 \*Early Diagnosis of Pulmonary Tuberculosis. (Frühdiagnose, etc.) H. Arnsperger.
- 106 \*Roentgen Diagnosis of Pulmonary Tuberculosis. (Roentgenologische Diagnose.) Pförringer and Bunz.
- 107 \*Gastropexy and Retention. (Gastropexie und Retention.) E. Nyrop.
- 108 \*To Render the Knee Jerk More Prominent. (Verstärkung des Kniephänomens.) O. Rosenbach.
- 109 Isolating Cabinets in the Waiting-room of Dispensaries for Children. (Prophylaxe der Infektionen in den Warte-räumen von Kinderambulatorien.) E. Fromm.
- 110 Nature and Treatment of Alimentary Disturbances in Infants. (Ernährungsstörungen.) M. Pfaundler. (Commenced in No. 1.)
- 111 Infant Mortality in the Hospital. (Säuglingssterblichkeit im Krankenhaus.) O. Soltmann.
- 112 Birth Rate and Fertility. (Geburtenziffer und Fruchtbarkeit.) O. Neustätter.

105 and 106. **Roentgen Early Diagnosis of Pulmonary Tuberculosis.**—Arnsperger writes from Erb's clinic to call attention to the instructive results obtained from Roentgenoscopy in cases of incipient tuberculosis. Almost invariably the first pathologic changes in the apex were perceptible and confirmed the diagnosis. In an extensive experience he has found that the findings in sound lungs are remarkably constant, much more so than percussion and auscultation findings. Any variation from the normal is readily recognized. It is important to have an adjustable diaphragm and an adjustable tube, to examine the lung from various points. He did not find that the excursions of the diaphragm were constantly impeded, as Williams has asserted. This was noted in only 6 per cent. of the cases, and it is probably due to pleuritic adhesions. Changes in the clearness of the Roentgen picture accompany the movements of breathing, the apices, especially, showing varying clearness and size under the influence of respiration. The clear space corresponding to the apex in the Roentgen picture becomes cloudy in case of disease. If the patient breathes deep the sound side becomes perceptibly clearer, while the affected side shows nearly the same cloudy appearance or may even grow darker as the less elastic apex is compressed by the rest of the lung. The findings are approximately the same for a fresh, incipient process as for a healed lesion.

Pförringer and Bunz confirm his statements, especially in regard to the lack of constancy in the excursions of the diaphragm. They review the Roentgen findings in various established affections, and advise combination of radioscopy with radiography as giving the best results. In 54 cases of apical tuberculosis the Roentgen findings coincided with the symptoms, and in 20 the Roentgen rays revealed more extensive changes than had been surmised from the symptoms and other diagnostic measures, and in three cases the findings were less marked than with other measures. In the incipient cases the slight cloudiness of the apex is seen best in the radiograph and may escape radioscopy. Infiltration causes light diffuse shadows and cloudiness, the cloudiness sometimes showing darker specks.

107. **Gastropexy and Retention of Stomach Contents.**—Nyrop relates some instances of spontaneous fixation of the stomach to the parietal peritoneum or abdominal wall after an operation. The fixation interfered with the motor function of the stomach and led to retention of stomach contents in time. The findings emphasize the importance of testing to see whether or not retention of contents exists as a preliminary

to any operation on the stomach, and they also point to the danger of retention as a consequence of artificial gastropexy. In one case of cancer and retention the tumor at the pylorus was resected and gastroduodenostomy done. The stomach was much dilated, with thickened walls. The patient was in good health for nearly three years, after which oppression and pains in the epigastrium at night made daily lavage of the stomach necessary. After three months of progressive retention of stomach contents and emaciation the abdomen was opened and the stomach found fastened to the parietal peritoneum. The weakened stomach had not been able to force the stomach content up to the opening into the duodenum, which was at about the normal height. The consequence was dilatation of the posterior wall of the stomach with secondary retention and resulting inanition, but no traces of cancer. Without anatomic inspection, the case would certainly have been regarded as one of recurring cancer. In another case gastropexy was done for ptosis. The patient was as "nervous" after as before the operation and retention gradually developed. The musculature was so weak by this time that even gastroenterostomy then was unable to put an end to the retention completely. In another case posterior gastroenterostomy was done for hematictemesis and symptoms of retention. The stomach walls were found remarkably thin and atrophic, and after a few months of freedom the old symptoms returned and the patient died. Autopsy revealed spontaneous fixation of the stomach. The thinness of the walls had probably entailed the speedy recurrence of the retention. In the fourth and last case universal edema was attributed to existing ptosis of the stomach, with occasional evidences of retention of its contents. A fold was taken up in the stomach wall, and it was fastened in place (gastroplication and gastropexy). After six months of health the posterior wall stretched and the symptoms of hour-glass stomach developed. If gastroenterostomy had been done at first this probably might have been prevented.

108. **To Render the Knee Jerk More Prominent.**—Rosenbach gives the patient a newspaper or large book to hold and bids him read aloud a certain passage rapidly and loudly. This diverts his attention. He is unable to see his feet owing to the interposed book or paper, and the effort required to hold it ensures the most favorable conditions for the test. When this method is impossible Rosenbach prefers Guttman's method. This consists in raising the leg of the reclining patient, lifting it up a little with a handkerchief while with another handkerchief, just above the knee, held by an assistant, the thigh is raised also, the knee thus raised forming an obtuse angle.

### Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors, Joseph D. Bryant, M.D., and Albert H. Buck, M.D. Complete in Eight Volumes. Illustrated. Volume Two. Muslin Binding. Pp. 778. Price, \$7.00. New York: William Wood & Co.

STUDIES FROM THE INSTITUTE FOR MEDICAL RESEARCH, Federated Malay States. Observations in the Federated Malay States on Beriberi. By C. W. Daniels, M.B., M.R.C.S., Eng. Paper. Pp. 105. Price, three shillings and sixpence. London: E. G. Berryman & Sons.

NINTH BIENNIAL REPORT OF THE PENNSYLVANIA INDUSTRIAL REFORMATORY. Huntingdon, Pa. Paper. Pp. 74. From Jan. 1, 1905, to Dec. 1, 1906. Printed and Bound by Inmates of the Reformatory.

REPORT OF THE PRESIDENT OF THE BOARD OF HEALTH of the Territory of Hawaii for the Year Ending June 30, 1906. Paper. Pp. 115. Honolulu: The Bulletin Publishing Company, 1906.

PRINCIPLES OF MICROSCOPY. Being a Handbook to the Microscope by A. E. Wright, F.R.S., Hon. F.R.C.S.I. Cloth. Pp. 250. Price, \$6.50. New York: The Macmillan Company, 1907.

A VICTORIOUS DEFEAT. The Story of a Franchise. By Charles Frederic Gilliam. Illustrated by Ted Ireland. Cloth. Pp. 371. Boston: The Roxburgh Publishing Company.

PUBLICATIONS OF CORNELL UNIVERSITY MEDICAL COLLEGE DISPENSARY, New York City. Medical Report. Paper. Pp. 156. New York City.

PRINCIPLES OF SPELLING REFORM. By F. S. Allen. Paper. Pp. 38. New York: The Bradley-White Company.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVIII.

CHICAGO, ILLINOIS, MARCH 2, 1907.

No. 9.

## Original Articles

### COCCIDIOIDAL GRANULOMA.

REVIEW OF THE EIGHTEEN CASES AND REPORTS OF CASES  
FIFTEEN AND SIXTEEN.

PHILIP KING BROWN, M.D.

SAN FRANCISCO.

The recognition, within a few years, of a comparatively large number of extremely fatal cases of a hitherto unknown disease, seems of sufficient interest to warrant me in presenting the last of these cases, together with a history of the findings in the other cases, the localities from which they came and a statement of certain experimental data in regard to the possible modes of infection.

A review by Ricketts<sup>1</sup> on oidiomycosis gives an interesting statement of the pathogenicity of the moulds that belong to this class and a discussion of their relation to each other. He dwells at great length on the cases of blastomycetic dermatitis, occurring in the middle West, reviews fourteen old cases of this disorder and reports several more which he has collected. He also reviews the cases of coccidioidal granuloma and considers that there is a close relation between it and blastomycetic dermatitis and also Busse's saccharomycosis hominis.

Ophuls<sup>2</sup> reviews the published cases of coccidioidal granuloma, and in 1905, at the annual session of the American Medical Association, gave in a supplementary paper the cases that have occurred since. He pointed out very plainly certain essential differences between this disease and blastomycetic dermatitis and reviewed the morphologic and histologic studies of the condition so thoroughly, that it seems unnecessary to go into them here. It is sufficient to state that in coccidioidal granuloma there are certain characteristics which differ decidedly from blastomycetic dermatitis. The differences in the behavior of the two organisms on culture media are very striking; even in the organisms of blastomycetic dermatitis, which most closely resemble those of coccidioidal granuloma, there are essential differences. It must be apparent that no one mould is responsible for the various lesions which Ricketts groups under the name of blastomycetic dermatitis, and he makes clear in his tabulation of the morphologic characteristics that some resemble the organism of coccidioidal granuloma more than others do. On agar the growths of the coccidioidal granuloma mould are all sharply defined even when grown on dry media where the mycelia are especially profuse. This is not true of any of the growths from blastomycetic dermatitis. The mould from coccidioidal granuloma is never found in the budding state in tissue, although in pus withdrawn from abscess cavities, beautiful examples of its growth by budding are shown. Cutaneous lesions are often entirely secondary

in coccidioidal granuloma and may even be wanting altogether. Generalized infections are the rule and the only patient known positively to be still alive, is a man with lesions in the ankle, whose foot was promptly amputated. He has been reexamined within a few weeks and at the time there were no signs of any further involvement of the body. Two of the patients were discharged from the hospital benefited, but nothing has been heard of them since and it seems probable that they could have been traced were they still alive. Only one of the cases of blastomycetic dermatitis became subsequently a generalized infection and the patient died from the disease. There is good evidence that cases of blastomycetic dermatitis have been held in abeyance or cured by potassium iodid. This has been very thoroughly tried in coccidioidal granuloma in a number of cases (I can speak most positively for the one I am reporting), and there was not the slightest benefit from it.

Lesions of coccidioidal granuloma are almost invariably progressive, with marked tendency to dissemination by lymph and blood currents. In very rare instances, healed lesions have been observed and in a few of the cases the course of the disease was extremely low. It is probable that the skin lesions were primary in some of the cases, particularly as in those cases where skin manifestations were noted before other symptoms, they occurred always on exposed parts.

Attempts were made to transmit the disease to guinea-pigs through original cultures from Case 15, in the following manner: Cultures known to have reached the spore-forming stage were transferred to the nostrils of pigs who were kept in glass cases. Another set of pigs were fed on similar cultures. A male pig was inoculated intraperitoneally and because of the characteristic genital lesions in pigs so inoculated, as pointed out by Ophuls, the experiment of transmission was tried by placing him in a cage with female pigs.

The secondary skin lesions are undoubtedly due to emboli in the blood current and of course occur anywhere. So far as I know no blood cultures have been attempted and it is hoped that this may be done in the cases that are likely to follow. The diagnosis of the disease is so easy after one has once known of its existence that ample opportunity for studies of the infectious nature of the blood must present itself. I regret exceedingly not having tried it in Case 15.

CASE 15.—S. K., aged 25, Japanese laborer, consulted me Feb. 22, 1906.

Past History.—His past history is negative to time of leaving Japan in 1903. He lived in Honolulu two years, came to California in June, 1905, and entered the employ of the Southern Pacific Company at Bakersfield. He worked in an extra gang along the line from Bakersfield to Tulare and came to the hospital from Tulare, where he had been working for a month. While in Bakersfield, he had what was regarded as beriberi for a month; the attack was not severe enough to keep him from work. He recovered from this and felt well up to Nov. 9, 1905. Previous to this he had good health. He

1. Journal of Medical Research, vol. vi, No. 3.  
2. Journal of Experimental Medicine, vol. vi.



never had syphilis or gonorrhea; he does not remember having had a break in the skin at any time, certainly he has had no skin sores.

*Present Illness.*—On Nov. 9, 1905, he had a vomiting spell and felt feverish. He thought he had caught cold, on account of a troublesome cough. He came to the Southern Pacific Hospital on Nov. 13, 1905, complaining of pain in his chest, a cough, constipation, slight headache, with pain in right ankle and left sternoclavicular articulation. The pain was not severe or constant and occurred only on moving the joints. Temperature on admission was 100.8.

*Examination.*—Nutrition was good. Tongue was slightly coated. Heart sounds were normal. There was normal resonance over the chest. Abdomen was normal. No cutaneous lesions could be seen anywhere. There was no enlargement of glands. There was an old hydrocele on the left side. None of his joints was swollen or sensitive to touch and there was no impairment in function in any of his joints. Nerve tracts were not tender and there was no edema.

*Course of Disease.*—During the first week in the hospital the pain began to be more severe and more constant in the right

a specimen free from contamination the swelling on the dorsum of the hand was aspirated and smears made. Examination was negative.) A few days later the swellings over the right supraclavicular fossa, left sternoclavicular articulation and left supraspinous fossa were incised and curetted. The left sternoclavicular articulation was found to be necrotic and also the inner end of the clavicle. The spine of the scapula was found to be necrotic. The cavity in the right supraclavicular fossa did not communicate with the bone at any time, but extended between the layers of fascia toward the right pleural cavity. The wounds were packed with iodoform gauze, saturated with iodoform emulsion. Specimens of the pus and necrotic tissue were submitted to the laboratory, and pure cultures of the mould of coccidioidal granuloma obtained. A clinical diagnosis was made by several doctors before this.

Patient lost steadily in weight and there was considerable anorexia. Bowels were regular at this time (eighth week of disease). Cutaneous lesions appeared (having no connection with bone or joints) over the right malar bone, on the chin about an inch on left side of the symphysis, posterior surface of left forearm, on posterior surface of right forearm and on right thigh. They began as papillæ, which became converted into flat papillary tumors, circular in shape, covered with crusts. On removal of the crust, pus escaped and a shallow ulcer was seen with an uneven floor, which bled easily on being touched. These ulcers continued to increase in size and in the case of the one on the chin, in depth, until it reached nearly to the bone. The patient's temperature was variable, at times normal, then, again 99 in the morning and 100 or 101 in the evening. During the last two weeks it was higher, sometimes 100 in the morning and 102 or 103 in the evening. During the last 48 hours the abdomen became distended and the temperature was 104 in the evening. No special tenderness.

Urinalysis: December 30: 1020; acid; trace albumin; few hyaline and fine granular casts.

Blood Examination: Jan. 1, 1906. Reds, 2,500,000; whites, 13,000; 79 per cent. polymorphonuclears; 17 per cent. small; 2 per cent. large; 2 per cent. eosinophiles; hemoglobin, 50.

*Treatment.*—Patient was given potassium iodid in increasing doses three times a day and tonics. No benefit followed medication. The man died Jan. 23, 1906.

*Autopsy Report by Dr. Mary Halton.*—Body of a fair-sized Japanese male. Condition of nutrition very poor. Small superficial ulceration about the size of a ten-cent piece over anterior half of right zygoma. There is conspicuous absence of redness or infiltration around the ulceration and this is true of every lesion found on this patient. The floor of the ulcer is of a dirty grayish color and is moderately moist. The ulceration is very shallow and lacks any punched out appearance. Practically no red granulation tissue is to be seen.

On left side of chin is a small, incised, rather superficial abscess. This contains a small quantity of creamy yellow pus. There is no redness or thickening whatever about the abscess. Abscess wall is of a yellowish white color and rather thin. No connection was found between this abscess and the bone. Many cervical glands both anterior and posterior on right side enlarged, movable, rather soft. Largest about the size of a hazelnut. Incised they appear to be very largely broken down into a thick yellowish pus.

In right supraclavicular fossa is an incision about 6.5x10 cm. long. This leads right into an irregular labyrinthine abscess cavity burrowing between the layers of cervical fascia in many directions, more especially downward. There is a large quantity of thick, yellow pus in this abscess cavity. Upper and inner surface of inner third of clavicle is eroded.

There is an incision about 5 cm. long over left sternoclavicular articulation running out along the inner third of left clavicle. Sternoclavicular joint is disintegrated and the clavicle is necrotic for a distance of about half an inch. Sternum is also eroded. Cavity contains much thick pus. Incised abscess in outer half of left supraspinous fossa. The abscess extends outward toward acromion process, and outer third of spine of scapula shows superficial necrosis. This abscess also shows much thick creamy pus.

Dorsal surface of right hand shows large incised abscess cavity. There is some edema extending over metacarpal region of



Fig. 1.—Case 15.

ankle and left sternoclavicular articulation. These joints were not red or tender. Other joints became painful on movement, the right wrist and left clavicularscapular articulations being attacked successively. Four weeks later a fluctuating swelling appeared in the region of the right internal malleolus. This was followed within a period of twelve or fourteen days, by the appearance of similar fluctuating swellings in the following places successively: Dorsum of right hand; right supraclavicular fossa; left supraspinous fossa; left sternoclavicular articulation. At this time the right inguinal, the epitrochlear glands on both sides and the right cervical glands became enlarged. The swellings developed with great rapidity for two or three days, but after that did not apparently increase in size or change in appearance or consistency. There was no redness, tenderness or edema of the skin covering them. There was no pain at any time at the swelling over the right supraclavicular fossa. At the right sternoclavicular articulation crepitation could be elicited. The swelling over the right internal malleolus was incised and a seropurulent fluid evacuated. Necrotic bone was found to exist. (In order to get



this hand. Third and fourth metacarpal bones show extensive superficial erosion. Same creamy pus found in this cavity. On extensor surface, upper third left forearm is a small, shallow ulceration about 2 cm. in diameter. The description of ulceration over zygoma will exactly correspond to the description of this ulcer. There is a similar, small ulceration on lower third extensor surface right forearm. Epitrochlear glands palpable, largest on right side. On right thigh, outer side, upper third, is a small ulceration about 2.5 cm. in diameter. The floor of this ulcer, unlike the others, shows a few red granulations, otherwise it is practically the same.

Right ankle is much swollen. There is a large incision over internal malleolus. A sinus leads into ankle joint which contains about 10 c.c. of thick creamy pus. The internal malleolus is about half gone, what remains shows an eroded surface. The astragalus and calcaneum show a roughening at edges of articulations. None of the bone lesions were of the soft spongy type. The bone left in all cases was very hard and showed an eroded surface.

In apex of right pleural cavity is a small abscess about the size of a dime, pointing into the pleural cavity and only covered by a thin layer of parietal pleura. With slight trauma this abscess was made to rupture into the pleural cavity, and the abscess was then found to be continuous with the large burrowing abscess of the neck on that side. A few adhesions were seen between the apex of right lung and sternoclavicular articulations. No fluid in right pleural cavity. Mediastinal glands enlarged, largest about the size of almond. Left lung shows adhesions light and friable anteriorly and posteriorly; adhesions much thicker in apex near abscess above. About 10 c.c. of blood-tinged fluid in left pleural cavity. Right primary bronchus filled with pus-like fluid. No particular infection of bronchus. Weight of lung, 18 ounces; size, 23x16x5.5 cm. Lung somewhat edematous. Left lung, slight hypostasis and edema, otherwise apparently normal. Weight, 17 ounces; size, 23.5 x 14 x 5.5 cm. Abscess in one of the peribronchial glands.

*Heart.*—About 10 c.c. blood-stained fluid in pericardium. Weight, 9½ ounces. Valves normal. Muscles pale, otherwise normal.

*Abdomen.*—Lower border transverse colon at umbilicus.

*Liver.*—One inch below costal margin in mammary line. Upper border fifth rib.

*Diaphragm.*—Right side, fifth rib. Left side, fifth rib.(?)

*Intestines.*—Much distended. About 25 c.c. of seropurulent fluid in right iliac fossa. About 5 c.c. of thicker pus in rectal region. Appendix normal. Many heavy flakes of fibrinous exudate scattered over intestines, more marked in right iliac region. Conspicuous lack of injection of peritoneal surfaces, also a conspicuous lack of adhesions between the viscera.

*Spleen.*—12x6.5x2 cm.; weight 3 3/16 ounces. In hepatic fossa is about 50 c.c. of pus, held as an abscess by adhesions.

*Liver.*—Surface covered by heavy fibrinous deposits; weight, 3 pounds 4½ ounces; size, 29x14x7.75 cm. A little pale. Gall bladder normal.

*Kidney.*—Right: Weight, 5 ounces; size, 1.5x5.5x2.5 cm. Left: Weight, 5¼ ounces; size, 12x6.5x2.5 cm. Normal. Capsules strip easily. Markings normal. Both kidneys a little pale. Many mesenteric glands enlarged, the largest about the size of a bean. A number of hemolymph glands enlarged, largest about size of almond. Right adrenal normal.

*Stomach.*—Very much dilated; contains about 0.5 liter of partly digested food. Mucous membrane of cardia shows some digestion postmortem. Small quantity of food in intestines.

Pure cultures *oidium coccidioides* obtained from peritoneal fluid and unopened abscesses.

All cultures and specimens were lost in the fire.

#### CLINICAL SUMMARY OF CASES.

CASE 1.—Obvious lesions in skin; duration of disease, seven years; patient resided in San Joaquin Valley seven months. Extent of disease: Lymph glands and disseminated nodular lesions in internal organs.

CASE 2.—Obvious lesions in skin, local nine years; duration of disease, 10 years; patient resided in San Joaquin Valley several months. Extent of disease: Lymph glands, many chronic skin abscesses; old scars and consolidated areas in lungs, chronic nodular pleurisy, nodules in diaphragm, circumscribed chronic nodular peritonitis beneath diaphragm and in pelvis, peribronchial and retroperitoneal glands, spleen, adrenals, prostate, both epididymides, testes, seminal vesicles, osteomyelitis in left tibia and metacarpal bone of left hand.

CASE 3.—Obvious lesions in skin; duration of disease, three months; patient resided in San Joaquin Valley. Extent of disease: Regionary lymph glands certainly involved and signs of general infection. No autopsy.

CASE 4.—Obvious lesions in lungs; duration of disease, 10 months; patient resided in San Joaquin Valley, but time not known. Extent of disease: Skin, abscess of lung extending up into neck and abscess of liver, lymph glands, osteomyelitis.

CASE 5.—Obvious lesions in lungs; patient resided in San Joaquin Valley, but time not known. Extent of disease: Osteomyelitis and periostitis of frontal bone and both tibiae, suppurative inflammation of right shoulder, both knees, elbows and wrists, abscess from lung extending into mediastinum and

diaphragm, liver, retroperitoneal lymph glands, kidney, spleen.

CASE 6.—No clinical history; no history of residence. Extent of disease: Lungs, pericardium, spleen, kidney, meninges.

CASE 7.—Obvious lesions in lungs; duration of disease, three and a half months; patient resided in

San Joaquin Valley for twelve days shortly before onset. Extent of disease: Meningitis.

CASE 8.—Obvious lesions in skin; no clinical history; patient resided in San Joaquin Valley. Extent of disease: Lung, spleen, liver, kidney and adrenals.

CASE 9.—Obvious lesions in skin. Duration of disease observed four months; patient discharged improved; resided in San Joaquin Valley several months. Extent of disease: Skin of foot, inguinal and cervical lymph glands, abscess anterior abdominal wall.

CASE 10.—Internal lesions; patient still alive two years later; resided in San Joaquin Valley some months. Extent of disease: Osteomyelitis, foot.

CASE 11.—Internal lesions; probably in lungs; patient supposed to be alive; resided in Sacramento Valley, never in San Joaquin. Extent of disease: Abscess of ribs.

CASE 12.—Internal lesions; probably in lungs. Duration of disease a few months; patient resided in San Joaquin Valley some months; lived in California in course of travels. Extent of disease: Caries at elbow, lungs, probably meninges.

CASE 13.—Wolbach, *Jour. Med. Research*, 1904, xiii, case not yet published.

CASE 14.—Obvious lesions in lung; Burrow's case (unpublished); duration of disease, eleven months; patient resided in San Joaquin Valley four months. Extent of disease: Multiple abscesses of lung, erosion of sternum, pleurisy with effusion, abscess of sacrum, wrist, kidney. Warty nodule on end of nose.



Fig. 2.—Case 15.



CASE 15.—Obvious lesion in intestinal tract; author's case. Duration of disease two and one-half months; patient resided in San Joaquin Valley five months. Extent of disease: Abscesses with caries of the adjacent bone in the right supraclavicular region, left sternoclavicular articulation, left supraspinous fossa, dorsum of right hand, right ankle, mediastinal glands, peribronchial glands; general involvement of the peritoneum with enlarged mesenteric glands, ulceration on right thigh, left forearm and over right zygoma, on chin.

CASE 16.—J. B., male, aged 28. Family history good; no tuberculosis.

*History.*—Patient has been two and one-half years in San Joaquin Valley; he worked on irrigating ditches near Fresno. Patient consulted his physician, complaining of general malaise; had no acute symptoms at any time. He has been treated for malaria; large doses of quinin having been administered without effect. He had had a sluggish punched-out ulcer on left wrist; red, with jagged edges; bathed in thin greenish pus; this had partially healed and broken down several times.

*Examination.*—Under the left clavicle he had an ovoid tumor 4x6 cm., slightly fluctuant and showing no signs of inflammatory process externally; another larger swelling of similar character appeared on the seventh, eighth and ninth ribs in the left parosternal line. On aspiration these tumors contained thin greenish pus loaded with coccidia-like bodies; these had a double contoured capsule but no budding forms; some of these bodies contained spores; with granular protoplasm. Owing to the patient's departure for Oregon, no cultures were made. The patient died in Oregon.

*Remarks.*—Three years after the first appearance of the ulcer on the wrist, a local physician who attended him in his last illness diagnosed the case as acute miliary tuberculosis. Autopsy showed the lungs to be studded with what appeared to be miliary tubercles and no further examination was made. No *Plasmodia malarix* were found. The blood showed an eosinophilia of 12.5 per cent. The tumors had been diagnosed in Fresno as benign fatty tumors.

Since reporting the above cases, I have found two more cases in the service of Drs. E. R. Bryant and H. G. Gates of Los Angeles. The conditions presenting were as follows:

CASE 17.—K. N., Japanese, aged 28. Examined July 10, 1906. Employed as a track worker by the Southern Pacific Railway in the San Joaquin Valley for some months preceding his entrance to the hospital. His first symptoms were pain in the neighborhood of the ankle joint, with swelling and redness. Later cervical adenitis. All the lesions supplicated and were treated surgically and healed in from seven to ten days. In a few weeks further abscesses developed in the neighborhood of the former ones and on the face. None of the abscesses was found to connect with the bone. Cultures from a fresh abscess were made and showed the organism characteristic of coccidioid granuloma. The patient ran a slight fever.

CASE 18.—T. C., Greek, aged 24. Lived in California three years and in San Joaquin Valley eighteen months. Examined July 10, 1906. Initial symptoms began about June 15, 1906, with pain in the left axilla simulating pleurisy. Shortly after there appeared a breaking out on the forehead and scalp, pustular in character. The skin lesions became covered with a thick crust, a cough developed and the patient ran an irregular fever and lost steadily in weight. On examination it was found that the crusts covered small ulcerating surfaces, and when removed a few drops of pus exuded. There were irregular areas of consolidation in the lungs, and loud, moist râles everywhere. Diagnosis was not confirmed by culture examination, but the skin lesions were quite characteristic and the lung condition not to be accounted for by tuberculosis or bronchopneumonia of the usual type.

#### SUMMARY.

Specimens of foot amputated by Dr. S. J. Gardner (Case 10) and autopsy specimens of Case 15 with cultures illustrating the morphology of the organisms of

oidium coccidioides and blastomycetic dermatitis (obtained through Morrow from cultures sent him of the Chicago cases) were all destroyed by fire, although I had sets of cultures in three parts of town. The pigs also were destroyed before any definite facts were elicited.

#### Site of initial lesion:

Skin. ....	5
Internal (chiefly lungs) .....	12
Unknown .....	1

18

#### Residence in San Joaquin Valley:

Positive .....	14
Negative .....	1
No history .....	3

18

Only one patient is known positively to be alive (Case 10) with local lesions in foot which was promptly amputated. There was no recurrence two years later. Two patients can not be traced. The majority lived less than one year and in all the patients with internal lesions who could be traced the disease was acute from the time the internal lesions began. The disease in California seems to be confined to the lower half of the San Joaquin Valley and has occurred chiefly among men working on railroad construction or irrigating ditches. The patient in the Sacramento case handled raw hides. No case has been found in women. The pericardium and heart alone have escaped involvement in the list of parts affected by the disease. The dissemination in the human being seems to be through both blood and lymph channels.

### THE NATURE OF HERPES SIMPLEX, WITH A CONSIDERATION OF ITS DIAGNOSTIC AND PROGNOSTIC SIGNIFICANCE IN VARIOUS INFECTIOUS DISEASES.\*

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PHILADELPHIA.

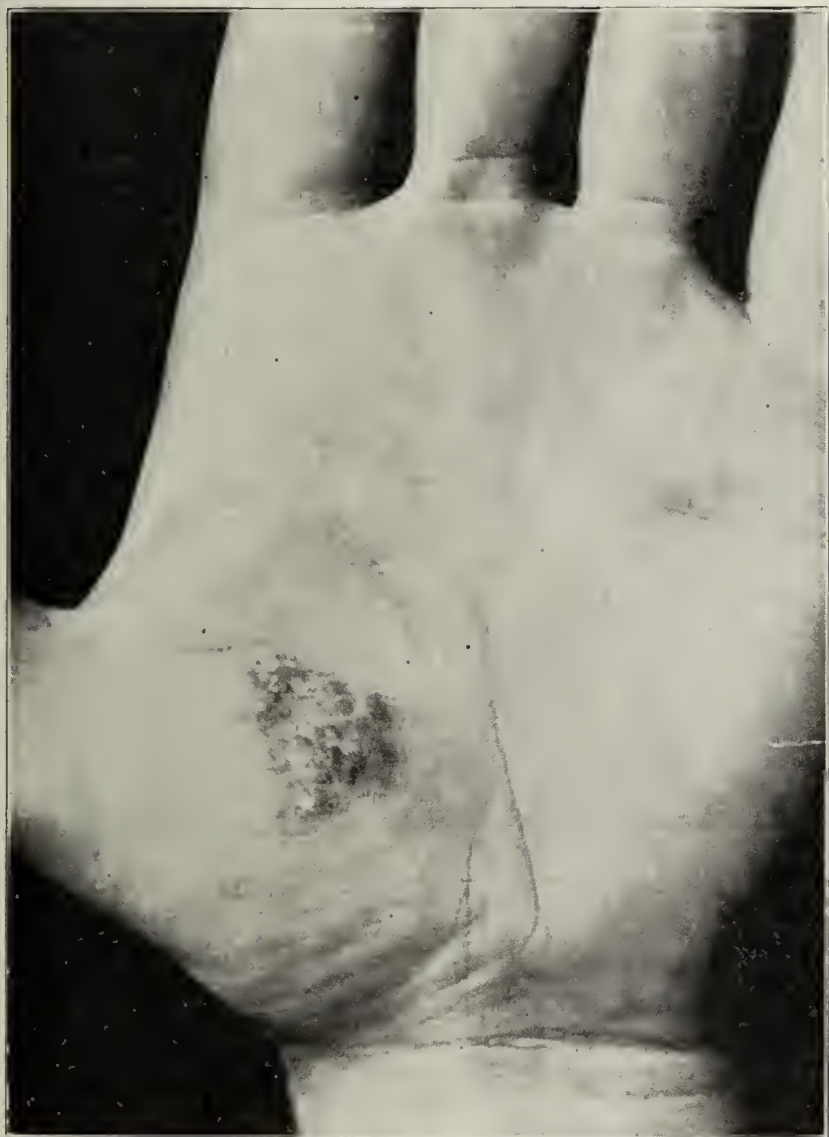
There are many features of resemblance between simple herpes and herpes zoster, but there are also strong points of dissimilarity. In extreme cases of herpes, particularly about the face, it is sometimes difficult to distinguish between the zoster and simple forms. The clusters of firm vesicles on an erythematous base are identical in both. Histologically, the lesions in the skin and those in the affected nerve structures are practically the same in the two varieties. Thus far simple herpes might almost be regarded as a circumscribed abortive zoster; but there are other differentiating clinical features. The most important is the tendency to recurrence in simple herpes, contrasted with such a rarity of second attacks in herpes zoster as almost to suggest an immunity conferred. Indeed, second attacks of true zoster are no more common than second attacks of measles or scarlet fever. Head and Campbell met with only four cases in 400 cases of zoster. There are certain patients who are so subject to facial herpes that they suffer eight, ten or more attacks a year. In herpes zoster, moreover, there is more pain and the eruption follows in a general way the area of distribution of nerves. In elderly patients neuralgia may persist for weeks, months or years after the disappearance of the eruption.

\* Read at the meeting of the Medical Society of the State of Pennsylvania, September, 1906.



PATHOLOGY OF BOTH FORMS OF HERPES.

Many years ago Barensprung suspected that herpes zoster of the trunk was caused by some lesion affecting the sensory spinal ganglia. Subsequent study has proved the correctness of this shrewd conjecture. A number of careful autopsies in persons who had suffered from herpes zoster have demonstrated gross structural change in the ganglia on the posterior roots of the spinal cord. The most important work on this subject has been published by Head and Campbell, who made autopsies on 19 patients who had recently or remotely suffered from herpes zoster. The acute changes found in herpes zoster consist in (1) extremely acute inflammation with exudation of small, round, deeply staining cells, (2) extravasation of blood, (3) destruction of ganglion cells and fibers, (4) inflammation of the sheath of the ganglion. The changes are always in the posterior roots, the anterior roots being normal. Herpes zoster, according to



A single patch of herpes simplex on palm of hand due to trivial cause. Similar patches are seen in meningitis of both the epidemic and tuberculous types.

those investigators, might be justly spoken of as an acute posterior poliomyelitis analogous to the acute anterior poliomyelitis causing infantile palsy. The only cranial nerve in whose distribution herpes zoster occurs is the trifacial, and similar changes to those found in the spinal ganglion have been found in the Gasserian ganglion. As early as 1871 Wyss<sup>1</sup> described structural alterations in this ganglion in a patient who died in the early stage of supraorbital herpes zoster. Sattler has also found changes in this ganglion in trifacial zoster.

These findings are of importance in discussing the etiology of herpes facialis and its relation to herpes zoster, for in the former affection practically identical

changes in the Gasserian ganglion have been found. W. T. Howard,<sup>2</sup> in an important contribution, gives the result of two carefully performed autopsies on patients dying of pneumonia, the one complicated by herpes zoster and the other by herpes labialis.

In the first case, a woman 63 years of age, died of double pneumonia. This patient had a well-marked herpes zoster in the mid-dorsal region of the left side in the spinal root ganglion (11th dorsal) corresponding to the area of the herpetic eruption. Pronounced changes were found consisting of congestion and hemorrhages in the capsular and interstitial tissues. At one site of the ganglion was cellular infiltration and destruction of a few ganglion cells; furthermore, amylaceous and hyaloid bodies in another portion of the ganglion.

The second case was one of croupous pneumonia in a man 41 years of age, who died on the sixth day of the illness. Two days before death a well-marked herpes of the upper lip and nose appeared, more extensive on the left side. The following changes were found:

Congestion of the veins about the origins of the superior maxillary branches of both Gasserian ganglia. Hemorrhages into the capsule and tissue, with interstitial cellular infiltration and compression and degeneration of the ganglion cells near the region of the superior maxillary branch of the left Gasserian ganglion. A few small areas of cellular infiltration in the same part of the right Gasserian ganglion. Marked congestion of the veins of the neck and brain and of the cerebral sinuses.

Councilman, Mallory and Wright<sup>3</sup> found acute inflammation of the Gasserian ganglion in cerebrospinal meningitis from extension of infection along the nerves.

ETIOLOGY OF HERPES ZOSTER AND SIMPLEX.

Both forms of herpes are due to a variety of etiologic factors. Though diverse in character, they all produce an intense irritation or actual inflammation of ganglia or nerve fibers. Exposure to cold or wet and sudden checking of profuse perspiration may act as causes; injury or pressure on a nerve trunk may produce herpes zoster. Herpes zoster has frequently been produced by the administration or accidental ingestion of arsenic, the drug setting up a neuritis. A number of dermatologists regard herpes as an infectious disease and quote epidemic prevalence of the affection in support of this view. Epidemics of herpes simplex are also occasionally observed. Zimmerlin<sup>4</sup> reports an epidemic of facial herpes occurring in the wing of a hospital at Basle, in which 16 out of 30 cases appeared in physicians and nurses.

Among the cases of herpes zoster and herpes simplex observed in the Polyclinic Hospital, I have never noted any particular evidence of epidemicity nor have these affections been more prevalent at any particular season of the year. We have treated 146 cases of herpes zoster and 83 cases of herpes simplex. These occurred in the following months:

Herpes Simplex.		Herpes Zoster.	
January	10	January	13
February	8	February	5
March	6	March	12
April	7	April	11
May	7	May	8
June	10	June	16
July	14	July	19
August	6	August	10
September	5	September	13
October	10	October	12
November	4	November	16
December	6	December	11
Total	83	Total	146

2. W. T. Howard: Amer. Jour. Med. Sci., 1903, p. 255.

3. Mass. State Board of Health Reports, 1899.

4. Correspondenz Bl. f. Schweizer Aerzte, March 15, 1883.

1. Wyss: Archiv. für. Derm. u. Syph., 1872.



An important etiologic factor is age. Childhood and early adult life are the ages at which most cases of herpes simplex and zoster occur. Fifty-five per cent. of the cases of herpes simplex and 48 per cent. of the cases of herpes zoster developed in patients between the age of 10 and 30 years.

#### HERPES IN INFECTIOUS DISEASES.

The occurrence of facial herpes, or, indeed, simple herpes anywhere on the cutaneous surface, is often of great diagnostic value in differentiating certain infectious diseases. The study of the incidence of this condition in various infectious processes shows that herpes is peculiarly related to certain diseases and forms an important part of their symptomatology. In certain other specific febrile disorders herpes occurs with great infrequency and even rarity.

*Herpes in Croupous Pneumonia.*—Many writers have indicated the great frequency with which attacks of herpes develop in the course of croupous pneumonia. It is said ordinarily to occur between the second and fifth days of the disease, although it may appear earlier or later than this period. Most writers state that it occurs in from 12 to 40 per cent. of the cases, and these figures are approximately correct. In 1,863 cases, most of which were collated by E. F. Wells,<sup>5</sup> herpes was present in 30.6 per cent. These cases were observed by ten physicians in various parts of both continents, and may, therefore, be accepted as indicating the general incidence of herpes in this disease. In some localities and in certain epidemics, wide variation in the frequency of herpes has been observed.

Hermann, for instance, noted herpes in 65 per cent. of 40 cases of pneumonia, whereas, in other epidemics, this symptom has been present in as low as 13 and even 7 per cent. of the cases. Concerning the prognostic value of herpes in pneumonia, reference will be made later.

Below is appended a table showing the frequency with which herpes has been observed by various writers:

#### HERPES IN CROUPOUS PNEUMONIA.

	Per cent.
Bleuler <sup>6</sup> .....	43
Drasche <sup>7</sup> .....	40
Volkman <sup>8</sup> .....	13
Geissler, <sup>9</sup> 421 cases ..	43
Hawkins, <sup>10</sup> 220 cases ..	16
Hermann, <sup>11</sup> 40 cases ..	65
Rall <sup>12</sup> .....	34
Kissel <sup>13</sup> .....	100
Lebert <sup>14</sup> .....	13
Scheef, <sup>15</sup> 44 cases ..	20
Speck, <sup>16</sup> 50 cases ..	18
Shapira, <sup>17</sup> 173 cases ..	29
Short, <sup>18</sup> 286 cases ..	20
Townsend <sup>19</sup> .....	7
Waller, <sup>20</sup> 81 cases ..	47
Wunderlich, <sup>21</sup> 50 cases ..	50
Ziemssen <sup>22</sup> .....	50
E. F. Wells, <sup>5</sup> 498 cases ..	26

*Herpes in Cerebrospinal Meningitis.*—In cerebrospinal fever, herpes is a symptom of great diagnostic

value; although it is generally stated that herpes is more common in croupous pneumonia than in any other disease, statistics do not seem to bear out this assertion, as will be seen from the subjoined table:

#### HERPES IN CEREBROSPINAL MENINGITIS.

	Per cent.
Tourdes .....	60
Leyden .....	75
Friis (Copenhagen) 54 of 107 cases.....	50
Jaffe (Hamburg) .....	41
Councilman et al. (Boston, 1897), 35 in 111 cases...	31
Average .....	52

In the above reported figures, herpes was present on an average in 52.2 per cent. of the cases. As is true of other diseases, the incidence of herpes in cerebrospinal fever varies considerably in different epidemics, but the fact remains that it is a most common manifestation of the disease. The erythematous and petechial eruption which has given to the disease the name of spotted fever is less frequent than herpes, and in some countries, as, for instance, Germany, is of great rarity. Herpes, therefore, may be regarded as the most frequent cutaneous symptom of cerebrospinal fever, although it is not its most characteristic eruption. Given a patient suddenly ill with headache, retraction of the head and herpes, and we have a strongly suggestive picture of an oncoming cerebrospinal meningitis. Herpetic vesicles are not limited to the face alone, but occur on the neck or distal portions of the extremities. I recall seeing one patient in whom a patch of herpes was present on the last phalanx of the thumb. I have also, however, noted the appearance of herpetic vesicles on the finger in a case of tuberculous meningitis. Herpes accompanying very mild disturbances may likewise be circumscribed to the hand as in the photograph here reproduced. Herpes occurring in the course of cerebrospinal fever does not differ from ordinary herpetic attacks. Patches are at times more extensive, but frequently are quite limited as regards area covered.

*Herpes in Malaria.*—Malarial fever comes third in the group of diseases in which herpes is a prominent symptom. Griesinger<sup>23</sup> observed herpes in 117 out of 390 cases, or about 30 per cent. Kelsch and Kiener<sup>24</sup> believe it to be present in one-third of the cases. Its presence is of great value in diagnosis because of its comparative rarity in typhoid fever, a disease with which malaria may frequently at the outset be confounded. Herpes may occur in malaria during the cold or hot stage, or, indeed, at any time in the course of the disease.

*Herpes in Influenza.*—It is not rare for herpes to develop in the course of attacks of influenza. The German Collective Investigation Committee found this symptom present in 6 per cent. of the cases collated. Curtin and Watson<sup>25</sup> found herpes zoster more common than herpes labialis. In about 6,000 cases of influenza, they observed herpes zoster six times and mention the fact that eleven cases were reported by two other physicians. "Herpes labialis was rare, differing in this respect from malarial fever."

*Herpes in Typhoid Fever.*—It has long been noted that herpes occurs with great infrequency in typhoid fever; indeed, to such an extent is this true that some writers erroneously allege that it does not occur at all. Osler's figures on the subject enable us to judge of the

5. E. F. Wells: THE JOURNAL A. M. A., May 26, 1894, p. 767.

6. Bleuler: Inaug. Diss., Zurich, 1865.

7. Drasche: Canstatt's Jahrb., 1860, vol. ci, p. 207.

8. Volkman: Inaug. Diss. Erlangen, 147, p. 17.

9. Geissler: Arch. d. Heilkunde, 1861, p. 115.

10. Hawkins: Lancet, April 1, 1893.

11. Hermann: Lungenentzündung Münch., 1880, p. 36.

12. Rall: Pneumonie, Eulenberg, 1852, p. 159.

13. Kissel: Klinik d. Brustkrankheiten, Tübingen, vol. i.

14. Lebert: Inaug. Diss. Erlangen, 1887, p. 33.

15. Scheef: Inaug. Diss. Tübingen, 1882, p. 38.

16. Speck: Inaug. Diss. Marburg, 1870, p. 30.

17. Shapira: Inaug. Diss. Würzb., 1877, p. 58.

18. Short: Inaug. Diss. Würzb., 1884, p. 58.

19. Townsend: THE JOURNAL A. M. A., Dec. 1, 1888, p. 789.

20. Waller: Op. clt., S. 4.

21. Wunderlich: Inaug. Diss. Tübingen, 1858, p. 59.

22. Ziemssen: Pleuritis u. Pneumonie, Berlin, 1863.

23. Griesinger: Traité des Malad. Infect., p. 59.

24. Kelsch and Kiener: Quoted by Mannaberg, Nothnagel's Spec. Path. u. Ther., 1899, 11, 130.

25. Curtin and Watson: Climatologist, Feb., 1892.



infrequency of its development. Among 1,500 cases of typhoid fever, herpetic outbreaks were found in 20 patients, or a little more than 1 per cent. of the cases. In the Johns Hopkins series of 829 cases herpes was served in 29 patients, or 3.5 per cent. D. J. M. Miller<sup>26</sup> recently observed 4 cases of herpes among 250 cases of typhoid fever examined. Many of the older writers maintained that even when all the characteristic symptoms of typhoid fever were present a case must be regarded as this disease, if herpes labialis developed. Some modern writers refer to herpes as negatively pathognomonic of typhoid fever. Certainly this symptom is so uncommon that the development of herpes in the course of a febrile attack would tentatively negative the diagnosis of typhoid fever. In acute tuberculosis and in typhus fever, both affections which may come into differential conflict with typhoid fever, herpes is occasionally observed.

*Herpes in Relapsing Fever.*—The occurrence of herpes in relapsing fever is likewise uncommon. Semon,<sup>27</sup> in an epidemic of relapsing fever in Berlin, observed only four cases of herpes in 160 cases of the disease.

*Herpes in Other Diseases.*—Concerning the frequency of herpes in the acute exanthematous diseases, no published figures are available as far as I have been able to ascertain. Herpetic outbreaks are of great rarity in smallpox. Among over 3,000 cases of smallpox that I have seen, I have observed but two cases of herpes; I am unable to present any figures in regard to the frequency of herpes in scarlet fever. I do not think, however, that this manifestation is so rare as in smallpox. From a general impression that I have received I should estimate that herpes occurs in about 3 per cent. of the cases. In diphtheria attacks of herpes are also occasionally observed.

#### THE PROGNOSTIC VALUE OF HERPES.

Many writers have insisted that the development of herpes in certain infectious diseases, notably pneumonia and malaria, is of distinct value in enabling one to forecast the outcome of the illness. In what manner the appearance of a few fever blisters becomes the harbinger of a favorable development of the disease and ultimate recovery can not be explained. The herpetic attack is sometimes regarded as analogous to a critical chill or discharge, but the time at which the herpes develops in the course of many illnesses precludes such an explanation. The extent to which herpes may be regarded as a symptom of favorable omen in pneumonia and malaria can not be justly estimated at the present time. Most authors, however, attribute to the development of this symptom a favorable prognostic significance. Osler, in speaking of herpes in pneumonia, conservatively says: "It is supposed to be of favorable prognosis, and figures have been quoted in proof of this assertion." The opinion that herpes was a favorable indication was believed many years ago. Hebra, the great Vienna dermatologist, did not share this view. In 1866 he wrote: "Observation teaches that this form of herpes is neither of good nor of bad augury with reference to the probable outcome of the disease which it accompanies." If we rely, however, on the statistics published we can not fail but be impressed by the remarkable discrepancy in the mortality of cases of pneumonia associated with herpes and those without this eruption.

Geissler presents strong evidence of the prognostic significance of herpes in 421 cases of pneumonia studied by him. Of 181 patients with pneumonia, with herpes, 17, or 9.3 per cent., died; of 239 without herpes, 70, or 29.3 per cent., died; 159 patients were over 30 years of age; of those, 50 had herpes and 10 patients, or 20 per cent., died; 109 had no herpes, and of this number 58 patients, or 53.2 per cent., died.

Sir Dyce Duckworth believes that herpes is a good sign in pneumonia, usually occurring in cases in which a well-defined crisis develops on the sixth day. Cases that are grave and prolonged with deferred crises usually do not present it.

In malarial fever, herpes is likewise alleged to constitute evidence of an early and favorable outcome of the disease. Dr. Arthur Powell, at whose hospital service in Assam, India, more than 100 patients with malaria are seen daily, states that the development of herpes is invariably an evidence of the cessation of the attack. He says: "If during an attack of remittent or intermittent fever, a patch of herpes breaks out on the lips, face or elsewhere, I always look on this as a sign that the malarial attack is over. In all my experience, I have never met a case to negative this theory, which I thought was well known by our profession." This may be true of malaria in India, but in this country herpes occurs often early in the course of malaria and in attacks that do not promptly cease after its appearance.

That herpes has any prognostic significance in cerebrospinal fever I can not from my experience with this disease believe, although some writers contend that it has. Tourdes is of the opinion that herpes is a symptom of good omen. Figures, however, do not appear to bear out such a contention. In an epidemic in Copenhagen, the mortality of cerebrospinal meningitis accompanied by herpes was 32.3 per cent., while in cases without herpes it was 35.5 per cent., too slight an increase to be significant.

Another form of simple herpes to which reference has not been made is herpes genitalis. This is often regarded as occurring reflexly from genital irritation. As Fournier, Bergh and Unna have pointed out, it is much more common in prostitutes than in married women; furthermore, it frequently follows gonorrhea and other venereal infections. It is not improbable, therefore, that, in the majority of cases, it may be of infectious origin, as are most, if not all, of the cases of facial herpes. Genital herpes commonly exhibits the same tendency to recurrence as is observed in some cases of facial herpes.

It would appear, therefore, that apart from traumatism to nerve structures most cases of herpes—herpes zoster, facial herpes and genital herpes—are of infectious origin. The probabilities are that a toxin or poison is absorbed which has a special affinity for nerve tissue, particularly for the cells of sensory ganglia. It is not necessary to assume that this poison which might be termed an "herpetoxin" is the result of any one specific micro-organism. While two of the diseases in which herpes is a prominent symptom (pneumonia and spotted fever) are of diplococcic origin, as is likewise gonorrhea, the third disease, malaria, is produced by an entirely different form of parasite. Just as rashes indistinguishable from that of scarlet fever may be produced by a variety of toxins and drugs, so may herpes be produced by certain toxins, and herpes zoster may be caused by arsenic. In the one instance we have an erythrogenic toxin or drug, and in the other a herpetogenic

26. International Clinics, iii. series 16.

27. Semon: Jour. of Cut. and Vener. Dis., 1884, vol. xi, p. 146



toxin or drug. That pneumonia, spotted fever and malaria should be so frequently accompanied by herpes and typhoid fever, smallpox and other exanthemata so rarely, can not in the present state of our knowledge be explained. It certainly seems reasonable to attribute the herpes to some peculiar quality of the associated toxin.

It must, of course, be remembered that some persons are peculiarly subject to simple herpes, accompanying coryza, gastric disturbances and other mild indispositions (see illustration). In such individuals there may be an unusual susceptibility of the nerve tissue to the action of toxins which in other persons might produce no herpetic outbreak. Certainly the well-established association of herpes with the three infectious diseases mentioned can not be explained on the basis of personal idiosyncrasy, for it is too well demonstrated by the extended observation of experienced clinicians in all countries.

In considering the diagnosis of a disease in which herpes develops, it is well, however, to obtain from the patient or his relatives some history as to the previous occurrence of herpetic attacks.

#### CONCLUSIONS.

1. Herpes zoster and herpes simplex—both the facial and genital varieties—while not clinically identical, are closely related. The histology of the cutaneous lesions and the observed changes in the nerve structures examined appear in all to be practically the same.

2. It is highly probable that the vast majority of all cases of herpes of the various types are the result of the action of a toxin. This proposition necessarily assumes the infectious origin of herpes.

3. The frequency of herpes simplex in certain infectious diseases and its rarity in others is evidence that the toxin must possess certain peculiar qualities in order to exercise a selective affinity for sensory nerve structures.

4. The toxins producing herpes simplex and herpes zoster are in all probability not the result of the action of any specific micro-organism. This is certainly true of the former and by analogy may be assumed to be true of the latter disease.

5. The three diseases in which an "herpetogenic" toxin develops with a fair degree of constancy are pneumonia, spotted fever and malaria. Its frequency in these diseases and its comparative rarity in typhoid fever and many other infectious maladies make its appearance a symptom of considerable diagnostic import.

6. In view of the tendency of certain individuals to recurrent attacks of facial herpes from slight indispositions the fact as to such a history should always be elicited before according to herpetic outbreaks the diagnostic value referred to.

**The Model Medical Society Paper.**—There is no doubt, says the *Jour. of the Minnesota State Med. Assn.*, that the model paper for a medical society or a medical journal is something very different from the average paper now prepared. To define what shall be a model is difficult, but it is possible to name some of its characteristics. It must contain something that will add to the general fund of medical knowledge, and while this something may be contained in a paragraph, it may need a setting to give it clearness and emphasis. Proper brevity is necessary both to maintain interest and to enhance its value. Definition or clearness of outline must be a characteristic of everything one writes. Combine these qualities in a subject of interest to the profession and we shall approximate a model paper.

## SOME UNUSUAL OCULAR MANIFESTATIONS OF ARTERIOSCLEROSIS.\*

WILLIAM ZENTMAYER, M.D.  
PHILADELPHIA.

#### OPTIC ATROPHY.

The first anatomic demonstration of the pressure effects on the optic nerve of sclerosed vessels at the base of the brain was made by Michel<sup>1</sup> in 1877. This case is unique inasmuch as the resulting ocular disturbance was bilateral choked disc which Michel explained by assuming pressure on the lymph spaces of the optic nerve.

From time to time since the publication of this case others have appeared in literature, but it remained for Otto<sup>2</sup> in 1893 to present a large enough series of cases to permit of conclusions being drawn as to the nature of the gross and minute anatomic changes and of their possible clinical manifestations. In 11 of this group of 20 autopsies there were more or less marked changes in the form of the optic nerve consisting of a flattening and a subsequent atrophy of the nerve fibers, primarily centrally situated but later extending above and below, while in the two wings of the nerve thus formed the position and the relation of the nerve fibers remained normal. He concludes that the atrophy is a pure pressure one without inflammatory phenomena and that this atrophy may progress in an ascending and descending direction. He suggests that clinically simple slowly progressive optic nerve atrophy occurring in the aged may have this origin. In a subsequent article (1901) Otto<sup>3</sup> adds 4 cases of sclerosis of the carotid and ophthalmic arteries the findings in which confirmed the original as to the nature of the atrophy and the varying location corresponding to the position of the affected vessels. In all of these cases, so far as it was possible to determine, related ophthalmoscopic and functional changes were absent.

In 1891 Bernheimer<sup>4</sup> reported two interesting cases. In one the nerve was divided into two unequal longitudinal parts by the pressure of the sclerosed carotid and ophthalmic arteries on its ventral surface. In the second case the optic nerve was furrowed on its *dorsal surface* at the point where the dural sheath begins. He expresses the view later again set forth by Otto. He attributes the absence of clinical symptoms to the fact that in these cases the ophthalmic artery coursed parallel with the optic nerve fibers within the optic canal to its exit into the orbit; and that notwithstanding the marked changes, there could be no influence on the conductivity of the nerve. When, however, the ophthalmic artery takes a right angled tangential course relative to the long axis of the nerve, the fibers must be destroyed by the pressure and produce an atrophy corresponding in degree to the depth of the furrow.

In 1902 Liebrecht<sup>5</sup> added 7 similar cases, all studied from an anatomic standpoint. From a consideration of these and the previously reported cases he finds that the most frequent seats of injury to the optic nerve through arteriosclerosis are: first, within the fibrous portion of the optic canal by imbedding of the ophthalmic artery into the nerve parallel to its long axis; the second is at

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Arch. f. Augenheilk., vol. xiv, p. 39. Türek's case (reported much earlier) was one of compression of the optic nerve by the artery pushed upward by a tumor.

2. Arch. f. Psych. u. Nervenk., vol. xxv, p. 559.

3. Arch. f. Augenheilk., vol. xlvi, p. 104.

4. Arch. f. Ophth., vol. xxxvii, p. 37.

5. Arch. f. Augenheilk., vol. xlv, No. 3.



the sharp free margin of the reduplicated dural sheath where it spans the nerve near the optic foramen; (the nerve may be extensively compressed between this fibrous band above, and the ascending carotid below); the third lies midway between the canal and the chiasm, the place where the anterior cerebral artery above, and the carotid below, cross the nerve. He says that as to the functional disturbance occasioned we have no positive evidence but it may be assumed that as the result of injury at the first point we would have either no functional disturbance or an atypically placed scotoma; at the second, an incomplete or a total transverse atrophy of the nerve with corresponding visual defect; at the third, the lesion and the functional disturbance would vary with the relative position of the two vessels. He states that he has found some marked cases of diminished vision with no determinable cause which he would attribute to arteriosclerosis, and details one occurring in a woman 64 years of age where the atrophic process in the eyes had not taken place synchronously. Vision was reduced to fingers at 2m., and the fields were irregularly contracted especially in the inner halves, almost to fixation.

In 1904 C. S. Bull<sup>6</sup> reviewed the subject and stated that while he had "no certain data corroborated by autopsy.....which would transform a theory into a fact he has for years been convinced that arteriosclerosis of the ophthalmic and internal carotid arteries may affect the optic nerve more frequently and seriously than we have hitherto suspected."

The following interesting case of optic atrophy, in which the prodromal symptoms were of a nature to warrant the assumption of arteriosclerosis as the primary cause of the degeneration, is recorded because of the expressed views of the above quoted distinguished observers and as clinical evidence to substantiate them.

CASE 1.—Mrs. A. T., aged 43, married; has seven children, all girls. She has had two miscarriages, one occurring between the births of the last two children and one since the birth of the last child.

*History.*—Aside from nasal catarrh and sick headache, which has become much less severe in the past four or five years, she was well until 15 years ago, when she had an attack of grip which left her with nervous prostration and insomnia, requiring the use of hypnotics. About this time she had metrorrhagia which lasted several months. Eight years ago she had a second attack of nervous prostration. Eighteen months ago she began to have attacks of dizziness, accompanied by temporary blindness. The blindness affected both eyes and lasted from five to ten minutes. At first both eyes recovered fully, but later the lower half of the right field would be slow to recover. This tardiness increased until, for a year past, this portion of the field has remained permanently blind. The left eye has been going through the same process, the upper half of the field, however, being slow in recovering. The visual disturbances occur at irregular intervals but seem more frequent during the menstrual period. The patient's mother died of tuberculosis of the lungs at 38 years of age, her father of heart disease at 50 years of age. She is in good physical condition except for a slight general arteriosclerosis. Dr. T. H. Weisenburg made a neurologic examination and found nothing abnormal.

*Examination.*—Examination of the eyes showed: Irides prompt to light and convergence. Convergence power weak. Slight left hyperphoria. Vision of R. E. 5/6, L. E. 5/6. Fields as shown in the accompanying illustration (Fig. 1).

Ophthalmoscopic examination: R. E., clear media. Disc vertically oval and pallid, especially in the upper half, where it is decidedly atrophic. Central physiologic excavation. The superior branches of the central artery are very markedly

contracted with accompanying white lines. The corresponding vein is shrunken but not to so marked a degree. The inferior branch is a trifle smaller than normal, but the accompanying vein is normal. The scleral ring is sharply cut below and to the outside. The presence of arteriosclerosis is distinctly shown by the marked indentation of the inferior vein by the crossing artery (Fig. 2). L. E., media clear. Disc vertically oval and of a much better tint than that of the other eye, although the lower outer half is decidedly gray. The arteries are slightly reduced in size. The veins are also a trifle small, this being especially so of the inferior branch. The scleral ring is sharply cut in and out.

*Treatment.*—The patient was given potassium iodid in five grain doses; strychnin 1/30 gr. and nitroglycerin 1/100 gr. three times a day. Pearls of nitrite of amyl were ordered with directions to use them at the onset of the attacks. Two months later she reported having had but two attacks of blindness, both slight as compared to former ones. Four months later she stated that she had had no further attacks of total blindness, but had had spells of "swimming of the sight," lasting from three to five minutes, involving the whole field, and recently in the L. E. a sector defect of almost total darkness extending from fixation upwards and outwards, lasting about thirty minutes and disappearing gradually.

That the theory advanced for the causation of the atrophy in this case shall be upheld, it is necessary that not only should it accord with present conditions but that by it the various remarkable phases through which the case has passed may be satisfactorily interpreted.

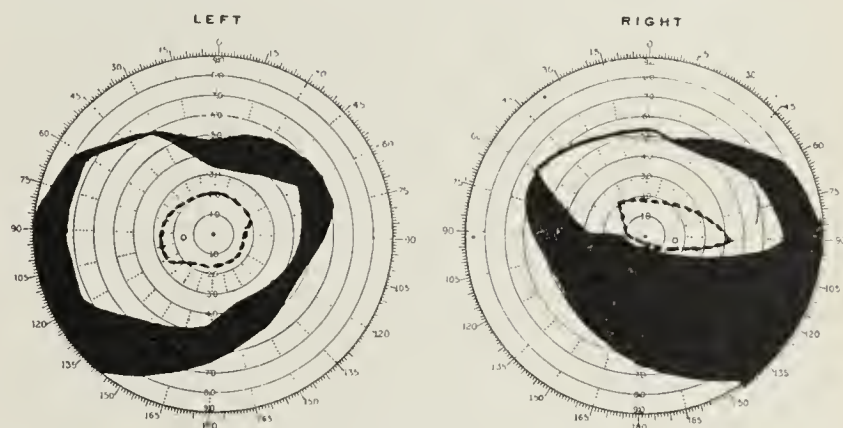


Fig. 1.—Eyefields in Case 1.

As seems well established, in the early stages of arteriosclerosis of the smaller vessels a spasm of the vessels may from time to time occur or during periods of low blood pressure collapse of the vessel may take place. If this occurred in the ophthalmic artery or certainly if in the central artery of the retina it would produce a transient blindness of the whole field. (It is claimed by some writers that, owing to the free anastomosis between the ophthalmic artery and the branches of the internal carotid, especially the facial, obstruction of the ophthalmic artery could not produce blindness.) This would account satisfactorily for the first symptom.

It has been shown that with sclerosis of the ophthalmic or internal carotid artery pressing the nerve upward against the unyielding edge of the internal end of the fibrous canal a transverse pressure atrophy beginning above and finally involving the entire diameter of the nerve, may occur. This would explain how, later, the vision was slow to recover in the lower field, and finally the blindness in this area became permanent. The advancing atrophy would doubtless at first impede the entrance of blood into this portion of the nerve and its conductivity would but slowly recover. When the atrophy became complete and the process crept deeper into the nerve the lower field remained permanently blind. Or it may be that this sluggish return of vision with final



blindness in the lower field did not take place until the atrophy had spread forward and squeezed the superior branch of the central artery of the retina. Reference to the illustration will show that the division of the artery has taken place in the nerve so that pressure might readily affect one branch earlier than it did the other (Fig. 2).

#### SPASM OF THE CENTRAL ARTERY OF THE RETINA.

As early as 1869 von Graefe<sup>7</sup> recorded an instance of what he termed ischemia of the retina, the diagnosis resting on the presence of contracted arteries and blindness. The condition persisting unchanged for a period of 10 days, operative treatment in the form of an iridectomy on one eye and paracentesis on the other was carried out with a successful result, vision in one eye rising to normal.

In 1866 Rothmund<sup>8</sup> reported having observed the same clinical conditions in two young girls with a like fortunate outcome from operative interference. Some-

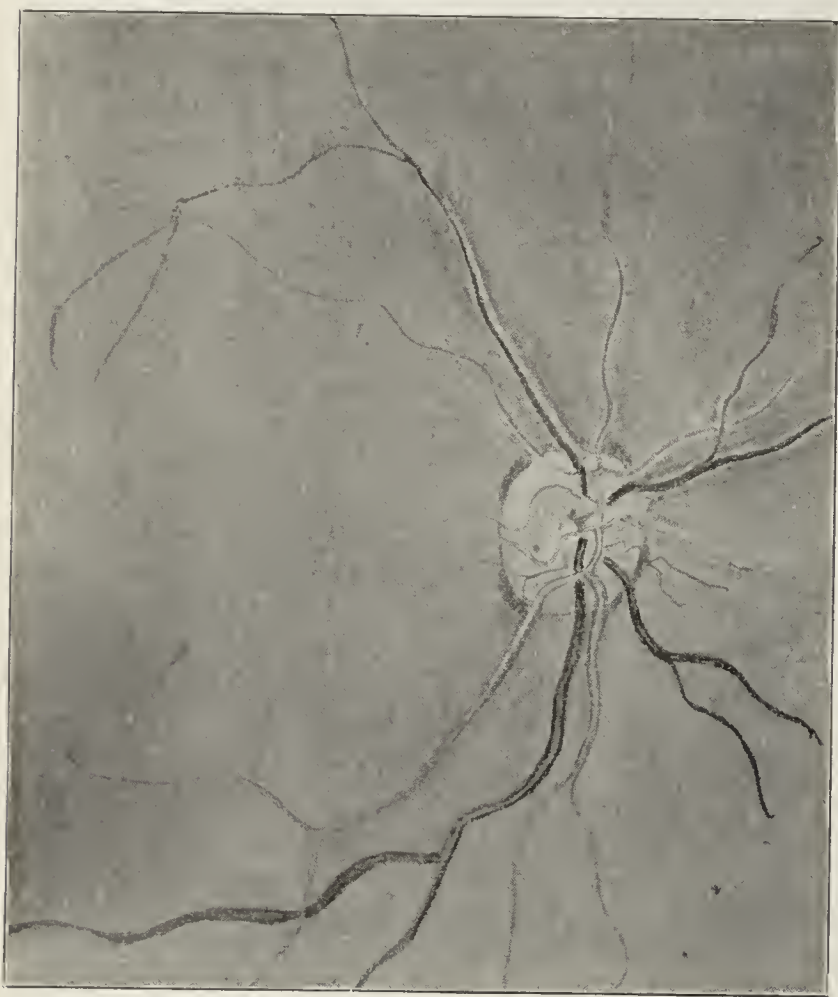


Fig. 2.—Fundus of R. E. in Case 1. Arteriosclerosis shown by indentation of inferior vein by the crossing artery.

what later, in 1874, Loring<sup>9</sup> published a similar case in a man having sclerosis of the aorta and hypertrophy of the left ventricle, in which recurring attacks of transient blindness resulted in permanent loss of sight. He believed that lowering of the blood pressure caused the attacks and that the final total blinding was due to secondary changes in the retina. Five years later Nettleship<sup>10</sup> attributed a similar case to lowered blood pressure.

Berger<sup>11</sup> was one of the first to assign to spasm of the central artery of the retina sudden blindness, he having assumed this to be the cause in a case of a woman 36

years of age, who had left hemicrania and recurring attacks of paresthesia and anesthesia of the left extremities, with blindness of the left eye, associated with pallid nerves and contracted vessels. Iridectomy was performed on the fifth day, with recovery of useful vision. Schnabel,<sup>12</sup> Galezowski<sup>13</sup> and Jäger<sup>14</sup> each report instances of intermittent ischemia of the retina which they laid to spasm. Galezowski's case terminated in thrombosis and atrophy. Schnabel's patient had also glaucoma, and Jäger's was suffering from intermittent fever. Mauthner<sup>15</sup> and Moos<sup>16</sup> believed the cause of visual obscuration in their cases to have been due to emboli. Mauthner supposed the cause to be the lodgment of an embolus in the ophthalmic artery at the place where the central artery of the retina is given off. In Moos' case, besides the retinal disturbance, there was transient diplopia, transient enlargement of the liver, recurring pericarditis, endocarditis and embolism of the mesenteric artery. Walton,<sup>17</sup> Landesberg<sup>18</sup> and Siegrist<sup>19</sup> have observed spasm of the central artery of the retina in migraine; Knies,<sup>20</sup> Klein<sup>21</sup> and H. Jackson,<sup>22</sup> in epilepsy, and Raynaud,<sup>23</sup> Weiss<sup>24</sup> and others, in symmetrical gangrene of the extremities. Barrett,<sup>25</sup> Noyes,<sup>26</sup> Nettleship,<sup>27</sup> Priestley Smith<sup>28</sup> and Posey<sup>29</sup> have all recorded instances of recurring, transient monocular blindness. Posey's cases were not dependent on the other possible causes which he gives for this symptom, namely, ciliary fatigue, glaucoma or migraine. Arteriosclerosis was present and the visual disturbance was assigned to spasm of the vessels. A very significant point brought out by Fischer<sup>30</sup> in his report of 5 cases of transient blindness is that in 45 cases of branch embolism recorded, transient total blindness, lasting from a few minutes to hours, preceded the final permanent limited blindness.

With this brief résumé of the cases in which the obstruction was, in nearly all, temporary and in which the cause was likely due, in some instances, to spasm, although this could only be surmised because of the presence of ischemia of the retina and because of the temporary nature of the functional disturbance, a personal observation in which the spasm of the central artery of the retina was repeatedly seen will be recorded.

On Nov. 23, 1905, I was asked by Dr. D. F. Harbridge of Philadelphia (to whom I am indebted for the privilege of reporting the case in abstract) to see the patient whose history follows:

CASE 2.—Mr. C., aged 49, stated that the day previously, while stooping, he noticed some difficulty with the sight of his left eye, and upon closing the right eye he found that the left was blind. The attack of blindness lasted about one minute. That day he had two or three subsequent spells. To-day he had four or five attacks in the forenoon, and between the hours of 2 and 4 p. m., while under observation, he had them as frequently as every half-hour, and they lasted from one-half to two minutes. The obscuration of the field begins in the

12. Arch. f. Augenheilk., xv, p. 379.

13. Rec. d'Ophth., 1882.

14. Abst. Graefe's Arch., vol. xlv.

15. Wien. med. Jahrb., vol. II, 1873.

16. Virch. Arch., vol. xli, p. 58.

17. Journal of Nerv. and Mental Diseases, vol. xl, July.

18. Arch. f. Augenheilk., vol. vii, 1878.

19. Graefe's Arch., vol. xlv.

20. Berleht. d'Ophth. Ges., 1877 (Arch. f. Psych., vol. xx).

21. Graefe's Arch., vol. xlv.

22. Ophth. Rev., vol. iv.

23. Arch. Gén. de Méd., 1874.

24. Wien. Klin., vol. I, 1882.

25. Ophth. Rev., 1902.

26. Text-book, 1890.

27, 28, 29. Posey: THE JOURNAL A. M. A., May 31, 1902.

30. Fischer: "Über Emboli des Art. Cent. Ret.," Leipzig, 1901.

7. Arch. f. Ophth., vol. viii.

8. Klin. Monatsbl. f. Augenheilk., vol. iv, p. 106.

9. Am. Jour. of Ophth., 1874. (This and the following footnotes to 24, inclusive, are referred to in Wagenmann's article. Graefe's Arch., vol. xlv, but where possible the abstract was made from the original article.)

10. Brit. Med. Jour., 1897.

11. Michel's Jahrb., p. 350.



periphery and is compared by the patient to the shimmer from ice-clad trees or to the movement of biograph pictures. Finally the field becomes totally dark. The clearing up begins in the periphery of the temporal field and with the same accompanying phenomena.

*History.*—The patient is a strong, stout man. Covering a period of one year he had severe attacks of vertigo seven years ago. In the spring of 1903 he had an attack of bronchopneumonia, followed by inflammatory rheumatism. Since the disappearance of the vertigo he has become subject to severe attacks of migraine occurring on the average of once in five weeks. Nine years ago he contracted syphilis. He has used liquor and tobacco to excess.

Dr. W. B. Stanton, who examined the condition of the patient's vascular system, states that there is no lung, kidney or heart lesion, but that there is a slight degree of sclerosis of the vessels. Dr. D. J. McCarthy reported that there is a symptom group suggestive of beginning tabes. The patient was given mixed treatment and nitroglycerin. Dr. Harbridge informs me that the attacks have become less frequent but that the optic nerves are becoming quite gray and that the retinal vessels are beginning to show evidences of arteriosclerosis.

*Examination.*—Ophthalmoscopic examination showed a moderate contraction and distinct flattening of the arteries and veins at the onset of an attack of blindness. When the blindness is complete the arteries become ribbon-like and lose their reflex and the veins, especially the superior branch, become very narrow. After a brief period there is a gradual refilling of the arteries and veins, the latter becoming greatly distended, particularly the inferior branch. During the last attack that was observed, the last of a long series occurring at half hour intervals, there appeared to be some retinal haze about the disc. There were never any macular changes. The pupil dilated synchronously with the loss of vision, and for a while after the attack exhibited hippus.

Dr. Harbridge will report the case in detail.

The opportunity of *repeatedly* observing this phenomenon is probably unique, as a search of the literature disclosed but 3 similar cases, one by Wagenmann,<sup>31</sup> who also was fortunate enough, on a single occasion, to observe the cycle of oncoming spasm, occlusion and relaxation of spasm. The second was by Benson,<sup>32</sup> who examined ophthalmoscopically a case during the existence of total blindness and during attacks of partial blindness. The third was that of Sachs,<sup>33</sup> who observed spasm of a branch of the central artery of the retina. Wagenmann's case briefly is as follows:

A man, aged 69 years, had for two months noticed frequent, and of late, almost daily attacks of blindness in the right eye, lasting from a few minutes to a few hours. He had had epileptiform attacks in childhood, but was now healthy except for arteriosclerosis.

The changes observed were, "in a short time perception of light was gone, and with it direct and consensual pupil reaction. Externally no change. Ophthalmoscopically, disc pale, arteries appeared as shiny streaks in which no blood columns could be seen, even with the direct method. Veins thread like. No pulsation on pressure. Soon the retina became cloudy and the fovea stood out as a round red spot. About ten minutes after the beginning of the attack a fine red line was seen by the indirect image to appear in the arteries, and immediately afterwards the veins became large. Thereupon the patient had perception of light, and the pupil reacted a little. In a few minutes the circulation, and with it the vision, was completely restored."

Following is an abstract of the case of Benson:

For more than four years a man, aged 32, in good health, had had numerous attacks of transient blindness, sometimes complete, at other times involving only a section of the field. During an attack of complete blindness the ophthalmoscopic examination revealed the inferior temporal artery entirely bloodless for a distance of four discs' diameter from its point of emergence. The bloodless section was seen to shift toward the periphery until it reached the next large bifurcation, when it suddenly disappeared, leaving the blood vessels normal. The same phenomena were noticed during attacks of partial blindness.

Sach's case resembled that of Benson:

In the affected eye a circular constriction would start from the papillary end of the inferior artery and travel to the point of first bifurcation, taking from three to five minutes to make the journey, a distance of one-half the disc's diameter. The fundus was typical of that embolism. When again seen three days later only the picture of embolism was present. The patient had arteriosclerosis.

The value of every such clinical observation will be appreciated on considering the uncertainty which exists as to the most common lesion leading to the fundus picture of obstruction of the central artery of the retina, an uncertainty which persists, notwithstanding the fact that almost a score of eyes thus affected have been examined anatomically. The reason for this being due, in part, to the long period of time which usually elapsed between the time of the occurrence of obstruction and the necessity for enucleation from secondary causes.

Thompson<sup>34</sup> has so recently brought together for critical consideration the arguments for and against the various conditions assigned as the cause that it is unnecessary at the present time to reconsider them. Suffice it to note that neither Reimar<sup>35</sup> nor Haab<sup>36</sup> is satisfied that any one of the anatomic studies has proven the existence of embolism and that Schweigger<sup>37</sup> has stated his belief that endarteritis is the usual cause and that early clouding of the retina with a cherry red spot would not be an early occurrence in embolism. Haab, in his able critical consideration of the subject, states that evidence of the occurrence of spasm of the central artery of the retina would render great service in explaining the prodromal periodic blindings and especially the filling of the retinal vessels that is seen immediately after the blinding. According to Haab the sequence of events, as the result of disease of the vessel walls would be: narrowing of the lumen of the vessels, but insufficient to interrupt the retinal function, followed by spasm of the vessel walls causing temporary blindness and, if a thrombus formed, permanent blindness. Kern<sup>38</sup> states that in 66 per cent. of cases of so-called embolism no assured source of embolus was present. He concludes that the cause is usually a local disease, such as atheroma, of the central artery.

Wagenmann says that where the intima is thickened the spasmodic contraction would be all the more likely to produce ischemia. He considers spasm of the coronary arteries with functional disturbance of the heart which occurs in arteriosclerosis of these vessels, an analogous condition.

An interesting feature in some of these cases has been the long period of time over which the blindness extended with ultimate restoration of vision. In von Gracfe's and in Rothmund's cases several days inter-

31. Graefe's Arch., vol. xlv.

32. Report Internat. Ophth. Cong., 1904.

33. Beiträg. z. Augenheilk., vol. xlv.

34. Ophth. Rev., 1902.

35. Arch. f. Augenheilk., vol. xxxviii.

36. Norris and Oliver. System of Diseases of the Eye.

37. Knapp's Arch. of Ophth., 1901.

38. Inaug., Dissert. (Refer to Wagenmann, footnote 31.)



vened between the onset and recovery, and in the case of Noyes, where repeated previous attacks of transient blindness authenticated the cause as a vascular one, blindness persisted 16 hours with recovery, and recently Barrett recorded an instance where the attack lasted two hours with a return to normal vision. It would seem that in these cases sufficient circulation remains to sustain the anatomic integrity, but not the functional activity of the retina.

**Prognosis.**—In considering the prognosis of transient blindness a distinction should be made between those cases where the attack is but a symptom of a general condition in which spasm is a feature, as epilepsy, Raynaud's disease, migraine and the ague of intermittent fever, in which the prognosis is good, and where it is due probably to a local manifestation of a general vascular disturbance in which the prognosis is grave. In the latter class the danger lies mainly in the secondary effect of the spasm, for, excluding the cases in which a reasonable doubt may exist as to the cause of the ischemia, there yet remain several cases in which, although the blindness lasted for many hours, a full recovery of retinal function followed.

**Treatment.**—The indications to be met are those of early arteriosclerosis, high arterial tension and spasm. The only drug that has secured any standing in combating this insidious affection is the iodid of potassium. It is to be given in doses of from 3 to 5 gr. three times a day in large draughts of water after meals so soon as there is any indication of capillary fibrosis, and is to be continued in interrupted courses thereafter. It should be needless to add that moderation in eating, drinking, exercise, pursuit of business and pleasure is more essential than regularity in taking medicine.

The nitrites are potent in reducing arterial tension. Nitroglycerin commends itself because of its convenience in administration. Nitrite of amyl, by reason of its quick action, is especially indicated for the attack, but frequently appears to have but little effect in modifying it. Heart tonics are usually called for to improve the circulation. The value of massage of the eyeball has been demonstrated in the treatment of cases exhibiting the symptoms of obstruction and should always be tried.

The question of the advisability of performing an iridectomy must be decided for each individual case. We have seen that recovery has followed alteration of circulation brought about by performing paracentesis of the anterior chamber and that iridectomy has failed in the one case of undoubted spasm in which it was done. The performance of an operation whose action is problematic for the relief of a condition which, if not problematic, is perhaps only the local expression of a general condition will not appeal to every one. It would seem that the operation might be justified where the obstruction had resisted the usual means employed for relief until permanent injury to vision was likely to result. But that it would guard against subsequent attacks is scarcely to be expected.

1819 Spruce Street.

#### DISCUSSION.

DR. D. J. MCCARTHY, Philadelphia, confined himself to a consideration of the subject of arteriosclerosis of the central nervous system. With reference to the first of these cases he called attention to some observations of his own as to the relation of the internal carotid artery after it reaches the brain. It must be remembered that it passes through a bony canal which prevents any extension of the pulse wave, this being more or less of a conservative provision of Nature to prevent a high tension pulse wave doing damage to the delicate nervous structures. Dr. McCarthy thinks that in cases of hypertension leading to

arteriosclerosis the first pathologic manifestation is a dilatation immediately inside the canal where the internal carotid passes into the skull cavity and that the main factor in the disturbance of the optic nerve is the relation of this dilatation to the optic chiasm. In regard to the second case, spasm of the retinal artery, the question comes up, he said, of whether or no there was cerebral arteriosclerosis. Of course, the examination of the eye is the best test of this, but the history of the case has to be taken into consideration. The fact that there may be arteriosclerosis confined to the cerebral vessels without general arteriosclerosis has been demonstrated. In one of Dr. McCarthy's patients who suffered with attacks of migraine, examination of the brain showed extensive arteriosclerosis with no general systemic trouble. Contraction of the retinal artery has been observed in attacks of migraine. Experiments have been performed of tying off vessels to vary pressure and it has been found that changes in tension give rise to localized arteriosclerosis. The migraine attacks might be sufficient to account for a localized arteriosclerosis in the retinal vessels.

### CONSERVATISM IN THE TREATMENT OF INFANTS WITH HARELIP AND CLEFT PALATE.\*

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The advent of an infant affected with deformity of lip or palate, or both, brings directly to the parents and physician in charge, the urgent necessity of deciding whether immediate or at least early radical operation for the correction of the deformity shall be performed, or methods of treatment adopted that will admit of postponement of palate closure until a later period.

With authorities openly divided on this question as they are, the decision must necessarily be a difficult one to determine, more especially since such cases are comparatively infrequent in the general practice of medicine and surgery.

My practice being limited to this field and necessarily covering a somewhat extensive territory, the opportunity to observe both the effects of treatment according to my own system on infants under widely different, often extremely difficult conditions, and the result of operations by others in their influence on the appearance and development of patients in

later life is such that I feel warranted in bringing forward for your consideration at this time certain facts bearing on conditions common to all such cases, with suggestions of individual variations from time to time noticeable to meet the exigencies of which my own system of treatment has been designed.

#### CLAIMS OF ADVOCATES OF EARLY OPERATION HARMFUL.

The following claims made by advocates of closure of palate in early infancy are not in accord with my own



Fig. 1.—Infant with harelip not associated with fissure of the hard palate, although there was cleft in the soft palate. In this case the usual order was reversed, staphylorhaphy performed with perfect result and lip closed after strips had straightened the nose.

\* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906. Part of the illustrations are omitted from THE JOURNAL, but appear in the reprints.



experience and the recorded results of many others in similar cases and appear to lead along lines that can not fail to be distinctly harmful if followed implicitly by operators generally for reasons that practical results here shown make clear. Writers favoring early operations hold that the most desirable time for operation is within three months after birth; that there is less nervous shock because the nervous system of the child is not well developed and the child is not capable of receiving the same impressions that it would later in life; that there is better reaction and less shock in young children because of less alarm and dread; that there is less deformity, for they claim all the tissues, bony as well as soft, develop naturally and according to accepted types; and that there is development such as will allow normal speech to follow when the child reaches speaking age.

#### ESTIMATE OF INFANT MORTALITY FROM EARLY OPERATION MISLEADING.

Any estimation of the mortality results of early operations on harelip and cleft palate infants must necessarily be misleading for large numbers of them do not live beyond the early periods of infancy. Many die from inanition in spite of good care and carefully

to sustain life, and this entirely outside of the question of difficulty in taking nourishment which can be corrected by application of strips as well as operation and with more safety.

#### SUSCEPTIBILITY TO TOXEMIAS IN INFANCY.

The total deaths in Chicago during the year 1905 were 27,212; of these, 5,631 were under one year or about one-fourth of the whole number of deaths of all ages and from every cause. Does it seem reasonable that grave surgical operations during the first few weeks or even months would have reduced this number of infant deaths, considering that the number between one and five years was less than half as many, which in consideration of the larger number would reduce the proportion to approximately one-eighth? Does it not appeal to reason that there must be a vastly greater resistance to disease and injury of every kind after one year than previously?

This truth might be corroborated in many ways, but the following quotations seem to bear directly on the subject as to call for repetition. Christopher<sup>1</sup> says:

At birth the child is a very incomplete human being. Its anatomic deficiencies are obvious. Its physiologic or chemic



Fig. 2.—Same infant shown in Figure 1 after closure of both lip and palate.



Fig. 7.\*—Baby with single harelip showing more marked maxillary and nasal irregularity and with wider palate fissure than the previous illustrations.



Fig. 8.—Same child as in Figure 7 after operation.

selected nourishment, even though no surgical operation be attempted, and it is hardly reasonable to suppose the percentage of fatalities would be decreased by the addition of surgical operation in every case.

In the development of the human embryo there is coincident development of other parts at the stage which determines the form and character of lip and palate. Naturally, causes which may happen to be responsible for arrest of development in this particular region might also be expected to cause arrest of development in other parts of the individual. External evidence of this is frequently noted. Many infants placed under my care or brought to my notice have had more than the usual number of fingers or thumbs, or they have been totally deaf from birth or otherwise defective and this, as might be expected, is quite in accord with the results of investigation by Talbot and others along these lines. Internal defects manifest themselves in insufficient vitality or inability on the part of one or more of the organs of the body to perform natural function with sufficient energy

deficiencies are less obvious, but more important. Attention is often called to the crisis through which the child passes at birth when its heart changes from a three-chambered to a four-chambered organ. Yet this is trifling compared to the crisis which occurs when the first food enters the stomach and that organ suddenly assumes new functions; when products of the digestion reach the liver and that organ commences a series of new and untried chemical processes; when the products from this organ instead of those from the old practical and well-developed liver of the mother start on their way through the circulation to do good or harm.

It would be absurd to suppose that the physiologic processes of the newborn baby are completely developed when the anatomic elements are so markedly deficient. We know positively that these processes are not the same as those of the adult. It is because of this incompleteness that autotoxemias occur and this also explains the greater frequency of autotoxemias in childhood than adult life and still greater frequency in infancy.

1. Christopher, W. S.: "Types of Children." *THE JOURNAL A. M. A.*, vol. xliii, p. 1700.



In a summer's experience with infantile diarrhea, J. H. Knox<sup>2</sup> gives a table showing susceptibility of infants to dysentery from birth to 24 months and older. The average shows 14 or 18 cases during the first year to one at 24 months or older. The tabulation indicates emphatically the great susceptibility of children during the first year to invasion of dysentery bacillus. He states that after the first year the susceptibility to these



Fig. 11.—Boy four years old, double harelip with characteristic deformity by muscular action.

disorders is rapidly reduced, although exposure to the infection is probably as great.

#### ORDER OF CLOSING LIP AND PALATE WHEN BOTH ARE INVOLVED.

While it is undoubtedly true that with the lip fissure open operation may be more easily performed on the palate by one accustomed to operate in this field, the advantage is not of much importance as no serious difficulty is experienced in securing all the space necessary



Fig. 13.—Face of boy showing in front view result of imperfect early operation apparent in deformed nasal form, almost complete nasal stenosis, arrest of maxillary development, due to loss of pre-maxillary structures and anterior permanent teeth, upper lip too long and badly marked with deep scars, eyes staring on account of unnatural muscular tension.

2. Knox, J. H.: "A Summer's Experience with Infantile Dysentery," THE JOURNAL A. M. A. vol. xliii, p. 1849.

for rapid use of proper instruments in mouths of which the lip has been properly closed. On the other hand, the proper adjustment and fixation of the maxillary bones in their right relation, with additional value of better circulation for the nourishment of flaps secured by the closure of the lip borders and anterior portions of the palate, are by no means inconsiderable factors in leading to successful results when palate closure is performed.

#### PERMANENT DEFORMITIES OF FACE.

In addition to danger of early operations, serious permanent disfigurement of the nose and face is a matter of some moment, for interference with development of the teeth must affect the form of the maxillary bones and other osseous portions of the face, thus directly influencing the shape of the nares, the orbits and the palate. It is axiomatic then that violent injury of any kind in early infancy, even though for the good purpose of palate closure, should only be a *dernier ressort* and at best can not fail to exercise a very serious and deplorable ill effect on the appearance, the general health and the character of the voice of the individual so treated.

At the fifth week of embryonic life the germs of developing teeth have already begun to assume distinctive form and at birth both deciduous and permanent sets are far along toward development. That arrest of, or other interference, with development of the maxillary bones must interfere seriously with the regular process of eruption of these teeth in due form at the proper periods is generally admitted, but the relation of the proper arrangement of the successively erupting dental organs to the form of the face, the oral cavity, the nares, the orbits, as well as more indirectly on the development of the individual, is such as to demand most careful consideration before surgical disturbance is attempted. Development of the posterior portion of the palate in such cases through the new growth of the upper jaw back of the first molar tooth sometimes shows a tendency to proceed along normal lines, thus making an attempt to give proper width to the palate at the posterior portion of the hard palate; but the incisor cuspid and even bicuspid regions must of necessity suffer arrest of development in marked degree from the previous crushing in early infancy. This not only applies to those so treated for palate closure, but is evidenced in all persons who have suffered accidental injury before or during the period of eruption of the deciduous teeth. Any injury in fact that disarranges the occlusion of the growing, permanent teeth so that they are in lingual instead of buccal or labial occlusion with their antagonists in the lower jaw will have the same effect.



Fig. 12.—Same boy shown in Figure 11 after operations to bring pre-maxillary back to place, and lip closure. The teeth of this patient now form a very good upper arch.

#### NASAL STENOSIS.

Stenosis of the nares is also a vital matter in consideration of development. Those familiar with the various typical forms of palate fissure know that in a large proportion of these cases it is a physical impossibility to



close the cleft by immediate pressure of any kind without bringing the opposite side of at least one naris in absolute contact, and in any case the nasal opening must be very much narrowed on one or both sides.

The question of partial or complete stenosis of the nasal passages and the natural ill results of mouth-breathing concerns as every one knows, general as well as local development and general health besides, and even though partial nasal improvement may be expected as growth increases, there can never be a normal condition in that respect. The proof of this statement is at hand everywhere, for in otherwise normal individuals the relations of contracted dental arches and high palatal vaults to mouth breathing, enlarged turbinates, spurs, hypertrophic and atrophic rhinitis are too well understood and too apparent in daily rhinologic practice to admit of further question.

#### EFFECT ON SPEECH.

This leads to the final claim for better speech. Individuals affected by nasal catarrh do not have good speaking voices, nor do those who are mouth breathers with marked nasal obstruction, nor do those as a rule with contracted irregular dental arches and abnormally high contracted palates. Not only is this true because of the

hemorrhage and other disadvantageous conditions which tend to increase the difficulty of operation in this necessarily somewhat awkward situation as to make accuracy practicable, notwithstanding the radical measures that are imperatively required to secure the best results.

A little study of the cases here represented and the range of temperature in spite of the great care given, before and after operation, as well as the comparative rapidity with which the operations were performed through the use of specially designed instruments, preparation of sutures and needles in advance, order in the use of instruments, systematic nurse and rapid handling of sponges with minimum amount of anesthetic, all conducive to the least possible shock and against unfavorable postoperative conditions, will give a better understanding how severely the vital forces of infants and even young children must be taxed to secure the ideal palate results that really mean benefit to speech. Further, it will become evident that had the infants on whom the lip operation only was performed been subjected to the more severe palate operation, the mortality record would certainly have been different and sadly disastrous.



Figure 15.



Figure 17.

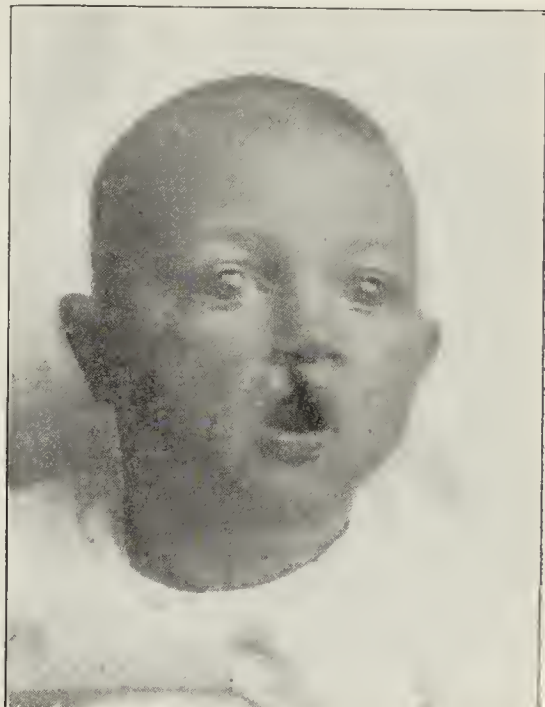


Figure 19.

Fig. 15.—Front view after operation on lip for the purpose of shortening the lip, reattachment of the parts in more nearly normal relation and removal of scar tissue for same boy shown in Figures 13 and 14. Improvement in expression of eyes is due to correction of unnatural muscular action.

Fig. 17.—Side view of boy, four years, old, for whom operation was attempted at two months by other surgeons according to the plan of forcing the maxillary and palate bones together and closing palate at that early age by radical operation, at which time the lip was also closed. Nearly all one side of the lip sloughed away, and all the central portion of the palate except a narrow bridge of tissue that held the maxillary bones in unnatural position and gave the deformed appearance of excessive unilateral prominence which may be noted, with corresponding depression indicating lack of development of the other side of the face, and practically ruined his nose.

Fig. 19.—Infant of three months with single hare lip and wide fissure through both hard and soft palates.

very considerable part borne in word and sound-making by those influences, but in such cases the larynx and vocal chords are very prone to affections which are not at all in the direction of the best speech or oral result. Even the development in form and character of the soft palate is not more assured than by later operation for the reason given in my previous writings on this subject that more perfect plastic work may be done by the surgeon in proportion as he may, with safety to his patient, be deliberate in his work, and effort to secure perfect coaptation of surfaces and exact muscular alignment of opposing muscles. Probably nowhere in the whole field of surgery is this more important than in staphylorrhaphy, for the chief battle at any age is so to control

#### METHOD OF TREATMENT DESCRIBED.

As described in my previous writing, strips are put on and a treatment outlined with a view to building the child up and putting in the best possible condition for operation. The simple procedure of placing a strip of zinc oxid adhesive plaster across the lip fissure, making it about the width of the upper lip, and extending sufficiently across the cheek from each side to give firm resistance when tightly drawn, accomplishes a number of useful purposes.

1. No mother should be allowed to suffer the shock of seeing her child almost inhuman in appearance when it can be made to look fairly well immediately with such a strip.



2. It prevents increase of deformity and further distortion of the face by unnatural muscular action.

3. In laughing and crying the principal force of muscular action is applied to the most prominent anterior portion of the maxillary bones. This, in double harelip and cleft palate, is on the projecting pre-maxillary, and tends to draw it backward. The effect is the same in single fissure, for this pressure comes on the almost invariably excessive development on one side that may be noted as a marked characteristic of all such cases as shown by the illustrations. With this as a point of resistance, the less developed maxillary on the opposite side is necessarily drawn forward, thus equalizing in greater or less degree the maxillary irregularity, and by this means tending to straighten the nose as well, while the general result of the muscular action is to make pressure in such manner as to bring the sides of the palate fissure nearer together, with consequent narrowing of the intervening fissures.

4. The infant becomes accustomed to tension in this region, and is less likely to fight and struggle to free the lip after operation, thus marking of the lip by sutures is much less likely to occur.

5. An infant learns to take nourishment much more naturally and easily with the lip thus placed in proper position.

6. He learns to breathe with the wide opening, that would otherwise exist, properly closed, thus avoiding the possibility of insufficient oxygenation after operation, when his air breathing space will be necessarily reduced, and the need of air more than ordinarily required to throw off the effect of the anesthetic.



Fig. 22.—Same baby as in Figures 19, 20 and 21, shows facial expression, correct muscular action and freedom from scar tissue at fourteen months.

If accustomed to nurse or use the bottle with nipple the child is allowed to continue to do this until marked improvement is noted by increase in weight, character of bowel passages, etc., afterward it is gradually taught to nourish with a spoon. The strips are changed from day to day, or as required,

always with effort to make the tension greater as tolerance is acquired. Usually it takes from ten days to two weeks to get an infant properly prepared and the unequal division of the jaw corrected with the anterior portion of the palate fissure drawn back sufficiently to make operation practicable, though it is frequently advisable to wait until the infant is three or four months old in order to allow it to become strong and vigorous.

The lip is then closed and the palate closure deferred until some period between one and two years old, preferably about one year and six months. If at that age the child be strong and in good health the palate is closed throughout, but if otherwise, then the hard palate is closed and the velum allowed to remain until a little later, when having recovered from operative procedures, the little one may be expected to endure this final operation with safety, because treatment that has preceded it will have so greatly narrowed the soft palate opening as not only to make the act of closing a less serious and dangerous one, but it will also have improved the pros-

pect of a full, flexible and useful palate after operation because of the decreased tension thus secured.

When the child is strong and well nourished and the palate fissure is confined to the velum, the order given may sometimes be reversed and the palate closed first; because with the hard palate united there is no opportunity to reduce its difficulties by earlier operation as described and there is not the same advantage acquired by the use of adhesive plaster strips as when both hard and soft palates are affected.

In the light of experience when successful surgical closure of cleft palate was at best a doubtful procedure, with the result much more uncertain than improved methods of operation have made it at the present time, such ill results as are shown in children now growing up who were subjected to the operation of crushing together the separated palate and maxillary bones for the purpose of closure of palate fissure in early infancy, seemed to be unavoidable in view of the choice between evils, but now that even the most difficult palate fissures can be closed at practically any age, jeopardization of young lives and the infliction of other deformities and disadvantages for the purpose of relieving the congenital one would seem to be quite unwarranted. Whenever possible, infants brought to the hospital, and especially those that come long distances, should be prepared for operation, not alone by careful examination of urine, feces and other usual methods of physical examination, but also by having them accustomed to change of food and surroundings until, by daily weighing, it may be found that there is a normal increase in weight.

Postoperative care begins with rectal injection of normal salt solution on or immediately after leaving the table. This is repeated at intervals of two or three hours with the addition of alternative substitution of nutriment, according to conditions and indications. A spoonful of warm water is given by mouth shortly after recovery from anesthetic. If no ill results follow this is repeated in larger quantity with gradual cooling and increase in quantity, then liquid nourishment is given that has already been found by previous care to be beneficial to the individual in charge.

Body temperature is sustained by external heat, especially hot-water bottle to the feet, and later temperature is regulated by cool sponging with alcohol and water, finishing with alcohol to cool fever, and young infants are rubbed with oil and wrapped in oil covering. Many infants seem to be benefited by giving modified milk soon after operation without the more gradual preparations that older children and persons seem to require. Great care is taken to stimulate the appetite, when, as sometimes occurs, there is lassitude with little or no desire for food. A drop or two of brandy in a spoonful of water every two hours, or with older children, carefully prepared chicken broth of concentrated strength or beef juice will often start the physiologic mechanism to more active work.

#### SUMMARY.

1. The first care should be to get the infant in the best physical condition for operation.

2. Delay until operation can be done with reasonable assurance of safety, but instead of allowing greater deformity to result from adverse muscular action during the waiting period as would otherwise be the case to utilize these forces, to reduce the fissures and correct the asymmetrical condition as much as possible, thereby simplifying the operative requirements and assuring better results.



3. Subdivide the operative steps required for complete correction of the existing deformity in such manner as to make sure of the accomplishment of each essential portion with the greatest possible avoidance of shock and with accurate adjustment of the parts.

4. A series of comparatively slight operations (not more than three to complete lip and palate) with sufficient intervals between them are less dangerous to the life of the little patient and undoubtedly tend to a higher average of perfect results than more radical measures.

5. Get back into the circulation such fluid as may have been lost through hemorrhage as soon as possible by the aid of normal salt solution and nutrient liquids.

6. Give the least possible amount of anesthetic consistent with avoidance of actual pain, and reduce length of time of each operation to the minimum by order in the use of specially fitted instruments and the rapid use of dry sponges.

7. Convert difficult cases with palate fissures of unusual width into better operative form by mechanical and other means before final closure is attempted.

8. Get the alimentary tract in order by cleaning thoroughly, by keeping the bowels open and by the administration of nourishing liquid food *per rectum*. As soon as the stomach will bear it without exciting vomiting administer food by mouth and when appetite is poor stimulate with carefully flavored, nourishing food in concentrated form.

9. Avoid the use of dangerous germicidal agents and depend chiefly on scrubbing and alcohol to cleanse the mucous membrane surface preparatory to operation. Use applicators dipped in dioxogen to cleanse the palate surface in postoperative care.

10. Watch respiration after operation to see that with the breathing space closed in an unaccustomed manner, there is sufficient oxygenation.

11. Aim to avoid periods of stress and give sufficient intervals for recovery between operations and yet have both lips, hard and soft palate complete, before speech habits have an opportunity to become fixed.

[FOR DISCUSSION, SEE PAGE 826.]

## THE ISCHEMIC PARALYSIS AND CONTRACTION OF VOLKMANN.\*

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The immediate and remote effects of overtight fracture dressings on the muscles of the extremities, essentially a myositis, were first made known by Richard Volkmann<sup>1</sup> in 1875. Volkmann reported but one case of which we have knowledge. This was in the lower extremity and is one of two cases cited here, the remaining fifty of the fifty-two cases described in this paper involving the upper extremity. Further, Volkmann's patient was practically an adult, his age being 16 years, and, as will be shown below, the lesion which is known by Volkmann's name is pre-eminently one of childhood, the great majority of patients being between the ages of 3 and 12, while in turn the greater number of these were between the ages of 5 and 10.

In 1884 Leser<sup>2</sup> published a short monograph on the subject, reporting no less than seven clinical cases. He also investigated the matter experimentally by studying the effects of tight bandaging on the limbs of animals. While he did not succeed in bringing out the type of affection known to us to-day, his work is sufficiently important to entitle him to share credit with Volkmann, and many German authorities designate the affection as the Volkmann-Leser paralysis and contracture. The description of the condition as generally set forth is based largely on Leser's work. This author appears to have taken little thought of the possibilities of operative treatment. His patients were not subjected to any surgical measures (save one in whom a pseudoarthrosis was incidentally corrected), and he seems only to have suggested that something might be accomplished by forcible stretching of the paralyzed and contracted flexors under general anesthesia.

Isolated cases were reported by Sonnenkalb<sup>3</sup> (1885), Petersen<sup>4</sup> (1888), Niessen<sup>5</sup> (1890); two cases), Hildebrand<sup>6</sup> (1890), Davidsohn<sup>7</sup> (1891) and Pingel<sup>8</sup> (1892; two cases). In 1893 Keferstein<sup>9</sup> published a monograph on the subject, adding no less than seven hitherto unreported cases.

During the decade which followed the appearance of Leser's monograph it had become apparent, first, that the Volkmann-Leser type of ischemic muscular paralysis due to overtight fracture dressings did not differ essentially from the ischemic lesions resulting from embolism and thrombosis and from cold; and, second, that pressure lesions might arise from nerve compression—especially after the use of the Esmarch bandage—which bore no relation whatever to the typical Volkmann-Leser affection, the latter being particularly myogenic in origin and in no wise influenced by injury of the nerve trunks. It was shown that injury from nerve compression led to a flaccid type of paralysis, which differed radically from the myogenic form. But little advance in treatment was made during this period. Leser's suggestion to use forcible stretching of the flexors under general anesthesia seems to have been utilized. In Davidsohn's case, reported in 1891, the flexors were lengthened. This appears to have been the first attempt to relieve the condition by a cutting operation, but this must have been thought of minor importance, for in the cases collected by Keferstein in 1893 we find no mention of surgical intervention proper.

In 1896 Henle<sup>10</sup> reported a case in the practice of his chief, Mikulicz, in which the forearm bones were resected with good effect. It is rather strange to note that at the time when German reports of these cases cease a series of English observations began with a case reported by Battle<sup>11</sup> in 1896. While the English surgeons were aware of Volkmann's pioneer study in 1875, and while they made use of his name in describing the peculiar state of affairs which follows the application of overtight dressings for fractures, they appear to have been ignorant of the work of Volkmann's successors; we nowhere find mention of the important monographs of Leser and Keferstein, nor, indeed, of any other German reporters.

2. Leser: Volkmann's Samml. klin. Vortr., 1884, No. 245.

3. Sonnenkalb: Deutsch. med. Wochft., 1885, No. 17, p. 273.

4. Petersen: Arch. f. klin. Chir., 1888, vol. xxx, No. 7, p. 675.

5. Niessen: Deutsch. med. Wochft., 1890, No. 35, p. 786.

6. Hildebrand: Deutsch., Zeitsch. f. Chir., 1890, vol. xxx, p. 98.

7. Davidsohn: Inaug. Diss., Erlangen, 1891.

8. Pingel: Inaug. Diss. Greifswald, 1892.

9. Keferstein: Inaug. Diss., Göttingen, 1893.

10. Henle: Centrbl. f. Chir., 1896, No. 19.

11. Battle: Trans. Clin. Soc., London, 1896, vol. xxix, p. 249.

\* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Volkmann: Krankheiten d. Bewegungsorgane, Pitha-Billroth. Handbuch d. Chir., vol. ii, No. 2, p. 846.



The English surgeons seem to have taken cognizance chiefly of the deformity which results from the condition. Their writings deal principally with an orthopedic lesion in which the causation plays a minor part in the prognosis and treatment.

Battle's pioneer British case in 1896 was soon followed by others: Dunn<sup>12</sup> (1897), Johnson<sup>13</sup> (1898), Davies-Colley<sup>14</sup> (1898; two cases), Owen<sup>15</sup> (1898), Clarke<sup>16</sup> (1899), Page<sup>17</sup> (1900), Littlewood<sup>18</sup> (1900; two cases), Wallis<sup>19</sup> (1901), Barnard<sup>20</sup> (1901; two cases). In studying these reports we are struck with the fact that the British surgeons were chiefly concerned with a deformity which they sought to correct by orthopedic methods. The cases came to light because such methods were employed to remedy certain deformities and disabilities, the causation of which was mentioned only incidentally. Dudgeon,<sup>21</sup> in 1902, was at pains to collect the scattered observations. He tabulated these, adding hitherto unpublished observations which dated back to a period at which no surgical intervention was practiced. In the following year<sup>22</sup> (1903) he reported three additional cases.



Fig. 1.—Ischemic paralysis of Volkmann. Condition at end of five months.

During the same year (1903) Edington,<sup>23</sup> of Glasgow, reported three Scotch cases, and in 1905<sup>24</sup> Rowlands wrote a short monographic article on the subject. This was based on Dudgeon's study, to which was added a personal case.

The only articles which I am able to find in American literature are those of Bernays<sup>25</sup> (1900) and Ferguson<sup>26</sup> (1906). The former called attention in a forcible way to the importance of the subject. The latter reports the result of two observations in which lengthening of the flexor tendons of the forearm was followed by marked improvement.

My personal contribution to the subject is as follows:

CASE 1.—X., male, aged 17, a miner by occupation, came under my observation Aug. 16, 1905, with the following history:

*History.*—Family and personal history were negative. On Aug. 7, 1905, nine days before I saw him, he received, while in Mexico, a stab wound at the upper outer side of the right forearm. The wound bled freely. He was taken to a hospital and an Esmarch bandage was applied with a fair degree of snugness from the wrist to the shoulder. This bandage remained in place from 9 a. m. until 10 a. m. on the following day. There was a moderate degree of pain in the hand and forearm but this pain was not excessive; the hand underwent moderate swelling. On removal of the Esmarch bandage an operation was performed under an anesthetic. The nature of the operation is unknown. On recovering from the anesthetic the patient found the forearm in anterior and posterior splints and enveloped in dressings held in place by an ordinary bandage rather snugly applied; a considerable degree of pain in the forearm and hand followed. The splints were left in place for three or four days. On their removal blebs were found in several places on the forearm, wrist and hand; there was moderate swelling in the hand and he was unable to move the fingers; he does not remember whether or not there was sensation in the fingers and hand. After the removal of the dressing the forearm swelled rapidly and became painful. During the last three or four days the swelling has gone down and the pain has markedly diminished.

*Examination.*—Aug. 16, 1905. The young man was up and about. He looked and felt well. His temperature and pulse were normal. He had a good appetite. He carried the right forearm in a sling. This forearm was the seat of a short, recent, healed wound on the antero external aspect a hand's breadth below the elbow. The forearm was about the size of its fellow. The hand was a little swollen and there was complete paralysis of all muscles below the elbow. The patient could not move the fingers or wrist in the slightest degree; there was complete anesthesia below a point a little below the elbow. There was no electrical reaction whatever in any of the muscles of the forearm or hand to either the faradic or galvanic current; a radial pulse was present.

*Diagnosis.*—Ischemic paralysis with coexisting pressure neuritis. Very gentle massage and a mild faradic current were advised.

*Course of the Disease.*—During the next few days the fingers showed a tendency to contract. They were extended and the forearm and hand were loosely bandaged to a light posterior splint. The only improvement which took place was a gradual return of sensation in the forearm.

Under date of Jan. 5, 1906, I find the following notes: "Patient seen to-day with Dr. Edward Delehanty; he has had massage and electricity to the forearm and hand constantly, but there is not the slightest return of motion; sensation has returned to a point a little above the wrist. Flexion and extension at the elbow are normal but there is less power than on the opposite side; the fingers and wrists can be moved passively, this has been done daily; passive pronation and supination of the forearm are possible to but a very slight degree. The forearm is smaller than its fellow, it is rather rounded; its muscles, especially those on the anterior surface, are hard and board-like; there is complete loss of electrical reaction both to the faradic and galvanic current in all muscles of the forearm and hand. Measurements of the circumference of the two limbs are as follows: two inches above the styloid process of the radius the right side measures 5¾ inches, the left side 6¼; five inches above the styloid process the right side measures 7 inches, the left side 8½; at the junction of the upper and middle thirds of the forearm the right side measures 8¼ inches, the left side 9½; at the middle of the arm the right side measures 8½ inches, the left side 9¼. The hand is shiny but not swollen; the hand and fingers have been on a posterior splint and are in complete extension. I am impressed by the hard, board-like rigidity of the forearm muscles. It seems to me probable that a fibrosis locks the forearm bones, thus preventing passive pronation and supination. No operation seems indicated" (Fig. 1 represents the arm at this time.).

12. Dunn: Guy's Hosp. Gaz., 1897, vol. xi, p. 11.

13. Johnson: Lancet, 1898, No. 1, p. 722.

14. Davies-Colley: Guy's Hosp. Gaz., 1898, 15.

15. Owen: Ibid.

16. Clarke: Orthopedic Surgery, 1899, p. 49.

17. Page: Lancet, 1900, No. 1, p. 83.

18. Littlewood: Ibid., p. 291.

19. Wallis: Practitioner, 1901.

20. Barnard: Lancet, 1901, No. 1, p. 1138.

21. Dudgeon: Lancet, 1902, No. 1, p. 78.

22. Dudgeon: Trans. Clin. Soc., London, 1903, vol. xxxvi, p. 251.

23. Edington: Glasgow Med. Jour., 1903, vol. lix, p. 417.

24. Rowlands: Lancet, 1905, No. 2, p. 1168.

25. Bernays: Boston Med. and Surg. Jour., vol. cxlii, p. 539.

26. Ferguson: Ann. of Surgery, vol. xliii, p. 599.



I examined the patient again Feb. 2, 1906. There was no change. He left the hospital of his own accord about April first, after six months' residence. During this time he had had constant attention. There was no improvement whatever at the time of his discharge. No muscles of the forearm or hand responded to any electrical current. A bad prognosis was necessarily given. Contracture would doubtless have gone on in this case had not the limb been placed on a splint when it commenced.

*Note, December, 1906.*—This patient re-entered the hospital in the service of one of my colleagues. Since I last saw him the forearm has become smaller and harder, the fingers are markedly contracted. The hand is a claw-hand. He has little motion at the wrist, a trifle of motion in the thumb, practically no motion in the fingers. The picture is a classic one. At the hands of the surgeon whose service he entered he was subjected to an operation in which an attempt was made to free the median and ulnar nerves. Both nerves seemed thickened; below the elbow they were buried in the dense tissue of the forearm. An excellent opportunity was afforded to examine the forearm muscles themselves. They are hard and fibroid, muscle tissue is replaced by a fibrosis. Sections were taken from these muscles and handed to Dr. J. A. Wilder, professor of pathology in the University of Denver, for microscopic examination. Dr. Wilder reports as follows:

*Examination of Muscular Tissue.*—The tissue is pale red in color and very tough and fibrous. Part of the tissue was fixed in formalin, part in Marchi's fluid; imbedded in celloidin. Histologic examination of the sections shows a great hyperplasia of connective tissue around and between the bundles of muscular fibers and in some areas between the individual fibers as well. This connective tissue is dense and consists chiefly of many adult fibers containing a moderate number of blood vessels, most of which have well developed walls. This fibrosis is so prominent that in many fields muscular tissue is not present, and where found it appears atrophic and fragmented. Many of the fibers have lost their nuclei and transverse striations, having the appearance somewhat of broad ribbons of delicate fibrillar tissue. Other muscular fibers and parts of fibers have a glassy, homogenous appearance with a marked affinity for the acid stains, their appearance and reactions being strongly suggestive of hyaline degeneration.

"Osmic acid preparations show a moderate amount of fatty infiltration, which is more marked between the connective tissue fibers than between the muscular fibers. Fatty degeneration of the muscular fibers is not found."

*Feb. 13, 1907:* Since the operation in December sensation in the hand has improved somewhat, but motion of the fingers has not improved.

#### ANALYSIS OF TABULATED CASES.

*Age.*—While in a few cases the exact age is not stated, there is reason to think that in at least 40 out of 52 instances the patients were between 3 and 12 years of age. Over one-half of these were from 5 to 10 years of age. Of the few remaining adult cases no patient was over 35.

*Sex.*—When sex is mentioned we find males 34, females 11. In the English series the sexes are about equally represented. Nearly all the German patients were males.

*Location.*—Of 52 cases all but 2 were seated in the upper extremity. The arm proper (including the elbow joint) and the forearm were involved in about an equal degree. Lesions of the upper arm were limited invariably to the lower third. It would seem that in the majority of the forearm cases the lesion was near the middle; both bones were usually involved. In the minority of cases the lesion was seated in the upper or lower third of the forearm.

*Character of Injury.*—In the vast majority of cases this was a fracture.

*General Results Independent of Treatment.*—It is

difficult to determine this. Of 51 cases in which the result is stated we find complete failure in 10, some improvement in 14, and a relatively good result in 27. The latter implies more or less return of function. Even in cases with a naturally poor prognosis time often accomplishes much. In but few cases is the end-result noted.

*General Results as Based on Treatment.*—Operative procedures in the main are limited to cutting operations—tendon lengthening, resection of bone, and, in a few cases, tenotomy (the two lower-limb cases) and the re-setting of badly healed fractures. In 22 cases treated by operative procedure a good functional result seems to have been secured in the majority. In 30 non-operative cases (simple tendon stretching being placed here) good results were secured in a minority only, and in several of these improvement was only apparent after many years of observation.

This analysis is of limited value, since it takes cognizance only of certain data common to individual reports, many of which are very defective. It covers the personnel of the patients, site and character of lesion, dressings, interval before operation when the latter was performed, character of operation and general results. It is necessarily far from exhaustive.

Lorenz,<sup>27</sup> who considers the general topic of muscle-ischemia, calls attention to those especial types which are due to arterial diseases (trauma, embolism, thrombosis, etc.) and to cold. These will be briefly reviewed in another place. It is sufficient to state that in ischemia of the muscles due to any of these causes the symptoms and sequelæ are the same. Clinical confusion is hardly possible if we bear in mind that the true Volkmann type results purely from over-tight dressings.

The clinical features of the latter type are given by Lorenz as follows: Soon after application of splints and dressings great pain develops, with swelling of the free portion of the extremity (the great majority of cases described concern the upper extremity only). The pains increase progressively, and if the bandage is not speedily removed the muscles soon become board-like and rigid. At the same time a moderate degree of contracture sets in. The limb is now paralyzed and the muscles are very sensitive. Sometimes paresthesiæ appear. A few hours after removal of the bandages the muscles swell, indicating the development of myositis. In two or three days the swelling subsides, with gradual cicatricial contracture of the muscles. This may lead to permanent shortening. Volkmann saw high degrees of permanent contracture (nails boring into palms). However, contractures do not invariably follow. There is a natural tendency to gangrene, with the cutaneous symptoms which precede the latter (coldness, insensitiveness, subsidence of original pain, bluish-gray skin, bullæ, etc.)

If the muscles are injured to a certain degree destruction of them results. To save the muscle in its entirety the cause must be removed within 5 hours, for in about 7 hours the rigidity of the muscles already described supervenes. This rigidity corresponds throughout to rigor mortis, and when it is once developed the muscle is lost, although it need not become definitely gangrenous. Regeneration can not occur unless the circulation can be promptly restored. The muscle, if it can not undergo some degree of regeneration, must atrophy with the production of cicatricial contracture.

27. Lorenz: "Die Muskelkrankungen," Nothnagel's Handb. d. sp. Pathol. u. Ther., 1898.



TABLE OF CASES—A—GERMAN CASES. \*\*

No.	Reporter.	Age Sex	Injury.	Dressings.	Interval before Treatment.	Treatment and Results.
1.	VOLKMANN ..... 1875.	M. 16.	No injury. Hy- drarthrosis of knee.	Posterior wooden splint.		Non-operative. Slow recovery from equino- varus deformity.
2.	LESER ..... 1884.	F. *	Contusion of upper arm.	Plaster-of-Paris, arm flexed.		Non-operative. Slight improvement from medical measures.
3.	LESER ..... 1884.	M. *	Fracture left up- per arm, lower thlrd.	Plaster-of-Paris, arm flexed.		Non-operative. Passive motion and splints. Some benefit.
4.	LESER ..... 1884.	M. *	Fracture right humerus, close above condyles.	Plaster-of-Paris, for 8 days.		Non-operative. Slight improvement.
5.	LESER ..... 1884.	M. —	Fracture of hu- merus into elbow joint.	Plaster-of-Paris for 14 days.		Non-operative. Very slight improvement.
6.	LESER ..... 1884.	M. —	Fracture of fore- arm in middle.	Plaster-of-Paris for short time.		Non-operative. Ultimate recovery.
7.	LESER ..... 1884.	M. †	Fracture of fore- arm in middle.	Plaster-of-Paris for weeks.	Fourteen weeks (?)	Operative treatment of false joint resulting from fracture. Essential improvement.
8.	LESER ..... 1884.	M. †	Typical fracture of radius.	Plaster-of-Paris for 5 weeks.		Non-operative. Almost complete recovery.
9.	SONNENKALB .... 1885.	M. 25.	Fracture in mid- dle of forearm.	Splints.		Non-operative. Deformity remains. Some use of hand.
10.	PETERSEN ..... 1888.	M. 4½	Compound frac- ture of humerus.			Flexors repeatedly stretched under narcosis. Some improvement. Complicated by trau- matic obliteration of brachial artery.
11.	HILDEBRAND .... 1890.	F. 5.	Fracture of lower third of radius.	Anterior splint.		The badly united fracture was refractured. Later forcible stretching of fingers. Four years later recovery perfect.
12.	NIESSEN ..... 1890.	M. 10.	Diastasis of lower epiphysis of hu- merus.	Volkmann's splint, re- moved 3 days later.		Non-operative. Some improvement.
13.	NIESSEN ..... 1890.	F. 34.	Fracture of sty- loid process of left radius.	Plaster-of-Paris, fol- lowed by two splints for 6 weeks.		Non-operative. Recovered use of hand.
14.	DAVIDSOHN ..... (Hinecke) 1891.	M. 12.	Fracture of right forearm, lower third.	Splints for several weeks.		Lengthening of flexor tendons. Good use of hand.
15.	PINGEL ..... 1892.	M. 10.	Probable fracture of humerus into elbow joint.	Plaster-of-Paris; later splints.		Non-operative, but slight improvement.
16.	PINGEL ..... 1892.	M. 6.	Fracture of left humerus near elbow.	Plaster-of-Paris, re- moved next day.		Non-operative. No improvement.
17.	KEFERSTEIN ..... 1893.	M. 25.	Contusion of right forearm.	Splints.		Stretching of flexors under narcosis. Good use of hand.
18.	KEFERSTEIN ..... 1893.	M. 6½.	Supracondyloid fracture of hu- merus.	Pasteboard splints, re- moved in 5 days.		Stretching of flexors under narcosis and use of splints. Withdrew from treat- ment. No improvement.
19.	KEFERSTEIN ..... 1893.	M. 8.	Supracondyloid fracture of hu- merus.	Plaster-of-Paris fol- lowed by splints for 2 weeks.		Non-operative. Recovered use of hand, with deformity.
20.	KEFERSTEIN ..... 1893.	M. 9.	Fracture of hu- merus into elbow joint.	Splints loosened on second day.		Non-operative. Withdrew from observa- tion.
21.	KEFERSTEIN ..... 1893.	M. 5.	Fracture at elbow joint.	Plaster-of-Paris 4 weeks.		Stretching of flexors under narcosis, fol- lowed by passive movements. Was im- proving when lost sight of.
22.	KEFERSTEIN ..... 1893.	M. 10.	Fracture of both bones of fore- arm.	Splints.		Forcible stretching of flexors. No im- provement, but 16 years later had good use of hand, despite deformity.
23.	KEFERSTEIN ..... 1893.	M. 9.	Fracture of mid- dle thlrd of right radius.	Anterior and posterior splints, taken off in 48 hours.		Forcible stretching under narcosis. Twelve years later, deformity persists. Has use of hand.
24.	HENLE ..... (Mikulicz) 1896.	M. 9.	Fracture of right forearm.	Plaster-of-Paris fol- lowed by splints until consolidation.		Resection of 1.5 cm. from radius and ulna. Wires tore through. Good use of hand.
25.	LYCKLAMA § & NIJEHOLT, 1904.	M. 7.	Fracture of left arm.	Plaster-of-Paris.		Non-operative. Excellent functional re- sults.

\*\* I am indebted to Dr. Edward Preble for valuable aid in the preparation of this paper.

§ Lycklama & Nijeholt: *Nederlandische Tydschrift*, 1904, vol. xi, p. 1070.

TABLE OF CASES—B—ENGLISH AND AMERICAN CASES.

No.	Reporter.	Age Sex	Injury.	Dressings.	Interval before Ope- rative Treatment.	Treatment and Results.
26.	DUNN ..... 1897.	M. 12.	Fracture of both bones of forearm.	Splints removed at end of week.	Ten months.	Untreated. Prognosis bad. Extensive sloughing. Nerves involved in scar.
27.	R. JOHNSON ..... 1898.	M. 8.	Fracture of low- er extremity of humerus.	Wooden splints.		Excision of small pieces of bone at mid- dle of radius and ulnar. Only fibrous union. Has to wear splint.
28.	DAVIES-COLLEY . 1898.	F. 6.	Fracture of bones about elbow joint.		About two years.	Forcible stretching under narcosis. Flex- ors cut or torn in two. Extension splints. Hand in good position, but no power to flex.
29.	DAVIES-COLLEY . 1898.	M. ‡	Compound frac- ture of tibia and fibula.		About two years.	Resulting equino-varus relieved by tenot- omy of Achilles and flexors. Calf mus- cles originally injured. Healing after prolonged suppuration.
30.	E. OWEN ..... 1898.	* —	Fracture of up- per part of fore- arm.			Tenotomy of flexors. Result unsatisfac- tory.
31.	J. J. CLARKE ..... 1899.	M. 6.	Fracture of lower end of humerus.	Splints.	Some months.	Tenotomy of flexors. Deformity overcome. No mention of function.
32.	H. W. PAGE ..... 1900.	M. 4½.	Fracture of lower end of humerus.	Anterior and posterior splints in flexed posi- tion.	About six weeks.	Lengthening of flexor tendons; all united being those of index. Good use of hand.
33.	LITTLEWOOD .... 1900.	F. 8.	Diastasis of lower epiphysis of hu- merus.	Internal rectangular splints.	Four months.	Lengthening of flexor tendons. Good use of hand.

\* Child. † Adult. ‡ Boy.



TABLE OF CASES — B—ENGLISH AND AMERICAN CASES—Continued.

No.	Reporter.	Age Sex	Injury.	Dressings.	Interval before Operative Treatment.	Treatment and Results.
34.	LITTLEWOOD .... 1900.	F. 6.	Fracture of lower end of humerus, radius and ulna.	Splint.	Seven months.	Lengthening of flexor tendons except flexor carpi ulnaris. Deformity corrected. Some power of flexion. Prognosis good.
35.	H. L. BARNARD.. 1901.	F. 3.	Fracture of radius and ulna about middle of shaft.	Anterior and posterior splints.	Nine months.	Lengthening of flexor tendons with use of extension splint. No mention of result. Prognosis good.
36.	H. L. BARNARD.. 1901.	M. 4.	Severe contusion of upper part of forearm.	External angular splint.	Five months.	Pronator quadratus separated from ulnar attachment; Arm supinated and fixed in splint. Prognosis good.
37.	F. C. WALLIS.... 1901.	F. 20.	Congenital absence of superior radius ulnar articulation. Operative fracture of lower third of ulna.	Splints.	One year.	Lengthening of flexor tendons. Good use of hand. Esmarch's bandage used in operation, but lesion was of Volkmann type.
38.	W. H. BATTLE.... 1896.	M. 12.	Fracture of forearm.	Anterior and posterior splints.		Attempt to lengthen tendons failed. Non-operative treatment with some benefit.
39.	DUDGEON ..... (Case of Clutton) 1902.	F. 5.	Fracture of humerus just above elbow.	Anterior and posterior splints.		Non-operative. Result very bad.
40.	DUDGEON ..... (Case of Pitts) 1902.	M. 20.	Unknown.	Anterior splint for 5 weeks. Plaster-of-Paris.		Non-operative. Very slow improvement under massage, etc. Deformity, but good use of hand.
41.	DUDGEON ..... (Case of Pitts) 1902.	M. 5.	Greenstick fracture of right radius and ulna at junction of middle and lower thirds.	Anterior and posterior splints.		Non-operative. Gradual improvement under massage and voluntary motion. No deformity and good use of hand.
42.	DUDGEON ..... (Case of Clutton) 1902.	F. 4.	Fracture of lower end of right humerus.	Plaster splints.		Non-operative. Gradual improvement under massage, etc. Deformity. Some use of hand.
43.	DUDGEON ..... 1903.	— 5.	Fracture of right upper arm, near elbow joint.	Plaster splints, arm flexed; removed 4 days later.		Non-operative. Very slight improvement.
44.	DUDGEON ..... 1903.	M. 9.	Fracture of left forearm.	Anterior and posterior splints for 3 weeks.	Two and one-half years.	Resection of from $\frac{1}{2}$ to $\frac{3}{4}$ inches from both bones of forearm, posterior aspect middle third. Bones wired. Great improvement. Several earlier operations, nature and date not stated, had failed to give relief.
45.	DUDGEON ..... 1903.	M. 8.	Fracture of left forearm.	Anterior and posterior splints for 5 weeks.	One year.	Resection of $\frac{3}{4}$ inches from radius and ulna. Ends wired. Great improvement.
46.	EDINGTON ..... 1903.	F. 4.	Backward dislocation of right elbow.	Poroplastic splint for 3 weeks.	Three months.	Tendon lengthening. Results excellent.
47.	EDINGTON ..... 1903.	F. 7.	Fracture of left forearm between middle and lower thirds.	Anterior and posterior splints for 6 weeks.	Three months.	Tendon lengthening. Slight improvement.
48.	EDINGTON ..... 1903.	F. 32.	Septic process in right forearm when 15 years old.	Posterior splints, after multiple incisions.		Non-operative. Permanent deformity and disuse.
49.	ROWLANDS ..... 1905.	F. 6.	Fracture of middle of radius and ulna.	Splints removed 3 days later.	Four months.	Resection of radius and ulna, $\frac{3}{4}$ in. of each at different levels. Bones wired. position of hand corrected. Slight deformity. Good use of hand.
50.	POWERS ..... 1906.	M. 19.	Wound of soft parts of upper, outer portion of right forearm. Some unknown operation done.	Splints, left in place 3 or 4 days.		Non-operative. Prognosis bad. Esmarch's bandage was used in this case, but condition was evidently due to splints. See history.
51.	FERGUSON ..... 1906.	M. 9.	Friction of both bones of right forearm 4 years before.	Tight splints.	Four months.	Tendon lengthening. Marked improvement
52.	FERGUSON ..... 1906.	F. 12.	Fracture of left humerus at lower and middle thirds.	Tight splints.	Ten weeks.	Tendon lengthening.

When the injury and its results are slight or moderate, time and proper treatment will accomplish much. Complete restoration of function is not unknown.

In 1902 Dudgeon<sup>21</sup> attempted to collect the recorded material, but of the 15 or more cases which he gathered practically all had occurred in the practice of English surgeons in recent years; most of these saw the light as orthopedic cases (it is significant that the English write of Volkmann's contracture, not of Volkmann's paralysis). In addition to collecting cases, Dudgeon discussed the condition systematically and with especial reference to treatment. Quite recently Rowlands has brought the subject to date, making free and acknowledged use of Dudgeon's paper. As these authors seem unfamiliar with the later German work, what they say of the condition under discussion may be reproduced, their views being founded chiefly on the analysis of the English cases.

Dudgeon defines Volkmann's contracture as a contraction of the fingers and sometimes of the wrist which comes on rapidly with loss of power. . . usually about the elbow joint and chiefly in young children. In all cases, save a simple instance of thrombosis, splints had been applied for a fracture. In 14 out of 19 cases the splints caused sloughing. The dressings were not necessarily applied too tightly at first, but no allowance was made for swelling. Few patients complained of constriction, which shows that one can not depend on pain as a necessary symptom of over-tightness.

Esmarch's bandage has been applied in some cases, but in all of these it was followed by splints. In nearly one-half the cases there was a fracture or diastasis at the lower end of the humerus, which leads to the suspicion that in some instances the brachial artery may have been compressed between the splint and the lower end of the shaft of the bone.



Surgeons who have had an opportunity to see the muscles agree that these are firm, pale and fibroid. While histologic confirmation is lacking it seems safe to assume that the lesions of the muscles are not secondary to those of the nerves. The electrical reactions of the latter are generally normal. The contracted muscles, when they retain power of voluntary motion, do not give the electric reaction of degeneration; when the tendons of the contracted muscles are lengthened the power of voluntary motion becomes apparent. When Rowlands states that paralysis of the muscles does not appear, thereby indicating absence of injury to the nerves, he evidently refers to flaccid paralysis and not to mere loss of function.

It is known that primary lesions of both muscles and nerves may co-exist, and it has happened that the latter have been found imbedded in scar tissue.

Rowlands conjectures what had already been proven by Germans, viz., that the fibroid condition of the muscle is the result of a myositis. It is evident that the entire muscle is not always involved, otherwise regeneration would be impossible. Inflammation comes about as the result of the removal of the tight dressings, the blood thereby being allowed to congest the muscles. In nearly all cases enough damage befalls the muscles to prohibit perfect recovery.

The diagnosis of a recent Volkmann's contracture is unmistakable from the history of the case. Paralysis and contracture set in simultaneously; electrical muscular reactions are generally lost. Late ulnar paralysis may be simulated in old cases. The latter may be differentiated by the loss of use, wasting, and lost electrical reaction of the small muscles of the hand (except those of the thenar eminence and the two outer lumbricals). Further, in ulnar paralysis the wrist is not flexed, and there may be sensory and trophic disturbances in the skin supplied by the ulnar nerve. Other nerve paralyses—median, musculo-spiral, cerebral and spinal—can hardly be confounded with the Volkmann's contracture. The latter, however, has been simulated in hysterical patients.

In cases in which there is but little contracture the English authors employ massage and passive motion—if necessary, for two years. Galvanism is not recommended. Operative treatment must be instituted early, as it is of no service in old cases nor in any case in which the contracture is of high degree. Passive motion under an anesthetic, as originally recommended by Volkmann, has been found worthless by the English.

#### OPERATIVE TREATMENT.

Operative treatment comprises tendon lengthening and resection of the bone. The former has been well tested by Littlewood, Page and Barnard. Tendon splitting with suture was the method employed. The results were very good, although inherent difficulties are present, viz., slenderness of the tendons in young patients and the number of tendons which may need to be lengthened. Non-union or the joining of wrong segments may result.

Resection of bone seems a preferable operation. This was first done in England by Raymond Johnson, portions of the radius and ulnar being removed. This takes less time than tendon lengthening. There is no likelihood of injuring nerve trunks as there is in the latter operation. In certain instances—I believe this possible in the case which I report—the patient may ultimately demand amputation of the limb.

Prognosis is much better than Volkmann believed, but not as favorable as it was thought by Anderson. While benefit is possible by non-operative treatment, the majority of cases demand operative intervention. The prolonged management by massage, passive motion, active exercise, etc., so warmly recommended by Anderson ten years ago, is indicated after operation as well as in non-operative cases, and the proper combination of the two methods should insure the best possible result.

That paralysis following the constriction caused by Esmarch's bandage is entirely different from the Volkmann lesion was conclusively shown by von Frey<sup>28</sup> in 1894. This author states that the Volkmann—or as he prefers to call it, the Volkmann-Leser—type of injury presents a sharply characterized picture. The hand and fingers swell; violent, increasing pains are felt, involving the entire limb; the latter feels "asleep," and the fingers are numb. Swelling and pain increase and the condition often leads to removal of the dressings. If this has not been thought necessary, contractures of the hand and fingers begin to appear. About 24 hours after application of the dressings the limb becomes rigid. Voluntary movements are impossible, while passive motion causes intense pain. On removal of the dressings the limb suddenly swells—the previously bandaged area undergoes a sudden and severe swelling which reaches its acme in about 48 hours. It then gradually subsides, contracture appearing. In moderate degrees of injury there is a certain amount of flexion contracture and the patient can not move the hand or fingers. Nerve conduction is shown to be unbroken, although the strongest faradic current fails to contract the muscles, and only weak contractions are produced by galvanism. The condition may be exactly reproduced in animals by bandaging.

To this picture, which is reproduced at the expense of repetition for purposes of comparison, may be contrasted that which has been known to follow the application of Esmarch's bandage. Here the muscles are flaccid, there is no trace of contracture and no inflammatory reaction sets in after removal of the dressings. Soon after the appearance of paralysis the electrical reactions of the muscles are found to be normal (this is important), but the electric excitability of the nerve trunks is depressed and sensibility is lowered. Plainly, then, Esmarch's bandage has caused some interference with innervation. Is this purely mechanical or is it due to anemia of the nerve trunks?

We know that the nerves may be rendered ischemic by constriction. To decide the matter, von Frey experimented with animals and succeeded in producing ischemia of the sciatic, having isolated it below the foramen and then constricted it at the latter. Later he faradized the nerve and caused all the muscles to contract. Ischemia, then, is not the cause of the nerve disturbance, which must be due purely to mechanical injury to the nerve trunks as a result of the application of the elastic bandage. von Frey's observations and experiments were corroborated by Köbner,<sup>29</sup> Bernhardt<sup>30</sup> and H. Braun, no less than 11 clinical cases being on record up to 1894.

Writing of ischemia of the muscles produced by cold and giving the clinical picture seen in the ordinary Volkmann type due to tight splints, Lorenz states that cases with histologic findings have been placed on record by Kraske and the younger Volkmann. The muscles

28. Von Frey: *Wien. klin. Wochft.*, 1894, vol. vii, p. 23.

29. Köbner: *Deutsch. med. Wochft.*, 1888, p. 186.

30. Bernhardt: *Arch. f. Psychiatrie*, 1888, vol. xix, p. 514.



and vascular walls suffer chiefly in this type, although gangrene of the skin may co-exist.

Lorenz states that the embolic type of muscular ischemic paralysis may be due either to embolism or thrombosis of the arteries when the occlusion is sufficient to prevent collateral circulation. Emboli are secondary to heart disease, thrombosis to diseases of the vessels themselves (syphilitic endarteritis, endarteritis obliterans), or as a sequela of acute infectious diseases, marasmus, etc., arteriosclerosis being a factor. Still other cases appear to be due primarily to nerve lesions which affect the vessels secondarily (Raynaud's disease, Morvan's disease). Finally, there is a traumatic type due to injury to arterial trunks. However produced, ischemic muscular paralysis and contracture is one and the same condition. The symptoms caused by sudden plugging of a large arterial trunk by an embolus agree closely with those produced by the application of overtight splints. It is said of the type produced by cold that it has a better prognosis than have the other forms.

In regard to the medicolegal aspects of Volkmann's contracture, Kriege<sup>31</sup> writes as follows: "The contracture occurred, as a rule, in children who had sustained uncomplicated fractures of the upper extremity. Plaster of Paris was used more frequently than splints. In nearly every instance there were 'warning signs' that the dressings were too tight. The diagnosis presents hardly any difficulty, Volkmann having laid down the rules. As to prognosis, the severe type of contracture and the prolonged paralyses are practically incurable, but all cases demand patient and careful treatment.

"The medicolegal witness has to determine the following: (a) Whether an ischemic paralysis or contracture is present. This should not be difficult on careful notation of the electrical behavior of the muscles. (b) Whether the tightness of the dressings was at fault or whether there was originally a lesion of the artery; this is decided by the presence or absence of the pulse beat below the fracture. (c) What are the disadvantages to the patient arising from the contracture? and (d) Whether the surgeon did or did not give to the case the care that his calling requires."

## SURGERY OF THE SPINAL CORD.\*

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Surgical intervention in spinal cord affections has been at all times a matter of hesitation on the part of surgeons. Results were so varied and indefinite that for a long time no conclusions could be drawn as to the necessity and probable outcome of operative treatment. Statistics were meager and their reliability doubted where favorable results were recorded. In this paper I shall deal mainly with the different types of injuries to the spine and spinal cord, and endeavor to bring out the important points in diagnosis and definite indications for surgical treatment in cases amenable to it. I also hope to be able to show that in certain cases patients should not be operated on, as the cases are absolutely hopeless from our histologic knowledge of spinal cord degeneration and regeneration. Of course, it goes without saying that the basis of all this work is a very

thorough and comprehensive knowledge of the anatomy, histology, embryology and physiology of the central and peripheral nervous system.<sup>1</sup>

The subjects to be discussed are:

- a. Contusion.
- b. Concussion.
- c. Punctured wounds of the cord.
- d. Hemorrhage or clot in spinal canal and cord.
- e. Dislocations and fractures.
  1. Contusion of the cord.
  2. Compression without division.
  3. Partial division of the cord.
  4. Total division of the cord.
- f. Gunshot wounds.
- g. Tuberculosis of the spine and spinal cord.
- h. Tumors.
- i. Spina bifida.

### CONTUSIONS.

Contusions of the spine may be of various degrees. They may affect the superficial tissues, as the muscles and ligaments, cause an effusion of blood into the spinal canal or cord, or cause traumatic zonal inflammation with paralysis without division of the axons. The symptoms following a contusion to the spine may be widely at variance with the apparent degree of trauma, and a classic clinical picture can not be drawn. In many of the cases of contusion to the spine, even in those of severe character, we may be surprised to find no symptoms of cord injury at the beginning. I have had several cases under my personal observation in which no initial symptoms were present, but in which, in a short time, varying from a few days to several weeks, a traumatic reaction set in, and the patient developed complete paraplegia of both motion and sensation. The following case will illustrate this statement:

G. M., aged 23, while carrying a carboy of acid across a bridge, fell a distance of 12 feet and struck on his buttocks. He felt some pain after the fall, but was able to resume his work in a few hours. For three days following the injury he was able to walk and work. On the fourth day he felt a pain in his back and was obliged to discontinue work. From that time on weakness and incoordination of the limbs gradually developed, although he was able to walk with the assistance of crutches for about three weeks. At this time, on examination, I found that the spine was sensitive to pressure at the eleventh lumbar junction, but no fracture could be detected. There was no numbness of the limbs, but incoordination of motion. Within two weeks his paralysis was complete below the level of the dorsal lumbar junction. This continued for three months. At the end of this time sensation began to return. There was partial restoration of motion at the end of four months. In June (four months later) the patient was again able to walk with the assistance of crutches, and finally, at the end of 14 months, motion and sensation were completely restored.

This case illustrates two points: First, the absence of initial evidence of injury to the cord and development of paralysis five weeks later; second, complete restoration of function without surgical intervention after 14 months.

In such cases, while there is no gross anatomic change in the spinal cord and its membranes, we are convinced that some changes must have taken place later in its vessels and neuroglia, which interrupted the transmission of impulses. Cases of this type have been interpreted clinically as destruction of spinal cord with regeneration. They do not deserve such interpretation. They are simply cases of zonal paralyses which are produced

31. Kriege: Vierteljahr. f. gerichtl. Med., 1903, vol. xxv, Supplement, p. 55.

\* Abstract of a paper on "Surgery of the Spinal Cord and Peripheral Nervous System," read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. This part of the paper had to be omitted; the paper in full, including the portion on the surgery of peripheral nerves, will appear in Surgery, Gynecology and Obstetrics, April, 1907.



without division of the cord or axons and are completely restored after the inflammatory condition has subsided, and the products of the inflammation have been removed. There is no regeneration of spinal axons. The observation of Schmauss, namely, edema and swelling of the ganglionic cells and of axons in the traumatized cord of rabbits, does not necessarily mean degeneration. We interpret that as an atrophy, as shown by the frequent recoveries in similar cases in man. These have proven the truth of this assumption. Several observers have noted cellular changes in the gray matter and neuroglia of the cord after applying great force to the spinal column, insufficient, however, to produce fracture or dislocation. Following laminectomies we frequently have complete paraplegia with full restoration of function illustrating operative, zonal, inflammatory reaction.

An insignificant trauma of the spine may cause marked paralysis.

Aug. 18, 1886, I had under my care a patient who, while sitting in a hammock, tipped backward, falling a distance of two feet to the ground. Immediately after the accident he developed a paralysis of motion and a numbness of sensation in both the upper and lower extremities. There was no special deformity or displacement, but great sensitiveness at the fifth cervical spinous process. In November of the same year the patient was able to walk, though hesitatingly, and had still a numbness of sensation in the previously paralyzed members. In May, 1887, he was still coming to my office. At the same time he was practically well, except for some unsteadiness of gait and uncertainty of equilibrium when he turned suddenly. The index and middle fingers of the right hand were the last to recover. This is a good illustration of the traumatic transient type of zonal paralysis.

#### CONCUSSIONS.

By spinal concussion is meant an impairment or loss of function of the spinal cord due to injury which is not sufficient to produce gross anatomic changes. The term "spinal concussion" is accepted by some surgeons and rejected by others. While spinal concussion is a temporary reaction, it is not a definite morbid entity. We do not accept as spinal concussion other cases than those with symptoms of pronounced zonal hyperesthesia or anesthesia and with a zone of diminished reflex, or paralysis partial or complete. Those who deny spinal concussion base their views on anatomic grounds, namely, the small size of the cord, as compared with the spinal canal, and its suspension in the canal by the denticulate ligaments and nerve roots which protect it from injury in traumas short of fracture or dislocation.

In this connection we must mention that hemorrhage in the spinal canal may produce an exact clinical picture of spinal concussion. Therefore, differential diagnosis between these two conditions is quite impossible. There are several cases on record, however, where the disappearance of paralytic symptoms in a short time point to the probability of spinal concussion. On the other hand, many postmortem examinations have not shown any anatomic changes in cases where marked paralysis following injury were noticed, and continued up to the time of death. In Guy's Hospital Reports is recorded the case of a woman, 59 years of age, who fell on her back and immediately developed marked paralysis of the upper and lower extremities. On the tenth day she died of pneumonia. A careful postmortem examination was made and no anatomic changes were found either in the brain or cord. There was no evidence of effusion of blood in the spinal cord or canal.

In my experience I have had several cases of injury to the spine in which physical examination did not reveal

evidence of dislocation or fractures, although the patients developed marked paralytic symptoms. In most of these cases perfect recovery took place in from six to twenty months.

#### PUNCTURED WOUNDS OF THE CORD.

The knife is usually responsible for such wounds. The cord may be injured without fracture of the vertebra. Wagner-Stolper has collected 86 cases of punctured wounds of the cord. Of these, more than half occurred in the cervical portion of the cord and the remainder in the upper region of the dorsal part. There was no case of puncture of the lumbar cord. The reason for the cord being punctured more often in the upper than in the lower part is very simple. The object attacked by an assailant is generally the head, and anatomically there is a considerable interspace between the vertebrae in this region for the admission of the knife blade. As a rule, such wounds involve one-half the cord, though sometimes the knife may pass beyond the median line and injure the other side.

The clinical picture of punctured wounds of the cord is that of a hemisection lesion. Out of Wagner-Stolper's 86 cases, 44 presented the picture of hemisection. The symptoms appeared immediately after the injury, and the course was generally an aseptic one. Twenty per cent. of the patients died. The remainder improved, but few recovered.

So far as treatment is concerned, very little can be done beyond rendering the external wound aseptic, and keeping it so. Operation is never indicated, except where infection of the spinal canal has occurred, or when there is compression from hemorrhage. If this occurs early it can be relieved by a lumbar puncture done with a large needle. The divided axons of the cord do not regenerate as they have no neurilemma, and suture of the severed segments is not only useless, but adds to the danger present. Such paralysis as results from effusion or traumatic zonal inflammation will subside without operation. Therefore, these cases all contraindicate laminectomy.

#### HEMORRHAGE IN THE DURA AND SPINAL CORD.

The blood may occupy the spinal canal, extra dural, may be beneath the meninges, or may be in the substance of the cord itself. In the second case it is called hematorrhachis; in the third, hematomyelia. The most important etiologic factor of hematorrhachis and hematomyelia is trauma from a blow, fall, gunshot or stab wound of the spinal canal.

The symptomatology of hematorrhachis is not definite. Patients usually complain of pain in the spine, paroxysmal and burning in character, pain along the nerves, and occasionally muscular spasms, opisthotonos, convulsions and finally paraplegia. While the paraplegia is sudden and complete in fractures and lesser injuries to the spine, in hematorrhachis it is gradual and progressive, often developing two to four days after the injury. The symptoms of hematorrhachis usually develop in the first 24 hours, increase in severity up to the fourth day, and disappear in from four to six weeks. There are, however, cases in which the paraplegia is sudden and complete, depending on the size of the vessel, as in a case of mine of a bullet wound of the cervical region, and one of Edward Janeway.

The best test for hemorrhage (in fractures, bullet wounds, etc.) is lumbar spinal puncture. Twenty to 30 c.c. of fluid may be drawn off. If the cord is injured above the puncture then the spinal fluid may be bloody.



The hemorrhage may be extra- or intradural, or combined. When the dura is lacerated, hemorrhage is usually due to rupture of the venous plexus, and rarely to rupture of the arteries. The blood has a tendency to extend downward, and, therefore, the hemorrhage is more extensive if the lesion is situated high up. As the lumen of the spinal canal is large, the quantity of blood is considerable. Diagnosis of intradural hemorrhage can readily be made by lumbar puncture, and the pressure of the cord relieved by this procedure, if the puncture is made early.

While hemorrhage is generally due to injury, occasionally it may be non-traumatic in origin. Edward Janeway reports a case of spontaneous subarachnoid hemorrhage in a bleeder. The young man, after having recovered from a slight attack of influenza, suddenly lost sensation and motion in the lower extremities and fell to the floor. The autopsy revealed extensive hemorrhage in the subarachnoid space up to the middle cervical region. There was also some blood between the dura and the arachnoid. The patient's brother was also a bleeder.

Hemorrhage into the spinal canal may produce marked paralytic symptoms, even to complete paraplegia. In such cases diagnosis can not easily be established, as illustrated by the following case from my practice in Cook County Hospital in 1887:

A man was shot in the neck. The bullet passed external to the jugular vein just above the clavicle. He said he did not fall immediately after this wound. A second bullet passed through the shoulder and hand, when he fell to the floor. He was taken to the hospital shortly after the accident. There was complete paralysis of the upper and lower extremities and he was able to move the muscles of the neck only. The diaphragm acted on both sides. It was concluded that the patient's statement was wrong, and that in all probability the first bullet entered the shoulder and hand, while the second one struck and divided the cervical region of the cord. He died on the third day.

The autopsy showed that the cord was not injured by the bullet. The meninges were divided and the intravertebral artery was severed, which permitted an extensive hemorrhage within the dura; this was filled with blood from the occiput to the cauda. In all probability the man's life could have been saved if the tension had been relieved by immediate tapping of the spinal canal in the lumbar region. From the postmortem findings it was evident that the first bullet entered the neck, as was stated by the patient, and the second the shoulder and hand, and that his fall was due to the blood pressure on the spinal cord from the hemorrhage in the canal.

*Hematomyelia.*—Hemorrhage into the substance of the cord usually occurs in the region of the fourth, fifth and sixth cervical vertebræ. According to Thorburn, the hemorrhage in that region is due to over-flexion of the spine. If the hemorrhage in that region is confined to the gray substance only, there is wasting of muscle and anesthesia of the upper limbs; also zonal absence of reflex. If the hemorrhage involves the white substance there is paraplegia below the level of the lesion.

Prognosis must be guarded in cases of hematomyelia. Even in cases of recovery there is always a weakness left, due to the destruction of the ganglion cells of the motor neuron at the point of hemorrhage. Hematomyelia may be due to gliosis spinalis. A patient of von Bergmann, a girl 19 years of age, died from this condition, as shown by the postmortem examination.

#### DISLOCATIONS AND FRACTURES.

*Dislocations.*—A dislocation without fracture practically never occurs. Rarely do we find luxation alone of the upper segment, but, as a rule, dislocation is associ-

ated with fractures, and the symptoms are those of compression. Recovery is possible, if the cord is not divided, and the compression is relieved early. The subject will, therefore, be treated under the head of fractures, and included with them will be associated luxations.

*Fractures.*—Fractures may be due to direct or indirect causes, as, for instance, forced flexion. The direct force may fracture a vertebra, but, as a rule, the fragments are not displaced. The laminae and spinous processes may be driven into the spinal canal and cut off and thus compress the cord. This, however, is a rare type of accident and one diagnosed readily. The bony fragments do not compress or lacerate the cord, at least not primarily. The following history is a striking illustration of an exception to this rule:

*Patient.*—T. Y., aged 38, Italian laborer, was admitted to the Presbyterian Hospital, May 3, 1906.

*History.*—While attempting to get off a moving train April 27 he fell or was thrown, and was unconscious for 15 minutes. On regaining consciousness he was unable to move the lower extremities and complained of severe pain in the back. He had retention of urine since that time, and it had been necessary to catheterize him. The patient did not know in what position he fell at the time of the accident.

*Examination.*—He was of fair muscular development. Head, neck and chest negative, except congestion of the lower lobes of the lungs. Abdomen was negative; marked hematoma over the lower lumbar region. The vertebral column showed a most pronounced angle at the level of the third lumbar vertebra; the lower fragment was displaced forward about an inch and a half, a superficial abrasion being present at this point. The displacement could not be reduced by manipulation or extension. The left foot showed a hematoma on the internal aspect of the heel. There was a complete paralysis of sensation and motion below the second lumbar zone. Reflexes: Abdominal, present; cremasteric, abolished; patellar and Babinski, absent.

*Diagnosis.*—Fracture of spine, with anterior displacement of the lower segment and division of the caudal fasciculi.

*Operation.*—May 3, 1906. The fractured zone was exposed by single incision. It was found that the arch of the second lumbar vertebra was driven in and had compressed the cauda. The third and remaining vertebræ below were displaced forward; the arches of the third and fourth and the body of the third were fractured, and the spinous processes driven down in the cord. Almost all of the caudal filaments were divided by the great forward displacement of the lower segment. The second, third and fourth spinous processes and laminae were entirely removed; the dura was opened for a considerable distance by a longitudinal incision, the fasciculi were picked up and the divided filaments united by an end-to-end suture. The right and left halves of the proximal ends were easily determined by their position. The distal ends were considerably entangled, but the right and left could be differentiated by applying the faradic exciter to the filaments. This caused a muscular contraction in its respective muscles notwithstanding that four days had elapsed since the division; when applied proximally to the contusion there was no muscular response. This muscular response after division corresponded to that obtained in our examinations of divided peripheral nerves the same length of time after their separation. After completing the approximations, the dura was sutured in position, and a muscle flap drawn from each side, filling the gap to the skin level. The patient stood the operation fairly well, although his breathing was noticeably more rapid than at the beginning. From these physical findings we concluded that the man was struck in the back with great force, which first fractured the spinous processes and laminae of three of the vertebræ, and then carried the lower segment forward for a full inch. He died on the morning of May 7, apparently from a double pneumonia. There was no autopsy.

Indirect force may produce fracture and displace the fragments of the vertebra, so as either to concuss, com-



press or divide the cord, as falls on the buttocks and shoulders, or extreme flexions or extensions of the body. In these cases the site of fracture is usually at the dorso-lumbar junction. Where the paralysis is immediate, uniformly transverse and complete, both of motion and sensation, there is no hope of recovery either with or without operation, as the spinal cord is divided. Surgical intervention is of value only in cases where the fragments press on the cord without having caused complete division. None of my patients in which the cord was divided by a fragment, recovered. The degree of pressure on the spinal cord can not easily be determined, and it is difficult to tell at the beginning how much pressure is being exerted on the intact cord. One can fairly accurately estimate when the cord is completely divided, as there is then a complete immediate annular paralysis of both motion and sensations, thermal, tactile and deep and superficial pain below the line of fracture, and a primary absence of tendon reflex. These cases are beyond repair.

Fracture with contusion of the cord may cause a motor or sensory paralysis below the line of union. The paralysis is rarely immediate, and is never complete and annular of both motion and sensation. The irregularities indicate that some columns of the cord are still intact; usually the paralysis comes on hours, days or weeks after the trauma. It is preceded by a zone of pronounced hyperesthesia and is accompanied by abolished reflexes in this zone. The motor or sensory manifestations will predominate, depending on whether the anterior or posterior columns of the cord have suffered most. Compression may be associated with contusion.

There is no known means of making a differential diagnosis of continued compression in addition to contusion; the degree of displacement of the spinous processes being the only physical manifestation we have for suspecting compression in addition to contusion. Both may give the same degree of primary paralysis. Both may give the same speedy or slow increase in the paralysis; both may have a stationary degree of paralysis for a considerable period of time; both may have a late manifestation of paralysis, as shown in the cases cited under contusions. Therefore, differential diagnosis is impossible without laminectomy, which, however, is a procedure to be avoided, as a contused cord suffers additional insult by any operation, no matter how delicately performed. However, where compression is suspected on account of the great displacement, one must not hesitate, but operate immediately.

Partial divisions of the cord give a symptom complex resembling contusion, in that there is an irregularity in the transverse line of paralysis, and either sensation or motion may be present to a limited degree. Operation is contraindicated except where continuous compression is suspected.

Dr. Walton says: "We have no symptoms from which we can assert from the outset that the cord is crushed beyond at least a certain degree of repair. It has been said that where there is complete loss of sensation, of motion and of patellar reflexes, the cord is completely crushed, and consequently recovery can not be expected." It is stated in the same article that the patellar reflexes may be present in a case of complete transverse destruction of a segment of the cord. This is possible secondarily as the ganglionic cells of the motor neuron below the point of division may be in perfect condition, though the contact axons of the central neurons are divided.

In fractures, with division of the true cord, operation

with suture of the cord is absolutely worthless; functional regeneration of the columns of gray matter never takes place. The improvements recorded by many authors were in cases in which only contusion or hemorrhagic compression of the cord existed, or where the type of traumatic zonal paralysis was present, which would have improved as well, if not better, without operation. Laminectomy in the dorsal and cervical region is, therefore, never indicated for division of the cord.

When the fracture occurs in or below the twelfth dorsal vertebra the treatment and prognosis are entirely altered. The cauda equina, which begins here, is made up of essentially peripheral nerve fasciculi, and not of spinal cord fasciculi, as the axons of the motor root in this portion have their ganglion trophic cell bodies above this level in the conus, and the motor axons in the cauda are covered with the sheath of Schwann, or neurilemma. They therefore degenerate after division and have the power of regenerating, the same as peripheral, motor axons. The sensory neurons of the posterior roots of the cauda have their ganglion cells just inside the sacral and lumbar foramina. Their proximal axons, which run through the cauda to the spinal cord, are medullated and have a sheath of Schwann. They are capable of regeneration, at least up to the posterior commissures, and from clinical observation, we believe they can again come in functional contact with the posterior horn of gray matter. In other words, both the motor and sensory neurons in the cauda outside of the cord are histologically capable of regeneration under favorable conditions; that is, after accurate suture, and exact approximation of the ends of the divided caudal fasciculi under aseptic conditions. It therefore becomes imperative for us to establish this approximation in every case of fracture of the lumbar spine with division of the caudal fasciculi and paraplegia.

It is easy to determine, up to the seventh day after the injury, by a mild faradic current, which are the right and left fasciculi. If the faradic current is applied to the individual nerve bundle distal to the trauma, there is a muscular response in the zone supplied by that bundle as shown in case of T. Y. If applied proximal to line of division, or even in severe contusion, there is no electric response. This corresponds exactly with the electric response after division of peripheral spinal nerves, external to the bony canal. Laminectomy with suture in this position is not extremely difficult. It has in it, however, the danger of sepsis, as the spinal canal and dura are open.

In every case of fracture, stab or bullet wound, where, supposedly, the cauda has been divided, exposure and suture of the fasciculi are positively indicated, the individual points of suture to be surrounded by egg membrane to lessen connective tissue interpositions. (The transplantations of caudal fibers in the treatment of unilateral paralysis of the entire lower extremity will be described in the article on peripheral surgery under its subdivision nerve anastomosis in anterior poliomyelitis.)

#### GUNSHOT WOUNDS.

Theodore Previtt collected 49 cases of gunshot injuries treated since the antiseptic era. Of those operated on, 11 recovered and 13 died; of those not operated on, 8 recovered and 17 died. Mortality: Cervical region, 55 per cent.; dorsal region, 66 per cent.; lumbar region, none. Three cases of the latter had operations and all recovered. Previtt concludes as follows: a. Immediate



operation if the wound is in an accessible region, and if it involves posterior or lateral portions of the spine. b. It is imprudent sometimes to wait for repair to be effected by Nature.

In bullet wounds of the spine, involving the spinal cord itself, operation is contraindicated, as from our knowledge of the absence of regeneration of the spinal cord proper, operation would be useless. If the cord is not severed, such fibers as are not divided will recover from the zonal paralysis resulting from the contusion and concussion without operation, while the fibers which are divided can not derive any benefit from surgical procedure. If the bullet remains within the spinal cord and compresses the cord, as the skiagrams will readily show, it should be removed. If the cord is compressed by fragments of bone, which may also be determined by the Roentgen ray, operation is indicated. If the cord is compressed by accumulated blood within the meninges, a lumbar puncture for its relief is indicated. The blood is kept fluid by its intermixture with the cerebrospinal fluid.

*Mortality.*—The causes of mortality from fractures of the cervical region are due to interference with the essential function of the centers of the spinal cord. Death may occur on the third or fourth day as the result of the degree of fracture. In fractures in the neighborhood of the fourth and fifth cervical, the temperature reaches as high as 106, 107 or 108 F., and even higher, as in one of my cases as high as 111 F. This is a central temperature from the destruction of the automatic center of temperature control. Respiration may be compromised from the injury of the phrenic segment of the cord, which corresponds to the fourth and fifth cervical.

With fracture in the upper dorsal region, the functions of the abdominal organs are greatly disturbed, and there is paralysis of peristalsis; enormous tympany may result; respiration may be impaired by the intra-abdominal pressure on the diaphragm. In fractures of the spine above the second lumbar, sphincteric control is destroyed.

Of the secondary causes of death the most prominent are vesical infection and ascending sepsis to the kidney. Next in frequency is the decubitus infection. The former can be avoided in a large per cent. of the cases by permitting the bladder to overflow from the beginning and refraining absolutely from using the catheter. If the catheter has once been used and decomposition takes place, then it must be continued. Relaxation of the vesical sphincter is favored by transproctal massage. The decubitus can be avoided or retarded by the water bed, air cushion, frequent changes of position and by dermal cleanliness.

John Chadwick Oliver reports 57 cases of fracture and dislocations of the vertebræ. Fifty of these developed nerve symptoms after the injury; seven showed no evidence of spinal involvement.

Thorburn collected 56 cases in which the patients were operated on with 38 deaths, 67.8 per cent.; 18 recovered from the injury; 2 recovered from cord symptoms, and 16 showed little or slight improvement. Dr. Samuel Lloyd collected statistics on 185 operations, with only 24 recoveries and 40 improvements. There were only 12 improvements by immediate operation; that is, there were only 12 that improved from the symptoms at time of operation. From various statistics of cases in which the patients were not operated on, and from my experience, the immediate mortality is no small percentage. The number of recoveries in 82

immediate operations was five. The recoveries without operative interference far exceed this number. The number of recoveries with late operation is a little more gratifying; there were 19 recoveries in 113 operations, which, when compared to the number of late recoveries without operation, may be considered as giving us some justification for the late operation. Lloyd's results are about 50 per cent. better than Chipault's. Chipault, in 1894, published 167 cases in which operation was done for fractures of the spine; 12 recovered and 24 improved.

#### INDICATIONS FOR, AND TIME OF, OPERATION.

In the cases that have come under my observation, it has been difficult, and many times impossible to ascertain whether I was in the presence of a case of division of the cord, or reaction of the cord due to trauma. Therefore, I always hesitate about operating until I am satisfied that the cord is not completely divided. The immediate complete bilateral circular paralysis of both motion and sensation is the only positive evidence of division of the cord. Where there is definite evidence of fracture or dislocation with division of the cord by fragments, operation is contraindicated and should not be performed. Where there is evidence of compression by blood or small bone fragments with fracture or dislocations, as shown by the fact that the paralysis is not immediate, not circular and not complete of both motion and sensation, an immediate operation may be indicated. Where the symptoms are persistent, the operation should be performed.

John Chadwick Oliver divides the surgeons into three groups: First, those who advocate operation in every case of injury to the spine in which cord symptoms are present. Second, those who abstain completely from operation. Third, those who advise operation in selected cases. I belong to the last class of surgeons. Eugene Hahn<sup>2</sup> advises operation as early as possible, and particularly in cases of compression due to fractures of the arch, which always result from direct violence. However, he says the question of early operation is not settled as yet.

Andrew McCosh condemns the waiting and watching policy. He advises early operation unless severe shock is present. Kocher is of the opinion that operation can be delayed and advantageously performed after long-continued pressure has been present. There are several cases on record where patients were apparently benefited by late operation. This is in consonance with a mild and gradual paralysis from neoplasms within the canal, but one can not see how that type of pressure would be exerted by a displaced fragment, but it might be by the callus of bone repair.

Carl Lauenstein records a case in which an excellent result was obtained five weeks after injury. Paraplegia, rectal and urinary symptoms and trophic changes were present in this case. This is no proof at all that there was compression or that operation had anything whatever to do with the result, as the train of symptoms, and the result obtained, occur frequently from contusion with fracture without compression. McCosh records a case in which paralysis had been present eight months, and yet complete recovery occurred after operation. L. A. Weeks reports a case by Huss, in which recovery followed surgical intervention one month after the injury. Allen Starr reports a case of compression of the cauda equina of one year's standing. Operation was followed by partial recovery. Some anesthesia persisted.

2. Deutsche Ztschr. f. Chir., 1902, lxiii, p. 995.



Samuel Lloyd says: "In my opinion we should wait until the period of shock is passed and until there is evidence that there will be no spontaneous recovery." If, after this period, the patient still continues to improve, no operation should be considered, but as soon as the symptoms begin to show retrograde phenomena, or seem to have reached the end of improvement, operation should be undertaken. This rule is not applicable with any degree of force or regularity as far as our observations tend. Recoveries after operation performed within a period of two and one-half years after the accident can not be attributed to the beneficial effects of the operation, except in the cases where fragments or foreign bodies were compressing the cord.

#### TUBERCULOUS OSTEITIS OF THE VERTEBRÆ; VERTEBRAL CARIES; TUBERCULOUS GRANULOMATA.

Under this head we do not intend to describe in detail vertebral caries. We will consider only that phase of the pathologic process which directly or indirectly may produce pressure symptoms on the cord. In other words, we will deal principally with the tuberculoma, which should be regarded as an extradural tumor.

It is practically an extradural tumor situated on the posterior portion of the vertebral body and in front of the cord; if it is of considerable size it may spread to the sides of the cord. It is never, however, posterior to it. From this we can understand that the primary symptoms will be principally motor as the pressure concerns the anterior or the anterolateral column. Sensory disturbances may take place, not by compression of the posterior columns, but by pressure against the posterior roots at their exit and also on Gower's column. From the symptoms one can accurately estimate the location of the tuberculoma, that is, which cord segment, and which column is compressed. One can not, however, judge from the symptoms whether the cord is merely compressed without having undergone degeneration, or whether there is degeneration of the cord substance. In localizing the tuberculous tumor it should be borne in mind that one is likely to make the error of estimating it too low.

The topography of cord segments in their relation to the vertebral bodies must be clearly pictured in the mind of the diagnostician. The splendid work of Victor Horsley, who has done so much to elucidate this condition, should be carefully studied by every one contemplating work in this line.

*Prognosis.*—The prognosis in the paraplegia of spinal caries is always grave. Statistics from Billroth's clinic, quoted by Oppenheim, show that out of 97 patients, 48 died, 28 were cured and 11 remained unchanged. Gowers states that the paralysis due to vertebral caries is the most favorable of all types of paralyses. Generally speaking, the prognosis does not depend so much on the age of the individual nor on the intensity and extent of the symptoms, as on the amount of damage done to the cord substance which does not allow of repair, if the pressure has been long continued. Operative procedure must, therefore, be timely.

*Operation.*—The operation for tuberculoma is a simple laminectomy (see laminectomy). Displace the cord to one side, expose the granuloma, remove it with a bone curette, fill the cavity with a Moorhof plug, replace the laminae and close without drainage. It is usually not necessary to open the meninges. One should not hesitate to curette extensively the vertebral bodies. If the wound heals without suppuration and the cord

has not long been compressed, the paraplegia rapidly disappears. If a mixed infection follows, the cord may be destroyed and a permanent paraplegia result, as occurred in one of my early cases.

*Technic of Laminectomy.*—Before proceeding with a primary incision, it should be definitely determined by the operator whether his plan is to extirpate the spinous processes and laminae entirely, or to preserve them. If the former is decided on, longitudinal incision should be made parallel to the spinous processes on the operator's side of the middle line. The incision should extend down the sides of the processes close to the bone. After thoroughly exposing the muscle, a blunt dissection may be made on the lateral surface of the processes to the laminae. The attachment of the flap to the tip of the processes is then divided, and a similar blunt dissection made on the opposite side of the processes down to the laminae, as shown in cuts by Bickham,<sup>3</sup> indicating also the points of division of the lamina.

The hemorrhage, which has been considerable, can now be checked by gauze packing. The inter-laminar spaces of one, two or three vertebræ should be exposed, and the conical drill rongeur, which I have adapted for this purpose, should be used to puncture the laminae at the base of each transverse process. The tips of my rectangular guarded bone-cutting forceps can be inserted in each of these punctures and the laminae divided. The interspinous ligament is next divided. The spinous processes and laminae can be lifted up readily with a sequester forceps. This plan avoids all malleting and concussion of the cord, and guards against its possible puncture; it hastens the procedure very materially.

The dura may now be opened, if desired, and the cord inspected, or if searching for a tuberculoma, the cord can be pushed to one side and the tumor recognized on one or the other side, anterior to the cord in the body of the vertebra, where it always forms. The dura should be sutured carefully with catgut after the operation. If it is the purpose of the surgeon to conserve the processes and laminae, then the H-shaped incision is preferable, leaving a septum of tissue, muscle and skin one inch in diameter between the two parallel incisions, making the muscular blunt dissection one-half inch from the bone to the side. The laminae should be punctured in the same way and divided with rectangular bone forceps, and then the interspinous ligament is divided and the flap turned half up and half down.

In replacing this, care should be exercised that the bone flap does not compress the cord. The flap should be closed by deep catgut sutures and superficial sutures of silkworm gut. Horsehair should not be relied on, as its tension is so great in these cases that this suture may give way. I had a case of compression by bone flap after operation, resulting in permanent paralysis. Since that time I have removed laminae and spinous processes completely, and have found no permanent weakness of the spinal column following the procedure. In fracture and dislocation it is always desirable to remove the laminae, as the luxation frequently can not be reduced at the operation, and there is danger of compression of the cord after the parts are replaced.

In pronounced deformities following fractures, one should not hesitate to remove the protruding edge of the fractured body of vertebra. This may necessitate a division of one of the spinal nerve roots. Traction should be made on the nerve to draw it well into the canal; it may then be divided and sutured at the close



of the procedure. The greatest care must be exercised in the manipulation of the cord, as it requires but a slight degree of trauma to produce a zonal paralysis. In most of my cases a complete temporary paralysis immediately followed the operation.

It is, however, only a zonal or traumatic paralysis, and entirely disappears as long as the centripetal and centrifugal axons are not divided and the ganglionic cells not severely traumatized; complete restoration always follows. One of the unpleasant features of this work is the length of time necessary to obtain results, six months to two years being required for a restoration of function. However, the time is not too long nor the labor expended too great, as otherwise the patient has before him no hope, except a permanent paraplegia. In handling these patients after operation, care should be exercised that too great pressure should not be exerted on the vertebral bodies while moving the patients from one cart to another and to their beds.

It is unnecessary to say that all these cases should be drained temporarily and that all aseptic precautions should be taken, as infections are more likely to occur here than in the peritoneum. If the meninges become infected, the case is likely to terminate fatally. Every precaution against bed sores (decubitus) must be taken. The bladder should not be catheterized; the patient should have a vaginal or proctal massage until overflowing is produced. The urine once started will continue to flow. If the catheter is once used it will have to be used continually, and decomposition of urine will occur. This will necessitate frequent vesical irrigation, greatly increase the labor in caring for the patient, and very materially hazard his life, as vesical and ascending renal infection is the most common cause of death after operation for injuries to the spinal cord.

#### SPINA BIFIDA.

Spina bifida is a congenital malformation of the spinal column, meninges, cord proper or ependyma, consisting of a protrusion either of the meninges or of meninges and spinal cord through a cleft, resulting from failure of coalescence of the borders of neural groove, or absence of the vertebral arches.

The nerve elements of the spinal cord are of ectodermic origin exclusively. The cord is an invagination of the ectoderm forming a groove which is widely open at first, gradually closing to form a tube—the neural tube. The mesoderm supplies the serous, bony and muscular elements which arrange themselves around the neural tube. A malunion or absence of the involuting neurilemmic elements which form the vertebral arches and spinous processes will leave a cleft through which the meninges alone, or with the spinal cord, will protrude posteriorly, because of lack of support.

The defective coalescence of the spinal processes may be either partial or complete. In the first instance the opening involves two or three vertebræ, either in the lumbar or cervical region, as these are the last to close; the latter is the more frequent. Complete absence of union is called *rachischisis totalis*, and is an uninterrupted opening extending from the cervical to the sacral region. This variety of spina bifida, however, is extremely rare.

In the circumscribed type of the spina bifida we find a protruding tumor, the size of which may vary from 3 to 15 centimeters in diameter, having either a broad or pedunculated base. The sac usually protrudes posteriorly. Occasionally, the sac bulges anteriorly, it es-

capas through the defective body or process or through the spinal foramina, as shown in the following cases, and is discovered by accident. Several cases of this type are recorded in the literature; De Forest Willard reports the case of a child 2 months old with a large cyst palpable through the right iliac fossa. The cystic tumor which communicated directly with the spinal canal bulged anteriorly when coughing. Its walls were the meninges and the contents cerebrospinal fluid. Emmet reported a case in a woman 36 years of age with a very large cyst extending down to the pelvis. It was aspirated through the rectum and three quarts of fluid removed.

The patient died on the seventh day of septic meningitis. Postmortem examination revealed a cyst formed of meningeal membranes, which protruded into the pelvis through the sacral foramina. Robinson operated in the case of a child 11 months old, who had a large cystic tumor occupying the entire right side of the abdomen. The patient had club feet; there was no tumor to be found posterior to the sacrum. A diagnosis of parovarian or broad ligament cyst of fetal origin was made. During the operation the surgeon found that the cyst communicated directly with the spinal canal, and that it was anterior spina bifida. Patient died after ten days. Postmortem showed extensive defects on the right side of the last dorsal and first lumbar vertebræ. The pedicles of the transverse process of the last vertebra were absent. The first two lumbar vertebræ had an undeveloped point of ossification on the right half, while the third lumbar vertebra had no point of ossification at all. The spinal column was curved laterally, the concavity being directed toward the left. There was a marked dilatation of the ependymal canal. Bryant reports a case of anterior spina bifida in a woman of 25 who died from trauma. The tumor was discovered accidentally.

*Varieties of Spina Bifida.*—Dana distinguishes three varieties: (a) Meningocele, a protruding sac composed of meningeal membranes and cerebrospinal fluid only. This may be either (1) anterior, abdominal or pelvic; (2) posterior or dorsal. (b) Meningomyelocele hydro-myelia, a tumor composed of meningeal membranes, cerebrospinal fluid and spinal cord, including the cauda equina. (c) Syringomyelocele, composed of meninges, cerebrospinal fluid and spinal cord with an enormous dilatation of the central canal or ependyma.

To these we may add spina bifida occulta, which is a cleft of the spinal column without any visible protrusion of the contents of the spinal canal. In great defects the cord is a velvet-like band containing blood vessels and flattened nerve elements spread out under the meningeal covering. In circumscribed varieties the sac may be covered with skin and hair, or simply with a thin epithelial layer which, together with the pia form an epithelio-serous covering.

In the first variety of Dana, the cord elements may be intact. In the second, the cerebrospinal fluid lies in the subarachnoid sac. The nerve elements of the cord protrude into the sac in two-thirds of the cases. The fibers are attached on the posterior and median surface of the sac and form a part of the cyst wall.

In the third variety, there is a considerable dilatation of the ependymal canal with complete or almost complete pressure atrophy of the spinal cord at the point of dilatation with a paraplegia below that zone.

*Treatment.*—Treatment consists either in injection or excision. Injection has long been and is still in



vogue. Morton's fluid, which has the following composition, is the one generally used:

R. Iodin .....	gr. x	6
Iodid of potassium.....	gr. xxx	2
Glycerin .....	ʒi	30

Injection is not free from danger, and its efficacy is very questionable. I have used it three times in one case without any effect, except a temporary disturbance of the central nervous system.

Excision of the sac seems to be the radical and more desirable procedure. The sac is best attacked from the side because the fibers of the cord are more frequently spread and attached to the median portion of the posterior wall, the line of embryonal cleavage. When the sac is pedunculated, it should first be freed from its attachment to the spine and neighboring structures, except its highest point, which is adherent to the skin, and an elliptical subcutaneous flap should be permitted to remain attached to the sac. When the latter is freed to a level with the cord, a provisional ligature should be thrown about its neck without tying. The sac should be opened, carefully examined, and if the cord is not protruding, the ligatures should be firmly tied; an overstretch of catgut should give it additional support. If the base is broad the same procedure should be followed, except that after opening the sac and inspecting it, the ligature should be removed. It should then be amputated at its base and carefully sutured if it be a case of syringomyelia, and if the cord protrudes into the sac, the fibers of the cord should be freed from their attachment to the meninges and replaced in their normal position; the opening in the sac closed with a continuous chromoform catgut, or preferably, kangaroo tendon suture.

If a complete syringomyelia exists, the cord should be amputated in both directions from the center of elevation to a normal anatomic zone; then a careful end-to-end suture of fibers should be made if the spina bifida be situated in the caudal zone. If above the caudal zone, the cord should be freed and replaced within the dural sac without suture, the opening closed, with little hope of motor improvement offered the patient. The muscles supplied by the distal fibers should be localized by the faradic current. Our results, immediate and remote, have been most satisfactory after this technic.

Mayo-Robson uses a median incision. He also leaves a segment of the skin in place if separation of the cord from it is difficult. He advises that the meninges and skin should not be united on the same longitudinal line. In the clinic at Breslau the meninges are united longitudinally and the skin transversely. After the removal of the sac, in order to prevent subsequent hernia of the contents of the spinal canal, the defect is repaired either by a muscular flap (Bayer), or by osteoplastic flaps (Selenko Boboroff). Mayo-Robson once transplanted periosteum and bones from animals for this purpose. The spinous processes may be divided at their base, leaving the soft parts attached, drawn upward and sutured in the median line to form a bony arch over the posterior surface of the cord.

**Prognosis.**—The mortality in the treatment of spina bifida by injection of Morton's solution is 20 per cent. Statistics of the Clinical Society in London, which include 71 cases treated by injection, show 49 per cent. cured, 5 per cent. improved, 7 per cent. unchanged, and 38 per cent. mortality.

The following case of spina bifida is the first and only one of this type treated in this manner:

**History.**—Baby R., family and general history negative. A mass the size of a silver quarter was noted at birth in the

median line of the back at about the level of the dorsolumbar junction. This at first was flattened and of a fluctuating consistency. A serosanguinous fluid discharged from the most dependent portion of the tumor. This continued during the first year, but finally yielded to local treatment. The tumor mass gradually increased in size, but the growth during the six months before entering the hospital was very rapid. At the time of entering the hospital the mass was of the size and shape of a small orange, rather tense and fluctuating in consistency. There was no tenderness or any evidence of inflammation in the tumor mass or in the adjacent skin. The child's head had been large from birth and tended to approach the ventricular hydrocephalic type. From birth the child had presented a complete paraplegia with absolute motor paralysis, anesthesia and analgesia; also loss of sphincter control. Teething and talking began at a normal age, that is, as compared with the other children in the family.

**Treatment.**—A diagnosis was made of syringomyelic spina bifida. Three injections with Morton's fluid were made. There was some reaction, but no appreciable benefit, and operation was decided on.

**Operation.**—Freeing of the sac showed that the dilatation was central. That is, it was due to an accumulation of fluid within the lower caudal and terminal portion of the ependymal canal producing a pressure destruction of the caudal nerves just below the exit from the conus and not producing a destruction of the conus ganglion cells or axones. Careful dissection was done, separating the dura and sac from other tissues down to the bone border. The cord was found dilated from the center with complete pressure destruction for an inch or more. The peripheral cicatricial mass was dissected out. The ends of the cord, upper and lower, were united with catgut sutures and the divided lateral nerves (lumbar plexus) attached to line of spinal suture. Placing one pole of a battery at the upper and one pole at the lower end of the cord gave a pronounced muscular response in both lower extremities. The dura was closed with a single row of catgut sutures. The opening in the bony spine was also closed. The fractured spinous process was turned upward at its attachment to the transverse process toward the median line and united with heavy catgut sutures. A drain was placed ( $\frac{1}{8}$  in. perforated rubber) beneath the line of suture. The aponeuroses of the quadratus lumborum were drawn together over the seam so as to retain lumbar muscle in the center line. The skin flaps were supported by four silkworm gut sutures through hair-line plates. The skin was united with horsehair and a silkworm gut drain was inserted. Cerebrospinal fluid was discharged for two weeks. Temperature went up to 102 F., but subsided. The patient recovered. The feet changed in their temperature and color, and "life expression" was noticeable before the patient left the hospital Dec. 20, 1905.

**Postoperative History.**—Jan. 14, 1906, the patient was progressing satisfactorily; there was no motion in the extremities; the legs and feet had an expression of "life" about them.

June 16: The patient was in splendid physical condition. The tumor in the back had not reappeared and the spine was apparently normal. The central hydrocephalus has materially increased and the child is showing marked optic atrophy and is almost blind.

Sept. 26, 1906: The limbs had become more firm and had lost their puffy and glossy appearance. The first faradic response was noted June 29, 1906. The limbs had a "living" expression, which they did not have before, showing that trophic changes were taking place. Trophic restoration is the first indication of nerve repair; next comes faradic reaction and finally voluntary motion. It is too soon to expect voluntary motion in this case.

If the dilatation had been 2 inches higher up operation for reunion of the cord would have been worse than useless and the danger from operation greatly increased, for in that position a resection of the sac and restoration of conformation of spine is all that could have been undertaken or justified. It must be borne in mind that the sacral and lumbar nerves pass upward a considerable distance in the spinal canal before they enter the cord or conus and have the neurilemma.



## CONCLUSIONS.

The gray and white matter of the spinal cord down to the cauda is made up of:

- (a.) Intrinsic ganglionic cells (gray matter).
- (b.) Centrifugal cerebral axons (white matter of motor columns).
- (c.) Centripetal sensory axons from the spinal ganglia in which is located the trophic cell of the body of these axons, making up the posterior sensory column. The centripetal and centrifugal axons within the spinal cord are aneurilemmic.
- (d.) Intercommunicating or associating axons which connect the various segments of the intrinsic ganglionic cells of the cord, and form the anterior ground bundle of white fibers.
- (e.) Direct cerebellar centripetal axons originate from ganglionic cells situated in the posterior internal region or posterior horn and close to the commissure, leading to the ganglionic cells situated in the vermis superior of the cerebellum and are aneurilemmic (tract of equilibrium).
- (f.) Gowers' or the lateral spinal tract, the axons of which originate in the posterior horn, close to the commissure.
- (g.) Neuroglia.
- (h.) The bulb or medulla oblongata is a continuation of the same ganglionic zones of gray matter in the cord and has all of the centrifugal and centripetal axons of the spinal cord. In addition, it has its own peculiar anatomic elements.

Nerves arising from the medulla are surgically spinal nerves. Therefore, all of the "cranial" nerves, except those of special sense, are from a surgical standpoint, essentially spinal nerves. The extraocular motor and sensory axons are medullated and neurilemmic.

(f.) Nerves of special sense should be called cerebral nerves, as their trophic cell bodies are outside the cranium, and in the organs of special sense. The centripetal axons of these nerves, with the exception of the olfactory, are all medullated and all aneurilemmic.

The extra spinal root, both centrifugal and centripetal sensory, are medullated and neurilemmic. The peripheral nerves of the bulb and cord (cranial and spinal) are medullated and neurilemmic to their nerve endings. The terminal dendrites are medullated and aneurilemmic. They possess, however, a limited potentiality of outgrowth of the axons beyond their neurilemma. The cauda, from a surgical standpoint, is an intradural collection of extramedullary spinal axons, and is made up of axons with a medullary sheath and neurilemma. The sympathetic system is a chain of ganglia and nerve trunks. Their axons are neurilemmic and non-medullated.

When an axon is divided, the entire distal portion from the trophic ganglionic body degenerates; proximally, it degenerates for a short distance, and for a longer distance it atrophies. A ganglion cell once destroyed, the degeneration of its axon, or axons and dendrites is complete, and the restoration and sensation in its peripheral zone can only be obtained by anastomosis of its axons to other axons originating from healthy ganglionic cells, as in anterior poliomyelitis.

Ganglionic cells and aneurilemmic axons once destroyed never regenerate. All neurilemmic axons, centrifugal (motor), and centripetal (sensory), are capable or potent of both anatomic and physiologic regeneration under favorable conditions. For the rôle played by the neurilemma in nerve regeneration the reader is referred to the article on regeneration of peripheral nerves.<sup>1</sup> Therefore,

- (a) Ganglionic cells in the gray matter of the cord never regenerate.
- (b) Centrifugal motor axons within the cord never regenerate, as they are aneurilemmic.
- (c) Centripetal sensory axons within the cord never regenerate, as they are aneurilemmic.

It can, therefore, be seen that there is no regeneration of the white columns or gray matter of the cord after destruction or division; it has never been demonstrated experimentally nor authoritatively observed clinically. All these principles apply equally to the bulb or medulla oblongata. The spinal, cranial, sensory and sympathetic ganglions once destroyed never regenerate. The caudal portion of the cord is made up of neurilemmic centrifugal axons from the spinal cord ganglion cells, in the conus, and of centripetal sensory axons from cells in the spinal ganglia, which are situated extradural in the lumbar and sacral foramina, both are neurilemmic, from the place they leave or enter the conus. They are, therefore, all capable of regeneration, the same as peripheral axons.

The extracordal or extramedullary and extrabulbous spinal and cranial axons are neurilemmic and potent of regeneration. Therefore, divided roots within the cranium and spinal canal regenerate. Peripheral nerves, cranial and cerebral, are composed of neurilemmic axons and capable of regeneration. The nerves of special sense, the optic, olfactory, gustatory and auditory, are composed of aneurilemmic axons, and are incapable of regeneration if once destroyed. In this particular, they resemble the columns of the cord. Their trophic cells are situated in the retina, Schneiderian mucosa, taste organs, cochlea and vestibule. When these membranes and ganglion cells are destroyed, the cells and axons are incapable of regeneration. The sympathetic nerve trunks are non-medullated, but neurilemmic and capable of regeneration.

Hemorrhage, concussion and contusion without laceration may offer the same immediate symptomatic picture as that of division, and a positive differential diagnosis may be practically impossible.

There is no direct relationship between the severity of the trauma and the degree of lesion in the cord. The element of time and the order of appearance of symptoms is of great importance, and may be the only guide in the differential diagnosis.

Absence of paralytic symptoms immediately after spinal trauma does not justify the surgeon in assuring the patient that such symptoms will not appear. They may set in within a few days or even some weeks after the injury.

If paralysis is due to hematorrachis the condition can be relieved by early spinal puncture. Intra or periarachnoidal hemorrhage from bullet or stab wound may produce complete paralysis resembling a division of the cord. If the pressure be relieved the patient will survive and paralysis will be temporary.

The majority of cases of transverse or incomplete traumatic irregular paralysis following fractures recovers without operative treatment, which signifies an absence of spinal cord division. Wherever there is immediate and complete circular paralysis, operation does not benefit the patient in the least, as there has been a division of spinal axons which never regenerate.

Surgical intervention in injuries to the cord should be resorted to only in cases where the spinal cord is not completely divided, except in the caudal zone. Immediate intervention will be of benefit when the cord is compressed above the cauda, or compressed and divided in the cauda. If operation is at all indicated there is no reason for delay, as degeneration changes may take place in the cells and neurons of the cord, which would be as irreparable as its division.

In fractures of the spine without considerable dis-



placement, we are justified in assuming that the cord is not suffering continual compression, regardless of the degree of paralysis, and operation is contraindicated. If this paralysis is due to laceration, it will not be improved by operation. If it is due to contusion it will recover without operation.

In gunshot and stab wounds with immediate paralysis, operation is contraindicated, as the cord is probably severed, and its re-approximation will avail nothing, except in the caudal zone. After division or crushing of the nerves of the caudal zone, there is a positive indication for an end-to-end suture, axonal contact of the various fibers, as determined by faradic stimulation, the same as in peripheral nerves.

In spina bifida centralis paralytica, in the caudal zone, resection of the atrophied section of the spinal cord with end-to-end union is indicated. Apendymal spina bifida should be treated by resection of compressed segments, and accurate suture approximation of the fasciculi of the cauda. Upper ependymal and true cord central spina bifida may be treated by ependymal sub-arachnoidal drainage.

In all non-malignant tumors of the cord, laminectomy should be performed at the onset of paresis. Delay to complete paralysis is unpardonable, not to use a more forcible expression. Operation after complete paralysis from compression with degeneration is contraindicated.

In tuberculoma compression the spinal cord operations should be done at the beginning of symptoms of paralysis. Late operations, that is, after a pressure necrosis of the cord, are worthless. The bone cavity should be filled with a Moorhof plug, as this lessens the liability of suppuration and hastens the process of repair.

In conclusion, surgery of the spinal cord, like surgery of other parts of the body, must be timely, i. e., operation must be done before the pathologic condition is advanced beyond the possibility of repair. In our present positive, though limited knowledge, timely action means conservatism, while delay must be interpreted as timidity and inefficiency.

I wish to express my appreciation of the services of Dr. Victor F. Schragar in the preparation of this article.

[FOR THE DISCUSSION ON THE PAPERS OF DRs. POWERS AND MURPHY, SEE PAGE 826.]

## A CASE OF COLON BACILLUS SEPTICEMIA.\*

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Nov. 2, 1905, Dr. G. W. Wende, Buffalo, referred to me a man with the following history, whom he had been treating for syphilis:

*Patient.*—I. A. K., jeweler, single, aged 38, American, with a good family history.

*Personal History.*—The man had had measles several times, typhoid in 1892 and diphtheria in 1896 and 1897. In 1888 he had a chancre, and in 1903 syphilitic rhinitis of mild type. For this he has been under treatment. While under my care, he was seen in consultation by Drs. Conrad Diehl, Chas. G. Stockton, G. W. Wende and Nelson G. Russell. Three weeks before consulting me he had had a severe wetting and had taken cold. A week later began to have night sweats, which continued nearly every night. Sweats occurred early in the night. The night before I saw him, he had had two sweats—

one early in the night, the other early in the morning. He slept well except for the sweats. He had no headaches. Appetite was good, no indigestion; bowels were constipated, especially during the last few days. There was no cough or expectoration. He was not short of breath; had no palpitation of heart.

*Physical Examination.*—Patient appeared pale with slightly yellowish tint; face was a little puffy. Tongue was clean. The heart apex was in the nipple line, at fifth interspace; sounds were both weak. There was no other abnormality. Pulse was 88, of moderate volume and regular tension. Temperature was 100.5 F. His weight was 160 pounds, a little below the average.

*Lungs:* There was very poor expansion, but no abnormality otherwise to be demonstrated.

*Abdomen:* Liver was enlarged and slightly tender. Spleen was of normal size. Abdomen was generally normal.

*Urine:* 500 c.c., strongly acid, specific gravity 1029. Urea 14.8 gm. Albumin none, sugar none, indican excess, bile trace, diazo reaction, negative, no blood. Microscope showed only urates.

*Blood:* Hemoglobin, 75 per cent.; red cells, 4,500,000; white cells, 3,800. Widal reaction negative; no malarial organisms found.

*Diagnosis and Treatment.*—There was doubt in my mind as to whether the case was one of syphilitic fever, general tuberculosis or typhoid fever. I inclined to the opinion that it was one of tuberculosis. The man was put to bed, his emunctories opened by a dose of calomel, followed by salts, alkaline drinks, and an afternoon tepid sponge. An antiseptic cleansing mouth wash was used frequently, and a bowel wash of borie acid and iehthyol in warm water was given every other day. A diet was ordered of milk, broth, raw egg and beef juice. Medicine: Guaiacol benzoate 1 gm. (gr. xv) every four hours.

*Course of Disease.*—The temperature chart is shown. Until the last week of his life, the man's pulse varied from 70 to 80, and respirations from 20 to 24. On November 8, the spleen was noted as enlarged and palpable.

The urine was examined frequently in the course of the disease, and only toward the end did it show any albumin. At no time was bile present after the first examination. The blood counts showed a slowly, but steadily, increasing anemia of slightly chlorotic type, and a remarkable leucopenia, the white cells never being above 3,800, a week before his death, falling as low as 1,340, the different forms bearing a normal percentage relation to each other. The last count showed 2,670,000 red cells, poikilocytes, microcytes, macrocytes, and a few polychromatic red cells. No nucleated red cells at any time.

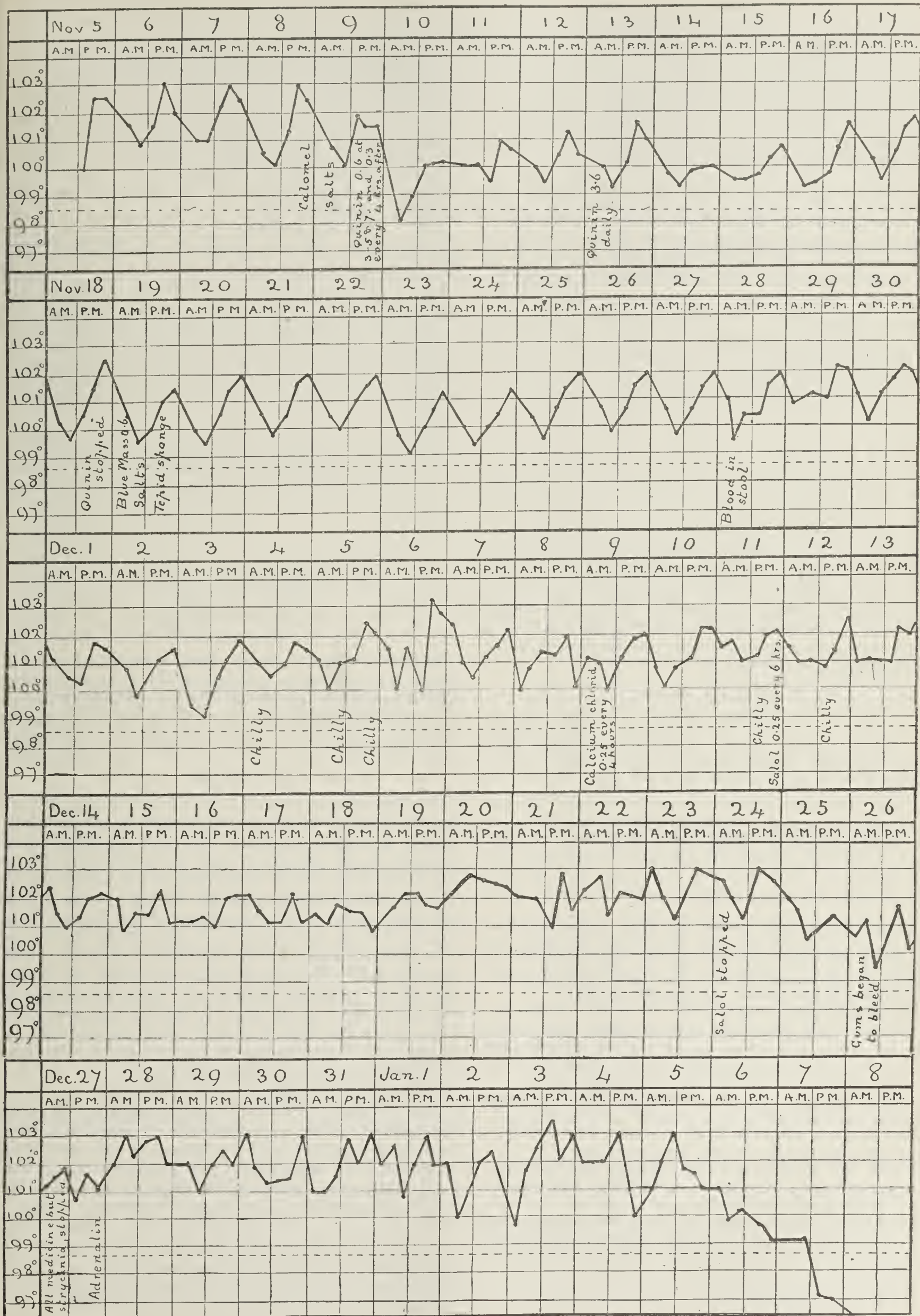
Although no malarial organisms had been found in his blood, as he had a very regular afternoon rise and morning fall of temperature associated with sweating, his guaiacol was stopped November 8 and he was given a full dose of calomel, followed by salts, and on November 9, was given quinin, 0.6 gm. (gr. x) at 3, 5 and 7 p. m., and then 0.3 gm. (gr. v) every 4 hours afterward. His temperature dropped to 98 F. and stayed below 100 F. for 24 hours, when, in spite of the continued administration of quinin, it began its up-and-down course again, so that on November 13, the 0.6 gm. was given at 6, 8 and 10 p. m., and the next day at 12 m., and 2 and 4 p. m., and afterward continued at 4, 8 and 12 a. m. and p. m. Under this dosage, the temperature remained below 100 F. for 24 hours only, and then again began its up-and-down course, so that by November 18 its range was between 99.2 and 101.8 F. Quinin was then abandoned.

November 30, at Dr. Stockton's suggestion, blood was taken for culture purpose. Drs. Nelson G. Russell and C. A. Bentz made the blood studies. At no time did the patient's blood stop the motion or cause clumping of typhoid bacilli.

Cultures from the blood taken at this time gave short motile bacilli, which did not react to the agglutination test with known typhoid blood, and did react with the patient's own blood. The bacilli at first did not have the characteristics of the colon bacillus, and it was concluded that we had to do with a paratyphoid septicemia. Under subsequent cultivation the organs developed the characteristics of the *Bacillus coli communis*.

\* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.







November 28: Blood appeared in the patient's stool and afterward proved constantly present by the guaiac test, and could occasionally be detected by the naked eye.

From the beginning it had been difficult to keep the man's tongue and gums clean, there being a great tendency to formation of sordes. December 26 his gums began to bleed, and, in spite of careful local treatment, in which a most competent dentist was associated, a terrific hemorrhage occurred on December 31, from which the patient did not rally, but steadily sank until his death, at 4 a. m. January 8.

There are one or two things in the course of this case that I think are worthy of emphasis. The first is that the character of the temperature curve, with the occurrence of sweats, the enlargement of spleen, the anemia and leucopenia, very strongly suggested malaria of an estivo-autumnal type. The study of the blood did not reveal the plasmodium, and the therapeutic test with quinin was a failure. From November 28, when blood first appeared in the patient's stool, calcium chlorid was administered regularly in full doses until the man died with profuse hemorrhage from the mucous membrane of the mouth. The local use of adrenalin had only a very temporary effect in the attempt to control the hemorrhage.

In the second week in December, on account of the pronounced leucopenia, yeast and, later, Vaughan's nuclein, and finally cinnamate of sodium were administered and the leucocytes continued to drop in number.

The patient complained of no pain at any time during his illness, nor was there any tenderness anywhere, except very slight tenderness over the liver. The only anatomic abnormality which could be demonstrated during life was the slight enlargement of liver and spleen. The man's mind remained clear, and he was cheerful up to ten days before his death, when the bleeding from his mouth began to be severe.

#### REPORT OF AUTOPSY.

The autopsy was performed seven hours after death by N. G. Russell and C. A. Bentz. Dr. Conrad Diehl was present.

*External Appearance.*—Usual postmortem lividity; rigor mortis, moderate; body considerably emaciated; skin, yellowish tint.

*Lungs:* Left lung crepitated, except at the base. The posterior part was intensely congested, somewhat friable, on section exuded considerable bloody froth. Right lung was somewhat heavier than normal, the upper and middle lobes were emphysematous. The lower lobe was large, dark in color, quite friable, did not crepitate; on section exuded bloody serum.

*Heart:* Small, pale; muscle was about normal thickness,  $\frac{3}{4}$  inch, of a brownish-gray color, soft, friable and flabby. The muscle of the right side was thin; in some places it was almost entirely replaced by fat. The valves appeared normal.

*Aorta and Blood Vessels:* Moderately sclerosed.

*Suprarenal Glands:* Normal.

*Kidneys:* Left kidney was large (swollen), pale, capsule stripped easily. Cortex was somewhat narrow, the blood vessels and medullary rays were distinct. The right kidney was the same as the left. The ureters appeared normal.

*Spleen:* Large, soft, friable. Malpighian bodies and trabeculae were not distinct.

*Gall Bladder:* Small, thickened and filled with thick, dark green bile. No calculi in either ducts or bladder.

*Liver:* Size about normal, pale, yellowish color and firm.

*Lymph Nodes:* Mesenteric, peribronchial and thoracic, lymph nodes were large, reddish in color and soft.

*Intestines:* The lower part of the ileum and the cecum showed congestion of the mucous membrane. The solitary follicles and Peyer's patches were somewhat swollen, but not ulcerated.

Smears and cultures were made from the spleen, lymph nodes, liver and heart blood.

Pieces of tissue from the spleen, liver, kidneys, lungs, pancreas, lymph nodes, intestines and heart were preserved in hardening fluid.

*Histologic Examination.*—The tissues were hardened in Orth's fluid, embedded in collodion, sectioned and stained with hematoxylin and eosin. The following is a brief summary of the findings:

*Lungs:* Hypostatic pneumonia of the lower right lobe and posterior border of the left lung. Emphysema of the anterior and middle lobes of right lung.

*Kidneys:* Parenchymatous nephritis.

*Heart:* Fatty infiltration.

*Spleen:* Congested.

*Liver:* Fatty and cirrhotic.

*Lymph Nodes:* Medullary infiltration and some hyaline degeneration.

*Gall Bladder:* Thickened.

*Bacteriologic Examination.*—Cultures from the organs and tissues gave short motile bacilli, having the structural and morphologic characteristics of *Bacillus coli communis*. The organisms isolated from the blood during life (November 30, 1905) had the same cultural and morphologic characteristics as those isolated from the organs and tissues at autopsy. The agglutination (blood) test was positive with both sets of cultures.

*Summary.*—The man had a septicemia due to an organism belonging to the *Bacillus coli communis* group. This organism in the beginning did not have the characteristics of *Bacillus coli communis*, but under subsequent cultivation developed them. The organs and tissues presented the gross lesions of septicemia.

## BERIBERI, ITS ETIOLOGY AND PREVENTION.\*

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Beriberi being a disease more particularly of the tropics and rarely seen in America, it may be well at the beginning of this paper to give a short description of the disease, so that those who are unfamiliar with its manifestations may bear in mind a picture of its principal characteristics.

#### PATHOLOGY.

Beriberi may be described as an acute or subacute infectious disease occurring endemically or epidemically usually in tropical countries. Its chief characteristic is a sensory-motor paralysis due to an involvement of the peripheral terminations of the sensory and motor nerves. The peripheral terminations are usually affected in the following order: The terminations of the vagus in the heart and lungs, the cardiac accelerator, those which have to do with the knee jerk, the branches of the peronei and anterior tibial, the muscles of leg and thigh, the extensors of the wrists and fingers, etc. After an incubation period of from 7 to 21 days, the patient begins to complain of malaise, loss of appetite, weakness, and pain in the lower part of the chest or the epigastrium. Vomiting may occur and sometimes diarrhea.

To a physician who is a novice as to beriberi, the foregoing symptoms would only indicate an attack of acute indigestion; to the physician who is acquainted with beriberi, and especially if the disease is prevalent, they would be very suggestive. The symptoms resembling acute indigestion are soon followed by sensations of feverishness, or chilliness, although there is no pyrexia. The uneasiness in the epigastrium soon becomes a dull heavy boring pain and is accompanied by distention of the epigastrium. The pulse becomes greatly accelerated

\* Read before the Central Wisconsin Medical Association, July 31, 1906.



and if the patient exercises only slightly, dyspnea is usually observed. In from a few hours to two or three days more pronounced nervous symptoms begin to appear. The knee-jerk is found to be absent, although it is occasionally exaggerated. Patient complains that his legs feel heavy. On walking the foot flops to the ground at each step, showing that the anterior tibial and peronei have become involved. Areas of anesthesia appear. The paralysis spreads rapidly upward to the thigh, hips, fingers, arms, etc. Edema may soon appear, beginning in the legs, depending on the implication of the vasomotor fibers of the vessels of these areas. There may be tenderness on pressure over the affected areas. The nerves of the circulatory and respiratory systems become more markedly involved. The heart becomes more irritable and palpitation occurs on the slightest exertion, with a weak and rapid pulse. The respiration becomes hurried even when at rest. Pulsation over the precordia and carotids becomes pronounced. The area of cardiac dullness increases toward the right. The cardiac impulse becomes diffuse. Signs of engorgement soon appear. Lips and finger nails become blue. There is marked dyspnea. Patient gasps for breath. The face shows great anxiety. Temperature becomes subnormal. Patient succumbs to cardiac or respiratory failure. The mind is clear to the end. This description corresponds to the usual subacute variety.

There is a pernicious form, however, the symptoms of which vary considerably from the foregoing. Loss of appetite, malaise, pain in the epigastrium, etc., may usher in the attack as in the subacute cases, but the peripheral terminations to the vagi in the stomach and heart become so rapidly involved that the patient dies often within a few hours, before other symptoms as peripheral paresis and edema appear. There are other forms of this disease, as the atrophic or paralytic, and rudimentary forms, but time will not allow a description of these in the limits of this paper. This description, however, will be sufficient to make what follows more comprehensive.

#### SERIOUS CHARACTER OF BERIBERI.

The importance of the prevention of beriberi, especially in the tropics, is forcibly demonstrated by the following facts:

Prior to 1884, an average of 33 per cent. of the available strength of the Japanese navy was continuously disabled on account of beriberi. During the war with China in 1894, 45 per cent. of the Japanese army were made non-efficient for the firing line on account of beriberi. Finally, in 1904 and 1905, in the Japanese army, nearly one-half of the sickness, or 24 per cent. of the entire sick and wounded, consisted of those ill with beriberi, amounting in round numbers to nearly 85,000 men.

This disease must not only be reckoned with in military movements in the tropics, but is also a factor determining to a great measure the success of many public and private undertakings. In the mines of the Federated Malay States a large percentage of the contract laborers are almost continuously disabled on account of beriberi. In Java many of the laborers are likewise disabled and in the Philippines, during the construction of the Benguet road to Baguio, the ranks of the laborers were considerably decimated on account of the same insidious disease.

#### THEORIES AS TO ETIOLOGY.

On looking over the voluminous literature of beriberi, I am struck with the diversity of opinions and theories advanced as to the cause of this disease and its prevention.

The most important theories promulgated as to the etiology of beriberi are:

1. That beriberi depends on the nutritive value of food.

(a) Kakaki claims to have banished beriberi from the Japanese navy by increasing the proportion of nitrogen in the ration. During a period before Kakaki's changes, about one-third of the entire strength of the navy, became affected during the year, while after the change 1/63 were affected by the disease.

(b) Several French authorities believe that beriberi is due to a scarcity of fat. It is claimed that an extensive epidemic of the disease at Chaudabun, Siam, was arrested by the increase of fat to the ration.

2. That beriberi is caused by a toxic agent taken in with the food has many advocates. Gelpke believes the toxic agent to be dried fish; Muira, raw fish; Grimm, infected fish; others that the toxin develops in moldy rice.

3. Carbon dioxid. Ashmead<sup>1</sup> has written several articles trying to prove that the excessive inhalation of CO<sub>2</sub> is the cause of beriberi.

4. That beriberi is due to an infection by protozoa. Glogner and Heanley advocate this theory. Heanley<sup>2</sup> draws an analogy between malaria and beriberi which is suggestive.

5. The arsenical poison theory is strongly advocated by Ross.<sup>3</sup> He believes that beriberi is a neuritis caused by the ingestion of arsenic.

6. That beriberi is caused by a specific germ, probably bacterial, has many advocates. There is great diversity of opinion, however, as to how the micro-organism enters the body or whether it enters the body at all.

(a) Manson<sup>4</sup> believes that the organism exists in some culture media outside the body, that the toxin which produces the disease enters the body not in the food or drink, but through the skin or by inhalation.

(b) Pikelharing and Winkler<sup>5</sup> believe that a germ is introduced in the body but that the bacterium to produce the disease must be introduced by repeated infections.

(c) According to Braddon beriberi is due to the ingestion of a specific germ which develops in growing rice.

(d) Hamilton Wright<sup>6</sup> maintains that the specific micro-organism is not a special habitat of any particular food, but that it may be ingested with contaminated food or drink. Having gained access by way of the alimentary canal, it becomes localized in the mucosa of the stomach and intestines. There it elaborates an extracellular toxin which, being absorbed, produces the symptoms of beriberi.

#### BACTERIOLOGY.

Several authorities have described a specific micro-organism as the cause of beriberi. Pikelharing and Wenkler<sup>5</sup> describe a white staphylococcus, which they

1. "Contribution to the Etiology of Beriberi," Univ. Med. Mag., Phila., 1892-3, v, p. 153.

2. "Some Analogies which Favor the Protozoal Hypothesis of Beriberi," Indian Med. Gaz., Calcutta, 1905, xl, pp. 212-214.

3. "Arsenic in the Hair of Beriberi Patients from Penang," Brit. Med. Jour., 1902, i, 329.

4. "Prophylaxis and Treatment of Beriberi," Brit. Med. Jour., Lond., 1902, ii, p. 830.

5. Mittheil. über d. Beriberi, Deutsch. Med. Wochschr., Berlin, 1887, xlii.

6. "Enquiry into the Etiology and Pathology of Beriberi," Jour. Trop. Med., Lond., 1905, viii, pp. 161, 180, 197, 209.



claimed to have isolated from the blood of beriberi patients. Hunter<sup>7</sup> describes an organism which resembles very closely that described by Pekelharing and Winkler. Ross<sup>3</sup> describes an angular diplobacillus which he claims to have isolated from the blood and cerebrospinal fluid of a large number of beriberi cases.

Okato and Kokubo have recently reported the finding of a coccus in the blood and urine of beriberi patients. Out of 129 cases examined, 65 were positive, both as to cover-glass examinations and cultures. In 34 both were negative. In 11 the microscopic examination alone was positive. In 19 the cultures were positive and the microscopic examination negative.

None of the above work has been confirmed, but the kakkecococcus of Okato and Kokubo has been reported too recently to make it certain whether or not the true micro-organism of beriberi has been discovered. Herzog,<sup>8</sup> in experimenting with this coccus in Manila has, according to the last reports, come to no positive conclusions.

According to this résumé the older authorities placed great stress on food as a factor in causing beriberi while more recent writers are inclined to disregard food entirely and to consider beriberi only in the light of a disease caused by a specific micro-organism. After an extensive study of the disease in the Philippines and a careful consideration of the literature I believe that the pendulum has swung too far and that food must still be considered in determining the etiology of the disease.

How can Wright<sup>6</sup> and Manson<sup>4</sup> sweep aside the experience of so many able men who have suppressed beriberi by certain changes in the diet? Was Takaki's triumph in eradicating beriberi from the Japanese navy, a feat considered one of the greatest successes in preventive medicine of modern times, only a coincidence? Can Manson or Wright cite such an overwhelming success in the suppression of beriberi by carrying out their theories? Wright<sup>9</sup> claims to have eradicated beriberi from the Kuala Lumpur gaol by instituting certain hygienic reforms, as the frequent disinfection of the prison, the better care of fecal discharges, better ventilation, etc., but Travers,<sup>10</sup> writing some months after Wright's report, denies that Wright's reforms were carried out and that the suppression of beriberi was due to other causes.

#### BERIBERI IN BILIBID PRISON, MANILA, P. I.

This report, based on the epidemic of beriberi which occurred in Bilibid prison, Manila, during which there were 5,448 cases of the disease, is written for the purpose of showing that food as a factor can not be eliminated in determining its etiology.

Bilibid prison is the penitentiary for the entire Philippine archipelago, and also served as the city jail. At the time of which I write, the number of prisoners ranged from 1,700 to 2,000. The prisoners consisted mostly of the several Christian tribes of the islands, but the Moros, Igorrotes and Negritoes were also represented. Among the prisoners were also found Spaniards, Chinese, Japanese, Indians, American negroes, Americans and Euro-

peans. The officers of the prison were a warden, two assistant wardens, and an attending physician. The warden was supreme in all matters. The physician, although having charge of the sick, had only advisory power in regard to sanitary matters, rations, etc.<sup>11</sup>

Previous to the epidemic of beriberi, which started in December, 1901, there had been but few cases in the prison. For some months there had been no deaths from this cause, but the disease might be said to be endemic, for it was seldom there were not one or two cases. In December it was noticed that a great many prisoners began to complain of pain in the epigastrium, loss of appetite, and malaise. It was first thought that the new ration, which had recently been instituted, was causing indigestion. When, however, symptoms of heart and respiratory failure with paresis began to appear, the affection was soon recognized. The disease did not seem to make its appearance in any special portion of the prison, but all parts seemed to be affected simultaneously.

In regard to race, the Filipinos suffered most severely. The Chinese were almost exempt, only one or two contracting the disease, while the Americans were entirely immune.

The epidemic spread rapidly. While in December there were in the prison 52 cases of beriberi, with 2 deaths, in January there were 167 cases with 12 deaths.

To determine the cause of the epidemic and institute preventive measures was now the problem. Was the sudden appearance of this epidemic due to insanitary conditions, as overcrowding; had some new source of infection suddenly gained entrance into the prison; was it due to meteorologic conditions; had the recent change of ration been the determining cause? These questions and others presented themselves for solution.

The first measures tried for the suppression of the epidemic were along the lines of sanitation and disinfection. To begin with, all beriberi cases were, on the first manifestation of the disease, transferred to certain quarters set aside for beriberi. Overcrowding was remedied as much as the available room would permit. The entire prison was disinfected several times and certain portions many times. Platforms, floors and walls in all the buildings were scrubbed or sprayed with carbolic acid or 1/1,000 solution of bichlorid. The prisoners' blankets, mats, and everything belonging to them were soaked in a solution of 5 per cent. carbolic acid and then dried in the sun. Before returning to their quarters the clothing of the prisoners was removed, each prisoner given a full bath with 1/2,000 bichlorid solution, after which fresh clothing was provided. The buildings and quarters, clothing, bedding and prisoners were not only disinfected, but a large portion of the prison grounds was drenched with a saturated solution of chlorid of lime. To avoid possible infection of contaminated hands and dishes, immediately before eating each prisoner washed his hands and dish in water, bichlorid solution 1/1,000, and then in water. This routine of disinfection was continued several months, but in spite of it

7. Hunter, W. K.: "Bacteriology of Beriberi." Glasgow Med. Jour., 1897, xlviii, p. 116.

8. "Beriberi in the Japanese Army During the Late War. The Kakkecococcus of Okata-Kokubo," Philippine Jour. of Sci., February, 1906.

9. Wright, H.: "Successful Application of Preventive Measures Against Beriberi," Jour. Hyg., Cambridge, 1905, v, pp. 129, 133.

10. Relating to the paper entitled "The Successful Application of Preventive Measures Against Beriberi," by H. Wright, Jour. Hyg., Cambridge, 1905, v, pp. 556-539.

11. The same defects exist in regard to the powers of physicians in the Philippine Civil Service as exist in the Army. In all departments physicians have over them those higher in authority who are not physicians. The physicians may suggest, but their suggestions and recommendations are often not complied with. It was unfortunate that during the epidemic of beriberi in Bilibid Prison the physician was greatly handicapped by the fact that recommendations in regard to food and sanitation were often turned down by the warden.



and other sanitary measures employed, beriberi did not abate, and at times seemed even to increase.<sup>12</sup>

The result of the above experimentation shows that at least the epidemic in Bilibid was not due solely to a place infection as advocated by Manson, for: 1. The most thorough disinfection had no effect in reducing the number of cases. 2. A change in location of the prisoners was not necessary to bring the epidemic to an end. For some months previous to December, when the epidemic began to wane, there had been no disinfection.

Overcrowding had little or no effect on beriberi in Bilibid prison, for: 1. During the time of the epidemic certain buildings which were the most crowded showed no greater proportion of beriberi cases. 2. Beriberi cases did not diminish when crowding was lessened. 3. About two years after the epidemic had ceased, when the prison contained over 4,000 prisoners instead of 2,000, and was crowded far beyond its capacity, there was no increase of beriberi, although the disease was endemic at the time.

The epidemic could have been due to no new source of infection gaining entrance to the prison, for all portions seemed to simultaneously be affected, although many of the quarters were widely separated. From the chart it is seen that meteorologic conditions had little importance. Hamilton Wright's theory that the infective agent is contained in the excreta of the patients, and that the infection results from fecal contamination, would have been practically impossible during a portion of this epidemic because for several months during its height, the prisoners' hands and dishes were scrubbed and disinfected in a 1/1,000 solution of bichlorid before eating. This was done in July, August and September, months in which beriberi showed no diminution, but rather an increase.

The possibility that the epidemic might in some way be related to the food was early considered and the attending physician had several times recommended to the warden that certain changes in the ration be made. The warden did not think it possible that such a "good ration" could have anything to do with beriberi, so the request was not complied with. Careful observation, however, brought to light a few facts which increased the probability that the ration was to some degree responsible for the epidemic: 1. The entire prison ration had been changed in November. In December the epidemic began. 2. Hospital attendants did not contract the disease. 3. Prisoners who worked in the kitchen very seldom contracted beriberi. 4. During the cholera epidemic there was an increase of beriberi.

In explanation of these facts it was found that in distributing food to patients, hospital attendants often retained more than their share of the vegetables, milk, etc. The same was true of those who worked in the kitchen. They were able to select their diet to a certain extent. As the Filipino is a lover of vegetables, more of these were taken than were given out to the prisoners generally. In regard to the increase of beriberi during the cholera epidemic, it was suggestive that the vegetables had been greatly cut down at that time for fear of bringing more cholera infection into the prison.

In view of the foregoing observations it was again recommended that the ration be changed with the hope that beriberi might be eliminated. The recommendation was finally adopted the following October, and by

the last of the month the new ration was instituted. The effect of the change was almost instantaneous. When the change in ration was made the latter part of October, there were in the prison more than 100 cases of beriberi; and during that month there had been 34 deaths from the disease. By the end of December the number of cases had dropped to 14. The number of deaths had decreased to 9 in November and 3 in December. Table 1 demonstrates graphically the relations of the changes of ration to the epidemic. It is clear, therefore, that the appearance and disappearance of the epidemic were coincident with changes in the ration.

TABLE 1.—SHOWING THE MONTHLY NUMBER OF CASES OF BERIBERI WITH DEATHS IN BILIBID PRISON, MANILA, P. I.

Year.	Month.	Cases.	Deaths.
1901	November .....	2	0
Ration changed:			
1901	December .....	52	2
1902	January .....	169	12
1902	February .....	1087	16
1902	March .....	576	15
1902	April .....	327	15
1902	May .....	310	19
1902	June .....	451	17
1902	July .....	233	33
1902	August .....	571	24
1902	September .....	522	31
Ration again changed, October 20:			
1902	October .....	579	34
1902	November .....	476	8
1902	December .....	89	3
1903	January 1-15.....	4	0
		5448	229

After the change of ration, about Dec. 1, 1901, beriberi, which had hitherto been a negligible disease in the prison, began suddenly to increase. Again, after the ration was again changed in October, 1902, beriberi began to decline rapidly, and in a few months the mortality, which during certain months exceeded a yearly mortality of 250 per thousand, declined to almost nothing.

To study better the reason for these results the ration instituted about Dec. 1, 1901, will be compared with the ration substituted the latter part of October, 1902.

TABLE 2.—RATION INSTITUTED ABOUT DEC. 1, 1901, AND CONTINUED TO OCTOBER, 1902, WITH ITS NUTRITIVE VALUE.

Ration.	Albumi- nates.	Fats.	Starch.	Salts.
Sugar .....	28.35	.....	27.35	.14
Bread .....	151.20	12.09	74.39	1.96
Rice .....	453.60	35.43	377.40	2.26
Beef .....	226.80	48.52	11.77	3.62
Potatoes .....	85.05*	1.13	11.90	.50
Onions .....	28.35*	.....	.....	.....
Pepper .....	.5	.....	.....	.....
Vinegar .....	10.00	.....	.....	.....
Salt .....	18.00	.....	.....	18.00
Ginger root .....	28.35	.....	.....	.....
Total gm. ..	97.17	17.24	491.04	28.52

\* Potatoes and onions have an average of 56.70.

TABLE 3.—RATION SUBSTITUTED IN OCTOBER, 1902, WITH ITS NUTRITIVE VALUE.

Ration.	Albumi- nates.	Fats.	Starch.	Salts.
Sugar .....	28.35	.....	27.35	.14
Bread .....	302.40	24.18	148.78	3.93
Rice .....	255.15	17.71	18.87	1.13
Beef .....	226.80	48.52	11.77	3.62
Dried fish .....	56.70	7.08	.85	.28
Potatoes .....	119.07	2.38	.14	25.00
Onions .....	102.06	1.84	.50	5.9
Pepper .....	.5	.....	.....	.....
Vinegar .....	10.00	.....	.....	.....
Salt .....	18.00	.....	.....	18.00
Ginger root .....	28.35	.....	.....	.....
Total gm. ..	101.71	19.37	395.73	29.13

12. This disinfection was not done entirely on account of beriberi, but also for the purpose of stamping out an epidemic of Asiatic cholera which had gained a foothold in the prison.



TABLE 4.—NUTRITIVE VALUE OF RATIONS IN TABLES 2 AND 3 COMPARED WITH THAT OF VOIT, WHICH HAS LONG BEEN CONSIDERED STANDARD RATION.

Ration.	Albuminates.	Fats.	Starch	Salts.
Ration previous to October, 1902 .....	97.17	17.24	491.04	26.62
Ration after October, 1902.	101.71	19.37	375.73	29.13
Voit's* ration reduced to Filipino weight, 125 lbs..	94.	45.	400.00	

\* Voit's ration, albuminates 118 gm., fats 56 gm., starch 500 gm., is for a man weighing 151 pounds and working nine or ten hours a day. The Filipinos do not average above 125 pounds in weight, about four-fifths of the above average weight. The reduced standard is, therefore, four-fifths of Voit's original standard.

TABLE 5.—COMPARATIVE STUDY OF THE RATIONS AFTER BEING REDUCED TO NITROGEN CARBON AND HYDROGEN AND COMPARED WITH MOLESHOTT'S STANDARD.

Ration.	Nitrogen.	Carbon.	Hydrogen.	Sulphur.	Salts.	Nitrogen as to Carbon.
Ration previous to October, 1902.....	172.1	4,166.5	61.9	13.2	140.2	1 to 24.2
Ration after October, 1902.	209.8	3,816.2	70.4	17.2	185.8	1 to 13.4
Moleshott's ration reduced to correspond to Filipino weight.....	256.	3,789.	143.	23.	172.	14.8 1 to 15.*

\* 1 to 15 considered to be correct proportion of nitrogen to carbon.

TABLE 6.\*—RATION PREVIOUS TO OCTOBER, 1902.

Name.	Grains.	Rubner's Figures.
Proteids .....	97.17	$\times 4.8 = 466.41$ calories.
Fats .....	17.24	$\times 9.5 = 163.41$ calories.
Carbohydrates .....	491.04	$\times 4. = 1,964.16$ calories.
Total calories .....		2,594.35

TABLE 7.\*—RATION PREVIOUS TO OCTOBER, 1902.

Name.	Grains.	Rubner's Figures.
Proteids .....	101.71	$\times 4.8 = 488.208$ calories.
Fats .....	19.37	$\times 9.5 = 184.015$ calories.
Carbohydrates .....	395.73	$\times 4. = 1,582.92$ calories.
Total calories .....		2,255.143

TABLE 8.\*—VOIT'S STANDARD REDUCED TO FILIPINO WEIGHT.

Name.	Grains.	Rubner's Figures.
Proteids .....	94	$\times 4.8 = 451.2$ calories.
Fats .....	45	$\times 9.5 = 427.5$ calories.
Carbohydrates .....	400	$\times 4. = 1,600.$ calories.
Total calories .....		2,478.7

\* Tables 6, 7 and 8 show the value of the two rations in calories as compared with the ration of Voit.

#### FOOD AS A FACTOR IN BERIBERI.

A comparative study of the tables suggests two theories as to the cause of beriberi epidemic:

1. Previous to the change of ration in October the individual daily ration consisted of 172.1 gr. of nitrogen, and 4156.5 gr. of carbon, which is a proportion of 1 of nitrogen to 24.2 of carbon. The ration instituted in October contained 209.8 gr. of nitrogen to 3816.2 gr. of carbon, a proportion of 1 to 13.4.

2. In the ration previous to October the average daily amount of vegetable for each individual was 56.7 gm.; after October the amount was increased to 221.13 gm.

The first theory would point to nitrogen starvation as advocated by Kakaki as the cause of this particular epidemic. The second theory would place beriberi in the same category as scurvy, that is, deficiency in vegetables as the determining cause of the disease.

In 1883 the cruise of the *Ryujo*, a Japanese warship, brought the beriberi question to a crisis in Japan and led to Kakaki's investigations. In a voyage of 271 days to New Zealand and South America, stopping at the ports of Wellington, Callao, Valparaiso, and Honolulu, 160 cases of beriberi developed out of a crew of 350 men.

The year following, at the same season, Kakaki changed the ration and sent the warship *Taukuba* on the same cruise. The cruise occupied 287 days, the same ports were visited, with the same number of days' stay at each port. During this cruise only 16 cases of beriberi occurred.

The nutritive value of the ration during the first voyage was:

	Grams.
Proteids .....	109.29
Fats .....	15.8
Carbohydrates .....	622.32

The nutritive value of the ration during the second cruise was:

	Grams.
Proteids .....	196
Fats .....	43
Carbohydrates .....	775

Kakaki attributed his success to the increase in the nitrogenous constituents of the second ration over that of the first. It might be well to note that a comparative study of the supplanted diet and the diet ordered by Kakaki shows not only the increase in nitrogenous food as stated above, but also an increase in fresh vegetables. The daily amount of fresh vegetables for each man was increased from 215 gm. to 450 gm.

The question which now confronts us is: What relation has a deficiency of vegetables in the diet of beriberi?

Literature gives us but little on this question. John G. Haggard<sup>13</sup> reports that in New Caledonia water-cress has been found an almost certain cure for beriberi. A study of the epidemic in Bilibid prison seems to favor the lack of fresh vegetables rather than the small proportion of nitrogenous food as the determining cause of beriberi for the following reasons:

1. Those who had access to the preparation of the vegetables and had the opportunity to take more than their share of the same had no beriberi.

2. When the vegetables were almost entirely discontinued for a time as a part of the ration, the mortality from beriberi became higher.

3. Some months after the epidemic had been under control, prisoners from the prison, many of whom had had beriberi, were sent to work on the Benguet road. So many of these were attacked by beriberi that it was found useless to try to use them, and they were returned to the prison.<sup>14</sup> I was unable to obtain their exact ration, but was informed that they were provided scarcely any vegetables.

4. At the time of the epidemic of beriberi in the prison, many of the prisoners suffered with a peculiar form of sickness which we finally decided to be scurvy. The number of these cases exceeded 50. There was gradual loss of strength, the gums became red, spongy and swollen, there were extensive hemorrhages into the muscles, usually into the muscles of the legs. The hemorrhages would be followed by marked induration. The muscles became almost board-like in consistency, and the patient could walk only with great difficulty. On post-mortem, hemorrhages were found in various parts of the body. One case of hemopericardium was noted. On the addition of lemons to the diet of these patients, or increasing the vegetables, they recovered. There is no doubt, therefore, that with the epidemic of beriberi we

13. *Lancet*, 1904.

14. The latency of beriberi is here shown. The majority of these prisoners had had beriberi during the epidemic, which was suppressed by dietetic measures. The lack of fresh vegetables again caused the infection, which had remained latent in the body, to become active. There was comparatively little beriberi among the laborers employed on the Benguet road.



had an epidemic of scurvy, although in much smaller proportion. This, I believe, is very significant.

To recapitulate briefly, we have a change in ration, followed by epidemics of beriberi and scurvy. Certain facts, as stated above, point to a scarcity of vegetables in the ration as a possible cause of the epidemic of beriberi. The determining cause of scurvy has long been recognized to be a deficiency in vegetables. Therefore, it would seem that these two diseases are somewhat similar in their etiology.

The most important anti-scorbutic in vegetables is supposed to be potassium carbonate. A comparative estimate of the potassium carbonate in the rations made by the help of Nothnagel's tables, shows an increase of these salts from 10.34 gr. in the ration previous to the change in October to 17.39 gr. in the new ration, the ration which caused the disappearance of beriberi and scurvy. The fact noted by many writers that beriberi is very prone to occur among these people who make rice their main diet is, I think, explained by the following table:

In one ounce<sup>15</sup> of

	Potassium Carb. Grains.
Large potatoes, boiled .....	1.875
Small potatoes, raw .....	1.310
Lime juice .....	.852
Lemon juice .....	.846
Unripe oranges .....	.675
Mutton (raw) .....	.673
Beef (raw) .....	.599
Corned beef (sl. salted) .....	.572
Peas .....	.529
Beef (salted) .....	.394
Onions .....	.333
Wheat bread .....	.258
Cheese (Dutch) .....	.230
Wheat flour .....	.100
Oatmeal .....	.054
Rice .....	.010

From this table it is very evident that when rice is made the staple food, there is little opportunity for the ingestion of potash salts. It also explains the disappearance of beriberi when a sufficient amount of vegetables, especially of potatoes, is added to the diet. Accepting the above, how can we explain the appearance of two diseases different in character, but both apparently following a deficiency of potash salts in the ration?

As already stated, beriberi is considered by many as due to a micro-organism. Indeed, it can not be doubted that the pernicious form with its rapid onset and sudden death is due to some acute infection which rapidly produces intoxication of certain vital peripheral nerves.

The acceptance of a micro-organism as its cause in no way interferes with the theory that the ration is the determining cause of the disease. The micro-organism being present, the disease is produced in an individual whose blood is deficient in potassium salts. If the normal amount of potassium salts were present in the individual the micro-organism would not find a suitable medium for its propagation, and the disease would not occur.

Much the same theory may be advanced in regard to the cause of scurvy. Babes has described a bacillus as the cause of scurvy. Rosenell subsequently described a similar bacillus. Following the capture of Port Arthur, Okado and Saito,<sup>16</sup> studying scurvy among the Russian prisoners, described a bacillus which they recognized as the origin of scurvy. The phenomena of this disease produced in animals, by this bacillus, are similar to those of human scurvy.

Is it not, therefore, reasonable to suppose that both

in beriberi and scurvy we have a certain condition produced by a deficiency of potash salts, and that this condition causes the organism to be peculiarly susceptible to certain forms of infection? With this susceptibility, and, under certain conditions, as the presence of the proper organism, race, climate, etc., beriberi is produced. Under other conditions the result is scurvy.<sup>17</sup>

## BERIBERI ON THE ISTHMUS OF PANAMA.\*

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It is not the purpose of this paper to give any new information on the etiology of beriberi. The subject has been extensively investigated by Pekelharing and Winkler, Manson, Wright and the Japanese school, and germs have been isolated, which, it is claimed, are the cause of the disease. These claims, however, have not been substantiated. Beriberi has been attributed to faulty diet, to various forms of intestinal parasites, to exposure to the elements, and, finally, in absence of definite knowledge, to malaria. The consensus of opinion is that beriberi is a place infection and probably of microbic origin; it is immaterial whether, as Manson states, the germ is located in the soil of infected spots and produces a toxin which gains entrance to the body and causes the symptoms characteristic of the disease, or whether the germ itself gains access to the body and there generates a toxin which produces the disease.

The knowledge gained by the Japanese during the late war toward the prevention of beriberi by the changed dietary proves little or nothing, because, as pointed out by Scheube, late professor of the Medical School at Tokio, so many hygienic reforms were put into effect at the same time, which by themselves would tend to improve the general health. Beriberi attacks persons living in damp, ill-ventilated and overcrowded buildings; in this locality it has been especially noted that it is common among the pearl fishers. With the knowledge gained during the past few years relative to the transmission of disease by the mosquito, is it not extremely probable that this insect plays an important part in the transmission of this disease? To sum up, the causative agent of beriberi has not been determined, nor has the mode of the transmission of the infection been demonstrated.

Beriberi is a specific form of multiple peripheral neuritis, with frequent involvement of the cardiopneumogastric system, the latter manifesting itself by both functional and organic (dilatation of the right side of the heart) disturbances.

17. For other literature on the subject the reader is referred to: Banks, Charles E.: "Scurvy," Reference Handbook of Medical Sciences; Buchanan, W. J.: "Beriberi and Rice," *Lancet*, Lond., 1898, ii, 577; Chittenden: "Physiologic Economy of Nutrition;" Clark, F.: "Beriberi," *Brit. Med. Jour.*, Lond., i, p. 1152; Dykes, C.: "An Outbreak of Beriberi in an Assam Jail," *Indian Med. Gaz.*, Calcutta, 1904, xxxix, pp. 201-203; Ellis, W. G.: "Contribution to the Pathology of Beriberi," *Lancet*, Lond., xi, p. 985; MacLeod: "Beriberi and Food," *Brit. Med. Jour.*, 1897, ii, p. 1459; Morris, H. C. L.: "Etiology of Beriberi," *Brit. Med. Jour.*, Lond., 1897, ii, p. 500; Seaman, L. L.: "The Real Triumph of Japan," Appleton & Co., 1906; Sodre: "Twentieth Century Practice," N. Y., 1898, xiv, p. 469-524; Hunter, W. K.: "A Note on the Etiology of Beriberi," *Lancet*, Lond., 1898, i, p. 1784; Hutchinson, Robert: "Food and Principles of Dietetics;" Wright, H.: "Outline of Acute Beriberi and Its Residual Paralysis," *Rev. Neuroi and Psych.*, Edin., 1905, iii, pp. 645-662; Wright, H.: "Beriberi in Monkeys," *Brain*, Lond., 1903, xxvi, pp. 488 and 513; Yeo, I. B.: "Food in Health and Disease," Chicago, W. T. Keener & Co.; Reports, Weather Bureau, Manila, 1901-1902.

\* Published under the Imprimatur of the American Society of Tropical Medicine.

15. Nothnagel's "Encyclopedia of Practical Medicine."

16. "First Report on the Etiologic Investigation of Scurvy," Sei-I-Kwai. *Med. Jour.*, Tokio, xxiv, No. 9, xxv, No. 1.



## TYPES.

The varieties of beriberi on the Isthmus differ in no way from those generally described, namely, 1, the dry, atrophic or paraplegic type; 2, the wet or dropsical type; 3, the mixed forms. It is proposed to give an outline of the symptoms of each of these varieties.

1. *The Dry, Atrophic or Paraplegic Type.*—Probably the earliest symptoms of beriberi cases is the pain felt in the epigastrium. This is often present for several months before other symptoms appear. The patient first notices a gradual loss of power in the legs, followed by atrophy of the calves of the legs, with loss of sensation over the front of the tibiae, the sides of the thighs, and very frequently of the finger tips and of areas on the arms. Manipulation of the muscles is painful. Patellar reflex and ankle clonus are usually absent. The gait in these cases is ataxic; there is marked toe-drop, causing the patient when walking to raise the foot a considerable distance above the ground and to bring it down with a characteristic flop. These patients use various sorts of devices to assist themselves in progression, and when walking with a support place as much of their weight as possible on this support. Examination of the cardiac area shows a greater or lesser degree of pericardial effusion; the heart sounds overlap each other; there is a general cardiac irritability; throbbing of the carotids and pulsating movements in the jugular vein.

2. *The Wet or Dropsical Type.*—In appearance this type differs entirely from the preceding. The face of the patient is puffy and heavy; the lips cyanosed, and the trunk and members of the body are edematous. The urine is scanty and dark colored, of high specific gravity, but in the majority of uncomplicated cases contains no albumin. The edema is firmer than that of nephritis. It may be localized and disappear from day to day. Hydrothorax and hydroperitoneum are frequently present. There is rarely any edema of the scrotum. The heart shows the same conditions as in the atrophic cases. The patellar reflexes are absent and the disturbances of sensation are the same as in the atrophic cases.

3. *The Mixed Types.*—In this type of case there is some edema, especially of the feet, about the flanks, over the buttocks and sternum and in the region of the neck. The patellar reflexes are absent; there are areas of anesthesia over the tibiae. The cardiac symptoms are the same as in the types described above. The general health of these patients is not affected. The appetite is good; the tongue clean, and unless there are complications there is no fever.

## SYMPTOMATOLOGY.

In reviewing the symptoms of beriberi, the paralysis and atrophy of the voluntary muscles do not play an important part as to the life of the patient. The real danger depends on the amount of involvement of the cardiopneumogastric innervation. Patients who are up and around one day and apparently doing well suddenly collapse and are dead the following day. This is pointed out by Manson as probably due to a chain of circumstances; to degeneration of the heart muscle following nerve destruction; to imperfect systole in consequence of an interrupted nerve supply and to obstruction to capillary circulation in consequence of vasomotor paresis in the pulmonary and in the general circulation. When the dilatation once begins, it tends to increase of its own accord; the more the heart dilates the more difficult it is for it to contract. Finally, the distension is so great that it fails to contract altogether and death is inevitable. Therefore, the prognosis in beriberi should always be

guarded, for the case that is apparently mild may suddenly develop serious symptoms.

## BERIBERI ON THE ISTHMUS.

The records of physicians who have practiced on the Isthmus for years show that beriberi was unknown here prior to the year 1887. The death registers of the French Canal Company began in January, 1881; those of the city of Panama in November, 1883. There are no records of deaths from beriberi in either of these registers prior to 1887. In that year the canal company imported a number of Chinese and African contract laborers. The first death from beriberi among the canal employés occurred in July, 1887. The first recorded death from beriberi in the city of Panama occurred in December, 1887, five months after the first death among the laborers of the French company. After its first appearance its spread on the Isthmus was rapid, especially among the poorer classes and among the colored races.

The description of beriberi given above refers to the ordinary uncomplicated cases. Almost all the cases which have come under observation in the hospitals on the Isthmus show numerous divergences from the above, due to the multiplicity of complications. A local practitioner of Panama informed me that 450 severe cases of beriberi which he treated began acutely with chills and fever. The fever was of a malarial type and responded promptly to quinin. After the fever subsided and the patients attempted to go about their usual vocations, they showed the typical symptoms of beriberi. As stated above, probably the earliest symptom of beriberi is the epigastric pain. If this is not severe, it would probably not be noticed by the patient unless his attention was afterward called to it by the physician. Hence the opinion prevailing among local practitioners that beriberi is of malarial origin. To illustrate further the complications in beriberics, it is proposed to add a series of cases, taken from the records of Ancon Hospital, giving the clinical histories and pathologic data, and showing beriberi complicated by malarial fever, ankylostomiasis, chronic nephritis of various types and locomotor ataxia.

## CASE REPORTS.

CASE 1.—G. M., of Martinique, was admitted to Ancon Hospital Jan. 6, 1906. Patient complained of pains in legs and thighs; of burning sensations in the feet; calves of legs were painful on slightest pressure; patellar reflexes were absent. Albumin was noted in the urine January 25. The patient died Jan. 30, 1906, at 4:10 a. m.

*Autopsy*—Autopsy at 8 a. m. gave the following findings:

Heart: Right heart considerably dilated. Intestinal tract: Mucosa anemic; no indication of hemorrhage; intestine contained round worms, whip worms, and *Ankylostoma americana*. Kidneys: Enlarged, soft and greatly congested. Spleen: Five times normal size; extremely firm; fibrous elements increased; stroma dark brown color; stained smears show estivo-autumnal parasites. Bone marrow: Estivo-autumnal parasites present.

Comparing the clinical with the pathologic data in this case, the former justified the diagnosis of beriberi, the latter the diagnosis of acute parenchymatous nephritis; of ankylostomiasis and of malarial fever, estivo-autumnal.

CASE 2.—J. T., Barbadian, was admitted to Ancon Hospital Jan. 22, 1906; died Jan. 22, 1906.

*Clinical Diagnosis.*—Bronchopneumonia.

*Pathologic Notes.*—All subcutaneous tissues were edematous. Right pleural cavity contained about 200 c.c. amber colored fluid; pulmonary edema marked; pericardium contained about 150 c.c. straw colored fluid. Heart was acutely dilated. Spleen five times normal size; deeply pigmented stroma, with miliary patches scattered uniformly throughout. Smear showed many



pigmented malarial parasites of the estivo-autumnal type. Kidneys acutely congested. Intestinal tract: Ankylostoma and round worms.

*Pathologic Diagnosis.*—Acute beriberi, estivo-autumnal and malarial fever, and ankylostomiasis.

In this case the clinical symptoms justified the diagnosis of bronchopneumonia; the pathologic, the diagnosis of acute beriberi, malarial fever and ankylostomiasis.

CASE 3.—F. H., Panaman, aged 23, was admitted to Ancon Hospital Nov. 14, 1905; died Nov. 15, 1905, 8:30 p. m.

*Clinical Notes.*—Illness began with pain in stomach and weakness in legs; patient was unable to walk; there was numbness of legs and hands; ankles were swollen; there was tenderness over tibiae and thighs; abdomen was tender; morning temperature, 98; evening temperature, 100; pulse, 100 to 124; respiration, 24; ankylostoma ova present.

*Pathologic Notes.*—Left pleural cavity contained 100 c.c. of fluid; pericardium 50 c.c. of fluid. Kidneys were congested. Intestines: In mid-portion of small intestine were many *Uncinaria americana*, both male and female; duodenum, stomach and remainder of intestinal tract normal. Spleen: Small number of pigmented malarial parasites.

This represents an almost uncomplicated case of beriberi of the dropsical type. The evening temperature of this patient was probably due to the ankylostomiasis, as there were no malarial parasites demonstrable in the peripheral circulation.

CASE 4.—Ancon Hospital. Patient showed patellar reflexes absent; marked pain in the calves of the legs on pressure; general anasarca.

*Pathologic Notes.*—Hydropericardium; hydrothorax and chronic nephritis.

CASE 5.—W. J., aged 54, Jamaican, on isthmus 20 years, was admitted to Ancon Hospital March 2, 1905; died March 26, 1905. Patient first noticed swelling of feet, which increased rapidly, extending up the legs; there was considerable amount of pain in calves of legs and knees; patient complained of shortness of breath in walking; temperature normal; pulse, 136; respirations, 28 to 36.

*Pathologic Notes.*—Peritoneal cavity contained about 200 c.c. amber colored fluid; pericardial cavity 60 c.c. amber colored fluid. Kidneys: Right kidney, weight 2 ounces; cortex, 7 m.m.; pyramids pale; capsule stripped with difficulty in places; right kidney as above.

*Pathologic Diagnosis.*—Chronic diffuse nephritis.

CASE 6.—A. G., Colombian, colored, was admitted to Ancon Hospital Jan. 31, 1905; died Feb. 10, 1905. Illness began one and one-half months prior to admission, with swelling in the feet; there was pain in the muscles of the extremities, difficulty in walking, and dyspnea.

*Examination.*—Edema of the ankles and feet; apex-beat diffuse; epigastric pulsation with double mitral murmur; pulse 130; great muscular weakness, especially in legs; wasting of calves of legs and thighs; hand grasp weakened; gait ataxic; patient raised legs with difficulty; there was pain on deep pressure of the calves; knee jerk was diminished; there were no anesthetic areas. Urine showed large quantities of albumin; examination of stools showed the presence of ankylostoma.

*Diagnosis.*—Beriberi and chronic interstitial nephritis.

*Pathologic Notes.*—Left kidney was very small; capsule adherent in strips; cortex very thin; minute hemorrhage in pelvis; right kidney one-half normal size and same as above. Heart greatly dilated. Stomach, mucosa showed minute pin point hemorrhages; also the first eight inches of duodenum showed marked injection and numerous pin-head elevations, whitish in color. Pin-point hemorrhages were very numerous.

CASE 7.—J. E., aged 46, American, had used alcohol in considerable amounts for a number of years; he denied venereal history. One month ago patient noticed swelling of ankles. This was followed by loss of power in the legs and irritability of the heart when walking rapidly.

*Examination.*—Patellar reflexes were absent; ankle clonus was absent; there was pain in calves of legs on pressure; slight anesthesia over tibiae; Romberg symptom was positive;

slight incoördination in movements; Argyll-Robertson symptom was negative.

Cases of this character are very often misleading and it is difficult to make diagnoses between incipient locomotor ataxia and beriberi. It is believed, however, that the absence of the Argyll-Robertson pupil would justify the diagnosis of beriberi, which was made in this case. The subsequent history has confirmed the diagnosis of beriberi.

In autopsies which show symptoms of beriberi and of ankylostomiasis, examination of the intestines very often shows in the duodenum around the worm a large red patch about 4 cm. in diameter. This is superficial and might tend to give one an idea of some pathologic condition due to disease and not to the presence of the worm.

In several deaths from acute beriberi the mucous membrane of the stomach and the upper part of the small intestine was found hyperemic and at some places hemorrhagic. One postmortem showed innumerable white spots, the size of a pinhead, scattered over the mucous surface of the duodenum.

#### TREATMENT.

As the majority of beriberi cases originate in damp, ill-ventilated and overcrowded habitations, the first essential in the treatment is removal from the probable source of infection. Patients should be placed in a dry locality in well-ventilated rooms. It is customary in Panama to send such patients as can afford the expense to the Island of Taboga. The climate of this island, situated 12 miles from Panama in the Bay of Panama, has long been noted for the beneficial results to patients who have had attacks of beriberi and malarial fever. Patients should be well fed, and bulky articles of diet should be eliminated. The medicinal treatment is entirely symptomatic. Digitalis and strophanthus for the heart, with general tonics and massage and electricity are indicated.

#### ANALYSIS OF CASES.

In examining the records of cases treated in Isthmian Canal hospitals, 112 cases of beriberi are tabulated. Of this number, 106 patients were males and 6 females. There were 14 deaths among those treated. The admissions to hospital occurred as follows:

1904.		1905.	
September .....	1	June .....	9
October .....	2	July .....	7
November .....	0	August .....	8
December .....	2	September .....	5
1905.		October .....	1
January .....	7	November .....	21
February .....	7	December .....	14
March .....	6	1906.	
April .....	5	January .....	9
May .....	4	February .....	4

Ages at admission ranged as follows:

10 to 20 .....	16	50 to 60 .....	8
20 to 30 .....	45	60 to 70 .....	4
30 to 40 .....	24	Not stated .....	4
40 to 50 .....	11		

The sources of admission were as follows:

City of Panama and vicinity.	77	Pedro Miguel .....	2
City of Colon and vicinity.	14	Gorgona .....	1
Culebra .....	9	Paraiso .....	1
Matachin .....	2	Bohio .....	1
Empire .....	3	Bas Obispo .....	2

The length of time on the Isthmus outside of the cities of Colon and Panama was as follows:

From Culebra: Five patients had been on the Isthmus upward of ten years. The remaining four had been on the Isthmus, respectively, one month, two months, and two about five months each.

The Matachin patients, upward of thirty years.  
The Empire patients, five months, one and one-half months and two months.

The Pedro Miguel patients, one seven years, the other four months.

The Bas Obispo patients, one sixteen years and one six months.  
The Gorgona, Paraiso and Bohio patients, unknown.



Of the above 112 cases treated in the Isthmian Canal Commission hospitals, 64 patients were employés of the Isthmian Canal Commission. Among these 64 there were 10 deaths. The morbidity was greatest in the month of November, 1905, when with a total of 22,000 laborers there were 15 admissions to hospital, giving a morbidity rate of slightly more than 8 per 1,000 per annum. The mortality rate among commission employés was greatest in the month of June, 1905. In this month there were 10,500 laborers on the rolls. Five beriberi patients were admitted to the hospital, of whom 2 died, giving a mortality rate of 2.3 per 1,000 per annum. The reader is referred to the accompanying chart, giving

more than 1/10 that of beriberi. To sum up, the highest death rate from beriberi under the Isthmian Canal Commission has been 2.3 per 1,000 per annum, and under the French company 54 per 1,000 per annum.

Deaths from beriberi in the Isthmian Canal Commission by nationality:

Colombia	18	France	2
Dominica	1	Barbadoes	3
Panama	14	Martinique	6
Jamaica	7	Guadaloupe	1
Africa	1	British Honduras	1
Spain	1	Germany	1
St. Lucia	1	Fortune Island	1
Mexico	3		
Costa Rica	1	Total	64
Grenada	1		

Deaths from beriberi in the French company by nationality:

China	65	America	1
Africa	127	England	2
West Indies	25	France	2
Colombia	7	Belgium	1
Cuba	1		
		Total	231

#### BERIBERI IN THE CITY OF PANAMA.

As stated before, the first death from beriberi in the city of Panama of which there is record occurred in December, 1887. Since that time there has been no year in which there have not been deaths from this cause. For the past 8 years, however, there has been a decided increase in the number of deaths. It is impossible to compare the mortality rate with the morbidity rate, as these cases have heretofore not been reported. The highest mortality rate occurs with great regularity in the last 3 months of each year, namely, October, November and December. Beginning with the year 1899 the mortality rate has risen from 4.5 per 1,000 per annum to 5 in 1900, 7 in 1902 and 11 in 1903. It dropped to 8.5 in 1904 and again rose to 11 per 1,000 per annum in 1905. There were 559 deaths from beriberi reported in Panama from 1887 to 1905, inclusive, distributed by nationality as follows:

China	114	Chile	1
West Indies	36	Venezuela	1
Colombia (Panama)	368	Nicaragua	1
Mexico	9	Cuba	1
Ecuador	5	America	3
Peru	4	France	3
Costa Rica	4	Spain	2
Salvador	3	Italy	1
Guatemala	2	Sweden	1

As an example of place infection of beriberi in Panama, the Bovedas prison may be cited. The ground floor of this building has been used as a prison for many years. It is built of stone, is poorly ventilated and at times overcrowded. The cases originating in this prison by months are as follows:

#### BERIBERI IN BOVEDAS PRISON.

Year.	Month.	No. of cases.	No. of prisoners.
1904	April	1	Not known.
	May	0	6
	June	0	23
	July	1	31
	August	1	47
	September	2	53
	October	2	58
	November	2	59
	December	2	77
1905	January	0	67
	February	0	63
	March	3	45
	April	0	49
	May	1	51
	June	4	47
	July	3	67
	August	3	68
	September	1	65
	October	3	59
	November	3	56
	December	0	69
1906	January	0	75
	February	0	75
	March	0	69

Late in October, 1905, the prisoners were transferred

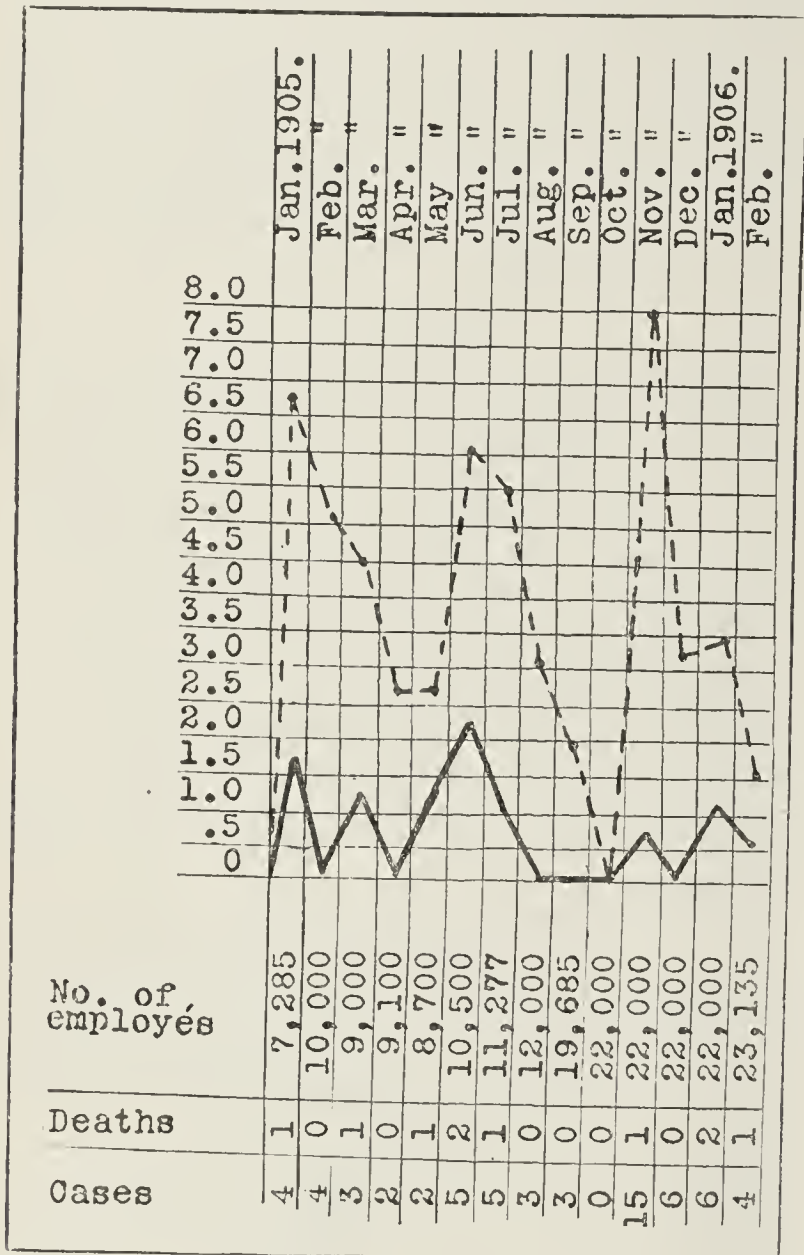


Chart showing morbidity and mortality rate from beriberi among employés of the Isthmian Canal Commission and the Panama Railroad from January, 1905, to February, 1906, inclusive. Solid line shows death rate per 1,000 per annum. Broken line shows morbidity rate per 1,000 per annum.

the morbidity rate and death curves for employés of the Isthmian Canal Commission from January, 1905, to February, 1906, inclusive.

In looking over the records of the French Canal Company it is impossible to find the morbidity rate for beriberi. The mortality rate for the French company in November, 1887, was 22½ per 1,000 per annum. Deaths from beriberi were very rare among the employés of the French company during the years 1890, 1891, 1892, 1893, 1894, 1895 and 1896. In 1897, however, the death rate rose to the alarming figures of 54 per 1,000 per annum. This occurred in the month of May. Comparing this with the mortality rate for yellow fever among the employés of the French company, we find that their highest mortality rate from the latter disease was in 1882, and reached 5.8 per 1,000 per annum, or slightly



from the prison proper into another portion of the same building, with conditions practically the same as before. Reference to the table above shows that after the first month there were no new cases.

The question naturally arises that with the presence of beriberi in Panama, and the appearance of sporadic cases in the Zone, what are the chances of an outbreak of this disease among the laborers of the commission, the same as occurred under the French régime? It is believed that the improved sanitary conditions, better habitations, the feeding of the laborers by the commission, this insuring a better dietary, and our increased knowledge of the management of tropical disease, will all tend to render an outbreak of this disease improbable.<sup>1</sup>

## AN OPERATIVE METHOD FOR THE REDUCTION OF HYPERTROPHY OF THE INFERIOR TURBINATE

OTHER THAN BY CAUTERIZATION OR EXSECTION.\*

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If the methods of treatment now in vogue for the reduction of hypertrophy or hyperplasia of the inferior turbinate were wholly free from objectionable features it were then, indeed, superfluous to write aught concerning it. As it is there are so many, and so serious, objections to each method now commonly employed that it may not be misconstrued if an effort be made to advance some suggestion for its relief other than those generally accepted.

Any treatment which primarily gives temporary relief, but whose secondary effects are hurtful, worse, indeed, than the original disease which it is sought to relieve, must be relegated to the rear as soon as another method is brought forward whose primary effect is fully that desired, permanent in nature and followed by no secondary effect whatever except that which is beneficial. If it can be proven that such result is attainable without any extraordinary instrumentation, without violence to the patient, while preserving important functioning tissue now often sacrificed in part or *in toto*, then the writing of another page on so hackneyed a subject is fully justified.

Before a body of rhinologists it is unnecessary to rehearse the several well-known and accepted functions of the nose. In view, however, of the fact that collapse of the alæ nasi so often follows the destruction of the inferior turbinate whether by cautery or by exsection, there must be some physical explanation of the agency by which the patency of the vestibule is maintained. If it were muscular action alone that keeps open the vestibule, then the removal of the inferior turbinate would have no injurious action whatever on it, for there is not any connection that I am aware between the inferior turbinate and the muscles of the alæ.

It is generally conceded that the compressors and dilators of the nasi are very seldom under voluntary control, that they are practically useless structures, unless by patient, long-continued practice they are brought under control of the will, and then only if the inferior turbinate is present. I have followed up this observation as closely as it was possible for me to do and I have never seen a case in which the patient whose turbin-

ates were absent learned after their loss to control the alæ nasi muscles. It is obvious, then, that muscle action has little, if anything, to do with this condition of the vestibule. That the inferior turbinate subserves an important purpose is established by the fact that collapse never occurs when it is present and almost invariably follows its removal.

To be liberal in judgment, it would be well to ascribe the duty of maintaining the patency of the vestibule to the conjoined action of the muscles of the alæ nasi together with the inferior turbinate, the greater influence by far being exerted by the latter structure.

It may be asked why so much importance is urged for this subject. It is because of the lamentable condition, mental and physical, of the victim of total collapse of the alæ nasi, also because a full appreciation of the part the inferior turbinate plays would probably cause a modification of the methods employed for the reduction of its enlargement.

### METHODS IN VOGUE.

Thus there are presented for consideration the methods now in practice for the reduction of the hypertrophy or hyperplasia of the inferior turbinate and the question if there be any other way to attain this end.

Cauterization of the enlarged inferior turbinate with chemical caustics is the oldest and perhaps the most generally used. When the electrocautery was first introduced it was adopted with universal enthusiasm; when the street current was adapted to office use it received fresh impetus, and specialist and general practitioner alike attacked everything within the nasal cavity that appeared the least swollen. Nostrils were cauterized until only the cicatricial tissue and the bones were left, the beautiful, moist, velvety red mucous membrane was converted into a white, dry and functionless tissue and untold misery followed this indiscriminate burning.

Now the reaction has fully set in, the indications and contraindications are better understood and more intelligence is used in the employment of this potent agent, while the diffusion of its limitations has caused the general practitioner to fear to employ it with his wonted liberality.

In reality the field of usefulness of the caustics is very limited, as is the frequency and extent of their application. Their full effect can be measured only after the lapse of an indefinite interval, and then this effect, whether injurious or beneficent, is permanent and progressive; should it be hurtful then it is beyond remedy or our power to allay. Better in this connection than to quote the results of the histologic examination made by Dr. J. L. Goodale<sup>1</sup> of Boston can not be done. Dr. Goodale made examinations in a series of cases in which the patients had been previously cauterized for hypertrophy of the inferior turbinate and who had returned later with recurrence of nasal obstruction. Briefly abstracted, his findings are as follows: Caustic applications cause loss of columnar ciliated epithelium with replacement by cells of the squamous type; they may cause obliteration of canaliculi in basement membrane with formation of connective whose depth depends on the intensity of the cauterization. Contraction of this connective tissue constricts the lumen of the ducts of the glands, leading later on to cystic dilatation, thus explaining the recurrence of the obstruction. It follows that repeated applications become progressively less effective.

1. I am indebted to Dr. Samuel T. Darling, pathologist, Ancon Hospital, for valuable pathologic data.

\* Presented as candidate's thesis, American Laryngological, Rhinological and Otological Society.

1. Boston Med. and Surg. Jour., 1904, Dec. 29.



We know, too, that the same injurious effects result from the electrocautery. Its action is more profound than that of the strongest chemical caustic. Its action can not by any known means be in any way limited or controlled; hence one may get an effect deep and destructive when only a superficial effect was desired and *vice versa*, or it may progress, defying every effort to control it until actual atrophy results. When a submucous cauterization is done, its action is not only highly intensified, but the ultimate result will be all the more uncertain. It is easy to draw a picture by secondary deduction from this pathologic sequel to cauterization. Thus the destruction of the ciliated epithelium loses to the tissues their ciliary function; the formation and contraction of connective tissue, closing ducts and blood vessels, prevents proper radiation of moisture and heat to the inspired air, at the same time the cystic degeneration of the glands thus cut off from duty later on cause recurrence of nasal obstruction. Loss of function and blood supply entails loss of materials for the regeneration of the injured tissues, and this failure of recovery of the structural bases of the tissue, added to progressive contraction of the new formed connective tissue, gives at the end advancing atrophy.

Notwithstanding all that has been said against it, cauterization has its field of usefulness. When, for instance, there is an excessive, long-continued discharge and the swollen tissue shrinks completely under the influence of cocain and adrenalin; or there exists a rapidly alternating nasal occlusion, especially at night when in bed; when the nasal membranes seem only slightly swollen, when the pathologic condition appears insufficient to give rise to symptoms so distressing, yet the relaxation of the tissues when in the recumbent position is complete and the obstruction troublesome. It is then that cauterization with one of the chemical caustics is indicated. These cases respond quickly and satisfactorily to a moderate caustic treatment when applied by one skilled in its technic. If the reduction is insufficient after one or at most two cauterizations then another method should be considered.

Concerning the electrocautery it would be, indeed, a consummation to be desired if we could all agree with Grayson, who after a severe but well-merited stricture on the use of the electrocautery thus concludes:

They are luxuries, not necessities, and the longer one pursues his work without them the more likely and able will he be to dispense with them altogether.

That this sentence is not too severe will be conceded by almost anyone who has observed his cases for several—eight or ten—years, who having seen following even after the most careful application progressive contraction and ultimately atrophy must conclude that this agent is too uncertain, too uncontrollable and too severe for the delicate nasal mucous membrane.

That the removal of a portion of the inferior turbinate is at times necessary can not be denied, but that its total ablation is ever justified can not be admitted. Time was when this complete ablation was frequently done, perhaps because it was so easily done, with such simple instruments and because it gave for a time the desired result, viz., a widely open nostril.

Turbinectomy removes a large area of physiologically active tissue and destroys the arch of the inferior turbinate which gives direction to the inspired air current. The mucus secreted is insufficient in quantity to moisten properly the inspired air, the blood supply is insufficient in amount to give the warmth that is so essential to pre-

serve the integrity of the mucous lining of the respiratory tract. Filtration of the air current is impossible. Subsequent contraction aggravates this condition. To a genuine atrophic rhinitis is only one step. Later on in many cases collapse of the *alæ nasi* occurs, adding to the already existing distress the greater evil of absolute nasal occlusion, especially at a time when nasal respiration is most necessary, viz., in sleep and *per contra* when exercising. This latter condition is so distressing and has been often observed, yet has received no mention by any author to whom I have had access save in the last edition, the fifth, of Lennox Browne. On page 789, in concluding the treatment of hypertrophic rhinitis, he says:

In some cases of hypertrophic rhinitis as well as in many cases of polypi collapse of the nostrils remains as a more or less permanent cause of trouble after the original malady has been removed. If unremedied all of the former symptoms are liable to recur.

This, so far as it goes, is very good, but one could wish that he had given the physical explanation for so undesirable an occurrence. In my experience collapse has not followed removal of polypi, nor has it ever been seen so long as the inferior turbinate has not been removed. Therefore, it must be supposed that the presence of the inferior turbinate in some way insures the stability of the intranasal air pressure at a sufficient pressure to maintain a patent vestibule. Some time after the complete removal of the inferior turbinate, in one case it developed as early as three months, the *alæ* begin to collapse. It is noticeable when breathing quickly, as when exercising or in taking deep inhalations, when the flaccid wings collapse, falling in on the septum, completely closing the vestibule like valves, purposely so placed.

The probable explanation of this is that the air within the nostril is evacuated before that from without can gain admittance, resulting in a loss of equilibrium, allowing the greater external pressure to force the flaccid *alæ nasi* against the septum. There occurs here what takes place when the air in the middle ear is exhausted and when it can not be quickly renewed, viz., collapse of the ear drum against the promontory. Collapse of the wings is seldom seen in cases of atrophy, for here the process is so gradual that ample time is given for gaining compensatory muscle action.

This condition of collapse is far worse than the obstruction caused by hypertrophy of the inferior turbinate. In the latter condition there are times when some air can be gotten through the nasal cavities, viz., when the air is dry or when exercising. These momentary *aëra*tions serve to ventilate the accessory sinuses, the Eustachian tubes and to keep the mucous glands somewhat active. There are moments of relief. With collapse, however, the occlusion is complete and permanent, with the entire train of symptoms following in its wake; insufficient *aëra*tion of the accessory sinuses with the well-known dangers entailed thereby. The middle-ear catarrh with its tinnitus and its deafness, for which turbinectomy is often done, is undoubtedly aggravated by the absence of any ventilation. In fact, cases have been seen in which the progress to a practical total deafness was noticeably hastened. Also the same mental symptoms of *aproxia* have been observed in this condition as in that attendant on occlusion from intranasal hypertrophy. Mouth breathing, with its almost interminable train of distress and associated with the collapsed *alæ*, so alters the facial expression as to make it appear unnaturally narrow, drawn and pinched, while the voice is usually much changed in tone.



## AUTHOR'S METHOD.

Working in view of this importance of preserving these several functions of the inferior turbinate intact, I have for the past six years done an operation simple in itself, but most efficacious in result and permanent in character, with no hurtful sequelæ to mark its performance or mar its record. Only very recently has anything similar been proposed, so far as my reading has informed me. The operation consists in one or more incisions through the mucous membrane of the hypertrophic turbinate well down to the bone, when with a broad nasal saw the bone is cut into to a depth depending on the nature of the bone, whether cancellous or vitreous, which is easily detected by the sensation imparted to the hand. If the bone be hypertrophied and dense the cut is carried well down into its substance. The nostril is next cleansed, the edges of the incised mucous membrane are carefully packed into the osseous cut which, as above indicated has been purposely made with a broad saw to admit of the introduction of the overlapping edges of the soft parts. This adjustment of the tissues is maintained by a carefully placed pledget of cotton saturated in a solution of equal parts of compound tincture of benzoin and flexible collodion. This dressing may remain *in situ* for two or three days when after careful soaking it is as carefully removed. The edges of the incision should not be disturbed when the cotton is removed, else the object of the operation will be defeated. Rarely will repacking be necessary. The direction of the incision will depend on the nature of the enlargement; it may be made from above downward, at the most dependent part of the turbinate upward, or, as is most usually necessary, directly into the body from within outward. It will be found that following this operation much absorption will occur, so that in the course of a short time the nostril will be sufficient for the full performance of its physiologic function.

I have tried the deep incision alone as has been somewhat recently advised, also the removal of a V-shaped section of the mucous membrane side by side with the method I had for so long employed, but it seemed to me that better result was obtained when both the mucous membrane and the bone were included in the incision. The furrow in the bone supplies a base for the attachment of the incised membrane, the firmness of the adhesion preventing the sudden distension so common and troublesome in these hypertrophic conditions.

In conclusion, the advantages of a procedure of this kind over cauterization with either chemicals or electrocautery, as well as the partial or complete turbinectomy, are:

1. Preservation of physiologically active tissues.
2. Freedom from disagreeable reaction or complications.
3. Absence of shock, since but slight local anesthesia is necessary.
4. Freedom from aggravation of existent disease in related cavities.
5. Ease and speed in performance, the instruments used being few and simple.

**Medical Organization.**—Complete organization of the medical profession, wisely guided and administered, will mean for the people better educated and trained physicians; better and more wisely administered public health and sanitary measures; more careful attention to the protection and the saving of human life.—Philip Mills Jones, M.D., in the *Bull. of Am. Acad. of Med.*

## CELLULITIS AND MYOSITIS OF THE ABDOMINAL WALL, SIMULATING INTRA-ABDOMINAL CONDITIONS.

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The cases which follow illustrate very well how closely conditions of the muscular layers of the abdominal wall, accompanied by symptoms most commonly referable to processes inside the abdomen, may be mistaken for the last named conditions.

## CASE REPORTS.

**CASE 1.**—S. S., aged 18, was admitted to the New York Hospital, Dr. Bolton's service, July 21, 1903, complaining of pain on the right side of the abdomen.

**History.**—Family history negative; past history negative; appetite good; bowels always regular.

**Present Illness.**—One evening, eight days before admission, the patient ate a large quantity of peanuts, cakes, candy and other Coney Island delicacies. The next morning he awoke with pain in his abdomen. At first the pain was diffuse, but later became localized on the lower right side of the abdomen. It was cramp-like in character, the cramps coming in paroxysms. The pain then disappeared for about three days, and the patient was up and about with only a dull ache in the right side. On the fourth day it returned with greater severity and remained localized on the lower right side, which gradually grew tender to the touch. At the onset the patient vomited, and he has vomited at intervals since, but at no time has the vomiting been distressing. The bowels were constipated, but have moved freely by medication. He has had fever, but no definite chill.

**Physical Examination.**—The patient was evidently in considerable pain. The face was flushed, pulse twenty-six to the quarter, good volume, regular in force and rhythm, temperature, 103.6 F. The heart and lungs were normal. The abdomen was slightly distended. The respiratory movements were limited above the navel and absent below it. On palpation the abdomen was everywhere slightly tender. In the right iliac region there was a hard, readily defined mass, extending from the anterior border of the rectus well into the flank and from the level of a line drawn through the navel down to within one inch of Poupart's ligament. This mass was extremely tender, the slightest pressure causing the patient to wince with pain. In this area there was also marked muscular rigidity. Very gentle percussion over the mass elicited a tympanitic sound. Hernial rings and genitalia were normal, and the rectal examination was negative. The leucocytes were 16,000.

The case was diagnosed as acute appendicitis with the formation of an abscess, and the patient was prepared for immediate operation.

**Operation.**—An incision 10 cm. long was made over the center of the palpable mass down through the external oblique where a small quantity of serosanguineous, slightly purulent serum was found on the internal oblique muscle which was edematous and rather markedly indurated. On cutting through it considerable edema and induration was found in the subperitoneal tissue, and the peritoneum itself seemed swollen and edematous. The peritoneal cavity was then opened and the intestines, cecum and appendix found to be uninflamed. As the appendix was a very long one, it was removed. The peritoneum was then carefully closed. The muscular and fascial layers were loosely approximated, a drain was inserted in each angle of the wound down to the peritoneum, and the skin closed loosely with silk.

**Subsequent History.**—The wound discharged a reddish grumous material composed of pus cells and shreds of muscle for about 12 days and the skin wound broke open, the sutures cutting through the skin. This discharge then gradually ceased and the wound rapidly granulated, healing in about four weeks from the time of the operation. The pain disappeared on the second day following the operation. The temperature ranged from 101 to 103 until suppuration ceased and then dropped to normal. The patient's recovery was uneventful.



When he was discharged from the hospital there was no induration nor tenderness in the region of the previously defined mass, and the abdominal wall seemed solid. A culture taken at the time of the operation yielded a pure culture of the *Staphylococcus pyogenes aureus*.

CASE 2.—J. S., aged 19, was admitted to Dr. Bolton's service at the New York Hospital, Aug. 11, 1903, complaining of pain in the lower left side of the abdomen.

*History.*—Family history was negative; past history was negative except for a little pain occasionally felt in the hypogastrium at the end of micturition. There was no hematuria, increased frequency, etc., and patient denied venereal disease.

*Present Illness.*—About four weeks before admission the patient had severe cramp-like pains over the whole lower abdomen, which later became localized in the lower left quadrant and remained dull and aching in character. With these pains he had no chill, nor fever. In a few days he was able to be about again with no other symptoms than an occasional dull ache in the lower left abdomen. Four days ago, however, he was again seized with severe cramp-like pains over the entire abdomen, which later became localized to the left lower quadrant; felt very sick; had a slight chill and was told by his doctor that his temperature was 104 F. This pain also subsided gradually into a dull ache, localized on the left side. He had slight nausea during the last attack, with headache, and a bad taste in his mouth, but no vomiting. The appetite had been good and the bowels regular. There was no pain on defecation and no blood or mucus was noticed in the stools. There were no urinary symptoms other than the slight pain in the hypogastrium at the end of micturition (v.s) which was no worse during the attacks of abdominal pain. There was no pain, nor swelling of testicles; no lameness nor pain in the back or hip, and no pain on walking or standing. The patient thought that the dull ache on the left side was slightly more marked during the process of assuming the erect posture after bending forward. He had had no night sweats and was not sure, but thought, he had lost some weight and strength.

*Physical Examination.*—The patient was well nourished, the tongue was clean; pulse was 25 to the quarter, of good volume and regular in force and rhythm; temperature, 100 F.; heart and lungs were negative; the abdomen was scaphoid; the respiratory movements were well marked throughout. On palpation the abdomen was soft and nowhere tender except over a small hard mass just outside the border of the left rectus muscle and between it and the anterior superior iliac spine and located about half way above and below a line drawn across the abdomen through the anterior superior iliac spines. This mass was somewhat tender, hard and apparently attached to the abdominal wall. There was no local redness, swelling, nor pitting of the skin, and no palpable local increase in surface temperature. Deep palpation elicited nothing but increased local pain. The genitalia were negative. The rectal examination was negative and a catheterized specimen of urine was entirely negative. Thorough examination of the spine, left hip joint and the left ilium yielded no signs of disease in those localities.

The diagnosis was not clear, but wavered between an intra-abdominal condition and a process local to the abdominal wall. Operation was proposed and accepted.

*Operation.*—An incision four and one-half inches long was made parallel to Poupart's ligament and about three-quarters of an inch above the anterior superior spine through the center of the palpable mass down to the external oblique, which was found to be edematous and grayish white in color. On incising the external oblique parallel to its fibers a small quantity of serum gushed out and the internal oblique was found to be edematous also, hard and indurated, and of the same color as the external oblique. The internal oblique was cut, and palpation revealed no intraperitoneal mass; so the peritoneum was not opened. A piece of muscle was then removed for examination and a culture was taken. The wound was loosely closed and freely drained from both angles.

*Postoperative History.*—For about 10 days the wound discharged a serosanguineous exudate, which never became purulent, and then began to heal rapidly. The urine was negative throughout, and the stools were normal. The temperature

ranged from 99 to 101 F., until the discharge ceased, and then fell to normal.

When discharged from the hospital, there was no induration except that immediately along the line of the scar; and nothing could be felt in the region of the previously described mass. Nor did the patient feel any pain.

The culture made at the time of the operation was unfortunately lost. Sections of the piece of muscle removed showed a chronic interstitial myositis with hyaline degeneration of the muscle fibers, edema of the intramuscular connective tissue and a well-marked infiltration by small round cells and leucocytes.

In the first case the indiscretion in diet; the onset of general abdominal pain with vomiting and constipation; the pain at first general and later becoming localized on the right side, its subsidence after free catharsis and its subsequent return with greater severity and more definite localization on the right side; the coated tongue; fever and rapid pulse; the tender hard mass in the region of the appendix, and the increase in the number of leucocytes: all seemed to point definitely to some acute involvement of that organ. On retrospection after operation the only factors (local redness, heat, swelling and edema) which might have helped in diagnosis, were not present in a degree sufficiently marked to be noted in the examination. The only fact which seemed noteworthy was the very marked degree of local tenderness immediately over the mass proper, a condition, however, not at all incompatible with an acute inflammation in the appendix leading to abscess formation.

In the second case the localization of the pain on the left side, with practically no other features than the slightly increased amount of pain while assuming the erect posture and the increased pain on deep pressure, rendered less liable so radical an error as in the first instance. In this case local heat, redness and edema were looked for definitely and were not found, and retrospection after operation gave no additional data which would prevent an error in diagnosis in a subsequent case of a similar nature. Both cases were similar in the history of their onset and the absence of any explainable etiologic factor. They differed slightly in their subsequent course, Case 1 being the more acute and simulating very closely indeed the features of an appendicular abscess, while Case 2 was more chronic with a quiescent period of a little over three weeks before any acute symptoms returned and presented the features of a more or less chronic condition with acute exacerbations.

#### REVIEW OF LITERATURE.

The literature on conditions of this character is, as far as I could find, rather meager. Fouque<sup>1</sup> describes a case of phlegmon of the aponeurotic and muscular layers of the abdominal wall in a male, aged 57, in which the etiology was not known, but the patient was ill with what appeared to be a grave typhoid until local redness, tumefaction, and swelling appeared in the lower half of the abdomen. This was incised and the pus evacuated, following which the recovery of the patient was uneventful.

Sonnenberg<sup>2</sup> mentions the case of a boy, aged 17, who, while in apparently good health, was seized with severe pain in the right lower abdomen. This gradually subsided but, eight days later, while at stool, he was again seized with sharp abdominal pain and sent to the hospital with a diagnosis of perityphlitis. His temperature was 38.9 C. On the next day the temperature fell to normal and the pulse remained good. The abdomen was

1. Gaz. d. Hôp., Paris, 1884, livi, p. 315.

2. Berlin. klin. Wochschr., xxiv, 1897, p. 810.



soft except for a large hard mass just below the costal margin extending from the right anterior border of the rectus muscle into the flank and separated from the liver dulness by an area of tympany in the nipple line, but continuous with it in the anterior axillary line. At the operation an abscess, the size of a hen's egg, which discharged yellowish-white sterile pus and contained broken down fat and muscle, was found between the external and internal oblique muscles. The surrounding muscle was hard and indurated. The peritoneum was apparently uninvolved and soft, and there was no underlying mass or resistance. Examination of a piece of muscle removed at the operation showed the pathologic features of a chronic interstitial myositis. The patient's recovery was uneventful. The revised diagnosis was chronic interstitial myositis of the external and internal oblique muscles.

Spellissy,<sup>3</sup> in an article devoted to conditions mistaken for appendicitis, quotes the above case of Sonnenberg and a second case (his Case 7) as follows:

J. A. Hopkins in the *New England Medical Monthly*, April, 1900, reports the case of a woman whose past history was not stated and whose symptoms suggested appendicitis. She exhibited pain in the right iliac fossa and suffered from local pain and tenderness. The possibility of appendicitis was kept in mind, but the diagnosis of an abscess of the abdominal wall was made. She was treated expectantly with poultices and the sequel proved that the abscess was limited to the abdominal wall.

Hiller<sup>4</sup> mentions the case of a woman, aged 23, with a tuberculous family history, who complained of occasional pain in the region of the gall bladder for three and a half years. For the past two months the pain had been more severe and there had been an intermittent sense of pressure in the gall-bladder region lasting for a day at a time. During this period of pain the patient had also noticed a tumor in that region which had gradually grown larger. On examination a smooth, somewhat movable, easily palpable tumor, the size of a goose egg, was felt in the gall-bladder region, two fingers' breadth below the costal margin, which seemed to have a thin pedicle leading up under the costal margin and which did not seem to be adherent to the abdominal walls. Operation was done for cholecystitis, but an abscess was found involving the right rectus muscle and infiltrating the adjacent muscles which discharged a thick, greenish pus containing caseous masses and in whose wall there were numerous tubercles. No connection between the abscess and the peritoneum or ribs could be found.

Allison<sup>5</sup> reports a case of tuberculous abscess of the abdominal wall simulating malignant disease of the transverse colon in a colored girl, aged 16, with a tuberculous family history, who eight months before admission to the hospital noticed a tender spot in the abdomen about the navel, when she stooped over the washtub. From that time on the abdomen began to increase in size and sharp pain from time to time shot through it. On examination the patient was quite anemic. There was a tenderness about the navel and for a considerable distance on each side of and below it and a swelling which in its outline resembled an omental or colic malignant growth. At the operation a tuberculous abscess was found between the rectus sheath and the peritoneum which extended from the navel downward and about four inches to each side of the median line. Following a long convalescence, the patient was discharged, well.

In conclusion, I express my thanks to Dr. P. R. Bolton for permission to report the two cases from his service at the New York Hospital.

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## SOME TROPICAL CUTANEOUS ULCERATIVE CONDITIONS.\*

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Under the term tropical ulcers so many types of cutaneous lesions may be included that it will be necessary at the outset to limit my remarks to certain forms of ulcerative process. It seems wisest, therefore, to exclude such forms of disease as tuberculosis, syphilis, yaws and leprosy. I shall confine myself to those described under the names "oriental sores," "tropical phagedena" and "veld sores," and dismiss those which have been less thoroughly discussed with a mere mention.

In studying tropical ulcers we must bear in mind that, under whatever title the processes have been described, there is so great a confusion of opinion with regard to etiology and clinical course and so meager a knowledge of histology that satisfactory classification is well-nigh impossible. This I have endeavored to take into consideration, and have chosen from among the bibliographic materials at my disposal those in which the descriptions are most uniform.

### ORIENTAL SORE.

Since the first mention of this condition by Russell in 1756, many other men have written of it, and considerable literature has accumulated on the subject. Some of this material is valuable, much is not. First observed in Aleppo, from which city it took the name "Aleppo boil," it has since been studied in Morocco, Algiers, Tunis, Tripoli, Egypt, Crete, Cyprus, Asia Minor, Syria, Mesopotamia, Persia, the Caucasus, Turkestan, Afghanistan, Beluchistan, and India. In many of these districts it has acquired different names, usually that of the place at which it is most frequently seen. Thus it has been called the "Aleppo boil," "Delhi sore," "Biskra button," "Sahara chancre," "Afghan plague," "Tashkent ulcer," and so on. It has also taken other names, some descriptive of the lesions, others referring to their duration, while still others, such as the term tropical or oriental sores, are purely general. The latter, because of our present incomplete knowledge of the causation, are most appropriate.

Following Wright's definition, the disease consists of single or multiple focal lesions of the skin, characterized by the formation of elevated, indurated areas, which ulcerate and eventually cicatrize. It is infectious and autoinoculable. Histologically such lesions are characterized by cellular infiltration of the corium and subcutaneous tissue, together with hypertrophy, atrophy and disappearance of the corium.

In 1885, Cunningham observed in the lesions certain bodies which had ameba-like characters and which were spore-forming. To these bodies Firth, in confirming Cunningham's observations, applied the name *Sporozoa furunculosa*. Riehl, however, believed that these appearances were due to cellular degeneration.

The bodies described by Wright in the lesion taken from the face of an Armenian girl were generally round,

3. *Annals of Surgery*, June, 1902, p. 766.

4. *Beitr. zur klin. Chir.*, 1899, xxv, p. 826.

5. *Medical News*, 1891, xxv, p. 217.

\* Read before the Manila Medical Society, December, 1905.



sharply outlined and from 2 to 4 mm. in diameter. A large part of their peripheral portions was composed of stainable substance, while the central part was unstained. In each body, beside the larger peripheral stained mass, was a smaller one which stained more deeply. The larger mass was from  $\frac{1}{4}$  to  $\frac{1}{3}$  the size of the whole body, was of variable shape, but always formed a part of the rounded periphery. Wright believes that these bodies are organisms, and has given them the name *Helcosoma tropica*. James and others have also described such structures in oriental sores, and have identified them with the Leishman body which was first studied in cases of kala-azar, or tropical febrile splenomegaly.

The disease is said to occur in dogs. Both Wright and James were unable to infect rabbits with fresh material, and James thinks that the so-called Delhi sores in dogs are of a different nature from those in human beings.

It is a peculiar fact that the same organism should in one locality produce a general disease like kala-azar and at another a purely local lesion. James thinks that in Annam, for instance, where kala-azar is so prevalent and so fatal, the organism is a more virulent one, while in the localities where the sores occur it is less virulent and does not cause a general infection. Manson believes that the presence of the camel in the latter places may explain the difference. He supposes that the organism passes through that animal and is thereby attenuated, much in the same way as vaccine is supposed to be derived from variola.

The question of the modes of infection has not as yet been completely elucidated. The general belief is that a previous lesion must be present to afford ingress for the organism. Such a lesion may be quite insignificant, as, for instance, the bite of a mosquito. Infection may also occur on the ground of other affections, such as the lesion of acne. It may be propagated by its own secretion, by scratching parts distant from the primary sore with infected fingers, by infected clothing or even, perhaps, infected baths.

One attack, while it may confer immunity, does not always do so. The immunity which develops may be permanent or very transient.

The clinical reports state that the period of incubation varies from a few days to a month. In the inoculated form the time is from ten to twelve days. Race, gender, age, constitution, occupation, general hygienic condition and food seem to play no rôle in determining the presence or absence of the disease. In children it usually does not appear until after the second or third year. Foreigners are generally exempt from it during their first year of residence in an infected district. It is more common in cities than in country districts.

The earliest visible sign of the disease is a small red spot which appears like a mosquito bite. On this there appears later a small spot of lighter color which gradually increases. After some time, months perhaps, a thin fluid is exuded, forming a yellowish crust which increases in thickness from below. If this crust be removed a small, rounded ulcer is exposed which has a tendency to increase peripherally. The healthy skin about the ulcer may be infected by the secretion, and a group of ulcers produced, which, if close together, tend to coalesce. The borders of the ulcer are sharp and somewhat irregular. The floor is covered with indolent granulations. The surrounding tissue may or may not be indurated. The seropurulent secretion varies in amount. In case the crusts are not removed they gradually become thicker

and in time bear a close resemblance to syphilitic rupia. The deeper tissues are not affected.

Healing commences after several months and is accomplished during the course of several more. It leaves a scar which is often pigmented and sometimes contracted. Occasionally the lesions do not ulcerate and disappear after some months.

Unlike many other cutaneous ulcers, this disease is usually quite painless and produces no disturbance of general health. Moreover, it may disappear completely during the course of intercurrent disease, such as influenza or typhoid. In case it is complicated with or complicates syphilis, tuberculosis or scurvy, it tends to become phagedenic. It may become the seat of secondary infection. When complicated by lymphangitis, phlebitis, erysipelas, abscess or gangrene, it may result in death.

The number of ulcers in a single individual varies from one to forty or more, and they may occur in any part of the body. They are most commonly seen on the extensor surfaces of the extremities, next on the face and neck, and infrequently on the genitalia. In children they are found most frequently on the face. They never occur on the soles of the feet, palms of the hands, beard or scalp.

In sections of a specific lesion, one notices first that the corium and papillæ are infiltrated with lymphoid and plasma cells and with other cells that have originated from endothelium. Accompanying this infiltration, the epidermis atrophies and disappears. In smears from such a lesion, bodies which are readily stained by eosin and methylene blue and which have the characteristics mentioned above are found. They are present in large numbers and often occur in aggregations that seem to have an intracellular relation to a large cell. Their morphology and structure is constant. In sections similar bodies, which occupy and sometimes completely fill the large endothelial cells, are observed. James describes such structures in smears and sections made from Delhi boils.

Thus far this condition has not been found in the Philippine Islands, in spite of the fact that both Strong and I have sought diligently for it. It was in the course of such a research that, in 1903 and 1904, I examined many prisoners in Bilibid prison. From a large series of patients studied, thirty of the most promising were chosen for making cultural and histologic examinations. From the local lesions, cultures were made. The lesion was then excised and prepared for sectioning by fixing in Zenker's fluid and imbedding in paraffin. The lesions studied included papules, vesicles, pustules and ulcers, chiefly the latter. In the smears of twenty of these, hyphae and spores of trichophytons or allied organisms were found. In many of them were small diplococci resembling the gonococcus in form. Staphylococci were of very frequent occurrence, but in none of them could I see any bodies which either in number or in constancy of form corresponded with those of Wright. It is perfectly true that occasionally bodies somewhat resembling those of the English Indian observers were present, but under such conditions that I was forced to regard them as the result of cellular degeneration.

Later, in 1905, Strong observed, in a case presenting a chronic ulcer, bodies that in some respects resembled those described by Leishman and others. But this resemblance was superficial and was due to the fact that the parasite, which Strong considers a torula, was an



intracellular one, which when stained showed certain forms similar to those pictured by the English observers.

Still later, in 1905, I collected some tissue from superficial ulcers observed in St. Paul's Hospital, and diligently searched them for evidence of the bodies of Leishman and Wright. One of these lesions somewhat resembled tropical phagedena while another was rather like an Oriental sore in that it apparently did not originate on the surface and was not tender or painful. The lesion in this was a papular one covered with a macroscopically intact cuticle, but sections showed that the skin had undergone well-marked changes. The corium was infiltrated with round and polymorphous cells, the former predominating. There was also an hypertrophy of the epithelium, most marked at the edges of the papule. In the corium there were areas of localized degeneration. The subcutaneous tissue was infiltrated with round cells and leucocytes. Giant cells were plentiful. No bacteria could be demonstrated in the tissue, but there were in sections from some regions bodies that resembled those of Leishman. In one section five such bodies could be seen within an endothelial cell of a small blood vessel. In other places agglomerations resembling zoöglar masses were present. By the use of a powerful mordanting stain, still other bodies were made visible. These resembled the bodies described by Strong as torulæ. They were chiefly present within phagocytic cells. By the same method similar bodies were demonstrated in the nuclei of phagocytic cells, but not in the giant cells.

Except for the intense resistance to stains, these bodies might be compared with those of Wright. The conclusion which seems most logical is that they are the result of staining degenerated fragments. This conclusion gains support from a comparison of these figures with the drawings illustrating Maximow's work on connective tissue formation as it results from inflammation. It is possible, however, that they are of true parasitic nature, for they have much the same shape and size throughout the tissue, and they often show a more or less centrally placed chromatic material.

Finding that the patient presenting these lesions did not improve either under iodids or mercury, he was ordered copper sulphate in small doses (gr.  $\frac{1}{4}$ ). Under this treatment he improved markedly. This therapeutic result certainly speaks in favor of a blastomycetic origin.

#### VELD SORES.

The discovery of the veld sore was one of the results of the unpleasantness between Boer and Briton in South Africa. Whether it is an actual pathologic entity and confined to the portion of the world where it was first observed can not be stated yet with perfect confidence, since there is little unanimity among the authors regarding its etiology, distribution and general course. Harman, whose work on the subject is voluminous and painstaking and the only authoritative one we have, considers the disease to be a particular one which has little, if anything, in common with other tropical cutaneous disorders. Harman based his report on some thousand cases, from which he made eight cultures, and from two of which he obtained tissue for histologic examination.

The sore as usually seen appears as an extremely superficial ulcer, edged by a fringe of exfoliated epithelial tissue and an areola of inflammatory redness. It commences as a small blister, the contents of which may be thin and watery or rather viscous. The organism is present in the contents of these vesicles. After the rup-

ture of the vesicle the ulcer is exposed. It is not readily amenable to treatment and runs a very chronic course. The lesions occur chiefly in the extensor surfaces of the upper extremities from elbow to digit and at corresponding places on the lower limbs. It is most frequent on the backs of the hands and wrists.

Of 7,067 men examined, 19.35 per cent. had suffered or were suffering from the disease. Whites alone, Boers and British, were affected. In uncomplicated cases there were no constitutional symptoms.

The organism resembles *Staphylococcus pyogenes aureus* in morphologic appearance and in cultures. It acts on the tissues like an attenuated *Staphylococcus aureus*, but it produces a distinctive lesion in which it has a tendency to appear as a diplococcus. It is a luxuriant grower on the usual media and has a greater resistance to destruction than its prototype. It is called *M. vesicans*. With it Harman was able to infect himself and to produce the characteristic lesion and afterward to recover the organism in pure culture.

The histologic picture presented is simply that of an acute inflammatory process characterized by leucocytic infiltration with destruction of the dermis.

Lesions of the same general type as the veld sores are not of uncommon occurrence in Manila. I suffered from a series of such sores, and in smears from their contents could find nothing but a diplococoid organism that had somewhat the appearance of pairs of rapidly growing pyogenic cocci.

These lesions originate at parts of the body which are subjected to trauma, as, for instance, the inner sides of the thighs in horsemen, and appear first as painful red points. In the course of several days the tissues beneath these points become firm and the tenderness increases. After four days or more the pain is intense. The contents of these nodules is a yellowish green, rather soft, but not fluid mass of necrotic tissue.

I find that, in my own cases, they healed most readily if dressed with alcohol or hot bichlorid solution. If incised, they tend to leave pigmented (brownish) scars.

#### TROPICAL PHAGEDENA.

Jeanselme points out that under the term "tropical phagedena" are included all sorts of tropical ulcerations whose nature is not understood. In a general way, the process may be described as one in which the ulceration is rapidly progressive and in which the lesion is covered with a diphtheroid membrane.

While it is most common in the Indo-Chinese peninsula, it has nevertheless been observed in many other tropical countries both in the old and in the new world. It is more common in low, humid, hot districts. Drs. Strong, McDill, Dudley and I have observed similar cases in Manila.

The apparent origin of the ulceration is in small abrasions of the skin, lesions that ordinarily would be thought of no consequence. Bites of insects, grass cuts, scratches of any sort, therefore, may predispose to the disease.

The first thing to be noticed in a typical case, according to the French writers, is a blister with serosanguineous contents. This ruptures and the base of the lesion becomes covered with a grayish false membrane. The secretion of the ulcers arising in this way is brownish or bloody and has a fetid odor. The gangrenous process extends rapidly and in some patients fever and weakness are present.

The extensions may be serpiginous or undermining, in the latter case involving vessels, nerves, tendon



sheaths, muscles, bones and joints. The result may be septicopyemia or fatal hemorrhage. Such cases are examples of the grave form of the disease, and are the sort which McDill, Dudley and I observed. Our case occurred on the basis of gangrene ensuing in a case of Raynaud's disease.

It is in the less severe forms that the diagnosis has been confused, and, in order to avoid confusion, Jeanselme suggests that the term tropical phagedena be confined to ulcerations which show rapid extension and a diphtheroid membrane. Bearing such a definition in mind, he says that there are only certain cases of syphilis that may be confusing, and the potassium iodid test will eliminate these.

Dantec and Vincent have both described organisms in the lesions, but were unable to cultivate them. Strong was able to isolate a staphylococcus and a proteus-like bacillus; the latter was, however, non-pathogenic. In the case mentioned above only the golden staphylococcus was found.

The histologic features are similar to those observed in diphtheritic infections. The surface of the lesion is covered with a diphtheroid membrane composed of fibrin and cellular remnants. The deeper layer shows round cells and leucocytic infiltration and edematous distension and separation of the cellular elements. In Strong's case there was a considerable perithelial proliferation, which was most marked about the veins. The process is, then no more than an acute fibrinopurulent inflammation of the skin, which may in severe cases affect other adjacent tissues. The peculiarity is that it is autoinoculable and may be transmitted from man to man. When these facts are borne in mind its similarity to hospital gangrene is evident.

McDill and Wherry have reported cases of a form of severe hand infection from which Wherry isolated an organism identical with, or closely allied to, the bacillus of Koch and Weeks. Such cases might also be included under the title of tropical phagedena, and, in view of the fact that infection is so readily accomplished, and that the cases of acute contagious conjunctivitis caused by this organism are not uncommon, it may be an important etiologic agent in this condition.

When we consider the common clinical features of these various sorts of lesions, and the varying descriptions that have been given of them, together with the varying bacteriologic reports on their contents, it seems extremely probable that few of them are entities from their incipency, and it would seem best for the present, leaving aside the specific lesions of syphilis, tuberculosis, leprosy and perhaps yaws, to confine all in the one group of ulcerative dermatites.

My own experience has been that the majority of these cases are the result of a primary trichophyton infection ("dhobie itch") on which, in consequence of continued irritation in one way or another, a secondary infection has been engrafted. A small number of lesions is caused by one or another organism, the commonest being the golden staphylococcus and an uncommon one the Koch-Weeks bacillus. A few cases are of blastomycetic origin.

The type of lesion produced by a given organism is often quite as dependent on the individual infected as on the organism itself.

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The Meat Inspection Law.—While this law has been looked on as a sacrifice of the gigantic business enterprises subject to its operation, its wisdom must speedily become plain to everybody.—*New York Medical Journal*.

## Clinical Notes

### THE USE OF PLASTER ABOUT THE HAND.

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The treatment of fractures of the hand and fingers, as a rule, has been considered of rather minor importance, because of the relatively more serious fractures which have to be dealt with. Yet to the patient with a broken hand there is little to interest him in fractures, except that which concerns the particular lesion from which he is suffering.

Attention to details in the treatment of these fractures can not be overestimated, and is just as essential to good results as in the case of more important breaks. The diagnosis is usually easy, but the difficulty arises when one comes to apply a firm and compact dressing. Simple as it may seem, this work is often accomplished in a slipshod manner because of its very simplicity. The usual splints of wood, cardboard, etc., are either too cumbersome or do not hold the parts as firmly as they should, and especially devised apparatus is always at a



Fig. 1.—Showing plaster splint applied to the thumb.

discount because of the inconvenience and loss of time in obtaining it.

One has but to inspect the normal hand to see how difficult it is to pad a flat splint so that it may conform to the various curves and not distort the member to which applied and at the same time give no discomfort to the patient.

Plain gauze, the best quality of dental plaster, zinc oxid adhesive plaster and roller bandages will, as a rule, meet all emergencies far better than any of the splints now in use. Such materials are of most decided use when applied to compound fractures of the thumb and fingers.

#### APPLIED TO A PHALANX.

Figure 1 shows a plaster splint applied to the thumb. Such a splint encircles more than one-half of the wrist; its edges then converge across the palm of the hand toward the base of the injured digit to form a groove in which the thumb lies securely bound down by adhesive plaster. The method of applying the dressing is as



follows: A piece of plain gauze is folded till it is about 14 ply and then cut to fit the parts according to the location of the fracture. It should then be thoroughly soaked in cream of plaster, wrung out and dry plaster rubbed into the meshes followed by enough water to moisten it, when it may be rapidly applied with a bandage and held in the position desired for the correction of the deformity, till the plaster begins to set. It may then be removed from the hand and allowed to become thoroughly dry while resting on a radiator or in the sun. The splint should in all cases include a little more than half the wrist and should immobilize the metacarpal bone as well as the phalanx itself. It may be allowed to become thoroughly hard and firm either on or off the hand after it has dried sufficiently to hold its form. When the fracture is compound the splint is made to leave the wound exposed, thus allowing for daily dressing without disturbing the parts. Should the wound be in the palmar aspect the splint should be applied to the dorsum of the hand (Fig. 2) and vice versa. Wherever the splint is exposed to contact with dis-

a part of the splint itself. The tendency toward rotary displacement is more easily avoided by this splint as it takes hold of the finger, as it were, instead of simply being bound on.

#### IN FRACTURES OF THE METACARPAL BONES.

Fracture of the metacarpal bones is usually treated by placing a 3-inch roller bandage in the fist, securing it as described by Scudder in his text book on "fractures." If the bandage be previously soaked in plaster, however, it will be found that less subsequent adjustment is necessary, because of the solid support given after the plaster has dried. Should a fracture of a metacarpal bone be compound anteriorly or accompanied by wounds on the palmar aspect of the hand a splint such as shown in Figure 3 may be employed. This splint covers the back of the hand and extends along the back of the finger corresponding to the broken metacarpal. The knuckles adjoining the fracture are depressed by the surgeon's thumbs while his fingers make counter-pressure in the palm, thus raising the injured knuckle while the



Fig. 2.—Showing splint applied to the dorsum of the hand.

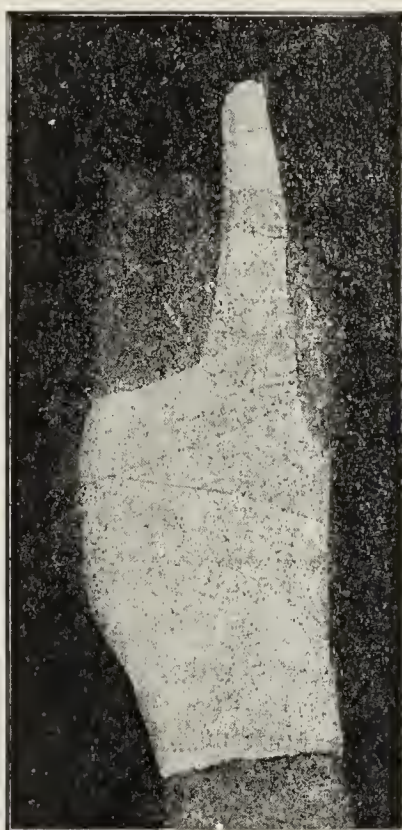


Fig. 3.—Showing splint covering the back of the hand and extending along the back of the finger corresponding to the broken metacarpal bone.



Fig. 4.—Showing splint projecting beyond edge of the finger to permit of extension and counter-extension.

charges it may be covered with a few coats of shellac varnish or protected by gutta-percha tissue. Such a dressing may be made to immobilize any or all of the fingers by varying the pattern while cutting the gauze.

This form of splint is neat, compact, comfortable, and can be made to hold the parts absolutely secure. It allows for daily dressing and inspection without in the least disturbing the alignment of the bones. It can be applied quickly and the materials of which it is made are inexpensive, easily obtainable or kept in stock if one wishes. It is equally effective when applied to either palmar or dorsal aspects and requires less subsequent adjustment than do other splints, because it fits, and swelling of the parts does not disturb the alignment nor necessitate removal of the dressing, as is sometimes the case when a cast is used. Being made to conform to the peculiarities of the individual case pressure and counter-pressure are not obtained by padding but are

plaster is setting. After the splint has become thoroughly dry it is secured to the hand by adhesive plaster, the base of the finger being drawn tightly up against the splint. This will usually be found to have raised the knuckle sufficiently, though in loose-jointed patients it may be necessary to place in the palm of the hand a small splint so formed as to raise the injured knuckle further into the concavity of the dorsal splint.

Should extension and counter-extension be desired it may be obtained by projecting the splint 3 or 4 inches beyond the end of the finger, as shown in Figure 4.

A hole is cut in the end of the splint and a piece of rubber tubing drawn through it, one of the loose ends being knotted. The finger is then secured to the rubber in the usual way by a loop of adhesive plaster. By this method one is able to increase the tension as desired, by pulling the unknotted end, slipping being prevented by engagement with the knot on the end next



to the hole. Such a simple method of extension can also be applied to a wooden splint. When plaster is used a number of hours should elapse before the splint is subjected to the strain and it should be made heavier than when extension is not needed. A very simple method of obtaining extension which will usually suffice in fracture of the metacarpals is by flexing the terminal and second phalanges over a palmar splint, maintaining traction while the plaster is hardening. If the two flexed phalanges are then firmly secured and the rest of the splint drawn into place, extension and counter-extension will be all that is usually required.

Superfluous plaster may be removed from the skin by washing with sugar or molasses. Salt may be added to hasten the setting of the plaster, when this is desirable, too much salt, however, will render the plaster brittle.

## THE PREVALENCE OF INTESTINAL PARASITES IN KIANG SU PROVINCE, CHINA.

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Although it is commonly known that intestinal parasites are very prevalent in China, but little definite statistical work has been done, and so far as can be ascertained none in this province of Kiang Su. China, considered medically, is rather an indefinite term with its great extent of territory and its hundreds of millions of people. The eighteen provinces vary in many important essentials as: 1. Climate; from the arctic cold of the northern to the tropical heat of the southern. 2. Elevation; from the plains and level provinces to the mountainous. 3. Density of population; from 30 to a square mile to 600. 4. Amount of rainfall. Therefore, it is quite probable that the prevalence of intestinal parasites in one province will be quite different from that in another.

The present series of examinations of stools of Chinese was made at the laboratory of St. Luke's Hospital, Shanghai, through the kindness of Dr. W. H. Jefferys. The stools of all the patients in the hospital were examined without regard to symptoms presented, and, as they were of the lower class, the majority of the Chinese in this province probably show the same percentage and kind of infection.

Kiang Su province has an area of 36,000 square miles, with a population of 25,000,000, or 568 to the square mile, with one exception the most densely populated province in China. It consists of low-lying land extremely well watered, with rivers, including the great Yang Tse, lakes and the grand canal. The climate is hot in summer, cool in the fall and an occasional light snow in the winter. There are many cases of malaria and filariasis. It resembles many of the provinces near it, but further inland the country becomes more mountainous.

With the above conditions, the absence of sewerage systems, and the unclean habits of the people, one would expect to find many cases of intestinal parasites as well as of other diseases caused by unhygienic surroundings. The practice of spreading night soil over vegetables, strawberries, etc., is perhaps one of the most prolific sources of infection. Water probably plays a less important rôle, as the natives rarely drink anything but hot tea or hot water. The Chinese believe that cold water is unwholesome, indicating that the Chinaman has learned through experience what the doctor has learned

through science. In the large foreign settlement cities as Shanghai, the local boards of health have spent considerable effort in instructing the Chinese in simple hygienic measures.

In all, during the months of October and November, 1906, 50 stools were examined. It was the original intention to secure one or two hundred, but even the fifty were obtained with some difficulty, as the Chinese are rather loath to contribute to such a little understood process as fecal examination. The patients in St. Luke's Hospital are nearly all adult males, with ailments or injuries from fractured limbs to beriberi. The stools were examined in the usual way, all with the high power. Following are the results in tabulated form:

TABLE 1.

Percentage of infection.	No. of stools.	Per cent.
Examined .....	50	..
Showing infection with one or more intestinal parasites .....	30	60
Showing infection with <i>Ascaris lumbricoides</i> ...	26	52
Showing infection with <i>Tricocephalus dispar</i> ...	9	18
Showing infection with <i>Uncinaria duodenalis</i> ...	2	4
Showing infection with <i>Oxyuris vermicularis</i> ..	1	2

TABLE 2.

Cases of Double Infection.	No. of stools.
Showing double infection .....	8
Showing infection with <i>Ascaris</i> and <i>Tricocephalus</i> .....	5
Showing infection with <i>Ascaris</i> and <i>Oxyuris</i> .....	1
Showing infection with <i>Ascaris</i> and <i>Uncinaria</i> .....	1
Showing infection with <i>Uncinaria</i> and <i>Tricocephalus</i> .....	1

TABLE 3.

Relative Frequency of Parasites Found.	No. of parasites.	Per cent.
<i>Ascaris lumbricoides</i> among the infected stools	26	86+
<i>Tricocephalus dispar</i> among the infected stools.	9	29+
<i>Uncinaria duodenalis</i> among the infected stools	2	6+
<i>Oxyuris vermicularis</i> among the infected stools.	1	3+

The sum of the percentages in Table 3 comes to over 100, but it must be remembered that many of the cases were double infections.

The above tables would indicate that 60 per cent. of the population of Kiang Su province are infected with intestinal parasites, and this figure is probably under rather than over the true estimate, as it is possible that some stools with very few ova were overlooked. Some of the stools, for instance, would show only one ovum of the *Ascaris lumbricoides* in a slide, while others would show large numbers of ova to every field. Then, too, it may be possible that if only one or two worms were present the discharge of ova might be intermittent, and thus the presence of parasites be overlooked with only one examination. *Ascaris* seems to be by far the most common parasite, with the *Tricocephalus* next. The ova of the *Ascaris lumbricoides* varied greatly in size, shape and color; a number of the long oval shape that have been described<sup>1</sup> as probably belonging to a new species of *Ascaris* were seen.

Two cases of infection with *Uncinaria duodenalis* are noted, or 4 per cent. of the stools examined. Both showed but a few ova, two or three to a slide, and after treatment with thymol search for the parasites was made without success.

One case of *Oxyuris vermicularis* was noted. J. Ch. Huber<sup>2</sup> states that he has never discovered the ova of this parasite in fecal material taken from the rectum, and that microscopic examination of the dejecta is of little diagnostic value. O. Leichtenstern<sup>2</sup> and Lutz<sup>2</sup> have also

1. O. T. Logan: The China Med. Missionary Jour., September, 1906.

2. Twentieth Century Pract. of Med., viii, 1896 Ed.



failed to discover the ova of *Oxyuris* in fecal examination. On the other hand, v. Jackson says he has almost always found them in the feces.

No ova of the tapeworms were found. The Chinese eat but very little beef, and that well cooked, explaining the absence of *Tenia saginata*. A great deal of pork is eaten, but thoroughly cooked, so *Tenia solium* also is apparently uncommon.

Of the unicellular intestinal parasites but one was noted, the *Trichomonas intestinalis*. Some of the stools, however, were examined after standing for some time, so it is possible some were overlooked in this way. Dysentery and abscess of the liver are not uncommon here; during 1905<sup>3</sup> there were three deaths from abscess of the liver among the foreign resident population of about 12,000. No statistics of its prevalence among the Chinese are available. Neither the *Entamæba coli* nor the *Entamæba histolytica* was found in any of the fifty stools examined.

### A NEW EYE SPECULUM.

O. B. MONOSMITH, M.D.

Ophthalmologist and Otologist to St. Joseph's Charity Hospital.  
LORAIN, OHIO.

This improved eye speculum is made entirely of brass and is, therefore, non-magnetic. It is composed of only two parts, which are easily detached for cleansing. It has neither spring, setscrew, hinge or ratchet. It is very light, weighing less than three drams. It is introduced easily without changing hands, locking itself automatically.

It can be removed very quickly without the resistance of a spring to overcome, a setscrew to loosen or the fear that it may slip from the hand. It takes but a moment to increase or to diminish the pressure on the lids. It has the advantage of the original Mellinger's speculum in that the blades open parallel.

The blades are solid and conform to the curve of the lid margin. The pressure on the sensitive lid, therefore, is equally distributed, reducing the distress and reflex spasm to a minimum. The under surfaces of the blades are concave to conform to the convexity of the eyeball, so that it is unnecessary

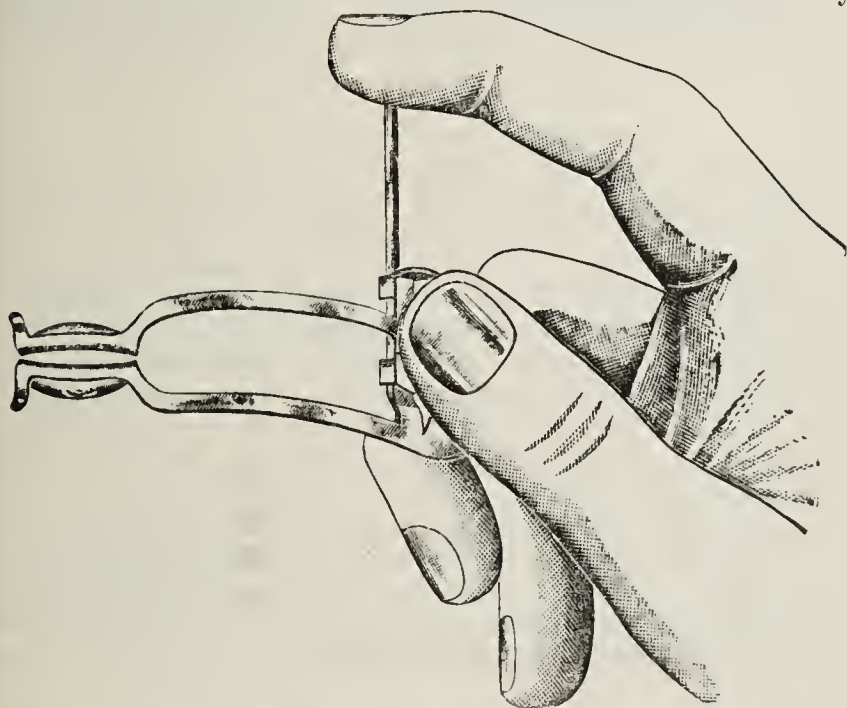


Fig. 1.—Method of introducing the speculum.

for an assistant to hold the speculum at the most critical period of an operation.

The advantage of the wire speculum is maintained by removing a piece from the outer part of the blades, leaving just enough to turn the lashes upward and downward. The heels of the blades are beveled, that the speculum may be removed

quickly without danger, and without touching the lids to release them. The sliding bar lies on the face and out of the way.

In originating this speculum I was prompted by the desire to get a non-magnetic speculum, but after using it for three years in all sorts of operations on the eyeball I feel that it has other advantages that will appeal to the progressive worker in ophthalmology.

After the technic of using the speculum is fully understood very little practice is necessary to operate it successfully. A reference to the illustrations will show the method of handling the instrument.

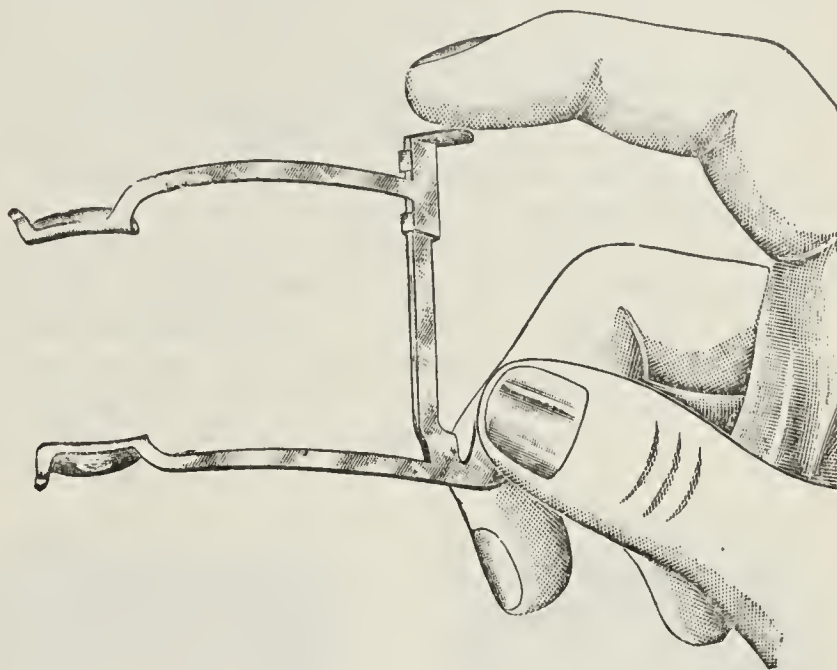


Fig. 2.—Method of removing the speculum.

### A CONTRIBUTION TO CHEILOPLASTY.

J. H. JACOBSON, M.D.

Surgeon to Lucas County Hospital, Member Surgical Staff, St. Vincent's Hospital.  
TOLEDO, OHIO.

Of the many deformities of the lower lip none is more distressing or more difficult to remedy than ectropion or eversion of the lower lip following extensive burns of the lower part of face and neck. Burns involving the deeper layers of the skin about the neck are almost always followed by this deformity, together with an extensive amount of scar tissue. This often extends up to the cheeks, but more often involves the skin about the inferior maxillary region and the anterior part of neck. The firm adherence of the scar tissue to the muscles and structures immediately beneath it renders the cheiloplastic operations usually described in text-books difficult, uncertain or impossible.

The operation usually recommended for this condition consists in making a V-shaped incision corresponding to the margins of the inverted lip, raising the lip and closure of the wound thus made in the form of the letter Y. This operation presupposes some mobility of the skin, and scar tissue on either side of the everted lip, and, while this mobility may sometimes exist, rendering this operation applicable, in most of the cases the fibrous tissue is so dense as to render the operation useless.

Elevation of the everted lip, after the V-shaped incision, combined with Thiersch skin-grafts for the denuded area, is probably the most applicable of all methods. This method, however, has the following deficiencies, viz.:

1. The difficulty of maintaining the reflected lip in its normal position until the union of the grafts.
2. Inability to overcorrect the deformity, which is so

3. Ann. Rep. Health Dept., Shanghai, China, 1905.



necessary to success in all plastic operations, in order to allow for subsequent contraction.

3. Difficulty in maintaining skin-grafts in position.

4. Infection of operative site by secretions from the mouth.

The operation which I wish to describe overcomes at least the first three of these deficiencies.

#### TECHNIC.

An incision is made, oval in outline, corresponding to the muco-cutaneous margin of the everted lip and extending through the skin down to the superficial muscles. The flap, consisting mostly of the mucous membrane of the everted lip, is dissected upward, care being taken that sufficient flap is secured to overcorrect the deformity. Hemorrhage is moderately severe and is controlled by pressure forceps and hot sponges.

The reflected flap or lip is now held in its normal, somewhat overcorrected position by what may be designated as the "skewer method." Beginning at the left side of the mouth, about one-quarter of an inch above and to the outer side of the angle, at a height corresponding to the upper border of the flap, a previously prepared short silver probe sharpened on one end is

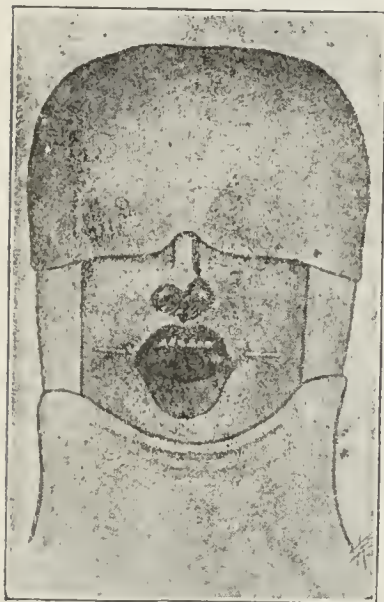


Figure 1.



Figure 2.

passed through the cheek toward the margin of the reflected lip, the point being passed submucously through the entire lip and piercing the right cheek at a point corresponding to its entrance on the left side (Fig. 1).

The lip will now be found securely held in its desired position, giving the opening of the mouth a somewhat triangular outline. The introduction of the sharpened probe in the manner described is easy.

In the first case in which this operation was done a heavy silver wire was used in place of the probe, but on account of the flexibility of the wire some downward sagging of the lip resulted. The probe should be heavy enough to prevent this. After the probe is in place a small gauze pad is threaded on each end, and a perforated shot placed next to the gauze, and the excess of the probe then cut away. The denuded surface is now completely covered by Thiersch skin-grafts, which are secured in place by a few stitches of either fine silk or catgut (Fig. 2). If silk is used, it should be of the finest, which is best obtained by splitting No. 1 silk and using a fine cambric needle. Before introducing the silk sutures they should be smeared with sterile vaselin, which reduces the liability of displacement of the grafts.

The dressing consists of salt solution and gutta-percha

tissue changed daily, and after from three to five days the use of a saturated boric-acid solution instead of the salt solution.

The prevention of contamination by mouth secretions is most difficult and is best overcome by frequent dressings. I have used this method in two cases, both of which gave most gratifying results.

CASE 1.—Boy, aged 4, entered the Lucas County Hospital Dec. 19, 1902, suffering from extensive burns about the lower part of the face, entire neck, chest and right forearm. He was treated for several months, healing taking place after daily antiseptic dressings and skin grafting about the chest, neck and arm. Cicatrization about the neck and lower part of the face resulted in ectropion of the lower lip. Two unsuccessful operations were made to restore the lip by raising it and skin grafting.

The third operation consisted in raising the lip and passing a heavy silver wire through the cheeks and lower lip, suspending the lip thereon, while the denuded area was covered by Thiersch grafts; it was dressed with salt solution and gutta-percha tissue. On account of the flexibility of the wire, some sagging of the lip occurred.

The cosmetic result was good, the patient being under observation for several months, during which time the lip remained in good position.

CASE 2.—Girl, aged 14, referred to me by Dr. C. F. Douglass, Kalida, Ohio, entered the St. Vincent's Hospital Aug. 19, 1906. Patient, when 4 years old, was burned about the face

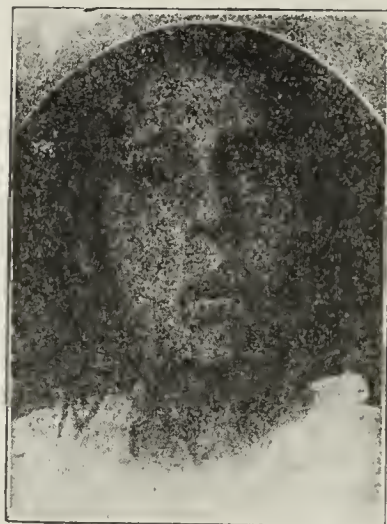


Figure 3.



Figure 4.

and neck. Healing took place in about two months, with the resulting deformity of lower lip shown in Figure 3. Two operations for the correction of the deformity were made by other surgeons about five years previously, consisting of a transverse incision under the chin and the reflection of the lip upward together with an extirpation of some of the everted mucous membrane. These procedures failed to correct the deformity. The condition on entrance to the hospital consisted of a typical ectropion of the lower lip; backward movement of the head was somewhat limited on account of scar tissue about the neck and chin.

On Aug. 20, 1906, a V-shaped flap, consisting of the everted lip and skin, was dissected upward and the wound closed in form of the letter Y. This operation did not correct the ectropion, but loosened the scar tissue about the neck and gave prominence to the chin, which before this operation had been lost.

On Sept. 11, 1906, the eversion of the lip was corrected by the "skewer method," in the manner already described.

Some suppuration of the wound required daily dressings; the probe was removed on September 20 by cutting off the shot at one end and withdrawing the remaining part, the removal being painless. The lip remained in place and the patient was discharged from the hospital on September 30, entire healing taking 16 days (Fig. 4).

237 Michigan Street.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 697.)

(A list of all accepted articles is published on advertising page 24, this issue.)

### THYREOIDECTIN.

#### CAPSULÆ ANTITHYROIDÆ.

Thyreoidectin consists of gelatin capsules each containing 0.33 Gm. (5 grains) of a powder prepared from the blood of thyreoidectomized animals.

The blood is derived from sheep, goats or horses (chiefly sheep) from which the thyroid gland has been removed. The blood is rendered aseptic during the process of desiccation by the addition of chloroform, and aromatics are added to the resultant powder as a flavor.

The contents of the capsules consist of a coarse, reddish-brown powder, resembling dried blood.

*Actions and Uses.*—See Antithyroid Preparations.

*Dosage.*—One to two capsules three times a day, the amount being varied to suit the individual case.

Prepared by Parke, Davis & Co., Detroit, Mich.

### TONIC HYPOPHOSPHITES.

#### SYRUPUS HYPOPHOSPHITUM TONICUS.

Each 30 Cc. (1 fluidounce) is said to contain: Potassium hypophosphite, 0.1 Gm. (1½ grains), iron hypophosphite 0.1 Gm. (1½ grains), manganese hypophosphite, 0.065 Gm. (1 grain), quinine hypophosphite, 0.03 Gm. (½ grain), strychnine hypophosphite, 0.004 Gm. (1/16 grain).

*Dosage.*—4 to 8 Cc. (1 to 2 fluidrams).

Prepared by Sharp & Dohme, Baltimore, Md.

### TRYPSOGEN.

Tablets, said to contain the enzyme of the islands of Langerhans with the tryptic and amylolytic ferments of the pancreas, 0.0006 Gm. (1/100 grain) gold bromide and 0.0003 Gm. (1/200 grain) arsenic bromide in each tablet.

The sugar oxidizing, amylolytic and tryptic ferments are said to be prepared from the tails of the pancreatic glands of young calves and lambs.

The tablets are of a light brown color, a faint odor and a sweetish taste.

The preparation should show active power of converting starch into sugar and should give the reactions for gold, arsenic and bromine. Methods of testing for the sugar oxidizing ferment are not known.

*Actions and Uses.*—Trypsogen has the amylolytic and tryptic power of pancreatin and is said to exert the sugar oxidizing action of the islands of Langerhans.

It is claimed that it is a rational treatment for diabetes and glycosuria, supplying the ferment of the islands of Langerhans which is lacking in these cases. It is also said to be useful in anemia, chlorosis, chorea and neurasthenia.

*Dosage.*—In glycosuria conditions 2 tablets after each meal gradually increased to the limit of tolerance, or until 5 to 7 tablets are taken; then discontinued for two days and begin again with the smaller dose and increase as before. In neurasthenic conditions 1 to 3 tablets immediately after each meal.

Prepared by G. W. Carrick Co., New York. U. S. trademark.

### TUMENOL-AMMONIUM.

Tumenol-ammonium is the ammonium salt of tumenol sulphonic acid (see Tumenol).

Tumenol-ammonium is a dark oil with a faint tarry odor and acid taste. It is soluble in water in all proportions with a neutral reaction. It is also soluble in alcohol, ether and glycerin.

*Actions and Uses.*—See Tumenol.

*Dosage.*—Tumenol-ammonium is applied as a local dressing in the form of a 5 to 10 per cent. aqueous solution, a 5 to 20 per cent. tincture containing equal parts of ether, alcohol and water or glycerin, and as a 5 to 20 per cent. ointment.

Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Höchst a. M., Germany (Victor Koechl & Co., New York). Not patented in U. S.

### VALIDOL.

Validol is the menthyl ester of valerianic acid,  $C_{10}H_{19}O.C_5H_9O$ , with 30 per cent. of free menthol.

It is prepared by heating a mixture of 16 parts of menthol and 12 parts of valeryl chloride on a water bath until hydrogen chloride ceases to be given off, adding very dilute solution of sodium hydroxide, shaking out the mixture with ether, drying the ether solution with potassium carbonate, distilling off the ether, and rectifying the residual oily product by vacuum distillation, finally, dissolving 30 per cent. of free menthol in the pure ester so obtained.

Validol is a crystal-clear, colorless liquid, of the consistency of glycerin having a mild and pleasant odor, distinct from either that of menthol or valerian, and a refreshingly cool and very faintly bitter taste, insoluble in water, but readily soluble in alcohol, ether, chloroform, and oils. It is decomposed by alkalis. On warming with sodium hydroxide solution, the odor of menthol manifests itself; if then the alkaline solution is acidulated with diluted sulphuric acid, the odor of valerianic acid is developed. It is incompatible with alkaline media.

*Actions and Uses.*—Analeptic, antihysterie, earminative, stomacheic; combining the activity of valerianic acid and of menthol. It is devoid of the irritating acridity of the latter and is said to be well tolerated by the most sensitive stomach.

It is recommended in hysteria, migraine, gastralgia, gastritis, vomiting of pregnancy, exhaustion, hypochondria, syncope and all reflex neuroses.

*Dosage.*—10 to 15 drops, on sugar, or in a little sweet wine.

Manufactured by Ver. Chininfabriken, Zimmer & Co., Frankfurt a. M., Germany (C. Bischoff & Co., New York).

### VALIDOL CAMPHORATUM.

#### CAMPHORATED VALIDOL.

Camphorated Validol is a 10 per cent. solution of camphor in validol. Camphorated Validol is a clear, colorless liquid, of the consistency of glycerin, having an agreeable odor, and refreshingly cool and faintly bitter taste. It is insoluble in water, but readily soluble in alcohol, oils and other organic solvents. It is incompatible with alkaline media.

*Actions and Uses.*—Restorative, local analgesic, non-irritant and non-poisonous; well tolerated by the mucous membrane of the stomach. It is recommended in serious cases of exhaustion, where the administration of camphor is indicated; in odontalgia, either by application to the pulp or inserted on cotton into the previously rinsed cavity.

*Dosage.*—10 to 15 drops, on sugar or in wine.

Manufactured by Ver. Chininfabriken, Zimmer & Co., Frankfurt a. M., Germany (C. Bischoff & Co., New York).

(To be continued.)



THE JOURNAL OF THE  
AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, MARCH 2, 1907.

THE SIGNIFICANCE OF DECREASED HYDROCHLORIC  
ACID IN GASTRIC CANCER.

Few facts in clinical chemistry have been more utilized and relied on in diagnosis than the decrease in acidity of the gastric juice in cancer of the stomach. The explanation of this fact has not been so satisfactory, however, for the degree of reduction in acidity has not been found to bear any constant ratio either to the extent of the growth or to its point of origin in the stomach. The coincidence of the location of the growth in the stomach with a decrease in the functional activity of that organ has naturally led to an association of the two facts, and emphasized the view that the decrease in acidity of the gastric juice in cancer of the stomach depends on some local effect of the tumor. This explanation, however, has never been satisfactory, for frequently a very local growth has been found associated with total absence of free hydrochloric acid, in spite of the fact that nearly all the gastric mucosa was uninvolved, and, so far as histologic examinations show, perfectly capable of performing its full function. Consequently we have attempted to satisfy ourselves with the idea that the local cancer has caused some obscure chemical change in the rest of the gastric mucosa, or has in some unexplainable way modified the secretory innervation. One writer, indeed, seeking for something tangible, has ventured the idea that products of the autolysis of the cancer neutralize the acid of the gastric juice, a very improbable hypothesis.

Anything new concerning the subject of the acidity of the gastric juice in cancer of the stomach is, therefore, highly welcome, particularly so when it bears evidence of being the outcome of exact study by improved scientific methods. This is emphatically the case with two papers recently published by Professor Benjamin Moore, of Liverpool, and his colleagues,<sup>1</sup> which deal with the acidity of the gastric juice of persons who do not have cancer of the stomach, as compared with the usual findings in gastric carcinoma. The very important fact is brought out that the decreased acidity of gastric cancer does not depend on the fact that the cancer is located in the stomach, for an equally striking reduction in acidity occurs in patients who have malignant growths located in any and all parts of the body.

Corroborative results have been obtained by F. W. M. Palmer.<sup>2</sup> It was also found that patients with non-cancerous diseases usually show no such striking reduction in gastric acidity as cancer patients, although not infrequently an extremely low quantity of free hydrochloric acid is observed in patients with no evidence of gastric disturbance of any kind. Evidently, then, the secretion of hydrochloric acid by the stomach is extremely susceptible to the influence of any depression in the general health of the body, and cancer of the stomach exercises no specific influence on this secretion. On the whole, however, the reduction in acid secreting power is much more marked in cancer than in other conditions, free acid being entirely absent in about two-thirds of all cases studied by the most approved methods, and much reduced in the remaining one-third.

As an explanation of the inability of the stomach to secrete hydrochloric acid in cancer, it is suggested that in this condition the blood plasma contains less free hydrogen ions than normal for the gastric cells to secrete into the stomach cavity in the form of free acid. In support of this hypothesis is reported the observation that in cancer the alkalinity of the inorganic constituents of the plasma is increased (it is impossible to determine directly the concentration of hydrogen ions in the plasma because it is too small to be measured). Whether or not this explanation is correct there still remains the important new observation of the general influence of cancerous growths, wherever located, on gastric secretion of hydrochloric acid; and this observation must have an important influence on clinical diagnosis by means of analysis of the gastric juice.

## DIMITRI IVANOVITCH MENDELEEFF.

By the recent death of Dimitri Ivanovitch Mendeléeff the world of science loses one of the most striking figures that has appeared within our times, while Russia loses a character which constituted one of the bright spots in the records of that country. It may properly be said that Mendeléeff was one of Russia's greatest contributions to the world's progress, and that by the chemists of foreign nations he will always be remembered in connection with that country, as Berzelius with Sweden, Liebig with Germany, or Dumas with France. Mendeléeff obtained his education almost entirely in Russia, and so he may be credited wholly to her. He was born of educated parents; at the time of his birth (1834) his father was director of the college at Tobolsk in Siberia. His mother was a woman of remarkable character, who, when her husband became blind, established and successfully managed a glass works which supported her large family. After pursuing his studies in various parts of Russia, Mendeléeff was made a privat-docent in the University of St. Petersburg when twenty-two years of age. From the beginning of his career he interested himself chiefly with problems related to the fundamental

1. Proc. Royal Society, 1905, lxxvi, 138; Biochem. Jour. 1906, 1, 274.

2. Biochem. Jour., 1906, 1, 398.



principles of physical chemistry. Although he accomplished much research along these lines, his principal contributions are the result of his great powers of generalization, which permitted him to grasp the essential principles underlying heterogeneous observations coming from scattered sources. The greatest of his generalizations, and the one on which his fame will ever rest secure, is embodied in the "Law of the Periodicity of the Elements," which he published in his classic "Principles of Chemistry" in 1869.

The essential features of this law, which Mendeléeff developed from the facts that had been accumulated up to the time of its publication, are briefly as follows: If all the elements are arranged in the order of their atomic weights it will be found that the properties of the elements thus arranged show a marked periodicity. Elements which are similar to one another in chemical properties fall together in such a table, for either their atomic weights are nearly the same (e. g., platinum, iridium, osmium), or they show a regular increase (e. g., potassium, rubidium, cesium). Also, the arrangement of the elements, or groups of elements, in the order of their atomic weights, corresponds to their valences. The magnitude of the atomic weight, therefore, determines the character of an element, just as the magnitude of the molecule determines the character of the compound body.

When the known elements were thus grouped according to the atomic weights assigned to them at the date of this first publication of the law it was noted that there were a few of the elements which did not come exactly where they should if the law were a general law; and, also, that there were a number of gaps in the table. So clear was Mendeléeff as to the universal applicability of the law of periodicity that he ventured to predict that those elements which were out of place in his table would be found to have had incorrect atomic weights assigned them, and that a restudy of their atomic weights would bring them into place on the table. As for the gaps in the table, these depended on elements yet undiscovered, but which, he predicted, would yet be found; and by application of the law of periodicity he foretold the properties of the missing elements and their probable sources. The immediate result of this publication was a greatly stimulated research in two directions, one the restudy of the atomic weights of the known elements; the other a search for new elements, which search now became a well-directed hunt guided by the foretold knowledge of the properties of the new elements, instead of a blind search after unknown things. In both cases Mendeléeff's predictions were brilliantly fulfilled, and within a very short space of time, so that he was permitted to enjoy his triumph for many years. Revision of atomic weights showed that the correction always brought the elements into the exact places in the series to which their properties assigned them according to the periodic law. And several new ele-

ments have been discovered with the properties and atomic weights foretold by Mendeléeff, which fill in many of the gaps in his table. The law of periodicity is, then, a fundamental one, on which researches can be based, not only in studying new or rare elements, but also in investigating the problems of the constitution of matter.

But Mendeléeff's claim to greatness does not rest on this single discovery. Not only did he write important papers on such subjects as the specific volumes of liquids, the theory of solution, elasticity of gases, and allied subjects, but he had a profound influence on the study of chemistry in Russia. A large proportion of the teachers of chemistry of that country have received their training under him and his pupils, and his early treatise on organic chemistry, as well as his more famous "Principles of Chemistry," had wide use and great influence. Furthermore, he took an active interest in the development of the industrial resources of Russia, especially in connection with the petroleum industry. It is interesting in connection with current topics to learn that over thirty years ago Mendeléeff was occupied in vigorously attacking a monopoly that controlled the oil fields at Baku. In this attack he was successful, and in connection with the development of the oil fields he made a thorough study of the petroleum industry, including a visit to the Pennsylvania fields.

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#### GORGAS A MEMBER OF THE ISTHMIAN CANAL COMMISSION.

The appointment of Col. W. C. Gorgas as a member of the Isthmian Canal Commission is of more than ordinary importance to the country and to the medical profession. At the time of the original organization of the Commission, in 1904, it will be remembered that the American Medical Association, through its Committee on Medical Legislation, made strong representations to the President, urging that Dr. Gorgas be made a member of the Commission.

The chief grounds on which the appointment was urged were: 1, that the sanitary problems at the Isthmus were strictly fundamental to the great enterprise; 2, that the officer placed in charge of a department of such paramount responsibility ought to have coördinate, if not autonomous, power in the executive body—in no event being made subordinate to those ignorant of the technical questions involved, and, 3, that the medical profession as such, by virtue of its intellectual, social, political and commercial status alone, was entitled to representation on governmental bodies vested with executive function and dealing in a large way with sanitary problems. While the request was denied, Colonel Gorgas was designated as Chief Sanitary Officer under an executive commission, the controlling spirits of which had no adequate conception of modern sanitation. As a consequence, such men were inimical to many of the most sa-



lient features of the necessary campaign against the perennially endemic diseases prevailing on the Isthmus. The status of Colonel Gorgas and of the sanitary department under this arrangement was shown, in the report of Dr. Reed, as chairman of the Committee on Medical Legislation, after a visit to the Isthmus in February, 1905, to be one of subordination successively " . . . to the Governor of the Zone; to the Chief Disbursing Officer; to the chief of the Bureau of Material and Supplies; to Mr. Grunsky (special committee on sanitation); to the Commission; to the Secretary of War; to the President; subordinated, in fact, in the seventh degree from the original source of authority. . . . One can not but be impressed," continued the report, "with the anomalous condition by which a man of Colonel Gorgas' distinction, the foremost authority in the world in solving the peculiar problems connected with sanitation on the Isthmus, being made a mere instrument in the hands of a whole series of men who confessedly are ignorant of the very questions with which he is the most familiar."

The publication of this report was speedily followed by material improvement in the status of the Sanitary Department on the Isthmus. It was not, however, until the President visited the Zone and personally investigated conditions, apparently, that he became convinced of the wisdom embraced in the recommendations of the American Medical Association, made three years previously. Immediately on his return, he announced his intention, which he has finally carried out, to appoint Colonel Gorgas as a member of the Commission.

As before stated, this is a step of great importance to the medical profession and to the country. It is a recognition of the principle that, in public station, the medical profession ought, of right, to be placed in executive control of its own science; it is a recognition of the capacity of physicians to serve in high administrative capacity, and it is a recognition of the right of the medical profession to distinguished consideration at the hands of the Chief Executive. The improved status of the Sanitary Department on the Isthmus is a further guarantee to the country that the great work of connecting the two oceans will be prosecuted with the least possible prospect of delay caused by epidemics such as defeated the French in both of their efforts to dig the canal.

The appointment, in its personal aspects, is a just appreciation of the valuable services of Colonel Gorgas. His long career in the army brought him in contact with yellow fever on the Rio Grande and elsewhere. During the Spanish-American War he was identified with Reed, Carroll and Lazear in establishing the mosquito theory of yellow fever; and, placed in absolute control of Havana (through the intelligent action of Colonel Leonard Wood, himself formerly of the Medical Corps), he was the first man in the world to reduce the scientific accuracy of that theory to a positive demon-

stration. His work on the Isthmus, in spite of the early embarrassments to which he was subjected, has been crowned with the highest success, showing the entire possibility of completing the great task to which the country stands committed. If we have felt that this action of the President was tardy, that feeling is now effaced in recognition of the judgment and justice—to say nothing of the progressive views—that he has displayed in appointing Colonel Gorgas to membership on the Commission.

#### THE PREVALENCE OF GONORRHEAL INFECTION.

Some weeks ago<sup>1</sup> we called attention to the series of papers dealing with venereal diseases, read at the Boston session of the Association, the remote effect of these diseases on married women, and the physician's duty to the public in connection with this question. Shortly before Erb<sup>2</sup> of Heidelberg, in a valuable paper, gave the results of his own experience in the matter of gonorrheal infection and came to the conclusion that the figures usually cited as giving accurate data as to the prevalence of gonorrhea are erroneous, the error being on the side of over-estimation. Erb had been collecting data bearing on the subject for some time, but his views were, perhaps, directly called forth by a paper of Blaschko, which contained figures purporting to show that every man who did not marry until the age of 30 had had gonorrhea at least twice. Previous to Blaschko's paper the figures of Lesser, Ricord and Doctor were those most frequently cited, these authors giving the percentage of males who contracted gonorrhea as over 80. Erb's study, which had in view both the determination of the frequency of gonorrhea in the male and the subsequent effect on the wife, led him to place the figures lower than other observers and to view the whole matter in a more optimistic light. He concluded that about 49 per cent. of men had gonorrhea before marriage, most of them contracting it before the age of 25. He also argued that at least 45 per cent. of the infected men recover so that no traces of the disease are left, a view quite at variance with that held by some well-known genito-urinary surgeons. Erb also concludes that not more than 4.5 per cent. of married women are seriously infected with gonorrhea by their husbands.

Erb's figures have called out a reply from Blaschko and a paper relating especially to the infection of the wife, by Vörner.<sup>3</sup> Blaschko objects to Erb's statistics on the ground that they are "retrospective" and based on the patients' statements rather than on the actual observation of facts; he also calls attention to a fact that Erb himself admits, viz.: that Erb's statistics refer to a particular class of patients and are not applicable to all classes. The difficulty of getting patients to speak the

1. THE JOURNAL A. M. A., Dec. 22, 1906, p. 2094.

2. Münch. med. Wochschr., No. 27, 1906.

3. Münch. med. Wochschr., Jan. 29, 1907.



truth in such matters is very properly emphasized, and figures collected from various sources are cited to show that Erb's statistics are too low. Vörner presents no actual figures, but also reaches the conclusion that Erb receives the statements of his patients with too much credulity.

Every practitioner must appreciate the great difficulty of collecting data on a subject of this sort. Doubtless the variations in the different figures are partly due to this element. It must be recognized, too, that figures vary greatly according to locality, those for the great cities being largest and those from the country being smallest. Making allowance for all these sources of error, the percentages as they stand are appalling. The amount of disease and misery caused by gonorrheal infection must be immense. We can but repeat our remarks of two months ago and urge on every physician a personal interest in the matter, which must be fought by education rather than by legislation.

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#### CHRONIC APPENDICITIS WITHOUT DEFINITE ATTACKS.

The history of most cases shows that the atypical forms become well known long after the typical ones are generally recognized. This is true of appendicitis, in which disease the classical picture with acute onset, localized pain and tenderness over McBurney's point is now known to every physician, but certain chronic forms are less often recognized. The fact that there are chronic cases in which there are no definite attacks and but few symptoms directly referable to the appendix has been recognized for some years. Ewald spoke of this type of appendicitis as "appendicitis larvata," but the term has not come into general use. There is little doubt that cases of this character are frequently overlooked and diagnosed as intestinal indigestion or dyspepsia. They do not belong to the class of cases which reach the surgeon early, and, as a rule, the surgeon is more expert at detecting the atypical varieties of appendicitis than is the general practitioner.

The clinical picture presented by these patients has recently been summarized by Klemm.<sup>1</sup> At first sight the patient gives the impression of one suffering from some chronic gastrointestinal disorder rather than from a localized condition. The symptoms are mainly those of a catarrh of the large intestine, and many cases are so diagnosed. The patient may have diarrhea or constipation, or the two conditions may alternate; there is often a feeling of fullness and discomfort after meals, some pain in the neighborhood of the right iliac fossa is rather common, and this may radiate to the epigastrium, the umbilicus, or the left side. The pain is increased by long standing or even long sitting, is severe enough to make the patient restless and irritable, but is at first not wearing enough to lead him to consult a

physician. Stomach symptoms may occur in some patients, but are not so common as intestinal ones. When present they take the form of anorexia or cructations occurring immediately after meals.

Physical examination of these patients shows in many instances some tenderness over McBurney's point and at times a palpable appendix. In some cases there is a visible swelling in the right flank from a gas-filled cecum, the so-called "air-cushion" symptom. In occasional patients there is a slight daily rise of temperature above the normal and persisting for months. The recognition of this type of appendicitis is important, as the condition is intractable under medical treatment, and is only to be permanently remedied by operation.

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#### RITUALISTIC SANITATION OF THE JEWS.

In an interesting article in the *Saturday Evening Post* Dr. Solomon Solis-Cohen, Philadelphia, points out in what manner and to what extent the sanitary regulations prescribed by the Jewish religious teachers have anticipated and are in accord with the best teachings of modern hygiene. It has long been claimed that the Jews are less subject to many contagious diseases and have an average greater longevity than other peoples and their immunity is said to have been specially noticeable during the great epidemics that from time to time have ravaged Europe. The aseptic methods of modern times are paralleled largely by the old Mosaic law which has been enlarged on by the rabbinical commentators. Even the regulations for government inspection of meats recently adopted in the United States, Dr. Cohen says, are less thorough and strict than those of the Jews. Only in the matter of inspection of milk, fruits, cereals, eggs, etc., has modern science and legislation distinctly advanced beyond that of the rabbis and he questions whether or not there was the same necessity in their day. We might also ask if there is the same necessity for the Jewish dietetic regulations in some climates, differing from that of the original seat of the Jewish race; certain parts of the world might be less habitable under the Mosaic dietetic rules. Be this as it may, there can be no question that the effect of these regulations has been salutary and that ritualistic cleanliness is the secret of a large part of the apparent Jewish immunity from certain forms of disease. There may be a question, of course, as to whether or not the enforced conditions of life of a great portion of the Jewish people, through so many centuries, have not endowed them with a certain degree of immunity such as probably exists among most civilized races toward certain diseases which, comparatively mild among them, become devastatingly fatal epidemics when introduced into the virgin soil of savage races. The white race, for example, is probably almost saturated with tuberculous infection, but resistance has been gained which makes it comparatively harmless to three-fourths of civilized mankind. The mass of the Jewish race has been living for hundreds of years under most unhygienic conditions as regards this particular infection, and with this, aided by their religious sanitary observ-

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1. Mitt. aus den Grenzgeb. der Med. und Chir., December, 1906.



ances, they may have acquired a still greater resistance to it than the rest of us. On the other hand, they have acquired a certain neurotic predisposition, a condition apparently not guarded against by aseptic rules, but one, as the late Dr. Beard used to claim, accompanied by a certain degree of apparent immunity to some other diseases. Racial peculiarities and their relation to hygienic practices form an interesting subject for study, which has not been very thoroughly worked out even in the case of the Jews. Such contributions as that of Dr. Solis-Cohen are valuable as giving the public useful ideas, and it would not be a bad thing were the often quoted aphorism of a more recent religious reformer, "cleanliness is next to Godliness," more actively incorporated into the religion of the non-Jewish races generally.

#### THE URINE IN CONTRACTED KIDNEY.

The work of Cabot and others has shown how frequently the text-book picture of the urinary changes in kidney disease fails to correspond to the changes seen in actual practice. In chronic interstitial nephritis we have flattered ourselves that the urinary changes are apt to be characteristic, likewise the high arterial tension and the cardiac hypertrophy. Nagel<sup>1</sup> has recently analyzed the urinary and other changes in a number of undoubted cases of contracted kidney, and shows that some of the signs generally accepted as being almost constant are far from being so. Thus, polyuria occurs in only one-third of the cases, a normal amount of urine being secreted in a second third, and a condition midway between polyuria and oliguria existing in about one-fifth of the cases. Increased blood pressure is present in a little under three-quarters of the patients, and clinically appreciable heart hypertrophy in a little over four-fifths. Night polyuria occurs in only one-quarter of the patients, while uremia occurred in every case observed. These findings serve to emphasize the remarks previously made<sup>2</sup> regarding the necessity of correlating the clinical and laboratory findings before making a diagnosis, and they also suggest the necessity of avoiding a too strict adherence to the text-book pictures of disease. Students of medicine often refuse to decide on a diagnosis because they expect too close a correspondence to the text-book description.

#### FREAK LEGISLATION.

With the present winter sessions of the state legislatures we may look for proposals for irrational and impracticable laws. Some such measures have already been announced. We hardly expect homicide of incurables to come up again—this year at least—as the verdict of public opinion has been so pronounced against it. We may, however, include under the general head of "freaks" such propositions as one to prevent the propagation of degeneration by surgery, and one to compel physicians and surgeons to go "whiskerless" and beardless. It would only be a step further to require them to be bald. Some persons are so organized that they can

not help going to extremes. If we are to credit the press, laws are being considered in a western state that will compel each county clerk to publish quarterly a list of physicians, with the numbers of deaths that have occurred under their charge; another that shall prohibit a physician charging more than a set schedule of prices; still another providing that a physician shall not be able to collect his bill should the patient decide he had received no benefit from treatment, and yet one more which states that should a patient die while under treatment the physician's bill for services must be canceled. We suggest that legislation along this line might be amplified. All pastors who fail to regenerate their entire congregations should have their salaries cut down proportionately to the *per capita* failures among their flocks; every lawyer who does not succeed in getting a verdict for his client should be unable to collect any fee for his services; all "patent-medicine" manufacturers should be required to sell their products at not more than 25 per cent. advance over the cost price, and on the "no cure, no pay" basis, etc. The field of class legislation is large and tempting.

#### COEDUCATION.

The system of education which provides for the teaching of boys and girls and of young men and young women together has been in vogue in the United States for some time, and until recently appeared to have found favor with all classes of the community. A section of the general public, however, has, during the past two or three years, evinced a change of attitude on the subject and there is a tendency to question the benefits of coeducation. Dr. G. Stanley Hall voices these objections and expresses the fear that girls brought up with boys will lose some of their feminine charm, while the boys, on the other hand, will take on some feminine characteristics. At the same time that America is inclined to doubt the merits of coeducation, Great Britain is adopting it with some degree of enthusiasm. Experiments in this direction are going on in different parts of England, and a large public school is to be opened soon at which the system will be given a thorough trial. Of course, it is difficult, indeed impossible, to state off-hand and definitely what the results of coeducation in America have been. On the whole, it may be said that the result so far as the woman is concerned, will compare favorably with that in other countries, and it may be asserted also that the American man as yet has exhibited no such marks of effeminacy as will warrant the fear that the vigor or vitality of the nation is endangered. Viewed from a purely medical standpoint, there are certain features of coeducation which at least require consideration. An article published recently,<sup>1</sup> which dealt briefly with the subject, expressed the opinion that, although a woman should be so equipped that she may be able to make her own way in the world, she should not be allowed to overexert her mental faculties at the expense of her bodily health. During the period of adolescence, coeducation perhaps might well be aban-

1. Deutsch. Arch. f. klin. Med., January, 1907.

2. THE JOURNAL A. M. A., Jan. 26, 1907, p. 333.

1. The Lancet, Dec. 8, 1906.



done, but the whole matter requires much further consideration from a medical standpoint before dogmatic statements can with fairness be made.

#### POLLUTED WATER AND EPIDEMIC DIARRHEA.

The letter<sup>1</sup> from Warren, Pa., printed in this issue is a contribution to an important, if little understood, problem. On several previous occasions extensive outbreaks of intestinal disturbance have been reported in connection with the use of contaminated water. One of the most thoroughly studied of these cases is that recorded by the well-known British health officer, Dr. Thresh.<sup>2</sup> In that epidemic, which occurred at Chelmsford, England, there were about 1,400 cases, mostly among adults, and fourteen deaths. The original source of the water supply was apparently not exposed to infection. The initially pure water, however, was passed into a small uncovered reservoir, through which it flowed to mix with water from a spring in a larger covered reservoir. The small reservoir was not bricked over above the ground level, and during a heavy rain water from the immediate surroundings could run directly into it. Adjoining one end of the reservoir was a garden patch which had been manured from time to time with road scrapings. The outbreak of the epidemic followed heavy rains falling after three rainless weeks. The incidence of the intestinal trouble in this particular outbreak was very striking, all the deaths and practically all the cases being among persons using the implicated water, while other persons in the same borough and in neighboring towns were exempt. On epidemiologic grounds, therefore, there seemed every reason for attributing this outbreak of diarrhea to water pollution. The similarity of the Chelmsford outbreak to the recent outbreak in Warren is marked, even to the probable contamination of the wells with surface washings. We can not regard it as settled, however, that the colon bacillus found in the water was the specific cause of the trouble. Little or nothing is known regarding the germ or germs causing such epidemics of diarrhea, and it is practically certain that, no matter what the specific cause, *B. coli* would be found in contaminated waters of this character just as, for example, it would be found in a polluted water that gave rise to typhoid fever. The trouble at Warren would seem to emphasize the need for protecting reservoirs, storage basins and the like from surface drainage.

#### WHAT LEGALLY CONSTITUTES THE PRACTICE OF MEDICINE.

As will be seen in the Medicolegal Department in this issue, the New York County Medical Society, after years of waiting and endeavor, has succeeded in obtaining from the Appellate division of the Supreme Court a legal definition of the term "practice of medicine," which should afford it the most valuable aid in the campaign which it has so long been carrying on against

quackery. Hitherto the question has not been fairly raised before the higher court, but the decision finally obtained seems to cover the ground and takes from the illegal practitioners what they have heretofore depended on for their chief support. It remains to be seen how far it will affect the Eddyites, who deny the existence of disease and yet take exorbitant compensation for modifying its course by their alleged influence with the higher powers. The point made by the court as regards diagnosis is a forcible one and it is rather remarkable that it should have been ignored by any state court in its decisions, and especially that there should have been on record in New York State any decision that would seem to ignore it. This decision ought also to be of value in the effort to defeat the bill legalizing osteopathy before the New York Legislature. It also adds one more to the many judicial opinions that help to make up the body of the law on this subject throughout the country and to put the question of what constitutes the practice of medicine on a rational basis.

#### STATE CARE OF INEBRIATES.

A bill is now before the Pennsylvania Legislature providing for the erection of a state hospital for the detention, care and treatment of persons addicted to the excessive use of alcohol or certain poisonous drugs—opium, chloral, cocain—and who are designated as inebriates, dipsomaniacs or drug habitués. Two other states are successfully conducting asylums for inebriates and the results so far have been gratifying. Modern views on inebriety tend to confirm the theory, as Dr. Butler<sup>1</sup> declares, that the excessive use of alcohol and enslaving drugs is due to a diseased condition and one amenable to proper treatment. While there may be some doubt as to the original responsibility for the disease in some cases, there is not so much question as to its being due, in large part at least, to an unfortunate heredity, the tendency often being aggravated by an unfortunate environment. Hence, the call for a certain degree of state care for this class of cases is not an unreasonable one, and such care is well worth taking if it can make useful citizens out of even a small proportion of those who, through original defect and bad environment, have become not merely useless but dangerous members of society. The present method of sending advanced alcoholic cases to asylums for the insane is objectionable in many ways, as every asylum medical official can testify, and is not justifiable if better means are available. That better methods are possible in any state whose public charities are not politically controlled need not be seriously questioned. The Medical Society of the State of Pennsylvania is actively endorsing the bill which is pending in that state and it is to be hoped that its wishes will be fulfilled. We may add that similar plans might well be instituted in other states.

1. Correspondence Department, page 815.  
2. Brit. Med. Jour., Sept. 26, 1903.

1. Butler (George F.): Care and Treatment of Inebriates, THE JOURNAL A. M. A., Feb. 23, 1907, p. 680.



## Medical News

### ALABAMA.

**Personal.**—Dr. William A. Burns, Sheffield, has been appointed inspector of the convict board, vice Dr. Nathaniel G. Clarke, Ensley.—Dr. John J. Horton, Huntsville, left for Nashville, Tenn., February 6, to undergo operation.

**Anticocain and Pharmacy Bills Combined.**—By agreement the Marritt anticocain bill, which prohibits the sale of cocain, morphin and similar drugs without the prescription of a reputable physician, and Dr. Lovelady's bill, regulating the practice of pharmacy, have been merged into one law.

**Health Officers Named.**—The Jefferson County Medical Society, which is legally the Board of Health of the county, elected the following health officers for the thirteen municipalities in the county outside of Birmingham: Drs. Samuel R. Caffey, Avondale; Joseph S. Winters, Bessemer; Francis S. Pugh, Brookside; Luckey A. Jenkins, Cardiff; Thomas A. Jones, East Lake; Jesse E. Robbins, Ensley; George W. Brown, Pratt City; Robert L. Mitchell, Warrior; William C. Gewin, West End; Alse W. Bell, Woodlawn; Joseph H. Edwards, Wylam; Ethbirt C. Rosamond, North Birmingham, and John W. Howard, Irondale.

**Society Elections.**—The Calhoun County Medical Society, at its annual meeting in Anniston, elected the following officers: President, Dr. William Y. White, Anniston; vice-president, Dr. Mark J. Williams, Oxford, and censor, Dr. John M. Whiteside, Anniston.—Walker County Medical Society held its annual meeting at Jasper, January 18, and elected the following officers: Dr. George S. Gilder, Carbonhill, president; Dr. Howard J. Sankey, Nauvoo, vice-president; Dr. Titus Manasco, Carbonhill, secretary; Dr. William M. Cunningham, Corona, censor, and Dr. Andrew M. Stovall, Jasper, county health officer.—At a meeting of the Morgan County Medical Society, held in Decatur, February 7, Dr. Able R. Wilson, Hartsells, was elected president; Dr. B. Walne Watson, New Decatur, vice-president; Dr. J. L. Gunter, New Decatur, secretary-treasurer, and Dr. Scott L. Rountree, New Decatur, county health officer. The society decided to establish a minimum of \$5 for examination for "old line" life insurance companies.

### ARKANSAS.

**Hospital Construction Progresses.**—The Davis Hospital, Pine Bluff, which is now under construction, has already on hand about \$20,000 of the \$30,000 required to complete the building.

**License Revoked.**—In the case of Dr. Thomas E. Rider, Hot Springs, charged with "drumming," Judge Bent revoked the license of the defendant to practice medicine and fined him \$150.

**Newspaper Publicity.**—The Jefferson County Medical Society, at its February meeting, unanimously decided to request all members of the society to refrain from giving out information to the lay press regarding professional matters.

**Society Meetings.**—The president of the state society has addressed a communication to the county medical societies, urging that the anti-drumming regulations provided by the federal medical board be strictly observed.—At the recent meeting of the Union County Medical Society, held at El Dorado, Dr. John A. Moore, Lisbon, was elected president; Dr. Samuel E. Thompson, El Dorado, vice-president; Dr. Joseph B. Wharton, El Dorado, secretary; Dr. James M. Sheppard, El Dorado, treasurer; Dr. H. H. Niehuss, Wesson, delegate to the state society, and Dr. Edward F. Hamm, Shuler, alternate.—At the annual meeting of the Mississippi County Medical Association, held in Blytheville, February 14, the following officers were elected: Dr. Carlos C. Stevens, Blytheville, president; Dr. Oleander Howton, Osceola, vice-president; Dr. Thomas G. Brewer, Osceola, secretary-treasurer, and Drs. Thomas G. Brewer, Osceola, and S. P. Martin, Chickasawba, delegates to the state society.—At a meeting of the Craighead County Medical Society, held in Jonesboro recently, Dr. Charles M. Lutterloh was elected president; Dr. William C. Haltom, secretary and delegate to the state society, and Dr. Hugh L. Rains, alternate, all of Jonesboro.

### CALIFORNIA.

**Antivaccination Law Defeated.**—The bill of Assemblyman Sackett, repealing the present general vaccination law was defeated by four votes, only 37 out of the 41 votes required being in favor of the bill.

**New College Building Dedicated.**—The new building for the College of Physicians and Surgeons, San Francisco, was formally dedicated January 18. Dr. Winslow Anderson, president of the institution, delivered the address of welcome.

**State Sanatorium for Consumptives.**—The first step toward the establishment of a sanatorium for the treatment of tuberculosis was taken to-day by Senator Keane, who introduced a bill appropriating \$150,000 for the purchase of a site and the erection of a building.

**Banquet to Governor Pardee.**—A banquet and reception in honor of Dr. George C. Pardee, ex-governor of California, was given January 28 by the Alameda County Medical Association, of which Dr. Pardee is a member. Dr. Daniel Crosby, Fruitvale, acted as toastmaster and delivered the address of welcome, to which Dr. Pardee made suitable reply.

**Medical Library Dedicated.**—A formal dedication of the Medical Library donated to the medical profession of Los Angeles by Dr. W. Jarvis Barlow took place February 8. Dr. Barlow made a brief address, at the close of which he presented the deed of the property and the keys of the library to the Clinical Association. Dr. Joseph Kurtz, president of the association, accepted the trust. The building alone without the grounds cost Dr. Barlow \$32,000.

**Hospital Notes.**—The Santa Monica Bay Hospital opened for the reception of patients March 1.—The Claremont Hospital Association, Oakland, has been incorporated with a capital stock of \$175,000 by Drs. Hayward G. Thomas, Frank L. Adams, Oliver D. Hamlin and Edward N. Ewer, all of Oakland, and Dr. George F. Reinhardt, Berkeley.—The Southern Pacific Railway Company has decided to build a modern hospital on the land it recently purchased for \$150,000 near the Park Panhandle, San Francisco.

**Medical Licensure.**—A bill has been introduced into the legislature doing away with the separate board for licensing osteopaths and placing full control of medical license in the hands of a composite board. Two osteopaths are placed on this board. Examination on therapeutics, etc., has been done away with, and applicants are required to pass an examination in all fundamental branches. The reciprocity clause has been dropped and five credits are allowed for each ten years of reputable practice. It is believed that this bill will be passed.

**Ill and Injured.**—Dr. W. G. Galbraith, Los Angeles, chief surgeon of the Greene Consolidated Copper Company, Cananea, Mexico, is seriously ill at his home.—Dr. Charles H. Thompson, Santa Rosa, who has been seriously ill, is reported to be convalescent.—Dr. Charles E. Stone, Maryville, has recovered from his recent illness.—Dr. Walter C. Smiley, Long Beach, lost his balance and fell from a trolley car, January 31, dislocating his shoulder and sustaining severe scalp wounds and also concussion of the brain.—Dr. W. T. F. Smith, San Francisco, was struck by an automobile, January 31, and suffered severe contusions and sprained his right ankle.—Dr. Martin Schnabel, Newcastle, was thrown from his buggy recently and badly bruised.—Dr. William J. Wickman, San Rafael, was thrown from his buggy in a runaway accident and fractured his left arm.

**Personal.**—Dr. Sidney R. Daunenbaum, Berkeley, will leave for Europe in a few days.—Dr. Ferdinand Stabel, Redding, has been appointed medical examiner for the twelfth civil service district.—Dr. Ethel L. Leonard has been appointed bacteriologist to the health department of Los Angeles.—Dr. Edward R. Taylor has been elected president of the Lane Hospital, San Francisco, vice Dr. C. N. Ellinwood.—Dr. Luther M. Powers has been reappointed health officer of Los Angeles.—Dr. James W. Wood, Long Beach, is taking a trip to Rochester, Minn., and New York City.—Dr. R. Edmond Dixon, Hanford, has been elected physician of Kings County.—Dr. Marcia Gilmore, Pasadena, has returned from a visit to Chicago.—Dr. Samuel S. Bogle, Santa Rosa, has been reappointed physician of Sonoma County.—Dr. George T. Hesser, Folsom City, has been appointed health officer of Sacramento County, and Dr. George L. Stevenson, Sacramento, physician at the dispensary.—Dr. Dudley Tait, San Francisco, has been elected corresponding member of the Surgical Society of Paris.

**Society Meetings.**—At the annual meeting of the Redlands Medical Society the following officers were elected: President, Dr. Walter B. Powers; vice-president, Dr. Charles E. Ide, and secretary, Dr. John L. Avey.—At a meeting of Contra Costa County Medical Society, held in Martinez January 20, Dr. Frank Rattan, Martinez, was elected president; Dr. Francis F. Neff, Concord, vice-president; Dr. J. Walter Key, Crockett, secretary; Dr. A. H. White, Crockett, assistant secretary; Dr. Jahial S. Riley, Crockett, treasurer; Dr. Joseph T. Breneman, Martinez, delegate to the state society, and Dr. Hawley N. Barney, Point Richmond, alternate.—At a meeting of Fresno County Medical Society, Dr. John R. Walker was elected presi-



dent; Dr. Asbury N. Loper, vice-president; Dr. L. R. Willson, secretary, and Dr. Thomas M. Hayden, treasurer, all of Fresno. —At the annual meeting of the Sonoma County Medical Society, Dr. James R. Swisher, Healdsburg, was elected president; Dr. James H. McLeod, Santa Rosa, vice-president; Dr. Reuben M. Bonar, Santa Rosa, secretary, and Dr. Lizzie Lain, Santa Rosa, treasurer. —At a meeting of the Long Beach Medical Society, held January 16, Dr. Frank L. Wood was elected president; Dr. Frances L. Rogers, secretary-treasurer, and Dr. Homer O. Bates, councilor.

#### ILLINOIS.

**Damage Suit Dismissed.**—The Varvil suit for malpractice in which damages of \$10,000 were sought against Dr. Albert L. Ward, Bement, in the Piatt County Circuit Court, has been dismissed.

**Colony for Epileptics.**—Dr. W. P. Spratling, superintendent of the New York State Colony for Epileptics, Sonyea, gave an address in the senate chamber, Springfield, February 26, on the colony treatment of epileptics, under the auspices of the Children's Hospital Society, Chicago.

**Personal.**—Dr. Charles E. Donahoo, Hillsdale, is ill with scarlet fever. —Dr. Harry B. Bailey, Rockford, was operated on for appendicitis at St. Anthony's Hospital, February 13. —Dr. Frederick A. Renner has removed from St. Jacob to Benld. —Dr. William J. Rideout, Freeport, sailed last week for Europe.

**Hospital Notes.**—The women of East St. Louis have organized a ladies' auxiliary in the interests of the Henrietta Hospital. The first work which they will undertake will be the erection of a dormitory for nurses, so that the quarters now used for that purpose may be devoted to a children's ward. —A movement is on foot to erect a hospital at Benld, Macoupin County.

#### Chicago.

**Children's Hospital Benefit.**—On the evening of March 11 Maude Adams will give a performance of "Peter Pan" for the benefit of the Children's Hospital Society.

**Personal.**—Dr. Frank Billings and daughter sailed for the Mediterranean, February 19. —Dr. William J. Butler left for Europe, February 23. —The case against Dr. Wilbur V. Johnson, charged with assisting in an illegal operation, was dismissed February 15.

**Mortality.**—The number of deaths for the week ended February 23 was 707, 9 more than for the previous week and 113 more than for the corresponding week of 1906. This mortality is equal to an annual death rate of 17.49 per 1,000. Pneumonia caused 161 deaths; consumption, 79; heart diseases, 50; violence, including suicide, 46; nephritis, 42; scarlet fever, 27; cancer, 25; diphtheria, 20, and whooping cough and typhoid fever, each, 8.

**Infectious Diseases.**—During the week, ended February 23, the cases of diphtheria, measles and scarlet fever have shown a decided and substantial reduction. The reduction has been steady and dates from the week the medical inspectors were put to work. This emphasizes the necessity of a permanent medical inspection corps for public schools. —Two cases of smallpox were discovered during the week and sent to the Isolation Hospital. One patient came from Minneapolis and the other from Lancaster, Canada.

#### KENTUCKY.

**Medical Student Dies.**—T. Vernon Gamron, a senior student at the Kentucky School of Medicine, Louisville, died from heart disease at his boarding house recently, aged 24.

**Hospital to be Enlarged.**—The trustees of the Children's Free Hospital, Louisville, have decided to enlarge their present quarters sufficiently to accommodate twice the number that can be taken care of at present. Funds have been provided for the improvements.

**Colored Physicians Organize.**—The colored physicians of Louisville organized the Falls City Medical Association, February 5, with the following officers: Dr. William T. Merchant, president; Dr. J. A. C. Lattimore, vice-president; Dr. Ellis D. Whedbee, secretary, and Dr. Percy R. Peters, treasurer.

**Illegal Practitioner Arrested.**—"Dr." John A. Taff, convicted in the local courts for practicing without a license, he having been running a "locomotor ataxia works," has just been arrested at Evansville, Ind., where he went after his conviction in Louisville, and returned on requisition. During the trial here he stated he was a graduate of Columbian University, Washington, D. C., and that his wife, from whom he is divorced, had the diploma. Investigation indicated that he has

never obtained a diploma from Columbian University, and he was arrested for perjury and will be tried in Louisville on that charge.

#### MARYLAND.

**Unlicensed Practitioner Fined.**—For practicing medicine without first having registered, "Dr." J. F. Wagner, Hagerstown, is reported to have been fined \$50 and costs February 2.

**Hospital Equipment Sold.**—The Frederick County Hospital Association, which formerly conducted the Emergency Hospital in Frederick, has sold the equipment of the latter to the Union Hospital Association, which has recently purchased a building and hopes to open a hospital.

**Prevention of Tuberculosis.**—On February 14 Dr. William S. Thayer, Baltimore, addressed the Washington County Medical Society at Hagerstown on tuberculosis and the need of carrying out the laws for its prevention. On the same evening addresses were made by Dr. Thayer and Mr. H. Wirt Steele, executive secretary of the Maryland Association for the Relief and Prevention of Tuberculosis, at a public meeting in Hagerstown. A branch association was formed for that section.

**Officers Elected.**—At the annual meeting of the Maryland Association for the Relief and Prevention of Tuberculosis, held in Johns Hopkins University, February 12, Dr. William H. Welch presided in the absence of the president, and the following physicians were among the officers elected: President, Dr. Henry Barton Jacobs, Baltimore; honorary president, Dr. William Osler, Oxford, England, and vice-presidents, Drs. James Bosley, Baltimore; Hiram Woods, Baltimore; John S. Fulton, Baltimore; Joshua W. Hering, Westminster; Richard S. Hill, Upper Marlboro; Henry M. Hurd, Baltimore; Samuel T. Earle, Baltimore; Thomas L. Shearer, Baltimore; Mary Sherwood, Baltimore; William S. Thayer, Baltimore; Isaac R. Trimble, Baltimore; William H. Welch, Baltimore; Charles M. Ellis, Elkton, and Louis B. Henkel, Jr., Annapolis.

#### Baltimore.

**Bequest.**—In accordance with the expressed wishes of the late Bernard Kohn, his children have given \$2,500 to the Consumption Hospital and \$500 each to the Hebrew Hospital and the Nursery and Children's Hospital.

**Site for Sanatorium Selected.**—It is announced that the Maryland Tuberculosis Commission has elected a site, consisting of 240 acres, for the proposed state sanatorium for tuberculosis on South Mountain, near Sabillasville, 66 miles from Baltimore.

**Visiting Nurses' Report.**—At the annual meeting of the Instructive Visiting Nurses' Association, held February 11, it was reported that eight nurses are now employed; that 22,336 calls were made during the year, and that, on January 1, 500 cases were under care.

**Addition to Hebrew Hospital.**—The plan of the Dr. Samuel L. Frank memorial addition to the Hebrew Hospital calls for a four-story building with basement and subbasement, with a frontage of 93 feet and a depth of 58 feet. It will be connected with the present hospital by a corridor. The donation for the erection and equipment amounts to \$84,000.

**Result of Public School Inspections.**—The medical examiners in the public schools report that 12,109 children were examined in January. Of that number, 4,362 were found to have defects or ailments and 118 were excluded. The principal defects or ailments were: Blepharitis or sore eyes, 135; strabismus, 80; eye-strain, 604; pediculosis, 1,436; imperfect teeth, 452; adenoids, 597; mental deficiency, 45; skin diseases, 91; enlarged tonsils, 1,344, and unvaccinated, 256.

**Personal.**—Dr. Charlotte S. Murdoch, who has been associated with the work of Dr. G. Campbell Morgan, London, for some years, has been visiting in Baltimore and will sail for Shanghai from San Francisco March 8. —Dr. Arthur Wegfarth was thrown from his buggy February 18 and seriously injured. —Dr. Adolph Eisenberg sustained painful injury to his shoulder by being thrown from his buggy. —Dr. Howard A. Kelly was given the degree of LL.D. by the University of Pennsylvania February 22.

#### MASSACHUSETTS.

**Personal.**—The Brockton Hospital elected the following officers: Vice-president, Dr. Amasa E. Paine, and executive committee, Drs. Jesse H. Averill, Samuel J. Gruver, N. C. King, Arthur L. Beals and Fred S. Faxon. The medical board will include in addition Drs. Henry F. Borden, Jonas E. Bacon, Frank E. Constans and Frederick J. Ripley. —Dr. Louis Z. Normandin has been appointed a member of the board of health of New Bedford. —Dr. William W. Hartwell has been



elected city physician of Malden, and Dr. Charles E. Prior has been elected a member of the board of health, vice Dr. Charles D. McCarthy, recently elected mayor.—Dr. Frank G. Wheatley, Abington, has been nominated by the governor as associate medical examiner for the second Plymouth district.—The appointment of Dr. George B. Magrath, Boston, as medical examiner for a portion of the Suffolk district has been confirmed by the council.—Dr. Charles H. Thomas, Cambridge, has been appointed a member of the local board of health, and Dr. Albert P. Norris, milk inspector.—Dr. Frank D. Stafford has been inaugurated for the third time as mayor of North Adams.—Dr. Agavinie Gilbakian, Boston, has been recommended as medical missionary to India by the Women's Society of the United Presbyterian church.—Drs. Timothy J. Daly, Robert W. Forster, John B. Bain, Albert W. Hancock and L. G. Beeley have been appointed physicians of the Lawrence General Hospital.

#### MINNESOTA.

**Endowment for Hospital.**—Matthew G. Norton, lumberman of Winona, has announced that he has settled an endowment of \$50,000 on the Winona General Hospital. The endowment is in the form of New York City bonds, maturing in 1956, with interest at the rate of 4 per cent. per annum, bringing the total amount of the gift up to \$150,000.

**Smallpox.**—Smallpox is reported from Frazee, where several cases exist.—In the country around Bemidji five new cases of smallpox have been found.—At the last session of the Biwabik village council, it was decided that the village is not responsible for the cost of the care of smallpox patients.—At the Pacific Hotel, Minneapolis, 5 new cases have been reported.—There are at present in the Isolation Hospital, Duluth, 15 cases of smallpox, practically all of which were brought in from unorganized towns and camps throughout the country.

**Personal.**—Drs. Knut O. Hoegh, Minneapolis, and Eduard Boeckmann, St. Paul, have been made knights of the Order of St. Olaf by King Haakon of Norway.—Dr. Charles W. More, Eveleth, has been elected health officer of St. Louis County.—Dr. Jacob C. Rothenburg, Springfield, has been elected chairman of the board of health of Brown County.—Dr. George S. Wattam, Warren, has been reappointed a member of the advisory commission of the State Sanatorium for Consumptives.—Dr. R. Ignatius Hubert, St. Cloud, has been appointed a member of the Stearns County Board of Health.

**State Board of Health Report.**—The annual report of the State Board of Health shows that the board received in 1906 an appropriation of \$21,000, the same amount which was received 20 years ago, and recommends an increase. It reports that deaths from tuberculosis in Minnesota amount annually to 2,000, and that at the same time there are probably 10,000 individuals suffering from the disease. It calls attention to the fact that the continued prevalence of typhoid fever is a disgrace to the community and should be prevented by care of sewage and water supplies, and also comments on the prevalence of smallpox for the last ten years in the state, and urges the provision of compulsory vaccination laws. During the year 100 people were bitten by rabid animals. Of these 69 went to Chicago or Ann Arbor for treatment. The board urges the establishment of a Pasteur institute, and recommends the passage of a burial permit law that vital statistics may be compiled.

**Society Meetings.**—The Southwestern Minnesota Medical Association met at Pipestone and elected the following officers: President, Dr. Walter E. Richardson, Slayton; vice-president, Dr. William D. Beadie, Windom; secretary-treasurer, Dr. Emil King, Fulda; delegate to the state society, Dr. George D. Rice, Pipestone, and alternate, Dr. George G. Balcom, Lake Wilson. Windom was selected as the place of meeting in July.—At the annual meeting of the Olmsted County Medical Society, at Rochester, the following officers were elected: President, Dr. John E. Crewe; vice-president, Dr. Fred R. Mosse, and secretary-treasurer, Dr. Justus Matthews, all of Rochester.—A meeting of the Upper Mississippi Valley Medical Association was held at Little Falls, when the following officers were elected: President, Dr. George R. Christie, Long Prairie; vice-president, Dr. John Burton Holst, Little Falls; secretary, Dr. Charles F. Coulter, Wadena; treasurer, Dr. Paul E. Kenyon, Wadena, and censor, Dr. Joseph G. Millsbaugh, Little Falls.

**Tuberculosis Conference.**—The National Tuberculosis Exhibit was shown in Minneapolis, February 2 to 13 inclusive, and created great interest. On February 5, in connection with the exhibit, the Western Conference on Tuberculosis was held. Among the speakers were Dr. Frank F. Westbrook, Minneapo-

lis; Dr. Arnold C. Klebs, Chicago; Dr. John W. Bell, Minneapolis; Dr. H. L. Taylor, Dr. John S. Fulton, Baltimore, and Dr. John M. Bessel, Milwaukee. At the close of the session the following officers were re-elected: President, Mr. George C. Christian, Minneapolis; vice-presidents, Drs. Charles L. Greene, St. Paul, and Louis B. Wilson, Rochester, and treasurer, Mr. J. H. Skinner, St. Paul. The conference is expected to embrace the states of Ohio, Michigan, Illinois, Indiana, Missouri, Iowa, Wisconsin, Minnesota and the Dakotas. On February 6 the State Association for the Relief and Prevention of Tuberculosis held its session. Dr. Cornelius A. Harper, Madison, Wis., spoke on "Tuberculosis from the Standpoint of a Health Officer;" Dr. James W. Pettit, Ottawa, Ill., on "The Sanatorium Treatment of Tuberculosis," and Dr. Harry A. Tomlinson, St. Peter, on "The District Nurse in Connection with Tuberculosis."

#### NEW YORK.

**To Abolish the Ringing of Church Bells.**—The New York Society for the Suppression of Unnecessary Noises is said to be about to begin a movement to abolish the ringing of church bells in cities.

**High Birth Rate.**—The annual report of the State Health Department shows that the births during the year 1906 outnumbered the deaths by over 40,000. There were in the state 183,012 births, 140,773 deaths and 87,870 marriages.

**Marine Hospital.**—Ground will soon be broken in Buffalo for the long contemplated marine hospital. It is expected that the building will be completed in a year. It is a three-story and basement building, 114 feet long, with an average width of 62 feet, and will be of brick and stone construction.

**Infirmary Completed.**—The Lackawanna Steel Company has completed the new dispensary at West Seneca. It is a two-story building, equipped for operative work. Heretofore injured workmen have been give first aid at the dispensary, but when operation was necessary this was done at the Moses Taylor Hospital.

**The Census of the Blind.**—While the canvass of the entire state is not yet complete, about 5,000 names have been handed in and the commissioner is now ready to begin work. The census shows that there were 184 persons blind or partially blind in Orange County, in Westchester County there were 220, in Rockland 32, and in Putnam 21, making 457 in four counties.

**Personal.**—Dr. Walter S. Goodale has been appointed tenement and lodging house inspector at Buffalo.—Dr. Frederick J. Barrett, Buffalo, has been appointed an examiner of applicants for pensions or increase of pensions for the eye, ear, nose and throat at Buffalo.—Drs. Harry R. Trick, Charles P. Chapin and Dr. Clark have been appointed trustees and physicians in charge of the Riverside Dispensary, Buffalo.—The Æsculapian Club of Buffalo, on February 6, tendered a dinner to Dr. Ernest Wende. Dr. Francis M. O'Gorman acted as toastmaster.

**State Cancer Laboratory Report.**—The annual report of the State Cancer Laboratory, Buffalo, announces that researches during the last year confirm the statement made by Dr. Roswell Park in 1898, that cancer shows a progressive and steady increase. This is estimated at 25 per cent. for the last three years. The report recommends that it would be well for health officers to enforce the proper sterilization and disposal of all dressings used on cancer patients, and the proper fumigation of rooms occupied by such patients.

**Protest Against Bronx Sewer.**—The Merchants' Association has filed a protest with the Secretary of War, declaring that unless the United States government interferes and stops the wholesale dumping of sewage into the Hudson River the harbor of New York will be completely ruined for shipping purposes. They protest especially against the construction of the Bronx Valley sewer. This contemplated sewer would drain the Bronx Valley, providing for the disposal of sewage and manufacturing waste for a population of 850,000 and would empty into the Hudson River north of Spuyten Duyvil.

**First-Aid Appliances in Factories.**—A bill has been introduced into the legislature providing that every person, firm or corporation operating a factory or shop shall at all times keep, free of charge to the employes, a medical and surgical chest containing all necessary medicines and instruments for first aid to the ill or injured, and that the board of health of each city or town shall see that this act is enforced. The penalty for violating this act is a fine of not less than \$5 nor more than \$500 for every week during which this violation continues.



**Coroner and Medical Examiner.**—Since the office of coroner has been abolished in Erie County and that of medical examiner created, there has been much friction with the several district physicians. The medical examiner construed the law to mean that if a person died without medical care and nothing indicated that the death was due to violence, the district physician should issue the death certificate, and that the medical examiner and his assistant should attend only to deaths by violence. In a recent case, the cause of death could not be determined by the district physician, and the medical examiner was asked to issue the death certificate. He refused the request, as there was no reason to believe that the death was due to violence. The corporation counsel of Buffalo, who was asked by the health commissioner to give an opinion, stated that if the city or district physician is not satisfied as to the cause of death, it becomes the duty of the medical examiner to make the necessary investigation.

**News from the Assembly.**—Coroner Harburg appeared before the cities committee and urged favorable consideration of the bill prohibiting removals from hospitals in New York City. The cities committee gave the matter no consideration and did not report it, but the Senate cities committee, before which Coroner Harburg did not appear, reported the Sohmer bill, prohibiting such removals and prohibiting the superintendent of a hospital to refuse admission to an applicant if brought in an ambulance or other vehicle and not suffering from a contagious disease.—The Wainright bill, which has been introduced into the Assembly, adopts for the state the national food law in every particular.—A bill is pending providing that there shall be four coroners in Manhattan, two in the Bronx, four in Brooklyn, three in Queens, and one in Richmond.—The Reese bill makes pasteurization of milk a municipal function under the direction of the Health Board and the selling of any milk that has not been put through pasteurizers would mean fine and imprisonment. The bill states that the Health Commissioners shall designate pasteurizing stations to which every quart of milk shall be taken. This would, of course, be in addition to inspecting the source of supply. Under this bill the health board would have authority to seize and destroy any milk found unpasteurized.

**Sanitation in the State.**—Eugene H. Porter, State Health Commissioner, requires that all cases of tuberculosis be reported to him, with a view of securing definite information on which to base steps to prevent its spread. A sanitary map of the state is being prepared and a systematic study of watersheds and an investigation of stream pollution are being carried on. The continued pollution of the streams of the state must cease and no permits to discharge sewage into the waters of the state will be granted except for very cogent reasons. It is urged that the commissioner should also have authority to order sewage taken out of a stream when necessary and within a given time. It is suggested that a commission ought to be created to cooperate with the Health Department in so important a matter as the pollution of the waters of New York harbor. An inspection of the packing houses, slaughter houses and meat markets showed many to be in bad condition. They have been directed to be put in sanitary shape at once and frequent inspection was urged. Particular attention will henceforth be paid to food stuffs manufactured in this state. A campaign for pure milk throughout the state was urged. During the month of August of 1906 there were 2,339 deaths under two years of age due to diarrhea and enteritis. The necessity for inspecting the eyes of school children was pointed out and it was recommended that the subject of ear sanitation receive attention.

#### New York City.

**Trichinosis on Lower East Side.**—At present there are eight cases of trichinosis in Bellevue Hospital, four men and four women. They are all from the same locality, the lower end of First avenue, near Second and Fourth streets.

**Personal.**—At a dinner of the British Schools and Universities Club Dr. John R. Shannon, the retiring secretary, was presented with a loving cup.—Dr. George F. Poole, physical director of the Twenty-third Street Branch of the Young Men's Christian Association, will have charge of all the water sports at the Sportsman's Show which opens March 1 in Madison Square Garden.

**Hospital Staff Dine.**—The seventh annual dinner of the directors and staff of the Manhattan Eye, Ear, Nose and Throat Hospital was held on the evening of February 19. This was the first dinner since the institution has moved into its new building. Dr. A. Alexander Smith spoke on "The Responsibility of the Hospitals as Educational Institutions." Dr.

Frank Van Fleet spoke on "Our Hospital: What It Has Accomplished, Its Requirements and Responsibilities."

**Contagious Diseases.**—There were reported to the sanitary bureau of this city for the week, ended February 16, 356 cases of tuberculosis, with 191 deaths; 282 cases of diphtheria, with 52 deaths; 263 cases of scarlet fever, with 21 deaths; 248 cases of measles, with 6 deaths; 52 cases of whooping cough, with 6 deaths; 42 cases of typhoid fever, with 12 deaths; 13 cases of cerebrospinal meningitis, with 13 deaths; 91 cases of varicella and 2 cases of smallpox, making a total of 1,349 cases and 301 deaths.

**A Building for the Blind.**—The New York Association for the Blind wants \$100,000 for a building in which to house the association and which will furnish a salesroom for the work of the blind and also quarters for a men's workshop. Andrew Carnegie and Smith Ely have promised \$10,000 each and Jacob Schiff \$5,000 on condition that the remainder of the fund necessary is raised. It was shown that New York is woefully behind European countries in caring for the blind, many of whom are only waiting the opportunity in order to become self-supporting and useful instead of a burden on the state.

**A Hearing on the Milk Question.**—There has been a discussion of the milk question before the committee on public health of the Board of Aldermen. Dr. Darlington sent word that his department was at work on a series of experiments to determine the feasibility of pasteurization and the most practical and inexpensive way of carrying it out. There was an ordinance introduced by Alderman Freeman directing that no raw milk should be sold in the city unless it was bottled and sealed under the supervision of inspectors of the Health Department and that the bottle should be sealed by the inspector. There will be several public hearings before reporting to the board. It is the intention of the committee to take advantage of these hearings to examine thoroughly into the conditions under which milk is sold in this city.

**Money for Hospitals.**—At a meeting of the German Charity Ball committee it was decided to divide the proceeds of that function, amounting to \$11,262, among the following institutions: The German Hospital, the Isabella Heimath, St. Marks, St. Francis, the German Poliklinik, the German Society, the Deutsche Frauen Verein and the West Side Dispensary.—Jacob Ruppert has given \$10,000 to the German Hospital and Dispensary for the erection of a building for contagious diseases, and George Ehret gave \$5,000 for the purchase from the city of a piece of ground which is to be used for the erection of an additional ward to the hospital.—The \$10,000 distributed annually among charitable institutions by the Siegel-Cooper Company will be divided this year among 277 institutions. St. Rosa's Home for Incurable Cancer and St. Joseph's Home for Consumptives are among the institutions receiving \$100. Among those receiving \$50 are the Home for Crippled Children, the New Rochelle Hospital, St. John's Hospital, the Association for Improving the Condition of the Poor and the Home for the Blind.

#### PENNSYLVANIA.

**Appropriation for Care of Insane.**—The House Appropriations Committee has reported favorably on the bill appropriating \$2,500,000 for the care and treatment of the indigent insane in state and county institutions for the two fiscal years beginning June 1. Appropriations of \$1,590,000 have been made for buildings at the state asylums at Harrisburg, Norristown, Danville, Warren and Wernersville. This will provide comfortable accommodations for 1,950 additional inmates.

#### Philadelphia.

**Internes Wanted.**—The examination of candidates applying for service as resident physician in the Presbyterian Hospital, will be held at the hospital Wednesday, April 17, at 7 p. m.

**Deaths of the Week.**—There were 656 deaths in the city for the week ended February 16, an increase of 61 as compared with the previous week. Of the total number, 92 were caused by pneumonia, 90 by tuberculosis, 66 by heart disease, 42 by Bright's disease, and 39 by typhoid fever.

**Diphtheria at Hospital.**—Four cases of diphtheria developed at the University Hospital, making a total of seven cases in that institution and one in the Baldwin House, a dormitory of the university. Dr. Robert Grant Torrey, resident at the hospital, has been stricken with the disease, and placed in the Isolation Hospital.

**Deaths and Disease.**—There were 650 deaths in this city during the week ended February 24, an increase of 6 over the number for the previous week. The principal causes were: Typhoid fever, 47; heart disease, 50; pneumonia, 81, and



Bright's disease, 55. There were 415 new cases of typhoid fever during the week, an increase of 10 over the number of last week. The number of cases this week makes a total of 3,224 since January 1.

**Reception to White.**—A reception was given by the medical students of the University of Pennsylvania, February 12, to Dr. J. William White on his return from Europe. The opening address of welcome was made by O. F. Lamson, president of the senior class. Besides the reply Dr. White addresses were made by Vice-Provost Edgar F. Smith and Drs. J. Chalmers Da Costa, Ernest LaPlace, Alfred Stengel and Alfred C. Wood.

**Hospital Officers Elected.**—The following have been elected officers of the Samaritan Hospital Medical Society: President, Dr. James C. Attix; vice-presidents, Dr. Wendell Reber and Dr. Collier F. Martin; secretary and treasurer, Dr. Jesse O. Arnold; and executive committee, H. C. Groff, and Drs. Sherman F. Gilpin and Benjamin F. Devitt.——The following have been elected officers of the Woman's Hospital Medical Society: President, Dr. Elizabeth R. Bundy; vice-president, Dr. Belle A. Schisler; secretary, Dr. Annie L. Conner, and treasurer, Dr. Miriam M. Butt.

**Joint Meetings.**—The Kensington Branch of the Philadelphia County Medical Society has invited the educational leaders of that section to participate in a series of meetings just inaugurated intended to instruct the general public on urgent questions of hygiene, sanitation and medicine. School teachers, manufacturers, physicians and clergymen will here meet the general public of Kensington, and by following the symposia of able specialists, will be able to instruct pupils, congregations, employes and patients with the most recent data on the topics mentioned. The first symposium is on "Prevention of Tuberculosis in Industrial Section."

**Wants One Board.**—By unanimous vote, the Philadelphia County Medical Society adopted a resolution endorsing the bill now in the legislature providing for the abolition of the present system of three boards of examiners and the appointment by the governor of a single board of examiners consisting of nine members to grant licenses to practice medicine. Dr. Matthew Woods offered the resolution, following a talk on the provisions of the bill by Dr. Henry Beates, declaring that recent statements put out by opponents of the measure were absolute misrepresentations. Dr. Beates read a section of the bill to show that no one school of medicine was given any advantage in the constitution of the board of examiners.

#### TEXAS.

**Hospital Notes.**—At a meeting of the board of trustees of the King's Daughters' Hospital, Temple, January 10, it was decided to proceed with the construction of an addition of 10 rooms to the main building.——Brooke Smith, Brownwood, has given five acres of land for a hospital site, provided that a hospital be built at a cost of at least \$10,000, and its maintenance be provided for.——The erection of a three-story and basement hospital building at Temple by the Gulf, Colorado & Santa Fé Railway Employes' Hospital Association is now fully assured.——Arlington Heights Sanitarium, now under construction, is to be enlarged, so that its capacity will be 37 patients, instead of 15 patients as originally contemplated.

**Personal.**—Dr. James P. Tucker, Galveston, has been appointed quarantine officer at Galveston Pass, vice Dr. Edgar F. McClendon.——Dr. John H. Florence, Brownsville, has been appointed to succeed Dr. William P. Thompson as state quarantine officer at Sabine.——The following assistant physicians have been elected for the North Texas Hospital for Insane, Terrell: Drs. James R. Nichols, George F. Powell and Claude M. Poff, all of Terrell, and Dr. William J. Johnson, Cookeville.——Dr. Roy H. Gough, Hillsboro, has been appointed deputy district counselor.——Dr. Benjamin M. Worsham has been re-elected superintendent of the State Lunatic Asylum, Austin, and Drs. John W. Bradfield, Jacob T. Wilhite, G. Horace Gilbert and Margaret Holliday have been re-elected as assistant physicians.

**Society Meetings.**—At the annual meeting of the Ellis County Medical Association, held in Ennis, January 15, the following officers were elected: Dr. Joseph A. Tate, Ennis, president; Dr. F. A. Pierce, Ferris, vice-president; Dr. Walter P. McCall, Ennis, secretary-treasurer; Dr. James C. Loggins, Ennis, delegate to the state association; Dr. Warren T. West, Waxahachie, alternate, and Drs. Henry O. Stacey, Waxahachie, Oscie P. Sweatt, Waxahachie, and Charles P. Cook, Ennis, censors.——At a meeting of the Taylor County Medical Society, held in Abilene, January 16, Dr. Alonzo O. Scarborough, Snyder, was elected president; Dr. Franklin E. Haynes, Abilene,

vice-president, and Dr. Shirley C. Gage, Abilene, secretary-treasurer.——At the annual meeting of the Nueces County Medical Association, held at Corpus Christi, January 18, the following officers were elected: President, Dr. Henry Redmond, Corpus Christi; vice-president, Dr. W. E. Carruth, Corpus Christi; secretary-treasurer, Dr. C. H. Yeager, and censors, Drs. William T. Harris, Mathis, and Harry Heany and S. T. Dodge, Corpus Christi, censors.——At the annual meeting of the Robertson County Medical Association, held in Hearne, the following officers were elected: President, Dr. Louis M. Bassett, Hearne, secretary; Dr. John H. Petty, Franklin, and delegates to the state association, Drs. Daniel Parker, Calvert; George M. Abney, Franklin, and Felix E. Collard, Wheelock.——The Red River County Medical Society met in Clarksville and elected Dr. Nowlin Watson, Clarksville, president; Dr. Robert Jones, Rosalie, vice-president, and Dr. James T. Hutchinson, Annona, secretary-treasurer.

#### VERMONT.

**Objects to Use of Names.**—At the quarterly meeting of the Lamoille County Medical Society, held in Morrisville, January 9, a resolution was adopted requesting the various papers throughout the state not to mention the names of physicians in connection with medical items regarding practice. A resolution was also adopted regulating fees for life insurance examinations.

#### WASHINGTON.

**"Patent Medicines" Not to Be Sold Without Prescription.**—Chief of Police Wappenstein, of Seattle, recently issued an order to druggists forbidding them to sell "patent medicines" containing opiates, without a prescription from a physician. The order is simply an enforcement of a city ordinance.

**Society Elections.**—At the annual meeting of the King County Medical Society, held at Seattle, the following officers were elected: President, Dr. H. M. Reed; vice-president, Dr. P. H. VonPoole; secretary, Dr. H. Eugene Allen, and Dr. J. C. Moore, treasurer. The annual reception and ball followed the election.——At a meeting of the Whitman County Medical Society, held at La Crosse, January 21, Dr. A. E. Stuht, Colfax, informed the society that the State Board of Medical Examiners for the state of Washington would pay \$50 toward the prosecution of illegal practitioners of medicine in the state. The society adopted and confirmed a resolution that no member should make insurance examinations for any of the old-line insurance companies for a fee of less than \$5. It was also recommended that all members adhere strictly to the resolutions adopted by the American Medical Association along these lines.——At the annual meeting of the Spokane County Medical Society January 3, the following officers were elected: President, Dr. Walter F. Morrison; vice-presidents, Drs. John G. Cunningham and Harold H. McCarthy; secretary, Dr. Carroll L. Smith; treasurer, Dr. Frank Rose, and censors, Drs. George K. McDowell, Wilbur W. MacKenzie and Peter D. McCornack, all of Spokane.——At the annual meeting of the Lincoln County Medical Society, held in Sprague February 6, the following officers were elected: Dr. Richard Connell, Odessa, president; Dr. J. E. Bittner, Sprague, vice-president; Dr. John M. Gunning, Harrington, secretary-treasurer, and Drs. E. C. Lanter, Wilbur, Rufus P. Moore, Davenport, and John M. Gunning, Harrington, censors.

#### WEST VIRGINIA.

**Society Elections.**—At the annual meeting of the Marion County Medical Society, held in Fairmont, the following officers were elected: Dr. Hal Hall, president; Dr. William C. Jamison, vice-president; Dr. James W. McDonald, secretary; Dr. William H. Sands, treasurer, all of Fairmont; Dr. James H. Riedy, Monongah, censor, and Drs. Henry R. Johnson and Claude L. Holland, Fairmont, delegates to the state association.——At a meeting of the Little Kanawha and Ohio Valley Medical Society, held in Charleston, January 5, the following officers were elected: President Dr. Thomas A. Harris, Parkersburg; vice-presidents, Drs. Robert L. Brown, Parkersburg; James B. Wilson, Pennsboro, and Wade H. Young, Ben's Run; secretary, Dr. O. Dustin Barker, Parkersburg; treasurer, Dr. C. W. Hudson, Parkersburg, and delegates to the state association, Drs. Lonzo O. Rose, Parkersburg, and James B. Wilson, Pennsboro.

#### WISCONSIN.

**Licenses Revoked.**—As the result of proceedings instituted by the State Board of Medical Examiners, licenses to practice medicine held by Drs. Edwin F. Kessler, Albert Preuss, Charles F. Peters and Hedwig Peters, graduates of an unrecognized medical school, were revoked.



**Hospital Trustees Elect.**—At the annual meeting of the trustees of the Emergency Hospital, Milwaukee, Dr. Frank B. Golley was elected president; Dr. Ralph Elmergreen, secretary; Dr. Louis Fuldner, house committee, and Drs. Arthur T. Holbrook and Gerhard A. Bading, committee to discharge patients.

**Medical Society Elections.**—At the annual meeting of the Milwaukee County Medical Society Dr. Lewis G. Nolte was elected president; Dr. William H. Washburn, vice-president; Dr. Joseph Kahn, treasurer, and Dr. Alfred W. Gray, secretary, all of Milwaukee.—At the annual meeting of the Sheboygan County Medical Society Dr. Otto B. Bock was elected president; Dr. Conrad T. Tasche, vice-president; Dr. William F. Zierath, secretary-treasurer; Dr. William H. Gunther, censor, and Dr. Arthur E. Ginter, delegate to the state society, all of Sheboygan.—At the annual meeting of the Milwaukee Medical Society Dr. Gustav J. Kaumheimer was elected president; Dr. George A. Carhart, secretary, and Dr. Robert C. Brown, treasurer.—The Fox River Valley Medical Association, at its annual meeting, held in Green Bay, elected Dr. Walter R. Hicks, Menominee, Mich., president; Drs. Richard C. Buchanan, Green Bay, and Daniel H. Gregory, West De Pere, vice-presidents, and Dr. Henry P. Rhode, Green Bay, secretary-treasurer.—The newly elected officers of the Ashland County Medical Society are as follows: Dr. Otto Braun, president; Dr. John V. Wenzel, vice-president, and Dr. John M. Dodd, secretary-treasurer, all of Ashland.—At a meeting of the Calumet County Medical Society, at Hilbert, Dr. George P. McKinnon, Stockbridge, was elected president; Dr. Claude G. Greengo, Chilton, vice-president; Dr. L. Rock Sleyster, Kiel, secretary-treasurer (re-elected); Dr. Isaac N. McComb, Brillion, delegate to the state society, and Dr. Ernest L. Bolton, Chilton, alternate and censor. The secretary reports that every physician practicing medicine in the county is either a member or has applied for membership.

#### GENERAL.

**Women Study Care of the Insane.**—The International Guild for the Benefit of the Insane will hold meetings in Washington, March 30, in New York in August and in Newport in September. Further information may be obtained from the president, Dr. Bertha A. Rosenfeld, 257 East Seventy-first Street, New York City.

**National Tuberculosis Association to Meet.**—The third annual meeting of the National Association for the Study and Prevention of Tuberculosis will be held at the New Willard Hotel, Washington, D. C., May 6-8. The organization of the sections for the meeting is as follows:

**SOCIOLOGIC SECTION:** Mr. Paul Kennaday, New York, chairman; Mr. Christopher Easton, N. Y., secretary.

**CLINICAL AND CLIMATOLOGIC SECTION:** Dr. George Dock, Ann Arbor, chairman; Dr. Joseph Walsh, Philadelphia, secretary.

**PATHOLOGIC AND BACTERIOLOGIC SECTION:** Dr. F. F. Wesbrook, Minneapolis, chairman.

**SURGICAL SECTION:** Dr. W. S. Halsted, Baltimore, chairman; Dr. Hugh H. Young, Baltimore, secretary.

**SECTION ON TUBERCULOSIS IN CHILDREN:** Dr. T. M. Rotch, Boston, chairman.

**Army Medical Corps Examinations.**—Preliminary examinations for assistant surgeons in the Army will be held April 29 and July 29. The Surgeon-General, U. S. Army, Washington, D. C., will send full information. The applicant must be a citizen of the United States, between 22 and 30 years of age, a graduate of a reputable medical school, of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points to be named later, where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. Applications must be completed by April 1. There are at present twenty-five vacancies in the Medical Corps of the Army.

**Charity Organizations and Tuberculosis.**—The importance of tuberculosis in charity problems is indicated by the report of the Charity Organization Society of the City of New York, about 50 pages of which are occupied by the report of the committee on the prevention of tuberculosis. This report is divided into two sections, the first relating to educational work which has been carried on by the usual methods of exhibitions, lectures and the distributions of printed leaflets and cards. Of the so-called "Don't Cards" issued by the committee 243,000 were distributed during the year. In relief work the committee made the experiment of sending favorable cases of incipient tuberculosis from New York into the country for the summer. The expense was an average of \$77.39 per patient, at a rate of \$6.59 per week. The results were most satisfactory. The total cases improved or in which the disease was arrested

amounted to 76 per cent. The country treatment of cases of tuberculosis referred from the city ought to be of special interest to country physicians and offers an opportunity to give great aid in the fight against tuberculosis.

**Public Health Surgeons Wanted.**—The Treasury Department announces that an examination will be held at 3 B Street SE., Washington, D. C., April 15, at 10 a. m., to examine candidates for assistant surgeonships in the U. S. Public Health and Marine-Hospital Service. Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and free from any ailment which would disqualify them for service in any climate. The written examination covers the various branches of medicine, surgery and hygiene. The oral examination covers preliminary education, history, literature and natural sciences. The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. On appointment they are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco. After five years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant surgeons receive \$1,600, passed assistant surgeons \$2,000, and surgeons \$2,500 a year. When quarters are not provided, commutation at the rate of \$30, \$40 and \$50 a month, according to grade, is allowed. The tenure of office is permanent. For further information address the Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

#### CANADA.

**Hospital Notes.**—A deputation from Selkirk, Man., recently waited on the premier of Manitoba to request a grant of \$2,500 toward a hospital proposed to be erected in Selkirk, and to cost from \$12,000 to \$15,000.—Notre Dame Hospital, Montreal, has recently been the recipient of several handsome subscriptions. These total \$239,000, of which Senator Forget of Montreal gave \$200,000. The work of constructing a new hospital building has been commenced.—Dr. McInnis, M.P.P. for Brandon, Man., has secured \$15,000 over and above grants from municipalities, for a tuberculosis sanatorium for the Province of Manitoba.—The Vancouver General Hospital treated more patients in December, 1906, than in any other previous month. The total of hospital days was 3,400, representing an average of more than 100 patients in residence every day of the month, and being double the number for the same month last year.

**Trypanosomiasis in Canada.**—The new professor of biology at Quebec, A. Loir, who was assistant to Pasteur at one time, has recently published a communication on trypanosomiasis in Canada. Strict regulations have been enacted in Alberta against dourine, the trypanosome affection of horses, introduced some two years ago, and a laboratory for study of the disease has recently been installed there. Loir spent some time last fall at this laboratory, but neither he nor any of the others interested were able to discover the causal trypanosome in the horses, but Watson, one of the workers, succeeded in finding a trypanosome in the blood of wild rabbits in Alberta. In Loir's communication to the *Jour. de Méd et de Chir*, ii, 33, 1907, he states that this is the first time that a trypanosome has been found in a mammal in a cold country. Experiments under way seem to indicate that trypanosomes are able to retain their virulence a long time at very low temperatures. He discusses whether the trypanosomiasis of the rabbits has any connection with the dourine of the horses. The rabbits may eat the dejecta of the horses, which generally run wild in that region for most of the year. He adds that a special fatal disease among rabbits is known in Alberta, which seems to recur every six or seven years; possibly Watson's trypanosome may have something to do with it.

**An Energetic Canadian Medical Society.**—The report of the meeting of the French Medical Society at Joliette, Que., December 10, states that through the efforts of the society a notorious quack has been fined \$100 and costs, with the alternative of 130 days in jail, while suits have been brought against two other quacks. The society has unanimously adopted the \$5 fee for insurance examinations and for life insurance companies, with \$2 for lodges and the like, and it was stated at the meeting that very few if any physicians will accept smaller fees in the districts of Wolfe, Sherbrooke, Beauce, Chicoutimi, Terrebonne, Portneuf, Lac St.-Jean, Three Rivers and Joliette. The Arthabaska Medical Society was criticised



for postponing the discussion of the fee question and regret expressed in regard to its discordant note in the general chorus of concerted action. Dr. Laurendeau remarked that he hoped the sister society would reconsider its action, not so much on account of the money question, but because it is a matter of principle and above all of dignity. Dr. Lippe related a talk with an insurance agent and stated that he told him that all examinations were worth \$5 but that for the mutual benefit societies, lodges, etc., the fees were reduced as a matter of charity. A passage from a Three Rivers daily paper was read stating the arrival of a Dr. E. Lebel of Quebec who had come to the place at the request of the Canada Life Insurance Company to make examinations as the local physicians refused to make them at the new \$3 rate. Dr. Laurendeau remarked that if the Quebec physician goes to Three Rivers again for this purpose, scorning medical ethics, the Quebec Medical Society will be asked to make an effort to educate the physicians of that region in the principles of solidarity and the benefits of concerted action. Hitherto the Quebec Medical Society has paid no attention to the insurance fee question, but, he added, when one of its members goes elsewhere to carry out his ideas in defiance of the prevailing usage of the place, it is time to call attention to the fact. A resolution was adopted providing that a circular letter be sent to all the physicians of the Joliette district, asking each to give his views on the fee question. A similar letter has been sent out by the medical society at Three Rivers. The Joliette society further took up the matter of "patent medicines," and a committee was appointed to confer with the member of parliament from the district and to inform him in regard to the views of the society on the question of having the formulas of "patent medicines" printed on the circular accompanying the article. Copies of the resolution urging the passage of the bill to this effect now in the legislature are to be sent to all the medical societies of the province. The *Journal de Med. et de Chir.*, for January 12, contains the detailed report of the secretary, A. Laurendeau.

#### FOREIGN.

**Italian Congress of Ophthalmology.**—The next congress will meet at Parma in October. Further particulars can be learned from Professor Gallenga of Parma.

**Polish Medical Congress.**—The tenth Congress of Polish Physicians and Scientists will be held at Lemberg in Austrian Poland, July 22-25, 1907. Dr. F. E. Fronczak, 806 Filmore Avenue, Buffalo, N. Y., is the representative in this country.

**Foreign Members of French Surgical Society.**—The Société de Chirurgie has elected Dudley Tait of San Francisco, J. Israel of Berlin, Psaltoff of Smyrna, and Giordano of Venice, foreign correspondents, while Mayo Robson of London was elected foreign associate.

**Women Medical Students in Switzerland.**—Switzerland has 5 universities, with a total of 2,102 medical students this year. Of this number, 1,171 are women, but only 31 are natives of the country. These figures show an increase over last year, when the total number of students was 1,799, including 993 women.

**Leprosy in Africa.**—The *British Medical Journal* states that leprosy is increasing in British Guiana, though segregation is enforced as much as possible. A new ordinance provides that wandering lepers and those who can not be properly cared for and isolated in their own homes shall be sent to the leper hospital, which is also capable of being used as a prison or lunatic asylum should any criminal or insane person be found suffering from the disease. All cases of leprosy must be reported by physicians, and various trades are forbidden to lepers.

**Germany Discards Greek and Latin as Preliminary for Medical Course.**—The authorities in Germany have announced that graduates from the high schools which do not include Latin or Greek in the curricula can matriculate in the medical department of the universities without passing any examination in Latin or Greek. At their first medical examination, however, they will have to pass an examination in Latin showing sufficient knowledge of the language to understand scientific terms. The law and theology departments still retain the classical standard as preliminary to matriculation.

**Death of Organizer of the German Imperial Office for Compulsory Insurance of Wage-Earners.**—The death of Dr. T. Bödiker is announced from Berlin, the organizer and former president of the state department which introduced and manages the insurance of workmen against illness, accident, old age and permanent earning incapacity. This stupendous scheme is ascribed to Bismarck, who devised it to side-track socialist agitation and placed the working out of the scheme in the hands of Bödiker. He accomplished the task with rare skill,

having absolutely no precedents to go by. Honorary degrees of medicine, law and philosophy were conferred on him by various universities, and our exchanges comment on his work as entitling him to lasting honor, especially in medical circles. He died February 4, aged 63.

**Death from Drinking a Solution of Potassium Chlorate.**—The Swiss courts recently condemned a military surgeon to a month's imprisonment on account of the death of a soldier in his charge from the consequences of drinking a solution of potassium chlorate which had been given him for a gargle. Evidence was presented that the physician had expressly stated to the patient and to the under sanitary officer attending him that the solution was for a gargle, but the sanitary officer alleged that he did not know what a "gargle" meant, and had allowed the soldier to drink the fluid. A military court of appeals took the matter up and the sentence was reversed and the physician honorably discharged. The *Allg. med. Ct.-Ztg.*, in commenting on the affair remarks that it will certainly banish potassium chlorate from the medicine chest of the Swiss army medical officers to make way for some gargle that will not prove deadly if swallowed.

**Accidents of Serotherapy.**—Under this heading Novaes discusses in the *Tribuna Medica* of Rio de Janeiro for Dec. 1, 1906, the recent death of Dr. F. Fajardo, chief of the Bacteriologic Institute at Rio, president of the Academia Nacional de Medicina, who died shortly after a preventive injection of anti-plague serum, as already mentioned. He explained his symptoms and collapse with the simple statement: "Accidents of serotherapy," and added: "Give me an injection of caffeine, keep up artificial respiration and rub my body." A few minutes later he added: "I am going to die. It is useless." Novaes reviews the rare similar cases of accidents from serotherapy on record, remarking that "in the prevailing bacteriology only series of successful cases are published," adding that Fajardo's epitaph might be Seneca's saying: "Man does not die; he kills himself." Fajardo's works on tropical medicine were numerous and well known, both in Europe and America.

**Unique Memorial to Hanot.**—A special issue of the *Archives Gén. de Médecine*, January, 1907, is devoted to the life-work of the Paris physician, V. Hanot, who died ten years ago, and who, for a number of years was editor of the *Archives*. After a brief biographical sketch, the complete list of his works is published, each one, with a few exceptions, followed by a summary of the principal points in the work. The list, with the summaries, thus fills over 90 pages, as 207 original works and monographs are reviewed, with 17 critical reviews or compilations of lectures, and 29 published clinical lectures with 15 monographs published by his pupils under his direction. Hanot's name is principally connected with affections of the liver—he is said to have "renovated, recast in a new mold and recreated the pathology of the liver"—but his imprint was left on many other branches of medicine. A bronze portrait tablet was unveiled at the Hôpital Saint-Antoine last fall, as was mentioned in these columns at the time.

**Two Festschrifts for Olof Hammarsten of Upsala.**—The pupils and friends of Professor Hammarsten have presented him with a volume of 670 pages as a souvenir of his sixty-fifth birthday, August 21. It contains 22 articles from the pen of various Danish, Swedish, Norwegian and Finnish physicians, written in German, French or English. Santesson relates research on the local action of cocaine and of stovain on the peripheral nerve trunks; Hedin on the influence of acids and alkalies on the autolysis of organs; Hasselbach on the action of light on the binding of oxygen in the blood; O. Folin of Waverly, Mass., describes the chemistry and biochemistry of kreatin, and I. Bang of Lund relates the excellent results obtained with centrifugation in quantitative analysis. The Physiologic Institute at Helsingfors has also issued a *Festschrift* in honor of Hammarsten, which appears as volume xviii of the *Archiv f. Physiologie*. Hammarsten has been professor of medical and physiologic chemistry at Upsala since 1869, and has published numerous articles and text-books on his specialty.

**General Conference of the Practitioners of France.**—About the middle of April a congress is to be held at Paris for discussion of reform in the present modes of medical education in France and also to promote the free choice of the physician by policy holders in insurance societies, etc., and to devise ways and means for postgraduate instruction. Delegates from more than a hundred different scientific and professional medical associations and private individuals are to confer at this *Assemblée nationale des médecins de France*. Huchard, Lereboullet and Reymond belong to the committee on organization, as also the presidents of the various medical syndicates and



federations, and other prominent physicians. The French people are very conservative in certain lines, and especially in the matter of medical instruction. The universities and their medical departments are still managed in great part as when first founded, not conforming to the progress of science and general education. One of the tasks proposed by the congress is to compile a list of the true practitioners, outside of the bureaucracy of the universities, and to insist that proposed reforms should be submitted to a representative body chosen among them rather than invariably from the reactionary university circles as in the past. The program of the congress states that reform is urgently needed in the existing abstract, theoretical, encyclopedic methods of teaching medicine, apart from life and from reality. It adds, "Every one knows that none of our masters has received an education comparable to that of his pupils."

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Feb. 9, 1907.

#### Research in Tropical Medicine.

The great progress in tropical medicine made by Great Britain in recent years, though in the main due to private enterprise, has lately received considerable assistance from the government. In July, 1904, the secretary of state for the colonies appointed an advisory committee for the tropical diseases research fund, to which the imperial government, the government of India, and many colonial governments, and the Rhodes trustees contribute. The report of this committee has just been issued. The revenue for 1906 was \$15,000, which consisted of contributions from colonial governments, \$9,000; from the imperial government and the government of India, \$2,500 each; from the Rhodes trustees, \$1,000. The London School of Tropical Medicine received \$5,000, which is to be devoted to the salaries of a combined teacher and investigator of protozoölogy, and a combined teacher and investigator of helminthology, and to the provision of laboratories. The Liverpool School of Tropical Medicine received \$2,500 for the salaries of a lecturer in economic entomology and parasitology and a lecturer in tropical medicine, both lecturers being required to devote their spare time to research. In April, 1906, the colonial secretary sent a circular letter to the governors of the colonies insisting on the necessity for scientific research by specially trained officers in tropical colonies. A step has already been taken in this direction by the establishment of a research institute in the Federated Malay States, and by the creation of bacteriologic posts in Hong Kong, the Straits Settlements, Ceylon, Mauritius, and British Guiana. But the secretary considers these appointments insignificant in number compared to the work to be done. As a difficulty has been experienced in filling them, he suggests that in a colony which has an adequate medical staff and is in a position to vote funds for scientific purposes, a sum might be devoted for detailing one or more of its medical officers to study the latest phases of modern scientific research in the best known centers.

#### Tetanus Due to Anti-Plague Inoculations in the Punjab in 1902.

The investigations into this catastrophe have only just been published and the report is a most elaborate one. The accident was confined to a particular bottle and to the use of a particular syringe. The syringe used on the 19 persons was rinsed out with carbolic lotion after the inoculated bottle had been emptied. Afterwards other people were inoculated without ill results from other bottles. Experiments showed that a syringe into which a tetanus culture, grown in a bottle of prophylactic even for a few days, has been drawn, becomes grossly contaminated. It follows that the prophylactic in the incriminated bottle could not have contained a developed tetanus culture, as the persons injected showed only the symptoms of an ordinary average case, not an acute or virulent one. The bottle was recovered and examined fifteen days after the accident, and instead of the rich toxic culture referred to above, contained only a poor culture of reduced toxicity. The contamination appears to have been due to opening the bottle with a forceps that had been dropped on the ground and which was not sterilized before being applied to the bottle. No pains were spared in making the investigation, as not only was a commission appointed in India, but it was also referred to the Lister Institute of London.

#### Milk Supply of Great Britain.

The cities and towns of Great Britain are becoming more and more alive to the fact that their milk supply is susceptible of great improvement in many particulars. Transportation, distribution, and the character of many of the stores at which milk is retailed, are alike said to be inadequate and defective.

Many municipalities have established milk depots at which poor persons can procure sterilized milk for the nourishment of young children and infants. Such depots are stated to have done good work, and to have been the means of checking, to some extent, the appalling infant mortality which prevails in almost all large British towns. London is probably the worst served city of Great Britain, so far as the milk supply is concerned. There is also a far smaller number of municipal depots in proportion to its population, than are present in other large British cities. As the law now stands, it is not legal to establish depots in Great Britain for the supply of sterilized milk for infants. It has been announced recently that a bill is to be introduced into parliament to legalize their establishment. This rumor has aroused the medical profession, who voiced the general opinion on the subject through Sir Thomas Barlow. This physician said that sterilization is only a second best process; once the milk is sterilized it is no longer possible to testify as to the goodness of the source of supply. Children fed on sterilized milk develop scurvy and rickets. Experience shows that if fresh milk is cooled immediately after it is drawn, and put into vessels properly sterilized, and kept cool in transit, the problem is solved. It is argued that a municipal depot should not be an institution for the distribution of sterilized milk, but one for the distribution of clean fresh milk. In Glasgow, the farmers supplying the milk depot are required to comply with certain stringent sanitary regulations. It may be stated with emphasis that most cities of America are far in advance of British cities in regard to the milk supply. The medical profession and general public of Great Britain are commencing to recognize this fact, and it will not be long before steps are taken to remedy the existing conditions. The *Lancet* is taking up the question, and articles published January 19 and 26 on the manner in which milk is retailed in small general provision stores in London, have attracted considerable attention.

#### Death of a Signman in His Box. A Question of Professional Secrecy.

A dramatic interruption of the service of the Lancashire and Yorkshire Railway occurred near Blackburn. Passenger trains going both ways found themselves held up by danger signals from a certain signal box, while the neighboring boxes reported the track clear. An inspector on going to the box in question found the signalman on the floor, leaning against his levers, dead. The entries in his book showed that he had been doing his duty twenty minutes before he collapsed. He is said to have suffered from heart disease, a question which will no doubt be settled at the inquest. Curiously a short time before this fatality, the following point was raised in the *British Medical Journal*, and its bearing on the case reported above is not lost sight of by the lay press. A physician was attending a railway signalman who suffered from asthma. The attacks come on suddenly and are so severe that the patient falls on the ground struggling for breath. He has not yet had an attack in his signal box, where he is on duty alone, sometimes for many hours. He declines to inform the railway company of his illness, thinking this would lead to his discharge. The physician is afraid that if he reports the case to the railway company an action for damages will be brought against him by the patient. On the other hand, he fears that if he does not break the seal of professional secrecy there will probably be a railroad accident. Commenting on the case, the *British Medical Journal* says that the circumstances, extreme though they be, can not be held to justify a breach of professional secrecy.

#### The Decline of Homeopathy.

Dr. G. Burford, in the *Monthly Homoeopathic Review*, takes a despondent view of homeopathy in Great Britain. Eight homeopathic pharmacies have closed their doors within the last few years in London, and in the provinces a similar condition exists. Ten years ago there were 205 physicians in the Homeopathic Society; to-day there are only 190. "In the earlier days of homeopathy converts were not infrequent among professional men in good practice. Of late years this method of accession to the homeopathic ranks has fallen into desuetude." The reason given by Dr. Burford is that "the introduction of antiseptic surgery" has saved the "allopathic" situation. Recognizing the "importance of the crisis" the British Homeopathic Association has drawn up a plan of propaganda. All the homeopathic bodies in the country are to be co-ordinated and the machinery of education created. A school of homeopathy is to be founded and professors are to be appointed. However energetically this campaign may be carried on it is not likely to meet with any success. The modern development of scientific medicine in Great Britain is fatal to homeopathy.



### Increase of Drinking Among Women in Great Britain.

Much alarm has been expressed of late in regard to the great increase of drinking among women in Great Britain. Dr. Brathwaite, inspector under the British Inebriates Act, has recently issued his annual report and no part of it is more alarming than that which refers to women inebriates. The report states that women under detention for drinking in British reformatories are far more numerous than male delinquents, outnumbering the men in the proportion of nearly eight to one. It is also stated in the report of the registrar-general of Great Britain, that while in the years 1880-1900 the death rate from intemperance taking the ratio per million of the population, increased 87 per cent. among men, among women it increased 180 per cent.

### Sleeping Sickness in Uganda.

The government of Uganda is making vigorous efforts to deal with the difficult and alarming problem of sleeping sickness. All persons suffering from it are being removed from the fly-infested districts along the lake shore and placed in special camps or settlements inland under medical care. The disease seems to be decreasing but the mortality is still very great. It is proposed to create ten settlements, each providing accommodation for 1,000 sufferers and their families. It is estimated that the expense will amount to \$150,000. Even persons who do not so far show signs of infection are being removed from the lake shore to inland districts free from tsetse flies. All vegetation capable of harboring the tsetse fly is being removed and the measures already taken are so effectual that a single fly can not now be found in Entebbe.

### Five Million Dollars for London Poor.

Mr. Whitely, the London shopkeeper who recently died under tragic circumstances, has bequeathed a large portion of his estate for charitable purposes. Nine London hospitals have benefited by substantial legacies, and the sum of \$5,000,000 has been left to found, provide and maintain homes for the aged poor.

### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Jan. 30, 1907.

### The Crusade Against Spitting.

The spitting nuisance has assumed such proportions that the authorities have been forced to comply with the long expressed wishes of the profession and renew the old regulations against public spitting. The railway companies, tram-car and bus companies and the proprietors of all public conveyances have received strict orders from the health department of the interior to place in all compartments and carriages notices forbidding spitting on the floor. In certain of the health resorts, especially the scattered climatic resorts, the police have strict orders to arrest anyone found spitting on the floor or on the ground. In the hospitals all patients are taught to avoid spitting, and are urged to exert their influence among their friends against the custom. The Vienna Society for the Care of the Phthisical (Tuberkulosefürsorge) is most active in this respect.

### Free Meals for School Children.

A committee has been formed having for its object the distribution of free meals to school children. As the funds are at present small, the number of recipients is naturally limited. Those parents who can afford to pay a small sum for the daily feeding of their children will be asked to do so, and thus enable the other children to be fed gratuitously. As the food supplied by the society is much superior in quality to that obtained otherwise by the children of the poor, it is expected that many parents will avail themselves of this opportunity of securing good meals for their children.

### Successful Transplantation of the Cornea.

Dr. Zirm of Olmütz reports what he thinks is probably the first successful implantation of a part of the cornea. By accident, a man had both his eyes made useless, the cornea becoming opaque, whitish gray, and consisting only of scar tissue. Dr. Zirm happened to come across a boy of 11 years of age at the same time, whose eye had to be enucleated on account of injury from an iron splinter. Part of the cornea from the boy's eye was transplanted to the eyes of the man. After ten days the right eye became painful and the transplanted piece had to be removed. In the left eye, however, the transplantation was a complete success. The new cornea, as it appears fourteen months after the operation, is absolutely clear and transparent, and enables the man to do his work.

## Pharmacology

### NEW AND NON-OFFICIAL REMEDIES.

#### The Preliminary List of Approved Articles Now Ready for Distribution.

To assist those who desire to co-operate with the Council on Pharmacy and Chemistry in any way, and who thus need to know what preparations have been approved, at least tentatively, the list of the names of the articles, brought up to date, appears in the advertising pages of the first issue of THE JOURNAL of each month. On advertising page 24 of this issue will be found such a list. To facilitate criticism and correction of errors a reprint has been issued containing the names and descriptions of all the preparations thus far provisionally approved. The brochure names and describes about 230 articles, making a pamphlet of 112 pages. A copy will be sent to any one on receipt of 6 cents in stamps.

### PHARMACOPEIA CHANGES.

#### Corrections and Modifications Announced in Drug Standards of the U. S. Pharmacopeia.

We are informed by the Committee of Revision that on account of the passage of the Food and Drugs Act and on account of information which has been furnished to the Committee of Revision, certain changes, listed below, have been made in drug standards in the U. S. Pharmacopeia, eighth revision. These changes, which are comparatively slight, will not materially affect the doses of the fluidextracts and tinctures of the drugs. It will, however, enable manufacturing pharmacists and others to make the preparations to comply with the requirements of the Pharmacopeia, and they can now be held accountable under the law if these standards are not upheld. The changes are:

BELLADONNA LEAF now 0.3 per cent. mydriatic alkaloids.  
BELLADONNA ROOT now 0.45 per cent. mydriatic alkaloids.  
COLCHICUM SEED now 0.45 per cent. of colchicine.  
IPECAC now 1.75 per cent. of ipecac alkaloids.  
STRAMONIUM now 0.25 per cent. of mydriatic alkaloids.  
FLUIDEXTRACT OF BELLADONNA ROOT now 0.4 Gm. alkaloids in 100 Cc.  
TINCTURE OF BELLADONNA LEAF now 0.3 Gm. alkaloids in 100 Cc.  
FLUIDEXTRACT OF COLCHICUM SEED now 0.4 Gm. alkaloid in 100 Cc.  
TINCTURE OF COLCHICUM SEED now 0.04 Gm. alkaloid in 100 Cc.  
FLUIDEXTRACT OF IPECAC now 1.5 Gm. alkaloids in 100 Cc.  
FLUIDEXTRACT OF STRAMONIUM now 0.25 Gm. alkaloids in 100 Cc.  
EXTRACT OF STRAMONIUM now 1.0 per cent. alkaloids.  
TINCTURE OF STRAMONIUM now 0.025 Gm. alkaloids in 100 Cc.  
JALAP ROOT now 7 per cent. of total resin.  
Under the article PETROLATUM, page 336, U. S. P., last paragraph, the sulphuric acid test has been dropped.

### Orangeine and Its Methods of Advertising.

The Food and Drugs Act has resulted in peculiar developments in regard to certain "patent" and proprietary medicines, some of which would be amusing if it were not for the tragedy side. Orangeine is a widely advertised "patent medicine" of the acetanilid order. As will be remembered, it was one of the nostrums shown up in the official report of the Council on Pharmacy and Chemistry, published in THE JOURNAL A. M. A., June 3, 1905, the others being Sal Codeia (Bell), Antikamnia, Ammonol, Phenalgin, and Koehler's Headache Powders. We have already shown how the owners of one of these frauds have changed the composition of their product, substituting phenacetin rather than acknowledge that they had been using acetanilid. Incidentally, it is interesting to notice that the formula of orangeine, now made open to the public by the Federal law, agrees almost exactly with the report published by the Council on Pharmacy and Chemistry. The published formula is 2.4 grains of acetanilid and a grain of bicarbonate of soda in a five-grain powder. This would be approximately 46 and 20 per cent., respectively. The Council's analyses showed 43 and 18 per cent., although, as stated at the time, the percentage of acetanilid published was the lowest found by any of the chemists engaged in making the analyses.

But that is another story. What we want to call attention to at this time is the brazen effrontery with which the orange-



ine people are using in their advertisements a sentence from a letter from Dr. Wiley. Here is the sentence:

"We are well conversant with the fact that Acetanilid, when properly used, is a most valuable remedy, but its indiscriminate use in the hands of the laity undoubtedly does great harm in many cases."

Those who know Dr. Wiley know that he looks on these acetanilid mixtures as among the most dangerous "patent medicines" on the market, and on orangeine as a typical example of the dangerous ones. Dr. Wiley appreciates, and so do others who know anything about the subject, that the rest of the stuff in the mixture called orangeine—and, for that matter, in all the acetanilid mixtures, whether "patent medicines" or those exploited as "ethical proprietaries"—is both harmless and useless. It is simply a blind to humbug and mislead the public.

**Death from Koehler's Headache Powders.**—Dr. P. Loewenthal, New York City, reports the death of a man in an hour and a half after taking two of Koehler's headache powders. The coroner's jury returned the following verdict:

The said James Tobias came to his death on the 2d day of September, 1906, at 1187 Lexington avenue, by acetanilid poisoning, administered at the time and place aforesaid in Koehler's headache powders, purchased at drug store of P. Jaffe, 1133 Lexington ave.

Chemist C. P. O'Conner made an analysis of a sample powder and reported it to be "made up of acetanilid."

The analysis of this nostrum, made under the direction of the Council on Pharmacy and Chemistry, was published in *THE JOURNAL*, June 3, 1905, page 1791. According to this analysis, Koehler's headache powders contain approximately: Acetanilid 76 per cent., and caffeine 22 per cent.

**Death from Chamberlain's Colic, Cholera and Diarrhea Remedy.**

Dr. W. C. Fulkerson, Marshall, Okla., reports a death from Chamberlain's Colic, Cholera and Diarrhea Remedy self-administered. He states that according to the formula, which is now published under the Food and Drugs Act, the remedy contains 6 grains of opium to the ounce.

#### "An Impudent Instruction."

It is a pleasure to quote the following, from the *Humboldt Times* (Eureka, Cal.), as another evidence that the "patent medicine" men have not their grip on all the newspapers of the country:

"Since the time of the legislature's convening the manufacturers of proprietary medicines have flooded the mails addressed to the newspapers of California with appeals to 'use their influence' in connection with certain proposed legislation, affecting drugs, under consideration at Sacramento. It is to be presumed that prepared editorials supporting the policies favored by the 'patent medicine' companies have been forwarded to some newspapers; for certain journals have recently appeared with editorials exactly in line with the arguments and appeals advanced by these interests.

"The *Times* has not been altogether exempt from the approaches of these medicine makers, who evidently consider that their advertising patronage entitles them to dictate newspaper policy. Most of the communications received have been simple requests, and have been ignored; but one medicine company has presumed too far, as the text following will show.

"The *Times* does not know the merits of the arguments advanced by the medicine manufacturers, but it does know that the patronage of the medicine companies does not and will not influence the paper's policy, or in any manner affect the private or public actions of its management.

"In this connection, the *Times* takes the liberty of setting forth a telegram which it received Wednesday, and the reply it forwarded, the same being as follows:

LETTER BY THE "TIMES."

EUREKA, CAL., Feb. 13, 1907.

*Miles Medicine Co., Elkhart, Ind.:*

Gentlemen:—I am this day in receipt of a telegram from you, reading as follows:

"Senate Bill Thirty, similar to National Law, satisfactory House Bill 531 has been amended by adding digitalis, nitroglycerin or other poisonous drug. These bills have both passed and will be harmonized in conference. Use your influence with representatives and senator to support Senate Bill Thirty, uniform with National Law."

In reply to the above telegram, which I consider impudent and insolent in the extreme, I will state that it is not the intention of the *Humboldt Times* or its management to have anything to do with attempts to influence the action of Humboldt County's legislators regarding "patent medicine" legislation. The *Times* believes

that the Humboldt legislators will do, in this matter, what to them appears advisable and proper, in the public interest.

Several patent medicine companies have requested this office to "exert its influence" in connection with medical legislation. I have not deemed it necessary to reply to the same; but your arrogant command calls for a reply, and I deem this a proper and excellent time to advise you that under its present management the *Times* will frame its own policy and dictate its own action relative to public affairs, in accordance with what it believes to be consonant with the public welfare.

If this reply seems to you an improper one; if you are under the mistaken impression that your advertising patronage, for which you are getting large returns, gives you the privilege of issuing orders to the management of this paper, then you are respectfully advised to terminate your contract and withdraw your business from the *Times*. This paper is anxious to carry a large volume of advertising, but only on a strict, legitimate, business basis. I might also notify you at this time that the *Times* intends to give its preference to the advertising business of Humboldt and Eureka business men.

I anticipate that you will be considerate enough to offer an apology for the offense you have given, and I expect you will state in explanation that it is the habit of many editors and managers to take such orders as you unsuccessfully have attempted to issue to me. I regretfully confess that perhaps the average newspapers are weak enough to encourage you in your bad habit; but you will please consider that the *Times* is conducted on a higher plane of journalism. Very respectfully,

WILL H. FISCHER.  
Manager *Humboldt Times*."

## Correspondence

### "Starch Sugar as a Food Adulterant."

CHICAGO, Feb. 19, 1907.

*To the Editor:*—In *THE JOURNAL*, January 26, appeared an article by Prof. Henry Leffmann, entitled "Starch Sugar (Glucose and Grape Sugar) as a Food Adulterant." The statements contained therein are in many instances misleading and so out of accord with the facts as to call for a correction of at least the principal features. Sulphuric acid is not employed in the manufacture of American glucose and grape sugar. It is surprising that Professor Leffmann is not better informed on this point, particularly as information can easily be obtained. This misstatement affords him the means of casting reflection on the wholesomeness of starch sugar and glucose, and makes it possible for him to cite the case of an extensive poisoning in England a few years ago by arsenical glucose, where the contamination by arsenic was due solely to the sulphuric acid employed in converting the starch material. At the times of this arsenic poisoning, Dr. Wiley conducted a thorough investigation and proved that American glucose could in no way be connected with this incident. This was corroborated by Professor Chandler of Columbia College in his presidential address before the Society of Chemical Industry, at its London meeting. Leffmann states that, "apart from some limited special applications, for which it is alone suitable, commercial glucose and grape sugar are almost entirely employed as adulterants and substitutes for natural carbohydrates." As regards the last part of this statement, it will not be disputed that a substitute may have the same food value as the material which it replaces. This applies particularly to grape sugar and cane sugar, as the caloric units of both are practically the same.

Let us now consider for a moment the principal uses to which glucose is put. The largest consumption of glucose or "corn syrup" is found in table syrups, glucose in this case being blended with cane syrup, refiners' syrup, molasses or sorghum. Such syrups are sold under their correct names, to-wit: "Corn syrup with cane flavor," "Corn syrup and molasses," "Corn syrup and sorghum," etc. It can not be said, therefore, that in this instance glucose is employed as an adulterant, nor is it employed as "a substitute for natural carbohydrates," for the sales of corn syrups outnumber those of cane syrups almost tenfold. Glucose is also largely employed in candies. When the United States committee on food standards prepared the standards for candies, special attention was given to glucose, and in the definition for candy, as finally adopted, the use of any saccharine substance was sanctioned. Another large market for glucose is found in the preserve business, the glucose in this case being employed not to lower the cost of the product, but to improve its quality. As to the use of grape sugar in fermented products, wines produced in Missouri, Ohio, and the eastern states require the addition of some kind of sugar, because the grapes, on account of the climatic conditions, do not contain



as much saccharine matter as in other more favored localities, as, for instance, California. The preference is given to grape sugar over cane sugar, not because of the difference in price, but because of its superior merits. As to grape sugar in beer, it is acknowledged that ale beers with keeping qualities can not be produced without the use of sugar, and again the preference is given to grape sugar.

Leffmann directs his principal criticism towards the report rendered in 1884 by a committee appointed by the National Academy of Sciences for the purpose of making an investigation of the purity and wholesomeness of glucose. This committee consisted of Professors Barker of the University of Pennsylvania, Brewer of Yale, Chandler of Columbia College, Gibbs of Harvard, and Remsen of Johns-Hopkins, and it is reported that "starch sugar thus made and sent into commerce is of exceptional purity and uniformity of composition, and contains no injurious substances," and "though having at best only about two-thirds the sweetening power of cane sugar, yet starch sugar is in no way inferior to cane sugar in healthfulness, there being no evidence before the committee that maize starch sugar, either in its normal condition or fermented, has any deleterious effect on the system, even when taken in large quantities." Leffmann finds fault with these investigations because they "were entirely insufficient according to modern standards of physiologic inquiry." He mitigates this rather severe criticism by stating: "This does not reflect on the ability of the members of the committee. They proceeded according to the light available at that time." In answer thereto we may state that in 1894, ten years after the original investigation had been conducted, these same scientists went on record as entertaining the same views as in 1884, and that, if anything, their belief in glucose had been strengthened.

Of expressions in favor of glucose of more recent date we may quote the following: Dr. William Murrell of England, in the *Medical Press and Circular*, May 1, 1901: "Commercial glucose is not only a food but a most excellent food." Dr. Wiley stated at the times his testimony was taken before Senator Mason, in connection with the establishment of a national food law that "the series of foods, known as glucose or grape sugar, when properly made, are valuable food materials and not injurious." And again Dr. Wiley at a meeting of the Philadelphia Retail Grocers' Association, Feb. 15, 1906: "I am a friend of glucose and of every healthful food product."

To substantiate his criticism against glucose Dr. Leffmann cites the "revelations brought about by the prosecutions recently undertaken by Dr. Warren, dairy and food commissioner of Pennsylvania," according to which glucose was contaminated in many cases with appreciable amounts of sulphuric acid. This statement is wholly erroneous. The investigations of Dr. Warren in Philadelphia showed a large amount of cheap candies to contain sulphites. The presence of sulphites was attributed to the glucose employed in the preparation of these candies, although it was generally known that it was a common practice among some confectioners to use sulphite preparations in the manufacture of their candies, and this accounted for the relatively large amount of sulphites found. It has never been denied that the brand of glucose, known as "Confectioners' glucose," which was sold to confectioners only, contained small amounts of sulphites, but these were considered unobjectionable because the sulphurous acid was supposed to be given off entirely at the high temperatures employed in cooking candies. The very moment the issue was raised the management of the Corn Products Refining company discontinued the manufacture of the sulphite-containing brand, so that every pound of glucose or grape sugar sold since for food purposes is absolutely free from this ingredient. It is quite pertinent to state that there is not one case on record where the purity or wholesomeness of any of our corn syrups put up for table use was questioned, although millions of cans are sold every year throughout the country.

It remains to reply to the allegation that the company had consented to pay all the numerous fines in Pennsylvania. This statement is absolutely without foundation, the facts being that when the matter was presented to Attorney General Carson and Special Attorney McGibney, who had been employed by

Dr. Warren, for the purpose of prosecuting these cases, they both advised Commissioner Warren that he should dismiss the 250 suits pending, which was done, as the records will show.

We regret that the space allotted us does not permit of doing the subject full justice, yet we believe that from the foregoing it is evident that Professor Leffmann's statements do not appear entitled to serious consideration, as most of the data submitted by him are erroneous. He has failed to submit any proof, scientific or otherwise, which would justify his demand that the use of glucose and grape sugar in foods be restricted. On the other hand, we believe we have shown that the report made by the committee in 1884 is substantiated in every respect by later developments and investigations.

CORN PRODUCTS REFINING COMPANY.  
(By T. B. Wagner, Ph. D.)

The above letter was submitted to Dr. Leffmann, who replies as follows:

PHILADELPHIA, Feb. 23, 1907.

*To the Editor:*—(a) All the literature that I have consulted mentions sulphuric acid as one of the principal agents in the making of glucose. I am aware that other acids have been used. The latest American work I have is Leach's "Food Inspection and Analysis." This states that "usually sulphuric acid" is employed. It is important to note that Dr. Wagner does not say what acid is used. Why this omission? His assertion that chemists can easily find out what methods are used in manufacturing operations is not correct. Chemists are usually denied admission, unless they are "orthodox" in their views of the sanitary relations of the products. If hydrochloric, oxalic or sulphurous acid is used, the fundamental danger is not removed. Each of these is a laboratory product and liable to impurities that do not occur in natural products. Let Dr. Wagner tell us what is used and then we can judge of the degree of danger.

(b) The statement that American glucose does not involve danger from arsenical poisoning may be admitted, I think, without affecting the point I wished to make. I referred to it to show that great harm had been done. In view of the disaster it is likely that all glucose is, and will be for a long time, free from arsenic, but the discovery was not made by the chemists of the glucose-makers, and many human beings were sacrificed to the "official" confidence and approval of glucose as a substitute for malt.

(c) I do not dispute that "a substitute may have the same food value as the material which it replaces," but before the makers and users of glucose can take advantage of this dictum they must show the fact. The comparison of calories means nothing. Dextrin and cellulose have the same percentage composition as starch, but they do not have the same value as food for human beings. Mushrooms and meat extracts contain considerable nitrogen, but it is now known that neither can be ranked as equal to a standard proteid diet, having the same nitrogen ratio. A few weeks ago THE JOURNAL pointed out that a preparation of agar-agar, widely advertised as a nutritious food, is about as nourishing as so much paper-pulp, yet the calories of agar-agar are probably nearly those of starch.

(d) Dr. Wagner admits my contention that starch-sugar is principally employed as a substitute and adulterant of the natural carbohydrates. He says: "The largest consumption of glucose or corn syrup is found in table syrups." "Such syrups are sold under their correct names." Here is a monstrous misstatement. Dr. Wagner gives some so-called "correct names." Every one of them is deceptive; every one has been devised with the sole object of deceiving. The term glucose has been largely discredited; the community is suspicious of it; the term "corn syrup" has been invented to conceal the real nature of the article. The readers of THE JOURNAL are fully familiar with this trick. They all know how acetanilid is concealed to the general public under the name "phenyl-acetamid," or saccharin under the term, "benzoyl-sulphimid." Dr. Wagner says, "Glucose in this case being blended with cane syrup." I doubt very much if, with the stringent rulings now in force, under the new law, cane syrup and glucose could be considered "like" substances, to which alone the term "blend" can be applied. Certainly, not if the principles



which have been suggested as applicable to blended whiskies are to be held in other cases.

(e) The "official" admission of glucose as an ingredient of candy has no bearing on the case. Candy is not a food in a strict sense; it is eaten for pleasure, not for nourishment. The Washington authorities interpret the application of laws subject to revision by the courts; they do not decide fundamental points in science. My argument is that glucose is not cane sugar, milk sugar, invert sugar, or predigested starch, and therefore is not a proper substitute for either of these.

(f) I deny Dr. Wagner's assertion that glucose is not used as a cheapening agent. Such a statement is an insult to the understanding of men. Similarly, the statement that the wine-makers of certain regions prefer glucose to cane sugar for other reasons than economy, or that beer can not be properly made without glucose is unworthy of serious consideration. The dominating factor in all ordinary uses of glucose is to secure greater profit to the manufacturer without informing the consumer of the substitution.

"Its honor rooted in dishonor stands."

(g) In my opinion nothing that Dr. Wagner says diminishes the force of my criticism of the report of 1884. It was a wholly insufficient investigation, and if it were published today for the first time, would be met by all sanitarians and biologists with condemnation. That the framers of the report did twelve years ago say that they had seen no reason to change opinion is of no value in this issue. No investigation of importance had been made. None of them was in close touch with clinical medicine or physiologic investigation, and their later statement merely reflects the conclusions that they came to under the original insufficient investigation. Dr. Murrell's opinion is merely an opinion; its value can only be determined when we know the data on which he based it. Nor can Dr. Wiley's statement be regarded as final. The quotations given seem to be rather *obiter dicta* than formal opinions.

(h) I regret that, by a typographic error, I was made to say that glucose was found to contain sulphuric acid. It does, indeed, frequently contain sulphates, but I referred to sulphurous acid, and the context conforms to this. It was widely stated in the Philadelphia newspapers that the glucose trust had offered to settle all the cases and withdraw the objectionable product. I saw a letter from the office to this effect. I do not understand that the cases were "dismissed." They were "settled," the costs being paid by the trust.

The makers of this glucose knew that it contained sulphites; they knew that such compounds are foreign to natural foods; they knew or should have known that sulphites are harmful to the human system, and that heavy penalties had been imposed for the addition of these substances to meat products, yet they sold the adulterated article, widely, as of superior quality, without hesitation, supervision or notice.

HENRY LEFFMANN.

The letter to which Dr. Leffmann refers is doubtless the following, which was written by the Philadelphia attorney representing the trust:

Aug. 20, 1906.

Hon. B. H. Warren, Dairy and Food Commissioner:

Dear Sir:—In reference to the cases recently brought by your department against various glucose houses, syrup manufacturers and manufacturing confectioners, on the charge of selling food products containing sulphur dioxide, I represent the Corn Products Refining Company, of New York, manufacturers of the glucose used by all of the defendants referred to. Since it was the glucose used by the said defendants that contained the sulphur dioxide which inspired the prosecutions, my clients have assumed the onus of defending these cases.

As the result of a recent conference with the Corn Products Refining Company, I am prepared to admit for my clients that the glucose up to this time manufactured by them does contain a minute quantity of sulphur dioxide, and that under the Pennsylvania Food Law this fact renders their goods in violation of the Pennsylvania Act of 1895, under which all of the present cases are brought. I should like to say just here in their defense, however, and to emphasize this as deeply as I can, that in using sulphur dioxide they have followed a practice which has marked the manufacture of glucose ever since the industry began. The ingredient named is not used in any sense as an adulterant, but to bleach the glucose to a color sufficiently white for confectioners' use. The natural color of glucose is yellow, which makes the manufacture of white candies difficult, if not impossible.

Now, realizing that their goods, as at present made, are in violation of the Pennsylvania law, my clients have already given orders

to their various representatives to withdraw immediately all bleached glucose from the market, not only the market in Pennsylvania, but also those in all other states and territories. Henceforth, they will make for the United States market only what is termed "neutral" glucose, that is to say, glucose, the color of which is natural light yellow. This glucose contains no sulphur dioxide whatever. It will not please manufacturing confectioners, yet under existing circumstances, we have no alternative but to produce it.

In addition to withdrawing all illegal glucose from the market and replacing it with glucose fully in conformity with the law, my clients will also assume the payment of all fines assessed against users of their glucose, where the prosecution pending against them springs from the presence of sulphur dioxide in their goods.

A number of these cases have already been brought in Philadelphia. In most of them hearings were waived, and the defendants held in bail. In others the defendants were held in bail after the hearings. I am greatly in hopes that you will see your way clear to dismiss these cases on payment of fines and costs, as it has been the custom of your department to do. My clients wish to dispose of the whole of this unpleasant situation as speedily as possible, and since the department has fully attained its object of securing the removal of illegal goods from the market, there would seem to be no good reason for pushing the cases further.

Further, the returning of these cases to court would, I respectfully submit, serve no necessary purpose, since the court, after having made it plain that the Corn Products Refining Company had not used sulphur dioxide for any illegitimate purpose, would scarcely impose more than the minimum penalty. At the same time, the carrying of the cases to the Quarter Sessions Court would entail on my clients additional costs and about \$25 in each case. This would seem a useless hardship, since, as I repeat, the Dairy and Food Department has already won its campaign and attained its object.

In order that the matter may be settled and ended as speedily as possible, I will ask you to let me have, from the records of your department, a list of the sulphur dioxide cases already brought.

ELTON J. BUCKLEY.

#### Dysenteric Outbreak Due to Colon Bacillus.

WARREN, PA., Feb. 12, 1907.

To the Editor:—On Dec. 8, 1906, nearly 3,000 persons—approximately one-third of the population of Warren—were attacked within a short time by severe vomiting, profuse watery bowel discharges and some prostration. There was no fever, and most of the symptoms disappeared within 12 hours. Warning was at once given to boil the water used for drinking, and those who obeyed had no further symptoms. Others continued to suffer from attacks of diarrhea for a period of two weeks. In no case did any typhoid fever develop.

Analyses of the general water supply were made on December 8, and at frequent intervals thereafter, and the wells from which the public supply is obtained were found contaminated with sewage. The *Bacillus coli communis* was found in every sample examined. These wells are 60 feet deep, but they are located in a very insanitary region, near numerous outhouses and outlets of sewers, and on the banks of a river which frequently overflows.

Analyses made at irregular intervals in the past few years always showed these wells to be very pure, and it is believed that in some way surface washings contaminated them.

Up to Jan. 18, 1907, the colon bacillus was found; since then the water has not contained this organism, but the river has fallen several feet and there has been no rain.

That the water was the cause of the epidemic is evidenced by the facts that only users of city water were affected. No other community in a radius of 50 miles had any epidemic; persons who visited Warren and drank the water were attacked within 12 hours with the same malady. The milk and food supply come from a dozen different sources, and no one article of diet was generally used. Analysis of the water failed to show the presence of any other pathologic germ but the colon bacillus. The attack was similar in all cases and was more like an attack of cholera morbus than anything else.

Are there epidemics of a like nature on record in which the colon bacillus is the offender?

Warren is free from typhoid fever, but in April, 1906, a similar epidemic, lasting a few days, was noted. The number of persons affected was not nearly so great. It was attributed to the use of stagnant water from an emergency reservoir, but analyses of the water made at that time showed no evidence of sewage contamination.

M. V. BALL,

President, Board of Health.

[This letter is referred to in the Editorial department, this issue.—Ed.]



## Shoemaker's "Materia Medica and Therapeutics."

PHILADELPHIA, Feb. 20, 1907.

To the Editor:—While thanking you for your favorable notice of my "Materia Medica and Therapeutics," sixth edition, I would regard it as only just to me that a misconception on the part of the reviewer should be corrected, and I ask you to publish this explanation in an early issue of THE JOURNAL. Unlike other text-books, my work is based on both the United States Pharmacopeia and the British Pharmacopeia, so that it can be used in all parts of the world where these two standards are in force. Unfortunately, the committee of revision did not see its way clear to adopt the English titles of some drugs, like carbolic acid and sulphonal, but authorized "phenol," "hexamethylenamine," etc., instead. A careful examination of my work will show that these drugs are described under both of their official titles, with full explanation given under each heading. Unofficial new drugs, of course, are described under their proper names (and also trade names) with their chemical formulas appended. Your reviewer's statement that "Unofficial preparations . . . unfortunately are described under proprietary or trade names, regardless of the fact that some of them have been admitted to the Pharmacopeia under other names," is both contradictory and incorrect. Of course, a preparation can not be unofficial and, at the same time, be included in the Pharmacopeia, while to imply that trade names are used without giving the Pharmacopeial equivalents is stating the reverse of the truth. No confusion, for instance, can arise from the discussion of "carbolic acid" among the acids according to the British Pharmacopeia, when it is accompanied by the U. S. P. title of "Phenol hydratum," and there is also a cross reference under "Phenol" in its place.

JOHN V. SHOEMAKER.

## The Etiology of Rheumatism in Children.

MAYWOOD, ILL., Feb. 16, 1907.

To the Editor:—Reading the theories, new and old, of the etiology of rheumatism in children, in THE JOURNAL of recent date, reminds me of a patient under my care two years ago. It was a typical case of croupous pneumonia in a boy of 7. The crisis was passed on the fifth day. The second day following he developed rheumatic fever with swollen and extremely painful ankle and knee joints on the right side, which several days later shifted to the left side. Under the usual treatment he made a good recovery. This suggests the probability of the cause of the rheumatism as being *Diplococcus pneumoniae* infection, and offers a field for research.

O. E. MATTER, M.D.

## Book Notices

A TEXT-BOOK OF DISEASES OF WOMEN. By J. C. Webster, B.A., M.D., F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynecology in Rush Medical College, in affiliation with the University of Chicago. With 372 Illustrations and 10 Colored Plates. Cloth. Pp. 712. Price, \$7.00. Philadelphia: W. B. Saunders Company, 1907.

It is a pleasure to review this excellent addition to American text-books on gynecology. The author has succeeded in adhering to the guiding principles which he formulates: To give prominence to the scientific basis of each subject under consideration, including the results of research in anatomy, histology, embryology, comparative anatomy, pathology and bacteriology; to study clinical phenomena in their widest relationships; to insist on caution in the adoption of new and insufficiently tried therapeutic measures and to emphasize measures proved by his own experience. As a general basis for the study of pathology and treatment he has necessarily devoted about one-seventh of the book to a full and very carefully prepared description of the anatomy of the female organs. This subject, well elucidated by 82 carefully selected illustrations, is presented in a chapter that gives a picture of the gross and microscopic structure, the development and the physiology that can hardly be excelled. Likewise the short chapter of ten pages on the genital tract in relation to micro-organisms gives a well presented résumé of the bacteriology of

the genital tract in various conditions and the relations of micro-organisms to pelvic disease. The chapter on puberty and menstruation, including the diseases of menstruation, is as satisfactory a presentation of this difficult subject as is perhaps possible in the present unsettled condition of our knowledge. The author's treatment of neuroses in relation to pelvic disease in women, including hysteria and neurasthenia, together with his advice concerning the surgical treatment of chronic ovaritis and cystic degeneration of the ovaries in a later chapter will, perhaps, from some receive more criticism than anything else in the book. Although Webster insists that operative treatment of neurasthenia should not be placed in the forefront of therapeutic measures, yet the conclusion that marked neuroses may be associated with cystic degeneration of the ovaries, with slight or absent pelvic symptoms because of reflex nervous disturbances from ovarian tension, or because of disturbance of ovarian secretion, and the statement that ovarian resection or removal has been frequently followed by a cure, will arouse opposition. Professor Webster, however, is well trained in modern pathology, and when he enunciates his well-known views on this subject he probably finds himself still able to defend them as he has done in the past. The chapters on case taking and physical exercise and that on minor therapeutic measures are similar to those in other works. Local massage is condemned. Pessaries are described and in certain conditions advocated, but evidently without much predilection for them. Surgical technic is described in great detail and is well illustrated. Only a most carefully trained operator with a highly sensitive "surgical conscience" could have produced this excellent description of abdominal and vaginal operations. Considerable attention is given to the technic and the advantages of local anesthesia.

The description of the various pathologic conditions found in the pelvic organs and their treatment is presented with as great degree of detail and completeness as is possible, considering the limits imposed by the size of the book. It is impracticable as well as unnecessary in a review to attempt to give the views of the author on the different gynecologic problems of the present time. To some of these problems Webster has made original contributions. Others are discussed from a point of view of one familiar with all the literature of the day, and who himself has tested many of the therapeutic measures that have been advocated. The result is a modern presentation of gynecology, differing, perhaps, not so much from that of others, but very satisfying to the reader because of the confidence he intuitively feels in the masterly handling of all the subjects. It is this great excellence combined with the unusual thoroughness of the introductory chapters that will secure for this work a wide and admiring circle of readers.

THERAPEUTISCHE TECHNIK FÜR DIE ÄRZTLICHE PRAXIS. By J. Schwalbe. Erster Halbband. Mit. 390 Abbildungen. Paper. Pp. 352. Leipzig: Verlag von Georg Thieme, 1906.

Therapeutics is acknowledged to be the first and most important task of the physician, and its recent developments have been largely in directions which demand a degree of technical knowledge and manual skill far in advance of that required when the physician's task was limited to the composition and writing of a compatible prescription. Many of the recent advances are, to be sure, in the domain of specialists, but their importance is such that it is almost imperative that the general practitioner should be well acquainted with them if he is to do the best for his patients and not lose them unnecessarily to the specialist.

The book before us is an attempt to furnish practicing physicians with an answer to the question what to do and how to do it. It is brought out under the general editorship of J. Schwalbe, with the collaboration of a number of eminent German clinicians. It is devoted to the technic of therapeutics and gives in detail the various procedures with the method of application and indications for their use, and in certain cases a comparison of various methods with a statement of their relative advantages and contraindications. The subjects treated in Vol. 1 are: Massage, gymnastics, the technic of mechanical hydrotherapy and thermotherapy, radiotherapy, preparation and application of medicines, surgical technic, and



the special treatment of the eye. From the text and illustrations it is evident that the author believes that massage is worthy of application by the physician personally.

In general, the methods prescribed comprise not only those requiring complicated apparatus and technic, but also those which the average practitioner may employ. The book is well illustrated and it is to be hoped that it may be made accessible to a larger circle of readers by translation into English.

**ANIMAL MICROLOGY, Practical Exercises in Microscopical Methods.** By M. F. Guyer, Ph.D., Professor of Zoölogy in the University of Cincinnati. Cloth. Pp. 240. Price, \$1.75. Chicago: University of Chicago Press, 1906.

This book is designed especially for beginning students in microscopic work on animals, and describes in detail the various methods and technic of the elementary processes such as killing, hardening, preserving, staining, sectioning and mounting. Several appendices deal with the theory of the microscope, the use of stains and reagents, collecting material for an elementary course in zoölogy, etc. Directions for blood work and for bacteriologic technic as well as embryologic methods are given so that while the trend of the book is toward zoölogy proper, the medical student will find it very useful as a guide to microscopic work. A feature for which the book is to be highly commended is the clearness of the directions which make it easy for the student to follow the methods. It is well illustrated with pictures of instruments and apparatus.

**GENERAL MEDICINE.** Edited by F. Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Chicago Clinical School. Practical Medicine Series, comprising Ten Volumes on the Year's progress in Medicine and Surgery under the Editorial Charge of G. P. Head, Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VI. Series 1906. Cloth. Pp. 363. Chicago: The Year Book Publishers.

Nearly two-thirds of this volume is devoted to diseases of the stomach and intestines. Physiology, pathology, diagnosis and therapeutics serve as convenient heads under which is classified the large amount of new material from the recent literature. The functional and organic diseases and motor neuroses of the stomach have been the subject of much study and numerous contributions to literature, which the authors have epitomized. Typhoid fever is the subject of an important article, and malaria, yellow fever, dysentery and syphilis of the liver are among the topics discussed. The volume contains much of value and will be appreciated by the student of modern medicine.

**A SHORT PRACTICE OF MEDICINE.** By Robert A. Fleming, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer on Practice of Medicine, School of the Royal Colleges, Edinburgh, etc. Cloth. Pp. 748. Price, \$4.20 net. Philadelphia: P. Blakiston's Son & Co. 1906.

This volume is especially intended as a handbook for the student while attending lectures, and may serve as a review for the general practitioner, but its limited size necessitates such brevity that it can hardly be regarded as alone a sufficient guide for the medical man. The methods of diagnosis are mentioned, but the details are not given. As a student's manual the work is worthy of commendation.

**A SYLLABUS OF MATERIA MEDICA.** Compiled by W. Coleman, M.D. Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College, etc. Third edition, revised to conform to the Eighth Decennial Revision of the U. S. Pharmacopeia. Cloth. Pp. 186. Price, \$1.00. New York: William Wood & Company.

This little book has been revised to accord with the eighth revision of the U. S. Pharmacopeia, in a way to increase its usefulness to the medical student as a supplement to the regular text-books on materia medica.

**JAHRESBERICHT, Ueber die Fortschritte in der Lehre von den Pathogenen Mikroorganismen umfassend Bakterien, Pilze und Protozoen.** By P. von Baumgarten and F. Tangl. Zwanzigster Jahrgang, 1904. Paper. Pp. 1106. Leipzig: Verlag von S. Hirzel, 1906.

The authors present a complete review of all the 1906 publications—books and current literature—on parasites, both animal and vegetable, general microbiology and disinfection. The book ought to be of great service to litterateurs and workers in pathology and bacteriology.

## Miscellany

### CLIPPINGS FROM LAY EXCHANGES.

#### DISEMBOWLED YET LIVED.

Marysville: J. B., for twenty years the wonder of medical science, is dead. Twenty years ago in a cutting affray B. was entirely disembowled. His intestines fell out and were entirely buried in sawdust. Bystanders picked him up and stuffed them back several hours before medical aid arrived. He recovered and later . . . died a natural death.—*Lima (Ohio) Gazette*, Aug. 12, 1906.

#### THE TRENDLENBURG POSTURE.

Prof. F. Trendelenburg . . . , inventor of the "Trendelenburg Posture," is visiting . . . in this city. . . . The Trendelenburg Posture consists simply of posterior operations by means of a specially contrived operating table, that in cases of a peculiarly delicate character have been remarkably successful . . . —*Philadelphia Public Ledger*, May 5, 1906.

#### GOOD WORDS FROM THE EDITOR.

. . . was kicked by a colt in the field, sustaining a compound fracture of his left arm, the bones protruding and causing much loss of blood until Dr. ——— came. The doctor has a large circle of patients, including J. A., who has a disease of the lymphatic glands never seen here before and pronounced incurable by several physicians but now improving to the surprise of all; also Mr. and Mrs. P. P., . . . and is treating the case of Mrs. M. A. L. with great skill it having been a nervous derangement of the system subject to more sudden changes than the weather, and who is up around and gaining.—*Belding (Mich.) Banner*, June 21, 1906.

#### LAY MEDICAL TERMS.

"Dr. I. is affected with lusus bulgaricus."—*Hastings (Neb.) Tribune*, Aug. 10, 1906.—"Dr. C. . . . assisted in viscerating the right eye, . . . "—*Pocahontas (Iowa) Democrat*, May 17, 1906.—"Charles Le P. died . . . as a result of . . . lamphigitis."—*Hampshire (Mass.) Gazette*.—"Secretary H. was prostrated by an attack of artremya at his summer home . . . "—*Clinton (Iowa) Herald*.—"The causes of death are as follows. . . . manition, . . . phthisis pulmonutes, . . . marosmus, . . . "—*Mahanoy City (Pa.) American*.—"General B. . . . died . . . of intestinal nephritis."—*Seattle (Wash.) Post-Intelligencer*.—" . . . in addition to hernia he is suffering from a water cancer."—*Middletown (Conn.) Penny Press*.—"He is in good hands and suffering with an attack of empiric fever."—*Rockford (Ill.) Republic*.—" . . . spasm of the diaplerague resulting from the sneeze caused the vertebræ to snap."—*St. Paul (Minn.) Pioneer-Press*.—"Mr. ———'s death was due to sorosis of the liver."—*Pittsburg (Pa.) Commercial Gazette*.—"Abijah L. . . . had an operation Wednesday for achanoids."—*Windsor Locks (Conn.) Journal*.—"Dr. M. W. . . . died suddenly of pleurisy of the brain."—*Cincinnati Enquirer*.—" . . . he became ill in this city with pulmonary peritonitis."—*Cincinnati Enquirer*.—" . . . , a four-months old . . . died . . . of what is known among surgeons as 'faraman ovale.'"—*Philadelphia Press*, Nov. 26, 1906.—" . . . the fatal disease at Marfa has been diagnosed as 'Stopplococus,' an affection of the throat."—*Galveston (Texas) News*, Nov. 11, 1906.

**Osteomalacia and Suprarenal Extract.**—Bossi had occasion to treat a woman in the eighth month of pregnancy in an advanced stage of osteomalacia. He conceived the idea that possibly the vasoconstricting power of suprarenal extract might modify the circulation through the uterus and ovaries and through the bone marrow. Extirpation of the suprarenals in animals is known to have a marked modifying action on the ovaries. He therefore gave the patient an injection of 0.005 gm. (about 1-12 gr.) of a 1 per thousand solution of suprarenal extract. It caused no disturbance, and the pain grew at once less intense, and the patient was able to sleep that night. Seven injections were given in the course of 7 days, the improvement progressing so rapidly that the patient regarded it



as an actual miracle. The bones were evidently in process of restitution, and the patient was clinically cured, entirely free from pain or other disturbances. Bossi urges research on gravid animals to determine the influence on the bones of partial or total removal of the suprarenal capsules, adding that the results in this case were so prompt and so marvelous that hopes in regard to suprarenal treatment of osteomalacia are certainly justified.—*Policlinico*, xiv 2, 1907.

**Devices to Prevent Asphyxiation.**—Among valuable first aid devices are the masks for protection against irrespirable gases and which enable divers, miners, firemen, etc., to penetrate safely places where life would be sacrificed without them. According to the *Scientific American*, the masks are of two kinds: One is provided with long tubing which supplies oxygen or air from a bellows manipulated by an assistant; the other is provided with a portable tank of compressed oxygen which is gradually supplied while the carbon dioxide formed is absorbed by passing the expired air over caustic soda, after which it is charged with oxygen and breathed over in this way again and again. Where the noxious gas does not injure the eyes a mask can be fitted over the mouth and nose with an inlet tube for fresh air and an outlet with a valve which may open directly into the poisonous atmosphere. Such an apparatus can be used only a short distance from the point where access to fresh air can be had. For penetrating mines, etc., an apparatus provided with a supply of oxygen must be used. The value of these devices in the rescue of miners overcome by poisonous "choke damp" is incalculable. The rescuers can pass quickly and safely to the scene of disaster and bring the unconscious miners to the surface for resuscitation. The supplementary supply of oxygen can be used by artificial respiration to hasten the process of resuscitation. There may be in this application an opportunity for the extension of the use of such masks to the resuscitation of the drowned or those accidentally asphyxiated by illuminating gas.

**Unnecessary Vivisection.**—"A case of cruel vivisection," says *American Medicine*, "was described at the recent meeting of the American Association for the Advancement of Science, by the experimenter, John B. Watson, of the University of Chicago. He subjected a rat to various operations, blinding it, extirpating the olfactory nerve, freezing its feet, and covering its head with collodion—all to find out whether it had a sixth sense which would enable it to escape from a complex cage. Though a rat does not suffer as a man, yet every neurotic person is thoroughly convinced that the pain sense in every animal is as acute as in himself. Such useless cruelties, therefore, give to the morbid antivivisectionists a real basis for their crusade. The association should not have permitted this paper on its program and the cruel experiment should never have been made. We are glad to see that Watson has been censured by several conservative lay journals, which have always defended vivisection done with the direct view of obtaining or proving important facts. They very properly condemn experiments which can prove nothing. The science of medicine is now advancing by leaps and bounds through what might be called vivisection, and it is deplorable that any one should cast discredit on a necessity of modern existence. We hope to hear of no further useless cruelty."

**Cause of Fever After Splenectomy.**—Herczel reports (*Wien. klin. Wochschr.*, xx, 123, 1907) the later history of 5 patients on whom he performed splenectomy between 1904-6. All were completely cured of their symptoms by the operation and have been in good health since. In 2 cases the enlargement of the spleen was of malarial origin and was accompanied by ascites and anemia. In another case a wandering spleen was enlarged, with secondary anemia. In another, the enlargement of the spleen was accompanied by hypertrophy of the liver, and in the fifth the trouble was an echinococcus cyst in the spleen. He found that the febrile conditions sometimes observed after the operation were the result of aseptic necrosis of the fat tissue around the stump when the pedicle was ligated *en masse*. Since he has made a practice of ligating the vessels in the hilus separately, close to the spleen, healing proceeds smoothly without tendency to rise of temperature.

## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

### Secret Commissions Barred in Omaha.

At a recent meeting the Omaha (Douglas County), Nebr., Medical Society adopted the following rules:

**RULE 1.**—Any member of this society who shall pay or offer to pay a commission for any case or shall accept or solicit a commission for sending a case, shall be expelled from the society.

**RULE 2.**—Any accusation that any member has been guilty of any of the offenses mentioned in Rule 1 shall be referred to the Board of Censors, who, if they deem the proof sufficient to warrant it, shall summon the accused to appear before the society at its next regular meeting. If the accused, without good excuse, shall fail to appear, or if, after hearing the evidence, the majority of those present shall decide that he is guilty, his name shall forthwith be dropped from the society's rolls. In case the Board of Censors think the evidence insufficient to warrant bringing the accusation before the society, the accuser shall have the right to introduce it at any regular meeting, when it shall be acted on as if it had been reported by the Board of Censors.

**RULE 3.**—Any member so expelled can not be reinstated for at least six months, and if he should be reinstated and should a second time be found guilty of a similar offense, he can never again become a member of the society.

It is further resolved that our delegates to the next Nebraska State Medical Society meeting be instructed to introduce and push a similar set of rules for the State Society with a recommendation that the matter be carried on to the American Medical Association.

Commenting on the above, Dr. Harold Gifford, Omaha, says:

"After considerable discussion, in which the only discordant note was the suggestion that action be postponed, the rules and resolution were unanimously adopted. It was predicted that these rules will not prevent commission giving on account of the difficulty of proving the offense, but it was answered that because we can not convict all thieves and gamblers there is no reason why we should not have a law which will enable us to punish them if they are convicted. I believe this is the first positive action to be taken by any society in the United States; if I am incorrect in this belief I shall be glad if any of your readers will correct the error."

In partial answer to Dr. Gifford concerning previous action on this point, we are able to give the following facts:

The House of Delegates of the American Medical Association, at the New Orleans session in 1902, adopted the following resolutions:

*Resolved*, That the House of Delegates recommend the adoption by county medical societies in affiliation with this body, of the following resolution:

*Resolved*, That any member of a county medical society proved guilty of division of fees, either the giving or the receiving of a part of a fee, without the full knowledge of the patient, be held guilty of misconduct, for which he may be expelled from the county medical society. (THE JOURNAL, xxxviii, 1661.)

A number of county societies have taken action on this subject, among them the Chicago Medical Society, which, in 1905, adopted a resolution which read as follows:

It is derogatory to professional character for physicians to pay, or to offer to pay, commissions to any person whatsoever, who may recommend to them patients requiring general or special treatment, or surgical operations. It is equally derogatory to professional character for physicians to solicit or receive such commission.

### Oppose Contract Practice.

The Westerly (R. I.) Physicians' Association has adopted resolutions against lodge or contract practice. The secretary of the association, Dr. W. A. Hillard, reports that every physician in the town has subscribed to these resolutions.

### Organization in England.

In the *British Medical Journal*, Dec. 22, 1906, is published an address by Sir Victor Horsley on the necessity of union in the medical profession, with special reference to so-called trade-unionism of which physicians are sometimes accused. In the course of his remarks he said that what is wanted in the profession is absolute unionism, collective action which will result in the laying of a foundation on which new things and new ideas can take root, flourish and fructify. By uniting and helping each other the members of the medical profession will further the progress of medical science. Therefore, unionism in the medical profession can not be objected to. He says that it is our duty to be trade unionists, in that we should help our professional colleagues by associating ourselves together closely as a profession, and the way to do that at the present day is to have every member of the profession join the only



existing collective organizations—in Great Britain the British Medical Association, and in this country the American Medical Association.

Sir Victor says that although such an association might not necessarily help some men in life, it would be of the utmost utility and helpfulness to many to whom life does not come so easy, who do not see so readily as to how they are going to support their families or educate their children. It is just those, he says, who do not want to take anything out of an association who ought to put the most into it, because they can best afford to do it, and thereby help on the material and moral progress of their less fortunate brethren. All, therefore, should join the association, not only for their own profit, but to secure that of others.

What are the interests of the community as compared with those of the general public? Sir Victor pronounces three chief interests. First, the standard of professional life and professional conduct, to be maintained at a high level; second, that a medical practitioner shall receive a fair compensation for his work; and third, that the state should recognize the importance, the difficulties, and the national responsibilities of medical work. The satisfaction of these requirements or interests will secure to the public the help of a thoroughly efficient medical service. Therefore, the interests of the public are identical with the interests of the medical profession.

#### More Societies Adopt Resolutions.

The following societies have adopted resolutions pledging their support in the campaign against the reduction of insurance examination fees:

Barbour County (Alabama) Medical Society.  
Greene County (Alabama) Medical Society.  
Clarke County (Georgia) Medical Society.  
Worth County (Georgia) Medical Society.  
Whiteside County (Illinois) Medical Society.  
Western Kansas Medical Society.  
Jackson County (Mississippi) Medical Society.  
Leflore County (Mississippi) Medical Society.  
Platte County (Missouri) Medical Society.  
Mercer County (New Jersey) Medical Society.  
Chaves County (New Mexico) Medical Society.  
Columbia County (New York) Medical Society.  
Troup County (Georgia) Medical Society.  
Wise County (Virginia) Medical Society.  
Dane County (Wisconsin) Medical Society.  
Whitman County (Washington) Medical Society.

The Secretary of the Ionia County (Michigan) Medical Society in the report of the annual meeting in the *Journal of the Michigan State Medical Society* says: "The society has awakened to the fact that we have in and among ourselves the necessary qualifications for a wide-awake, progressive medical society. We have as fine a band of deep-thinking, hard-working, clear-headed medical men as it has been my privilege to meet."

The Rutherford County (Tennessee) Medical Society held two meetings in December, which were mainly devoted to the consideration of practical questions. Papers were read on "The Business Side of the Medical Profession and on Medical Ethics." This society is so well pleased with its experiment of meeting semi-monthly that it has adopted an amendment to the constitution providing for two meetings each month. The society adopted the fee schedule used by the physicians of Murfreesboro as its standard.

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

#### PREPARATION OF CHROMICIZED CATGUT.

CLEVELAND, OHIO, Feb. 21, 1907.

To the Editor:—Please publish some methods of preparing chromicized catgut having varying degrees of resistance to absorption.

WALTER G. STERN.

ANSWER.—The method of preparing chromicized catgut was given in THE JOURNAL, Sept. 1, 1906, p. 703, as follows: "The gut is freed from fat by soaking for twenty-four hours in ether. It is then soaked for twenty-four hours in a watery solution of chromic acid from 1 to 4 per cent., dried in an oven, and boiled in cumol." Most authorities recommend 4 per cent. solution of chromic acid.

The length of time which the material will resist absorption by the tissues varies according to the size of the catgut. H. Cabot found (*Boston Med. and Surg. Jour.*, March 27, 1902), that chromicized catgut No. 0 had little strength at the end of four weeks, No. 1 full strength at five to eight weeks, and No. 2 full strength at eight to twelve weeks. DaCosta states (*Modern Surgery*, 4th edition, 1903, p. 51), that chromicized gut No. 3 and No. 4, will remain unabsorbed in the tissues from four to six weeks.

## The Public Service

#### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Feb. 23, 1907:

Jones, Percy L., asst.-surgeon, granted two months' leave of absence.

Bradley, Alfred E., surgeon, will, on the completion of his duty at Fort Slocum, N. Y., proceed to Fort Sheridan, Ill., for the purpose of packing and shipping public property, and will then proceed to Jefferson Barracks, Mo., for station.

Usher, F. M. C., and Webb, Walter D., asst.-surgeons, appointed members of examining board to meet at St. Paul, Minn., for the examination of officers of the Quartermaster's Department for promotion.

Morse, Charles F., asst.-surgeon, will, in addition to his present duties at Fort Howard, Md., attend Fort McHenry, Md., during the temporary absence of Capt. Kent Nelson, asst.-surgeon.

Stephenson, William, surg., relieved from duty at the Presidio, San Francisco, Cal., and, on arrival of 25th Infantry at San Francisco, will report to the commanding officer for duty to accompany that command to the Philippine Islands; on arrival at Manila, will report to the commanding general, Philippines Division, for assignment to duty.

Havard, Valery, asst.-surgeon-general, is detailed to represent the Medical Department of the Army at Convention of the Interstate National Guard Association, to be held at Columbia, S. C., March 25, 1907.

Brown, Ira C., contract surgeon, relieved from duty at Fort McIntosh, Texas, and ordered to accompany the Third Battalion, 25th Infantry, to the Philippine Islands for duty.

Ames, Roger P., contract surgeon, left Fort St. Philip, La., on leave of absence for one month.

Mason, George L., dental surgeon, left Fort McPherson, Ga., and arrived at Fort St. Philip, La., for temporary duty.

Branch, Frederick D., contract surgeon, relieved from duty at Fort Wood, N. Y., and ordered to Fort Preble, Me., for duty.

Mount, James R., contract surgeon, arrived at San Francisco, Cal., from Philippine service, and ordered to the Presidio of Monterey, Cal., for duty.

Bell, Leonard P., contract surgeon, arrived at San Francisco, Cal., for leave of absence from the Philippines Division.

Hutson, T. Ogier, contract surgeon, left Fort Moultrie, S. C., and arrived at Fort St. Philip, La., for temporary duty.

Jones, Edgar C., contract surgeon, ordered from Allegheny, Pa., to the Army General Hospital, Fort Bayard, N. M., for duty.

Marshall, John S., examining and supervising dental surgeon, granted sick leave of absence for one month.

Stallman, George E., dental surgeon, arrived at San Francisco, Cal., from Philippines service, and ordered to Fort Sam Houston, Texas, for duty.

Stone, Frank P., dental surgeon, relieved from duty at Fort Sam Houston, Texas, and ordered to Macon, Mo., for annulment of contract.

Wing, Franklin F., dental surgeon, left Fort Washakie, Wyo., and arrived at Fort Robinson, Neb., for temporary duty.

#### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Feb. 23, 1907.

McLean, N. T., asst.-surgeon, discharged treatment Boston Hospital, and ordered to duty at Navy Yard, Boston.

Grieve, C. C., P. A. Surgeon, commissioned P. A. surgeon from June 2, 1906.

Ryder, C. E., P. A. surgeon, commissioned P. A. surgeon from June 26, 1906.

Bacon, S., acting asst.-surgeon, ordered to duty Naval Hospital, Norfolk, Va.

Moore, J. M., surgeon, to Norfolk Hospital.

Furlong, F. M., surgeon, detached Boston Hospital, to duty in connection with fitting out of *Vermont* and duty aboard that vessel when commissioned.

#### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 20, 1907:

Ranks, C. E., surgeon, granted leave of absence for 14 days from February 21.

White, J. H., surgeon, directed to proceed to Baton Rouge, La., for special temporary duty, on completion of which to rejoin station at New Orleans.

Williams, L. L., surgeon, directed to report at Bureau for special duty, on completion of which to rejoin station at Baltimore.

Lumsden, L. L., P. A. surgeon, granted leave of absence for a period of 30 days from February 18, on account of sickness.

Corput, G. M., P. A. Surgeon, directed to proceed to Austin, Texas, for special temporary duty, on completion of which to rejoin station at Galveston.

Roberts, N., asst.-surgeon, granted leave of absence for 7 days from Feb. 11, 1907, under Paragraph 191 of the Regulations.



Gribble, B. C., acting asst.-surgeon, granted leave of absence for five days, from Feb. 14, 1907, under Paragraph 210 of the Regulations.

Schwartz, L., acting asst.-surgeon, granted leave of absence for 5 days from Feb. 16, 1907, under Paragraph 210 of the Regulations.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public-Health and Marine-Hospital Service, during the week ended Feb. 22, 1907:

#### SMALLPOX—UNITED STATES.

Florida: Lakeland, Jan. 26-Feb. 2, 6 cases; Feb. 9-16, 3 cases.

Georgia: Augusta, Feb. 5-12, 3 cases.

Illinois: Chicago, Feb. 9-16, 1 case.

Indiana: Indianapolis, Feb. 3-10, 4 cases.

Maryland: Baltimore, Feb. 9-16, 1 case.

Minnesota: General, Dec. 1-Jan. 28, 277 cases, 1 death.

Missouri: St. Louis, Feb. 9-16, 1 case.

Montana: Helena, Jan. 1-31, 1 case.

North Carolina: Charlotte, Feb. 9-16, 1 case.

Ohio: Cincinnati, Feb. 8-15, 2 cases.

Utah: Ogden, Jan. 1-31, 3 cases.

Washington: Spokane, Feb. 2-9, 13 cases.

#### SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, Dec. 29-Jan. 5, 1 case.

Brazil: Bahia, Dec. 29-Jan. 12, 6 cases.

Canada: Toronto, Jan. 9-26, 2 cases.

China: Shanghai, Jan. 6-13, 1 case.

France: Paris, Jan. 19-26, 19 cases.

Great Britain: Cardiff, Jan. 19-Feb. 2, 2 cases, 1 death; Hull, Jan. 19-26, 1 death; Liverpool, Jan. 19-Feb. 2, 2 cases; Southampton, Jan. 26-Feb. 2, 1 case.

India: Calcutta, Dec. 29-Jan. 5, 12 deaths (epidemic); Rangoon, Dec. 29-Jan. 5; 1 death.

Mexico: Vera Cruz, Jan. 26-Feb. 2, 1 case, 1 death.

Netherlands: Rotterdam, Jan. 26-Feb. 2, 5 cases, 1 death.

Russia: Moscow, Jan. 5-26, 11 cases, 8 deaths; Odessa, Jan. 12-19, 13 cases, 5 deaths.

Turkey: Constantinople, Jan. 20-27, 1 death.

#### YELLOW FEVER.

Mexico: Tuxpam, Jan. 22-29, 1 case, 1 death.

#### CHOLERA—INSULAR.

Philippine Islands: Provinces, Dec. 15-22, 19 cases, 10 deaths; Dec. 22-29, 20 cases, 11 deaths; Dec. 27-Jan. 5, 21 cases, 12 deaths.

#### CHOLERA—FOREIGN.

India: Bombay, Jan. 8-15, 3 deaths; Calcutta, Dec. 29-Jan. 5, 76 deaths; Cochin, Dec. 28, 1 death; Rangoon, Dec. 29-Jan. 5, 18 deaths.

#### PLAGUE.

Egypt: Ismailia, Jan. 25-29, 1 case, 1 death; Assiout Province, Jan. 24-29, 1 case.

India: General, Dec. 29-Jan. 5, 12,918 cases, 10,363 deaths; Bombay, Jan. 8-15, 33 deaths; Calcutta, Dec. 29-Jan. 5, 10 deaths; Rangoon, 18 deaths.

Japan: General, Jan. 1-19, 9 cases.

Mauritius: Dec. 13-Jan. 3, 65 cases, 43 deaths.

Siam: Bangkok, Nov. 21, 1 death.

## Marriages

O. P. GRANT, M.D., Cantrall, Ill., to Miss Mabel Irene Green, of Chicago, January 9.

OSCAR F. BLANK, M.D., to Miss Diana Van Gordon, both of Bethlehem, Pa., February 1.

JOHN JOSEPH HECK, M.D., Baltimore, to Miss Nina Davis, at Washington, D. C., February 12.

EDWARD M. BUCK, M.D., Montrose, Iowa, to Miss Kathryn Rowe, at Summitville, Iowa, February 2.

HENRY J. POOL, M.D., Port Clinton, Ohio, to Miss Louise Debreau, of Detroit, Mich., February 6.

FRANK C. WITTER, M.D., Ann Arbor, Mich., to Miss Lena Lyle Armstrong, of Lapeer, Mich., February 14.

WALTER M. REEDY, M.D., Scranton, Pa., to Miss Mary Theresa Healey, of Dunmore, Pa., February 1.

RICHARD F. NOTH, M.D., American Falls, Idaho, to Miss Genevieve O'Donnell, of Haverhill, Minn., February 12.

FRANCIS J. ANTOINE, M.D., to Miss Rose Marie Garvey, both of Prairie du Chien, Wis., at Racine, Wis., February 11.

JOHN A. CALDWELL, M.D., Cincinnati, to Miss Ortha C. Featherstone, of New York, at Lowell, Mass., February 14.

WILLIAM HEWSON BALTZELL, M.D., Baltimore, to Miss Alice Steele Cheney, of Elm Bank, Needham, Mass., February 12.

RAY WALLACE MOE, M.D., Peekskill, N. Y., to Miss Ella Madalene Greeley, of Long Island City, N. Y., February 10.

JOHN DIEDRICH MORITZ, M.D., Piedmont Lodge, Keswick, Va., to Miss Martha Washington Jennings, at Baltimore, February 12.

## Deaths

Charles K. Yancey, M.D. University of Virginia, Department of Medicine, Charlottesville, 1870; passed assistant surgeon, United States Navy; who entered the service May 1, 1871; was made passed assistant surgeon June 12, 1876, and was retired May 21, 1880, on account of disability incurred in line of duty; who had been an inmate of the Government Hospital for the Insane, Washington, for 29 years, died in that institution, from tubercular osteitis of the right tibia, February 9, aged 58.

Adolph Rupp, M.D. New York University Medical College, New York City, 1877; a member of the American Medical Association and the New York Academy of Medicine; a specialist in diseases of the ear, nose and throat, and heart and lungs; the translator of Ziemssen's "Cyclopedia of General Medicine;" a member of the staff of several hospitals and dispensaries in New York City, died at his home in New York, February 7, from heart disease, following influenza, aged 50.

Henry W. Elmer, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1869; a member of the American Medical Association; for 24 years secretary of the Cumberland County Medical Society, and for many years chairman of the standing committee of the Medical Society of New Jersey, died at his home in Bridgeton, where his father, grandfather and great-grandfather had been practitioners before him, February 13, after an illness of two years, aged 59.

William O. Lantz, M.D. Jefferson Medical College, Philadelphia, 1882; of Lemasters, Pa.; a member of the state and county medical societies, and formerly president of the Franklin County Medical Society, died in Johns Hopkins Hospital, Baltimore, a few hours after an operation for complicated disease of the liver, February 15, aged 51. His funeral at Chambersburg was attended by a delegation from the county medical society, which also furnished pall-bearers.

George E. Rosenthal, M.D. College of Physicians and Surgeons, Chicago, 1902; a member of the American Medical Association; assistant surgeon of the Illinois Sailors and Soldiers' Home, Quincy, Ill.; attending surgeon and pathologist at the Blessing Hospital, and secretary of the Adams County Medical Society, died in Quincy, February 17, from typhoid fever, aged 34.

Henry C. Faulkner, M.D. Leonard School of Medicine, Medical Department of Shaw University, Raleigh, N. C., 1894; formerly a practitioner of Chicago, but for the last four years a missionary on the West Coast of Africa; secretary of the board of health, Monrovia, Liberia, and city and harbor physician, died from pneumonia, Dec. 11, 1906.

John G. Keith, M.D. University of Louisville (Ky.) Medical Department, 1891; of Leadville, Colo.; a member of the American Medical Association; a veteran of the Civil War, died in St. Louis, Mo., February 16, from paralysis following a lightning stroke last summer, aged 58.

Jacob F. Whiting, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1879; a member of the American Medical Association, and an esteemed practitioner of Spencer Brook, Minn., died at his home in that place, February 13, from pneumonia, aged 62.

Thomas D. Bedford, M.D. Bellevue Hospital Medical College, New York City, 1882; of Kansas City, Mo.; coroner of Jackson County, Mo., in 1897, died at University Hospital, Kansas City, February 13, from pneumonia, complicated by chronic cardiac disease, aged 53.

Ernst von Schulenberg, M.D. University of Buffalo (N. Y.) Medical Department, 1880; a well-known physician and clergyman of Sandusky, Ohio, and the leading historian of that city, died at his home, February 11, after an illness of one month, aged 57.

William H. Rowe, M.D. University of Iowa, College of Homeopathic Medicine, Iowa City, 1885; of Waukesha, Wis., died February 3, at the Northern Hospital for the Insane, Oshkosh, Wis., where he had been an inmate for a year, aged 50.

Weston D. Bidaman, M.D. University of Buffalo (N. Y.), Medical Department, 1878; a member of the state and county medical societies, died at his home in Buffalo, February 15, from heart disease, after an illness of eight months, aged 55.

Henry Warner, M.D. Eclectic Medical College of Philadelphia, 1877; of Hampden, Mass.; a veteran of the Civil War, died suddenly from cerebral hemorrhage, while making a professional call in East Longmeadow, February 12, aged 59.



George Ross Griffith, M.D. Starling Medical College, Columbus (Ohio) 1872; a member of the Washington County (Pa.) Medical Society, died at his home in Carnegie, February 4, from nephritis, after an illness of two years, aged 60.

John F. English, M.D. University of Vermont, College of Medicine, Burlington, 1898; of Providence, R. I., died at the Rhode Island Hospital, Providence, February 9, from lobar pneumonia, after an illness of three days, aged 31.

Frederick Stanley Cowles, M.D. Yale Medical School, New Haven, Conn., 1893; a member of the state and county medical societies, died at his home in Essex, Conn., from heart disease, after a long illness, February 12, aged 37.

John Quincy Adams Hollister, M.D. Eclectic Medical Institution, Cincinnati, 1878; a veteran of the Civil War, died at his home in Mount Vernon, N. Y., February 10, from cerebral hemorrhage, after an illness of two years, aged 69.

John V. Martin, M.D. Toledo (Ohio) Medical College, 1896; of Toledo; a member of the state and county societies, died at St. Vincent's Hospital, Toledo, February 9, from typhoid fever, after an illness of two weeks, aged 44.

Perry Waltman, M.D. Eclectic Medical Institute, Cincinnati, 1882; formerly of Birmingham, Ohio, died at the home of his sister in Mansfield, Ohio, February 11, from paralysis, after an invalidism of three years, aged 50.

Wesley A. Derhamer, M.D. Jefferson Medical College, Philadelphia, 1875; a member of the state and county medical societies, died at his home in Lehigh, Pa., February 17, after an illness of one week, aged 57.

William E. Carroll, M.D. New York University Medical College, New York City, 1890; a member of the state and county medical societies, died at his home in Taunton, Mass., February 18, after a short illness.

Fred Henry Messenger, M.D. University of Iowa, College of Homeopathic Medicine, Iowa City, 1906; of Plaza, N. D., died at his home February 5, from septicemia due to infection after vaccination, aged 25.

William J. Chappell, M.D. College of Physicians and Surgeons, Baltimore, 1886; died at his home in Baltimore, February 7, from the effects of cyanid of potassium taken with suicidal intent, aged 49.

Emery Gregg Ireland, M.D. Rush Medical College, Chicago, 1899; formerly of Miles City, Mont., was found dead in his bed at the home of his cousin in Pittsburg, Kan., February 5, from heart disease.

Ulysses Sidney Grant Binger, M.D. Milwaukee (Wis.) Medical College, 1899; of Lovelocks, Nev., died from pneumonia, at a ranch 10 miles south of that place, February 8, after an illness of one week.

Henry C. Briggs, M.D. Jefferson Medical College, Philadelphia, 1847; of Homeville, Va.; at one time superintendent of public schools of Sussex County, died suddenly, February 11, aged about 70.

Michel Omer Routhier, M.D. summa cum laude, École de Médecine et de Chirurgie, Montreal, 1893; died at his home in Lawrence, Mass., from pneumonia, after an illness of three weeks, aged 46.

Adolph C. Sontag, M.D. Wisconsin College of Physicians and Surgeons, Milwaukee, 1904; died at the home of his parents in Milwaukee, February 8, after an illness of six weeks, aged 28.

James H. Delany, M.D. Bellevue Hospital Medical College, New York City, 1886; was found dead in his office in Erie, Pa., February 12, from heart disease following influenza, aged 54.

T. Scott McFarland, M.D. Chicago Homeopathic Medical College, 1894; formerly of Sedalia, Mo., died at his home in Tucson, Ariz., February 11, after a long illness, aged 38.

James Long, M.D. St. Louis Medical College; who retired from practice in 1882; died at his home in St. Louis, January 16, from nephritis, after an illness of one week, aged 68.

Thomas A. Corlett, M.D. Detroit (Mich.) College of Medicine, 1892; died at his home in Manton, Mich., February 9, from angina pectoris, after a long illness, aged 43.

Leland M. Wright, M.D. Washington University, Medical Department, St. Louis, 1867; died at his home in Altona, Mo., February 8, from cerebral hemorrhage, aged 66.

John Edward Bolte, M.D. Baltimore Medical College, 1891; registrar of wills for Baltimore County, Md., died at his home in Harrisonville, Md., February 16, aged 41.

Francis A. Reynolds, M.D. Columbus (Ohio) Medical College, 1879; died at his home in Kendallville, Ind., February 15, after a lingering illness, aged 62.

#### Deaths Abroad.

F. Fajardo, M.D., director of the Bacteriologic Laboratory at Rio de Janeiro, president of the Academia Nacional de Medicina, etc., died recently, presumably from the effects of a preventive injection of antiplague serum.

## Society Proceedings

### COMING MEETINGS.

Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.  
American Association of Anatomists, Madison, Wis., March 27-29.  
Med. Assn. of District of Columbia, Washington, April 2.  
Tennessee State Medical Assn., Nashville, April 9.  
Mississippi State Medical Association, Gulfport, April 10.  
South Carolina Medical Association, Bennettsville, April 10.  
Medical Assn. of State of Alabama, Mobile, April 16.  
Florida Medical Association, Tampa, April 17.  
Medical Association of Georgia, Savannah, April 17.

### OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Regular Meeting, held Jan. 3, 1907.*

The President, DR. WILMER KRUSEN, in the Chair.

#### Vaginal Hysterectomy.

DR. GEORGE ERETY SHOEMAKER reported the histories of ten patients operated on. Each made a normal recovery. Nearly all the patients had passed through the menopause. Great stress was laid on the importance of paying heed to postmenopausal bleeding. The danger of overlooking early malignancy in the examination of scrapings was emphasized.

#### DISCUSSION.

DR. JOHN C. HIRST prefers atmokausis in a case of persistent bleeding where examination of the scrapings shows no malignancy.

DR. BROOKE M. ANSPACH believes there are cases of persistent metrorrhagia or menorrhagia requiring hysterectomy in which no pathologic lesion of the endometrium exists and in which therefore examination by curettement is absolutely negative. In these cases the lesion is in the myometrium and they are amenable only to radical treatment.

DR. C. C. NORRIS believed that in the large majority of cases the microscope can be relied on to give an absolute diagnosis in all cases of carcinoma of the fundus uteri. The chief sources of error in the pathologic diagnosis, he thinks, are that the tissue is often improperly hardened, that it is not all cut and consequently not all examined, and that in some cases the diagnosis is made by men not especially experienced in this line of work.

#### Case of Chorioepithelioma.

DR. BROOKE M. ANSPACH and DR. HENRY R. ALBURGER reported a case of chorioepithelioma which came to operation and autopsy. The history did not very closely suggest the disease, which was diagnosed only after curettage and the examination of scrapings. Widespread metastases were found at autopsy, involving almost all of the visceral organs except the spleen. The tumor did not contain chorion villi. The ovaries were riddled with Graafian follicle cysts. There was very little lutein tissue present.

#### Treatment of Eclampsia.

DR. JOHN C. HIRST's conclusions as to the treatment of eclampsia, based on the cases at the University of Pennsylvania Maternity, were as follows:

The routine treatment consisted of: 1. Chloroform to avert the attack, if possible. 2. Fifteen minims of fluid extract of veratrum viride hypodermically. 3. Wash out stomach and through the tube introduce 2 ounces of castor oil and four drops of croton oil. 4. Hot vapor bath or hot pack, for thirty minutes, in every four hours. 5. Hypodermoclysis of one pint of salt solution under the breast every eight hours. 6. If convulsions recur, repeat the veratrum viride in five minim



doses, every hour, for three doses, and then if blood pressure is still high and the patient is cyanotic, venesection is performed, removing from 8 to 16 ounces of blood. 7. Under ordinary circumstances let the labor alone. The use of morphin and pilocarpin is restricted to desperate cases only. Venesection is not done, as a rule, until veratrum viride has been given a trial.

Accouchement forcé is used only under the following conditions: 1. When the patient is far advanced in spontaneous labor, forceps are applied. 2. If patient is seen very early after the first onset of convulsions, it may be advisable to interfere. 3. If patient is going from bad to worse under treatment, the uterus is emptied as a last resort. The method employed is either vaginal hysterotomy (the so-called vaginal Cesarean section) and forceps, or the Pomeroy bag, followed by forceps. The latter method is probably the better. The cases studied were 88 cases of eclampsia and 278 cases of albuminuria. This treatment gave a mortality, excluding cases brought in in a moribund condition, of 13.4 per cent. Of the cases of albuminuria 40 had had eclampsia in previous labors (one four times), but escaped under treatment.

#### DISCUSSION.

DR. RICHARD C. NORRIS said that at the Preston Retreat he sees on an average two or three cases of eclampsia in a year, and four or five cases in consultation, but he has had only one case of eclampsia in his private practice in fifteen years. He has never done Cesarean section nor used a Bossi dilator in eclampsia at the Preston Retreat. When the cervix is dilated, forceps or version is resorted to, and prior to dilatation eliminative treatment is vigorously employed, while a bag is used to obtain dilatation.

The method of elimination by the bowel he regards as the most valuable. He has yet to see a woman die of eclampsia from whom he was able to secure from 12 to 20 stools in twenty-four hours. This is his first aim in treating any case. Two ounces of Epsom salts are first administered, and if vomited, then three to five drops of croton oil are given in sweet oil. The danger was pointed out of excessive amounts of salt solution unless the purging or sweating is free. Dr. Norris said that veratrum viride should be used with caution, in some cases of eclampsia being distinctly contraindicated. If the condition is of sudden onset, veratrum would be useful in moderate, frequently repeated doses until it has markedly slowed the pulse. Morphia he usually does not use.

There should be a differentiation as far as possible between the various types of the disease. Cases showing a slow onward progress suggest a kidney type, and in such cases morphia would be a bad drug to give, especially in the interstitial type, as recently pointed out by Dr. Tyson. Other groups of cases may be looked on as of intestinal origin, and here large doses of morphia to control convulsions and copious lavage of the bowel would be of value. Another group of cases, hepatic in origin, he has always felt to be the most hopeless. Admitting that there is nothing to prove the theory of the syncytial origin of the toxins of eclampsia, he is inclined to group those as possibly of syncytial origin in which the onset is sudden and without premonitory signs. In such a case he would not hesitate to either stretch or cut the cervix and deliver the patient rapidly. The plan of treatment to which he has always objected is the routine use of vigorous surgical procedure. He admits that the literature of the world in the last year or two shows a steadily decreasing mortality from the aggressive plan of surgical treatment, but he believes the secret of this to be that all cases are being so treated, and that the mild ones that would have gotten well without the surgical treatment are credited to it, and that the worst cases that end fatally in spite of surgical treatment continue to give a mortality to even that treatment.

DR. BARTON COOKE HIRST does not agree wholly with Dr. Norris concerning purging. He thinks it is brought about too slowly to be of great value in the worst cases, and in such cases he depends mainly on sweating. This, however, he thinks, is very imperfectly carried out in the average private house, and suggests that the double mortality of the private house cases compared with the hospital cases may be due to

this imperfect method. An illustration was given in which a patient treated at home was given up to die by the attending physician, when sweating brought about by the apparatus used by Dr. Hirst in the hospital resulted in recovery. The patient must be put into a regularly arranged tent, a steady stream of live steam must be introduced under the tent and the treatment must be continued for thirty minutes, when literally quarts of fluid can be drained from the woman's blood vessels. The loss of fluid is replaced by normal salt solution given midway between the sweats. The sweats should be given every four hours during the worst of the attack, but should be continued once or twice a day for several days.

Of special interest to Dr. Hirst in the treatment of eclampsia are the relative advantages of rapid delivery during pregnancy or labor and the conservative treatment. His feeling at the present time, after ample experience with both kinds of treatment, is that the conservative obstetric treatment of eclampsia gives the best results. An absolutely rigid rule, however, can not be followed. Cases are presented in which he deliberately resorts to accouchement forcé in spite of his prejudice against it; for example, a woman entering the hospital comatose and in convulsions, who fails to respond to the routine treatment, is subjected to accouchement forcé. He has seen some of these patients recover unexpectedly.

Veratrum viride has seemed to him the best drug in the treatment. Venesection has not worked well in his hands. If veratrum viride is indicated, he gives 15 minims of the fluid extract as a first dose, repeated in five minim doses as often as necessary to keep the pulse at 50 or 60. In twenty years he has seen but a single case of veratrum viride poisoning. The woman, however, was easily revived by digitalis, strong coffee and alcoholic stimulation.

DR. HOPKINSON has employed the Straganoff treatment in a large number of cases, and in eight consecutive cases it was successful except in the last.

DR. SWITHIN CHANDLER referred to the change of opinion concerning the use of morphia.

DR. WILLIAM R. NICHOLSON regards rapid delivery as the most important point. He cited a case which recently came under his care. The patient had been brought to the maternity after having had a dozen convulsions at her home. The mere placing of the hand on the abdomen caused convulsions. Eliminative treatment was instituted, but the convulsions remained. Under mild chloroform anesthesia the cervix was dilated without tearing and the child, which was dead, delivered by forceps. There were subsequently two convulsions, and within the next thirty-six hours the woman returned to consciousness. He would not go on record as believing this to be the proper treatment for a large number of cases. He does believe, however, that accouchement forcé is indicated in a certain limited number of cases after eliminative treatment has been instituted.

#### MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*One Hundred and First Annual Meeting, held in Albany, Jan. 28-30, 1907.*

*(Continued from page 721.)*

#### Toxic Nephritis Dependent on Surgical Conditions.

DR. NATHAN JACOBSON, Syracuse, said that while the toxic agencies producing nephritis have been extensively studied, the surgical conditions that are capable of producing pathologic changes in the kidneys have not received so much attention. It is still an open question whether the presence of bacteria in the urine implies a diseased condition of these organs, or whether the bacteria can be eliminated without producing pathologic changes. The question has also arisen whether in this form of nephritis the provoking cause is the bacteria or the toxins produced by them. The author reviewed the experimental work that has been done in the endeavor to solve these questions and the conclusions thus far reached. It seemed that in cases of general infection the passage of bacteria through the kidneys produces various anatomic and pathologic changes in the kidney structure. Toxic nephritis



presents rather a favorable prognosis if the primary disturbance can be relieved. The author cited three cases. The first one was, presumably, a staphylococcal infection. The patient suffered from septic endocarditis as well as nephritis; in the second case, one of intestinal obstruction without septic disturbance of any kind but with complete arrest of intestinal function a very serious and all but fatal form of nephritis was awakened; the third case in which there was complicating gallstone disease, a subacute pancreatitis, and in consequence of the disturbance of the secretory function of this gland a toxic condition was aroused causing not only nephritis but also glycosuria. In each of the three cases after removal of the causal condition all evidence of renal disease disappeared. It is generally held that the presence of nephritis is to be regarded as a possible contraindication to surgical operation, but it seems that in a certain class of cases bacterial or toxic nephritis becomes rather a most positive indication for operation as by such a course only can the nephritis be removed.

#### Surgery of Foreign Bodies in the Respiratory Tract.

DR. WILLIS G. MACDONALD, Albany, said that a striking feature of foreign bodies aspirated is their size, as for instance a hatpin, 14 cm. long, having a head more than a centimeter in diameter, artificial tooth plates having as many as four teeth, and pieces of bone  $2\frac{1}{2}$  cm. long. The great size of bodies aspirated may in the absence of trustworthy evidence lead to serious errors in diagnosis. The general impression gained from literature corresponds to the author's experience that the normal plan of treatment of foreign bodies lodged in the deep trachea or bronchi is a preliminary inferior tracheotomy. If the body is mobile, a wide tracheal incision, left well open, will soon lead to expulsion through the violent efforts of coughing. If the body is fixed in the bronchus or the lower trachea, bronchoscopy, using a short tube, may be employed with precision. The mortality from the aspiration of foreign bodies has been materially decreased during recent years. This is due to the use of the Roentgen rays for diagnostic purposes, to the invention of mechanism for the direct inspection of the larynx, trachea and bronchi, and to the recent developments in technic.

#### Treatment of Diffuse Septic Peritonitis Following Appendicitis.

DR. RUSSELL S. FOWLER, Brooklyn, presented the following conclusions: 1. A small incision and the avoidance of eversion. 2. Thorough cleansing of the primary focus of infection and removal of the appendix. 3. Evacuation and cleansing of all accessory abscess cavities and the pelvis before washing out the peritoneal cavity. 4. A rapid systematic flushing of the peritoneal cavity with hot saline solution. 5. The continuance of the saline flushing until the sutures are placed and for the most part tied. 6. The provision of proper drainage for the pelvis either by means of a large glass tube containing a capillary drainage strip emerging through the lower angle of the wound, or in females by a large caliber rubber tube filled with wicking passed through a posterior colpotomy incision. 7. The drainage of accessory abscess cavities with gauze or wicking. 8. The elevation of the head of the bed to accelerate the drainage of septic fluid into the pelvis, whence it can be removed through the tube, or in case of vaginal drainage find a ready exit. He said there are certain cases of diffuse septic peritonitis which may be closed safely without drainage. These are cases in which there are no necrotic areas and in which the serous covering of the intestine is not "blistered" or desquamated, or swollen and infiltrated. It is his firm conviction, however, that cases for complete closure should be selected carefully and this can only be done safely by an operator of wide experience. No more striking evidence can be adduced in support of drainage than the frequency with which secondary abscesses form.

#### Study of Blood Pressure.

DR. HENRY L. ELSNER, Syracuse, stated that the sphygmomanometer often gives information which is strongly suspected without it, but that conditions are unfolded by cautious blood pressure study which can not be made positive without it. It is not an uncommon experience to find that the sphygmomanometer leads to conclusions diametrically opposite

to those reached without it. The author showed the importance of arterial tension for diagnostic and therapeutic purposes, and holds that the sphygmomanometer of to-day gives sufficiently accurate information of systolic, diastolic and pulse pressure to justify safe conclusions. Dr. Elsner considered the baneful results which follow chronic arterial hypertension unless the underlying process is controlled. Hypertension is usually a compensatory measure and it is often a mistake to give drugs which lower blood pressure without considering primary causes. Longevity depends on cardiovascular competence, and hypertension frequently exists in supposedly healthy individuals, especially in those who are strenuous and active, and its early recognition and control are of economic importance to the state. The author dealt with the differential diagnosis of hypertension and arteriosclerosis and on the importance of hypertension as evidence of renal change before the appearance of other symptoms. The foundation for all treatment in regulating and preventing hypertension is temperance and sobriety. The influence of the nitrites, chloral, iodids and other drugs is evanescent. The changes which follow in distant organs after the persistence of hypertension during long periods are many and far reaching.

The rapid development of arteriosclerosis in professional men is a depressing and alarming fact and worry is a causative factor in producing hypertension. Exophthalmic goiter is a disease of normal tension or hypertension and its persistence often leads to arteriosclerosis. Diabetes is also associated with hypertension. The importance of disturbance within the splanchnic vessels and gastrointestinal tract as factors in the production of hypertension and ultimate vascular change was discussed. In spite of high blood pressure, pulse pressure might be very low. This condition is a valuable indication for cardiac stimulation. The author considered the effect of filling the splanchnic vessels in the presence of pulmonary edema, and the use of nitroglycerin with adjuvants for this purpose was recommended in the presence of an insufficient heart with peripheral arterial obstruction associated with pulmonary edema. The author warned against one-sided reasoning in blood pressure study.

#### Classification of Blood Pressure Cases.

DR. LOUIS FAUGERES BISHOP, New York, said departures from normal blood pressure are classified into three principal classes—primary low arterial tension, high arterial tension, and secondary low tension. Certain special cases are described under constitutional low arterial tension. He subdivides the high pressure cases into those due to nervous causes and those due to other causes. Hypertonia vasorum idiopathica stands for a class of cases in which high arterial tension often exists but which evidently are not of nephritic origin, nor do they owe their origin to changes in the blood vessels. This group of cases is becoming more important than formerly because it is the first departure from health noticed in those who break down under the strain of modern life, mental tension being the cause of the increasing number of persons who suffer from this disorder of the circulation. The cure of this condition consists in regulating the functional activity of the brain, heart and blood vessels so that they shall run smoothly. Hygiene, exercise and diet play an important part in the treatment.

#### The Criminal Lunatic; His Status and Disposition.

DR. ROBERT B. LAMB, Matteawan State Hospital, dwelt on the present practice of dealing with the criminal lunatic in New York. The different forms of commitments on criminal orders were discussed and certain defects in the present system were pointed out and remedies suggested. No legal cognizance is now taken in cases of diminished responsibility or constitutional inferiority, the old legal definition of insanity being the only interpretation usually permitted in the courts. He strongly condemned the custom of permitting lay juries to pass on the mental condition of criminal lunatics and of constituting commissions of lunacy with a medical minority. The bar as well as medical societies recognize the need of a betterment of present conditions.

(To be continued.)



# Medical Education and State Boards of Registration

## COMING EXAMINATIONS.

MAINE Board of Registration in Medicine, Common Council Room, Portland, March 5. Secretary, Dr. W. J. Maybury, Saco.

MASSACHUSETTS Board of Registration in Medicine, Room 15, State House, Boston, March 12-13. Secretary, Dr. Edwin B. Harvey, Room 159, State House, Boston.

CONNECTICUT Medical Examining Board (Regular), City Hall, New Haven, March 12-13. Secretary, Dr. Charles A. Tuttle, New Haven.

CONNECTICUT Eclectic Medical Examining Committee, State Capitol Building, Hartford, March 12. Secretary, Dr. George A. Faber, Waterbury.

CONNECTICUT Homeopathic Medical Examining Committee, New Haven, March 12. Secretary, Dr. Edwin C. M. Hall, New Haven.

IOWA Board of Medical Examiners, Des Moines, March 19-21. Secretary, Dr. Louis A. Thomas, Des Moines.

OKLAHOMA Board of Medical Examiners, Guthrie, March 26-27. Secretary, Dr. J. W. Baker, Enid.

**California December Report.**—The State Board of Medical Examiners of California reports the written examination held at San Francisco, Dec. 18, 1906. The number of subjects examined in was 9; percentage required to pass, 75. The total number of candidates examined was 52, of whom 37 passed and 15 failed. The following colleges were represented:

### PASSED.

College.	Year of graduation.	Anatomy.	Bacteriology.	Chemistry.	Materia Med.	Obstetrics.	Pathology.	Physiology.	Medicine.	Surgery.	General average.
Cooper Med. Coll. ....	1906	89	75	81	84	84	85	91	82	92	84.7
Cooper Med. Coll. ....	1905	87	77	77	96	78	63	80	84	91	81.4
Cooper Med. Coll. ....	1906	85	68	75	82	69	60	79	76	86	75.5
Oakland Coll. of M. and S.	1906	83	83	60	73	90	68	71	75	94	77.6
University of California...	1906	91	81	82	87	96	94	95	92	94	90.2
University of California...	1906	86	77	94	87	96	85	100	79	95	88.7
University of California...	1906	90	85	88	82	94	83	95	91	91	88.7
University of California...	1906	82	75	82	80	89	75	93	75	91	82.3
University of California...	1906	84	61	91	81	84	84	93	86	86	82.2
University of California...	1906	88	78	88	85	88	70	78	70	86	81.2
University of California...	1905	89	74	60	75	80	70	93	80	86	78.5
Univ. of Southern California.	1906	81	70	67	85	84	64	66	80	86	75.6
Chicago Homeo. Med. Coll.	1889	75	79	87	88	88	75	82	84	84	81.3
Hering Med. Coll. ....	1903	78	65	67	90	72	60	78	90	85	76.1
Northwestern University ...	1903	80	86	68	73	94	70	64	75	87	77.4
Northwestern University ...	1904	88	82	76	82	94	84	93	73	91	83.6
Northwestern University ...	1905	89	80	77	91	97	80	96	80	90	86.6
Northwest. Univ. Woman's Medical School .....	1899	85	79	75	81	93	67	75	62	81	77.5
University of Kansas.....	1892	86	76	73	87	96	68	93	75	95	83.2
Hosp. Coll. of M., Louisville	1894	81	83	62	84	89	65	66	60	87	75.2
Kentucky School of Med. ...	1906	79	68	76	82	84	61	85	82	87	78.2
Johns Hopkins Med. School.	1906	88	72	76	76	82	76	90	80	80	80
Harvard Med. School.....	1887	80	77	75	86	76	79	90	79	92	81.5
Harvard Med. School.....	1901	89	81	92	88	88	85	93	75	95	87.3
Harvard Med. School.....	1901	90	73	79	83	82	75	90	81	94	81.8
Coll. of P. & S., New York.	1903	88	80	86	84	85	80	85	95	90	85.8
Medical Coll. of Ohio.....	1896	93	89	79	80	90	93	96	83	90	88
Medical Coll. of Ohio.....	1897	90	74	85	88	78	71	62	97	87	81.3
University of Pennsylvania.	1897	90	84	73	92	97	87	80	83	91	86.1
Jefferson Med. Coll. ....	1879	95	89	76	90	89	80	85	85	94	87
Jefferson Med. Coll. ....	1892	75	75	76	77	69	73	68	85	80	75.3
Woman's Med. Coll., Penn.	1903	88	77	76	73	77	72	78	81	92	79.3
McGill University, Montreal.	1903	91	74	77	80	76	81	95	95	83	83.5
University of Virginia.....	1891	90	81	66	83	64	70	83	80	85	78
R. C. S. Eng., R. C. P. Lond.*	1900	90	67	87	88	96	81	88	77	87	84.5
Royal Univ., Turin, Italy...	1905	87	68	70	81	71	90	61	72	75	75
Univ. of Würzburg, Germany	1903	86	67	69	78	63	75	90	67	83	75.3

### FAILED.

Coll. of P. & S., San Fran..	1906	80	66	51	79	55	53	66	68	82	66.6
Univ. of Southern California	1905	79	68	71	79	84	76	66	40	79	71.2
Am. Coll. of M. & S., Chicago	1906	78	62	43	77	71	60	51	80	82	67.1
Denver & Gross Coll. of Med.	1895	75	58	62	72	70	47	70	45	80	64.2
Coll. of P. & S., Chicago....	1893	50	42	38	72	60	53	36	76	71	55.2
Coll. of P. & S., Chicago....	1898	79	80	75	78	89	50	64	49	76	71.
Coll. of P. & S., Chicago....	1905	75	64	69	75	88	60	74	60	86	72.2
Coll. of P. & S., Keokuk, Ia.	1890	80	64	47	85	68	60	60	77	79	68.8
University of Louisville....	1905	68	63	56	79	77	63	48	50	79	64.7
University of Michigan....	1886	79	63	..	83	75	60	58	52	70	60
Cincinnati Coll. of M. & S.	1875	70	41	56	82	72	70	31	30	73	62.7
Medical Coll. of Ohio.....	1882	52	54	60	74	67	35	51	32	53	53.1
University of Tennessee....	1888	75	51	50	82	73	41	75	60	54	62.3
Queen's University, Ontario.	1888	62	56	50	63	75	55	49	26	78	55.1
Chiba M. C., Tokio, Japan.	1892	65	48	54	84	65	35	29	42	79	55.2

\* Not a medical school but the Examining Board in England composed of the Royal College of Physicians of London and the Royal College of Surgeons of England.

The following questions were asked:

### CHEMISTRY AND TOXICOLOGY.

1. Write a prescription for the administration through the mouth of chlorin gas dissolved in water. 2. Mention the sources and uses of benzin. 3. Describe the theory of construction of the metric system. 4. Name the chemical elements which enter into the formation of bone. On what does the hardness of bone depend? 5. What is the cause of lactic acid in the stomach and how can it be separated from hydrochloric acid? 6. Describe in detail a reliable method for determining the quantity of sugar in diabetic urine. 7. Give the maximum doses of the following: (a) Acetanilid. (b) Atropin sulph. (c) Beechwood creosote. (d) Bichlorid of mercury. (e) Extract cannabis indica. 8. Name the ingredients of the following: (a) Compound chalk powder. (b) Dover's powder. (c) Compound licorice powder. (d) Carron oil. (e) Blackwash. 9. Give chemical tests for detection in solutions of the following salts: (a) Silver nitrate. (b) Lead acetate. (c) Ammonium chlorid. (d) Ferric chlorid. (e) Corrosive sublimate. 10. State the significance of the presence in drinking water of (a) nitrates and nitrites, (b) excess of albuminoid ammonia, (c) excess of chlorin.

### BACTERIOLOGY.

1. Give the classification of bacteria and name an example of each division. 2. Define aerobic, anaerobic; differentiate facultative aerobins and facultative anaerobins. 3. State method of sterilizing the following: Fluid culture media, test tubes, rubber stoppers, rubber gloves. 4. Define the following terms: Germicide, antiseptic, aseptic, sterile, disinfectant. 5. Define immunity. What do you understand by natural, acquired and inherited immunity? 6. To what requirements must bacteria conform to be considered the cause of disease? 7. Briefly describe the Widal reaction, state its diagnostic significance. 8. What do you understand by the terms factor and unit, as applied to antidiptertic serum? Give the origin, morphology, properties and growths, *Bacillus tuberculosis*, *Bacillus anthracis*, *Bacillus edematis maligni*. What is understood by the terms, trichobacteria, leptothrix, sarcina?

### ANATOMY.

1. Describe and locate the appendix vermiformis. 2. Describe, generally and briefly, the lymphatic system. 3. Trace the arterial blood from the heart to the foot. 4. Describe the palmar arch. 5. Describe the knee joint. 6. Locate and describe the stomach. 7. Locate the liver, spleen, pancreas and kidneys. 8. Give the position and relations of the tricuspid and mitral valves of the heart. 9. Describe and name the muscles of the female perineum. 10. Describe the sympathetic nerve, naming and locating the principal ganglia.

### PATHOLOGY.

1. Describe amyloid degeneration, and state in what cases and in what organs it is found. 2. Classify and describe briefly the cysts of the kidney. 3. Enumerate in the order of frequency the tumors of the parotid glands. 4. What diseases of the mother may be transmitted to the fetus? 5. Classify and describe abscesses of the liver. 6. Give the sites and the pathology of varicose veins. 7. Describe the causative agent and the production of the lesions of scabies. 8. Examination of gross pathological specimens. 9. Examination of microscopic specimens (histology); 1 slide. 10. Examination of microscopic specimens (pathology); 1 slide.

### OBSTETRICS.

1. Give the signs of pregnancy. 2. What is hyperemesis? Give the symptoms, course, and treatment. 3. Name the varieties of placenta prævia. 4. Under what conditions should a pregnancy be interrupted? 5. What effect does maternal syphilis have on the child? 6. What changes take place in the circulation at birth? 7. What are the causes of rupture of the uterus? 8. Describe the management of labor in breech presentations. 9. What is episiotomy? Under what conditions and how is it performed? 10. Describe the treatment for a complete perineal laceration.

### HOMEOPATHIC MATERIA MEDICA.

1. What homeopathic medicines are most frequently indicated in threatened abortion? Give characteristic symptoms of two. 2. Give symptomatology of china and nux vomica in icterus. 3. Give the indications for cantharis, mercurius cor. and terebinth in nephritis. 4. Give differentiating symptoms of arsenicum and apis in dropsy. 5. Give differentiating symptoms of mercurus cor., veratrum alb. and nux vomica in ailments of the intestinal tract. 6. Give four prominent objective symptoms of belladonna. 7. Where patient has "taken cold" give symptoms characterizing aconite and gelsemium. 8. Differentiate bryonia and rhus tox in rheumatism. 9. In teething children with "summer complaint," give characteristic objective symptoms of arsenicum, antimonium crud. and chamomilla. 10. Give three symptoms of digitalis, cactus grand and aconite which would lead you to select either in preference to the others in heart trouble.

### EXAMINATION IN SURGERY.

1. Give dressing and position of forearm in fracture of olecranon process. 2. Give management of case of multiple fracture of inferior maxilla. 3. Describe manipulation for reduction of backward dislocation of femur (on dorsum ilii). 4. Describe two methods of surgical procedure in pleural empyema. 5. Describe a recognized method of prostatectomy. 6. What are the indications for resection of head of humerus. 7. Give treatment of prolapsus ani. 8. Diagnosis of aneurism of aorta. 9. Diagnosis of malignant stenosis of pylorus. 10. Mention various causes and clinical features of spinal curvature.

### HOMEOPATHIC MEDICINE.

1. Diagnose syphilis in first, second and third stages. Give treatment. 2. Where can you best hear the various heart sounds? How would you recognize mitral insufficiency? 3. Diagnose typhoid fever and prescribe for the diarrhea. 4. How would you recognize perforation of the intestine in typhoid fever, and what treatment would be indicated? 5. Diagnose and give treatment for angina pectoris. 6. Name some of the causes of retention of urine. How would you recognize same, and what treatment would you apply?



7. What are the most common complications of measles and of scarlet fever? 8. How would you recognize and treat acute peritonitis? 9. Describe your treatment in a case of undeveloped scarlatina. 10. Give the symptoms, treatment and prognosis of cirrhosis of the liver.

## PHYSIOLOGY.

1. Name the enzymes concerned in the various phases of digestion. 2. Give the histology of skeletal muscle tissue. 3. Describe and give the function of the red blood corpuscles. 4. Explain the neuron doctrine. 5. Write a detailed description of the function of the seventh cranial nerve. 6. What is the effect of severing (a) the anterior root of a spinal nerve, (b) the posterior root? 7. Distinguish between the paralyses caused by a lesion of the internal capsule and a lesion of the anterior horn cells of the spinal cord, in the following particulars: (a) reflexes, (b) nutrition of muscles, (c) electrical reactions of muscles. (8) Discuss briefly the physiology of the liver. 9. (a) Describe the components of human semen. (b) In what part of the female genital tract does fertilization occur? 10. Define (a) autolysis, (b) emmetropia, (c) diopter, (d) ontogeny, (e) macula lutea, (f) aphasia, (g) suprarenalin, (h) urea, (i) zymogen, (j) osmosis.

## MEDICAL.

1. What are the essential differences in the blood picture between a typical primary and a typical secondary anemia? 2. What are the signs, clinical and laboratory, of a well-established chronic interstitial nephritis? 3. Give the symptoms and physical signs of chronic lead poisoning. 4. By what physical signs do you recognize hydropneumothorax? 5. How would you treat a case of diphtheria involving the larynx? 6. Enumerate the causes of hematuria. Differentiate between renal and extra-renal blood in the urine. 7. What are the immediate indications for treatment in intestinal hemorrhage complicating typhoid fever? 8. Give symptoms of fibrinous pericarditis. 9. Name the physical signs and clinical symptoms which would lead to the suspicion of lung abscess coming on as a sequel of pneumonia. 10. Discuss the data on which you might base a diagnosis of tuberculosis of the lung.

## MATERIA MEDICA AND THERAPEUTICS.

Select ten of the following drugs. Regarding each of the ten state: (a) Adult dose. (b) Therapeutic use. (c) Symptoms produced by an overdose. Write the name of the drug at the beginning of the answer which applies to it: 1. Tartar emetic. 2. Nitrate of silver. 3. Salicylate of bismuth. 4. Sulphid of calcium. 5. Camphor. 6. Sulphate of Codein. 7. Arsenite of copper. 8. Tinct. chlorid of iron. 9. Tinct. gelsemium. 10. Gualacol. 11. Corrosive sublimate. 12. Veratrum viride. 13. Chlorate of potassium. 14. Hexamethylenamin. 15. Nitroglycerin.

**Missouri November Report.**—Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written examination held at Kansas City, November 26-28, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 69 of whom 34 passed and 35 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
American Coll. of Med. and Surg., Chicago.....	(1906)		75
Rush Med. Coll. ....	(1905)	81,	84
College of P. and S., Chicago.....	(1902)		75
Johns Hopkins Med. School.....	(1904)		79
St. Louis University.....	(1906)	75, 75,	75, 75
Barnes Med. Coll., St. Louis.....	(1895) 75; (1906)	75, 75,	75
St. Louis College of P. and S. ....	(1906)		75
University of Pennsylvania .....	(1905)		84
Meharry Med. Coll. ....	(1906)	75,	75
Vanderbilt University.....	(1906)		77
McGill University, Quebec.....	(1895)		75
University Medical School, Dublin.....	(1906)		78
Undergraduates, the grade of 75 was reached by six, 76 by one, 77 by two, 78 by two, 80 by two and 85 by one.			

## FAILED.

Keokuk Med. Coll., College of P. and S.....	(1906)	68,	69
Physio-Medico Coll. of Indiana.....	(1900)		63
Louisville Med. Coll. ....	(1899)		47
Kentucky School of Med. ....	(1894)		48
St. Louis University.....	(1906)	64, 68,	68, 69
Ensworth Central Med. Coll.....	(1906)		55
Barnes Med. Coll. ....	(1905) 63; (1906)	56, 57,	61, 69
St. Louis Coll. of P. and S.....	(1905) 59, 66; (1906)	56,	67
University Med. Coll., Kansas City.....	(1906)		63
Eclectic Med. University, St. Louis.....	(1906)	56,	56
Washington University, St. Louis.....	(1906)		69
Meharry Med. Coll. ....	(1906)	63,	64
Undergraduates .....	57, 58, 60, 63, 64, 66, 67, 68, 68,	69	

**Oklahoma December Report.**—Dr. J. W. Baker, secretary of the Territorial Board of Medical Examiners, reports the written examination held at Guthrie, Dec. 26-27, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 66.2. The total number of candidates examined was 23, of whom 22 passed and 1 failed. The following colleges were represented:

College.	PASSED.	Year Grad.	Per Cent.
Northwestern University, Chicago.....	(1905)		88.2
American Med. Miss. Coll.....	(1901)		87
College of P. & S., Keokuk.....	(1878) 83; (1906)		68
University of Kansas.....	(1906)		79
Kentucky School of Med.....	(1892)		69.2
University of Louisville.....	(1876)		70
University of Maryland.....	(1906)		88.5
Boston University .....	(1906)		70.2

St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.) (1896)	82
Washington University, St. Louis.....	(1906) 87
Missouri Med. Coll.....	(1881) 93.6
Cleveland Coll. of P. & S.....	(1906) 73.2
Eclectic Med. Inst., Cincinnati.....	(1889) 78
Jefferson Med. Coll.....	(1906) 69
Coll. of P. & S., Dallas.....	(1905) 71
Memphis Hosp. Med Coll.. (1887) 69; (1900) 83; (1902)	71.5
University of Texas.....	(1906) 71
Chattanooga Med. Coll.....	(1903) 86
McGill University, Quebec.....	(1893) 91

## FAILED.

Missouri Med. Coll.....	(1890)	54
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The following questions were asked:

## CHEMISTRY AND URINALYSIS.

1. Define (a) chemistry, (b) matter, (c) atom, (d) molecule, (e) element. 2. Differentiate between chemical and physical changes in matter and illustrate. 3. Define chemism, atomic weight, specific gravity. 4. Name the alkaline elements; give symbols for the gaseous elements. 5. Names two -ic and two -ous salts of mercury and give formulas. 6. Give common name, formula, and uses of four zinc salts. 7. Give common names of following formula:  $\text{CO}_2\text{H}_2\text{O}_2$ ,  $\text{FeSO}_4$ ,  $\text{NaCl}$ ,  $\text{HgCl}_2$ . 8. Give chemical name and formula of borax, marble, blue vitriol, rochelle salts, oil of vitriol. 9. Discuss arsenic, mention its properties, compounds and uses. 10. Name four normal and give in detail tests for four abnormal constituents of urine.

## OBSTETRICS AND GYNECOLOGY.

1. Define menstruation, give duration, age of appearance and cessation, and abnormal manifestations. 2. Name and give measurements of female pelvis; of fetal head. 3. Give briefly the anatomy of uterus, ovaries, placenta. 4. Give theory of menstruation; of conception. 5. Name the three important forms of hemorrhage met in obstetric practice and give causes and treatment of each. 6. Define ectopic gestation, caput succedaneum, vitellus, amnion. 7. Into what stages is labor divided, and where does each stage begin and end? 8. How would you treat mastitis, puerperal eclampsia? 9. Give in detail technic of repairing laceration of perineum involving floor of vagina. 10. How would you prepare your patient for delivery and yourself for attendance in a case of labor?

## MATERIA MEDICA AND THERAPEUTICS.

1. Give therapeutics of quinin, iron, strychnin, digitalis. 2. Give dosage of remedies you use in pneumonia, membranous croup, typhoid fever. 3. Give dosage and indications for four remedies you use in jaundice, rheumatism, malaria. 4. Give habitat, preparation, dosage and uses of twelve leading remedies you carry in your medicine case. 5. Give indications that guide you in the use of each of the remedies you mention in answer to previous question.

## PHYSICAL DIAGNOSIS AND PATHOLOGY.

1. Name the topographic lines of the thorax, outline and locate the heart's area of absolute dullness and the upper border of the normal liver. 2. Describe the usual course of parenchymatous nephritis, also interstitial nephritis. In what class of patients is the latter most frequently observed? How would you differentiate one from the other? 3. Under what conditions would occur a physiologic leucocytosis? Under what pathologic conditions would you expect to find a polymorphonuclear leucocytosis? A lymphocytosis? 4. Designate which component part of the spinal cord is involved in locomotor ataxia and describe the metamorphosis of structure characterizing the pathologic process. 5. What pathologic changes occur in cirrhosis of the liver? 6. Give differential diagnosis between septicemia and pyemia. 7. Give the principal diagnostic points of difference between mitral regurgitation and aortic regurgitation. 8. Give differential diagnosis between scarlet fever and erysipelas in their early stages. 9. Give differential diagnosis between phlebitis and lymphangitis. 10. Give differential diagnosis between variola and varicella.

## MEDICAL JURISPRUDENCE.

1. In a medicolegal sense, what constitutes a dying declaration and what is necessary to make it evidence in a court of justice, and how should it be taken? 2. Determine in a case of supposed infanticide whether the child was stillborn or killed after birth. 3. What are the symptoms and treatment of corrosive sublimate poisoning? 4. At what period will a body float after being drowned? 5. In a case of opium poisoning, what are the postmortem symptoms? 6. What is malpractice? 7. How would you treat a patient suffering from poisoning by coal gas? 8. What are symptoms and treatment for poisoning by the castor bean and what is considered a lethal dose? 9. What are symptoms of poisoning by wood alcohol and treatment for same? 10. Give symptoms and treatment for poisoning by turpentine taken internally.

## PRACTICE OF MEDICINE.

1. What are the intrinsic and extrinsic causes of dilatation of the heart with broken compensation? How would you treat the latter condition when very extreme? 2. Describe Bell's paralysis, Cheyne-Stokes respiration. 3. What are the early manifestations of pulmonary tuberculosis, and give your method of management in a case? 4. Give the etiology, pathology, symptoms, treatment, dietetic, medicinal, hygienic and prophylactic of enterocolitis. 5. Give symptoms and treatment of acute ptomain poisoning. 6. Give symptoms and treatment of pulmonary edema. 7. Give cause, symptoms and treatment of herpes zoster. 8. Name one infectious and contagious disease and give diagnosis of the diseases named. 9. Describe a case of uremic coma and your treatment for same. 10. Give symptoms and diagnosis and treatment of follicular tonsillitis.

## ANATOMY.

1. Describe the femur, its articulations and state what portions of it are not covered by periosteum. 2. Give the number of sutures and fontanelles in the skull. By what and how is each formed? 3. Where is the reticular elastic cartilage found? Locate the coracoid and acromion process. 4. Give origin, insertion and uses of the following muscles: Trapezius, supinator longus, latissimus dorsi, internal oblique and gracilis. 5. Describe the right ventricle



of the heart, give its capacity and name the valves connected with the ventricle. 6 and 7. Locate and give uses of the Fallopian and Eustachian tubes, lachrymal duct, prostate gland, crystalline lens, antrum of Highmore, clitoris, spleen, ureter, suprarenal capsule, the abdominal and thoracic cavities. 8. Give origin and branches of inferior dental and the mastoid arteries. 9. Name the bones, main muscles, arteries, nerves and other fascia gone through in amputating leg at the thigh. 10. Enumerate the changes the bones of the lower jaw undergo in very aged persons.

## PHYSIOLOGY.

1. Define special and comparative physiology. 2. Name the digestive juices and the organs that produce them, and give their actions on bread, eggs, milk and butter. 3. Name the ferments found in the digestive juices and give source of glycogen and dextrose. 4. Give the composition of normal and healthy urine, and of urine in a case of diabetes mellitus. 5. Give structure and functions of the liver and kidneys. 6. Where and how is urea formed? Give cause of rigor mortis. 7. How do the products of digestion find their way into the blood? 8. What would be the results of eating in excess of albuminous, oleaginous and farinaceous foods? 9. Give the changes of the air in respiration and the respiratory changes in the blood. 10. Name the heat-producing tissues of the body.

## SURGERY.

1. Diagnose, give prognosis and treatment of the following diseases: Erysipelas, rhinitis, pyemia and traumatic or surgical fever. 2. Describe and differentiate the following: Concussion and contusion, incised, punctured, lacerated gunshot and poisoned wounds. 3. Give signs of fracture, dislocation, reduction and the process of repair. 4 and 5. Give differential diagnosis and treatment of fracture of the surgical neck, capsular fracture of the femur, and a case of hip-joint disease. 6. Define and give treatment of tinea versicolor, tinea circinata, herpes zoster and scabies. 7. How would you diagnose? Give prognosis and treatment of septicemia, pyemia and septicopyemia. 8. Give differential diagnosis between coma, the result of an injury and that produced by opium poisoning, alcoholic intoxication, apoplexy and uremic poisoning. 9. Describe and give treatment of hydrocele, hypospadias, varicocele, hematocele and epispadias. 10. Give symptoms, prognosis and technic of the operation for ectopic gestation, or an extrauterine pregnancy.

## Discussions

### SURGERY OF HARELIP.

(Continued from page 759.)

## DISCUSSION.

DR. THOMAS FILLEBROWN, Boston, said that while his long association with Dr. Brown has proved the general harmony of their views, there are some points on which his personal experience differs from Dr. Brown's. Dr. Fillebrown fully agreed that the closure of the fissures of the palate would be done better by easy stages, and said that he considers it entirely unreasonable to attempt to close both fissures at the same operation. If the fissure in the palate is narrow, both hard and soft palate may be united in one operation. But if it is wide, Dr. Fillebrown thinks that only the hard palate should be attempted at the first operation. In all cases the cleft of the palate should be operated on first. There is much more room to work and the intermaxillary can then be much more perfectly adjusted. The soft palate can well be closed later. Dr. Fillebrown has done the Brophy operation a number of times and has never had stenosis result and has not disturbed the teeth germs when doing it properly, nor has the articulation been much disarranged. He has followed with much satisfaction a hint from Dr. Gilmer and only approximated the parts at the first operation, so that the closure can be easily completed by a flap operation a few weeks later. He does not fear collapse and remembers but one patient who showed any particular depression or had temperature over 102 F. after the operation. The strapping of the face of the infant appeals to him and he said that he certainly shall adopt it. His patients do not suffer from after effects of anesthesia, as his method of administering the anesthetic is such that the patient comes out of it all right with a good appetite and digestion. He does not recall a case in which it seemed that the anesthesia caused any serious depression. His method, a modification of the Junker system, is giving simply etherized air. He does not produce very deep anesthesia, nor does he allow the patient to become so conscious as to suffer from the shock of the operation. He believes in early operations for deformities of the mouth and lips, that is, if the child is normally well during the first few weeks of life.

DR. M. I. SCHAMBERG, Philadelphia, said that Dr. Brown properly called attention to the fact that young infants are

particularly susceptible to shock, in spite of advocating early operation. He believes with Dr. Brown that the proper course to pursue is to draw the parts gradually together, to assist the face in reaching its natural conformation prior to the performance of the operation; and while his experience in this work has not been anything compared to that of Drs. Brown and Fillebrown, he believes from observation that the best results can be obtained in this way.

DR. M. H. FLETCHER, Cincinnati, said that his experience in this kind of work has only magnified his ideas of the difficulties always present in performing such operations, and while it has not been his pleasure to see Drs. Brown and Fillebrown operate, he is sure that their methods must be a great advance over the old ones.

DR. E. S. TALBOT, Chicago, said that the pictures shown by Professor Kingsley illustrated beautifully the evolution of the jaws from fish to reptile, and from bird to mammal. From conception, the infant passes through all these evolutionary stages. The fact that when a child is born it has cleft palate is evidence that the child is a degenerate and has an unstable nervous system. In passing through the different phases of evolution, arrest of development takes place in the palate, and often in other parts of the body, demonstrating that the child has an unstable nervous system. The question naturally arises as to whether the operation should be performed early or late. At time of birth, and the eruption of the first set of teeth, the child is undergoing what is known now in modern pathology as the "second period of stress," in which some tissues are developing and others are passing. The tissues that are developing are along the line of the alimentary canal, including the face, jaws and teeth. From his research work, it seems to Dr. Talbot that this is a very serious point. The greatest care should be taken not only to prevent shock to the nervous system, but also to take particular cognizance of the bacteria which form in the mouth. These points in modern pathology must be considered in the operation. It is simply a matter of time, of recording cases, and summing up after some 200 or 300 operations have been performed, to decide whether an early operation is the proper thing, or whether operation should be performed later in the life of the child. Of course, other things must be considered, such as the hygiene and the nurse.

DR. GEORGE V. I. BROWN, Milwaukee, Wis., said that he wished to explain what evidently had not been made clear by the paper. The central idea intended to be conveyed, was that there can not be a perfect lip without a reasonably perfect nose; there can not be perfect speech unless these organs are perfect also. The laws of Nature can not be transgressed by violent operative procedures on infants, so far as the maxillary bones are concerned, without injury to one and all of these associated parts. Sections of the embryo at five or six weeks, and sections showing the dental follicle in various stages will end in understanding the relation of the parts. Never, said Dr. Brown, let a poor mother see a new-born child without the strips on its face, if possible to avoid so doing. It is an unnecessary shock. In the course of a few weeks these strips will have worked wonders by drawing the asymmetrical parts into relations much better than any surgeon can do it by forcible means.

### SURGERY OF NERVES.

(Continued from page 774.)

## DISCUSSION.

ON PAPERS OF DRs. TAYLOR\*, POWERS AND MURPHY.

MR. CHARLES BALLANCE, London, Eng., has found that the neurilemma cell is the chief factor in the regeneration of the peripheral nerves, and that without this cell the fibers in the nervous system are unable to regenerate, hence it comes that, as we have not that little cell in the spinal cord, it is impossible, as far as we can see at present, that suture of the spinal cord can be of any service whatever. The neurilemma does not enter the spinal cord with the anterior root nerves, although there

\* Dr. Alfred S. Taylor's illustrated article on "Brachial Palsy" appeared in THE JOURNAL, Jan. 12, 1907.



are some of the nerves of the posterior root which have some neurilemma as they enter the spinal cord. How far that extends and to what extent it is possible to get a recovery of sensation after division of the spinal cord Mr. Ballance can not say. That is a subject which has not yet been worked out.

This research with regard to the regeneration of the nerves has an important bearing on Dr. Taylor's paper. In 1895 Mr. Ballance sutured the facial nerve to the spinal accessory. That patient disappeared for a while and it was not until five years afterward that the results could be noted. In that case there was complete recovery of the face, but no dissociated movement with the shoulder. Mr. Ballance has done a number of operations of facio-accessory anastomosis since then, and in some of these cases there has been subsequently dissociated movement, while in others it has never occurred. In one of his brother's cases dissociated movement did not commence until three years after the operation, so that even when it does not occur early we need not despair. It is obvious, of course, from the anatomic relation of the cortex, and from the relations of the centers in the medulla, that the operation which ought to be done is either a facio-hypoglossal anastomosis or a glosso-pharyngeal anastomosis. Professor Shafer said that the best nerve to use is the glosso-pharyngeal, but Mr. Ballance came to the conclusion, as the result of the conditions he had studied on the cadaver, that the operation was so difficult that he would not attempt it. Mr. Ballance said that this splendid series of cases illustrates very well the results of these operations. The best class of cases of facial palsy to operate on is not the class of cases which occur before or after operations on the mastoid. Of course, sometimes the conditions existing in the mastoid influence the facial canal and so produce facial palsy, but in those cases there is no doubt but that in some there is a pyogenic neuritis which afterward interferes with a good recovery when a nerve anastomosis is done. The best type of cases for this operation is represented by cases of fracture of the base of the skull in which facial palsy occurs, and the palsy is permanent. Here there is no sepsis and a perfect field of operation, and in these cases the best results are obtained.

The operation which Mr. Ballance has done is not an end-to-side anastomosis, but an end-to-end anastomosis. He does not think that the individual who has a divided hypoglossal nerve suffers very much discomfort. He referred to a case of punctured wound of the neck in which the only serious injury was a division of the hypoglossal nerve. In that patient the tongue became atrophied on one side, but the patient did not suffer any discomfort. It is so important in a facial palsy case to get a good result, that for the present, at least, he will not consider the question of the tongue and throw the whole of the hypoglossal nerve into the end of the paralyzed facial. It is not a good thing sometimes, he said, to try to do too much, and in this operation he has found that whether a facio-accessory anastomosis or a facio-hypoglossal anastomosis is done, the best plan is to do an end-to-end junction. With the facio-accessory anastomosis, if an end-to-end junction can be done, it is easy to unite the distal end of the divided spinal accessory with one of the cervical nerves in the neck that will give regeneration and not a permanent loss of power in the sternomastoid and the trapezius.

With regard to the distal end of the hypoglossal, Dr. Ballance would advise the same procedure. On four or five occasions he has united the distal end of the hypoglossal to the gustatory. These cases are too recent, however, to report what the result will be, but at any rate, when the attempt is made, especially in women, to give relief from this terrible deformity of facial paralysis, the best plan is to throw over all thought about the tongue and the sternomastoid, and to throw the whole hypoglossal and spinal accessory into the facial. Think of that condition at first, and then afterward anastomose the divided nerve with some other nerve in the immediate neighborhood. In that way regeneration of the tongue or sternomastoid will take place some months afterward and without any deformity.

DR. HARVEY CUSHING, Baltimore, said that experimental physiologists have devoted a great deal of attention of late to the part that is played in regeneration by the peripheral and the central segment, and they believe that the peripheral por-

tion of a nerve has the power to regenerate itself *in toto*. Much of this is against the doctrine of the neurone as a nerve-cell unit. It is undoubted, he said, that in the peripheral segment there occurs, after division, a multiplication of the sheath of Schwann cells; that is, the cells proliferate, and the process is undoubtedly regenerative in character, but in the opinion of many the entire restoration of the peripheral segment can never take place without some central connections, whether they come from axones wandering out of the central ends of the same nerve, or from axones which have straggled in from the central ends of other nerves which have been divided in the approach through the tissues before the nerve under study has been reached. It is Langley's view that the latter accounts for the finding by Bethe of the few anatomically perfect fibers in the peripheral segment of nerves with no apparent central connection. In order to get a functional return there must be a connection with the central cell. It is probable that the complete functional regeneration depends on a double process. It seems that these proliferating cells of the sheath of Schwann play some part in drawing down the central axone, possibly through a chemiotactic influence. Some experiments show this attraction very distinctly. If, for example, the central end of a divided nerve is conducted into a tube or quill buried in the tissues, the down-growing axone will pass through the tube into the tissues beyond. If, however, the peripheral segment, instead of being left in the tissues, is brought up and inserted with the central end in the tube, the nerve fibers will start to grow down, but will return in the tube and find their way into the end of the peripheral segment. This shows that there is some influence at work, possibly akin to that mysterious force which attracts the leucocytes to a certain point of the body. The sheath of Schwann cells have been shown to have "wandering" propensities, and the axones probably do likewise under some chemical influence which draws them back to their original destination. In spite of the fact that this influence or attraction is constantly at work, anything that will prevent the central axone from growing down into the peripheral will prevent the establishment of a communication which under ordinary circumstances will surely be made. Herein lies the importance of this matter from a surgical point of view.

It is a most important thing, Dr. Cushing said, to prevent the intervention of a scar or the interposition of tissue between divided nerve ends. In the endeavor to bring the divided nerves together by means of sutures, union is often complicated through the presence of a foreign body which adds to the scar formation and prevents a complete functional reunion between periphery and center. Practically every incision made through any tissue divides nerves. With perfect healing and perfect tissue approximation the nerves unassisted will reunite. There are operations, however, after which, through methods of closure, this auto-reunion is impossible, and in these operations it is most desirable to avoid injury or division of the nerves. Emphasis is laid only on the importance of correct apposition of the muscles, fasciæ, etc. If the nerves to these muscles are not handled carefully, or if they are divided, there will be an atrophy of these very muscles, on whose strength depends the strength of the wound. Therefore, it is wise in all operations to bear in mind the presence of nerves, and to save them, if possible. If the nerves must be divided, and if the tissues are subsequently approximated with accuracy, and heal without much scar formation, the chemiotactic principle will tend to draw down the central axon to its periphery again. All that is necessary is to see that the nerves are brought into careful apposition. Except for large nerves, sutures are unnecessary and often undesirable.

DR. W. W. KEEN, Philadelphia, recorded three failures from the physiologic and surgical point of view. He has three times attempted to anastomose the facial nerve with other nerves. First, with the spinal accessory, in the case of a lady who had had a facial palsy dating from childhood and due to an uncertain cause. In that case he was utterly unable to find any facial nerve remaining. He dissected completely down to the bone but failed to find any nerve. The palsy had existed some twenty-five years. In the second instance he operated on a young man who had had a bullet wound of the facial nerve which had destroyed it entirely. Dr. Keen anastomosed the



nerve with the spinal accessory, splitting the latter and using only that portion of the nerve which went to the trapezius and not that going to the sternomastoid. The third case he anastomosed with the hypoglossal. Both were end-to-end anastomoses. Both of these patients had agreed to submit to later treatment, but they disappeared as soon as they left the hospital. One of them was seen about two months after the operation and with absolutely no benefit at all, as was to be expected when postoperative treatment was neglected.\*

DR. JOHN B. ROBERTS, Philadelphia, reported two cases he saw recently, one of which was an ischemic paralysis. The first patient, a young man of 17, with very bad contraction of the hand and atrophy of the forearm muscles, was treated for a fracture in the neighborhood of the lower end of the humerus. Dr. Roberts has been able to obtain some relief of the contracture by lengthening the radial flexor of the wrist and transplanting the long palmar muscle from the flexor surface to the posterior region and attaching it to the ulnar side of the carpus and metacarpus. The other patient, a young woman, aged 20, had had a somewhat similar condition cured many years ago by tight bandaging for fracture of the forearm. In her case so much had happened since in the way of operation and various attempts at relief that up to the present time nothing has been done.

DR. LEONARD FREEMAN, Denver, referring to Dr. Powers' paper, did not think that these cases are as rare as has been supposed. He has seen five in the last two years. Two of the patients he lost sight of; three are still under observation. One of the five cases occurred in the lower extremity; four in the upper. All the patients were children who fell and fractured the bones. In two of the cases gangrene of the skin was present, showing the great pressure with which the splints had been applied. In one of the cases massage was instituted and was carried out faithfully for about twelve months. This patient had very indurated muscles, with the fingers rather contracted, and there was numbness and loss of sensation in the thumb and little finger of one hand. All these symptoms disappeared in great part during the twelve months. The muscles softened up and the fingers regained much of their flexibility and sensation. In one other case the sensation was not only lost in the hand and the fingers contracted, but many trophic changes had occurred in the skin with a tendency to ulceration of the fingers. It seemed wise in this case to dissect down on the ulnar and radial nerves and remove them from the cicatricial muscular tissue to a place beneath the skin, which was done easily and gave immediate relief. Sensation returned rapidly and the ulcerations disappeared from the skin and hand. Under the influence of massage the patient recovered almost, if not completely. The fingers straightened out and the patient could use his hand with perfect ease. These are the only cases presenting definite results.

The best treatment, he said, would seem to be first to try massage, and if sensation does not return, the fingers straighten out, and the trophic disturbances disappear within a reasonable time, then cut down on the nerves and liberate them, bringing them up beneath the skin so as to relieve pressure and lengthen or transplant the tendons as may be indicated.

DR. A. J. OCHSNER, Chicago, pointed out that in order to secure peripheral regeneration of nerves one must establish conditions favorable for the actual communication between the axis cylinders above and the axis cylinders below. In cases that come to the operation late this is only possible by securing a clean, straight cross section above so that the axis cylinders project, and by securing the same conditions below so that there also the axis cylinders project. Then, to favor the union between the two surfaces, one must, above all things, avoid tension. It matters very little, within reasonable bounds, how far distant the two ends may be. He has united many of

these cases, one of them the ulnar nerve, at a distance of seven and a half centimeters. That portion of nerve had been shot away above the elbow. By simply producing these conditions by uniting the severed ends of the nerve with about twenty strands of fine catgut, suturing from above down and from below upward, so that there was a bundle of catgut like a telegraph cable between the ends, the conditions necessary for the passage of the nerve were secured. Within three years the conditions in the arm were so perfect that the boy was able to play the banjo with that hand.

DR. F. B. LUND, Boston, did not agree with Dr. Ochsner that it is necessary to get an end-to-end anastomosis. When a nerve is cut, making an ordinary slit, the knife edge is pretty rough and sufficient fibers are cut off transversely to make Dr. Taylor's method efficient. He has operated on two patients, one of whom has had complete paralysis for four months. He sutured the nerve into the hypoglossal, exactly as described by Dr. Taylor, and the woman made a perfect recovery. The second case was a woman who had had a facial paralysis for seven years. The nerve was thin and frazzled. It was hard to get out and hard to handle. But Dr. Lund succeeded in suturing it into the hypoglossal and her face is now symmetrical in repose and she can draw it over almost as far on the paralyzed side as on the other.

DR. JOHN B. MURPHY, Chicago, believes that the end to end approximation creates the ideal condition. A lateral approximation will only approximate a few axon units because of their insulating medullary sheath. Unless that sheath is destroyed there will not be a transmission of function from one extremity to the other. That is definite and positive. He thought that Dr. Keen's experience is in striking contrast with his own in the retention of the size and vitality of the peripheral segment of the nerve. Dr. Murphy had the same apprehension in a case of paralysis of the posterior cord of the brachial plexus operated on twenty-six years after the occurrence of the trouble. The distal end of the posterior cord was as large as normal and had the typical faradic resistance in the muscles.

Dr. Murphy had a case of a lesser degree of paralysis from a trauma involving the upper four roots of the brachial plexus. They were cut off close to the spinal foramen. The electric reaction was present seventeen years after the injury, which showed that not only did the nerve continue the same size, but that there was regenerated in that nerve, without approximation or union, an axon that had faradic conductivity. In another case of bullet wound where the external popliteal nerve was cut off, he operated ten weeks later and there was not the slightest faradic reaction. Why? Because in the latter case the axis cylinder did not have time for reproduction of the peripheral source of supply, whereas in the other case it did have time to regenerate.

Dr. Cushing's remarks, he said, are instructive and they are the most positive evidence that the axon regenerates not only from the proximal side but with equal force and to an equal degree from the distal side. That there is a certain chemotaxis or attraction at work is beyond question. Referring to Dr. Powers' paper, Dr. Murphy said that there are two types of paralysis which result from pressure: The flaccid paralysis, always the result of suppression of function or division of the peripheral axon; the other the result of myositis which always causes contraction of the involved muscles. They are both amenable to two types of treatment, and Dr. Murphy emphasized two types of treatment; one where the nerve is divided completely, which requires a reapproximation with resection of the bulb end, and it is the omission of resection of the bulb end that gives bad results in so many cases reported in the literature. If the paralysis is due to compression, that can be relieved, first by liberation from cicatricial tissue the mere compression of which stops the transmission of function. Second, if the nerve has been compressed severely, where the nerve is infiltrated and a connective band connects the two ends, then a resection of the nerve must be made. In the second class of cases there are always some fibers of the muscles left, and even when there is extensive contraction, where the finger nails are driven into the palms of the hands, the elonga-

\* Dr. Keen added a comment, subsequent to the session, saying, that in closing the discussion Dr. Taylor very properly called attention to the fact that functional return can not usually be expected under two months. While this is true, his experience is that if the post-operative treatment by electricity, massage, douches, etc., is neglected, there will usually be no return of function, even after a long time.



tion of the tendons by tendoplasty very freely compensates the patient for the operation.

DR. ALFRED S. TAYLOR, New York, did not think that Dr. Keen should record his last two cases as failures, because he saw them for only two months after the operation. There is no evidence of a returning nerve function from regeneration of the nerve until three months after operation. So that Dr. Keen may still live in hope that these cases have had their lost nerve functions restored.

DR. CHARLES POWERS, Denver, said that the Volkman-Leser is a definite type of a case in which the nerves are not at fault. The muscles here have undergone a fibrosis and the operations on the nerves will not cause a regeneration of these muscles. He believes Dr. Roberts' cases were of the Volkman type. In these, as in the two cases reported by Dr. Ferguson of Chicago, shortening of the bones or lengthening of the tendons may do a great deal of good.

## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

### Scarlet Fever.

The specific treatment of this condition is still *sub judice* and the symptomatic management of the disease finds favor with most writers. Rest in bed during the acute febrile period, and continued for one or two weeks afterward, is imperative, and great care should be taken to prevent undue chilling of the body. This does not preclude, however, the judicious use of hydrotherapy for the fever.

#### FEVER.

For mild cases with moderate elevation of temperature a tepid sponge bath once or twice daily will usually be sufficient. Heubner, in *Modern Clinical Medicine*, for cases with intense fever and associated nervous symptoms, advocates the use of repeated packs, the influence of which may be extended to an hour without causing a decided internal congestion, as in the case of cold baths, which, in his experience, are not well borne. Two beds, each supplied with a sheet and woolen blanket, are necessary. The cover and the sheet, which have been wrung out in cold water (at from 59 to 60 F.), are spread out, the naked child is enveloped up to the neck, first in the sheet, then in the woolen blanket, and allowed to remain so for ten minutes, or, if the hyperpyrexia is intense, for fifteen minutes. In the meantime the second bed is prepared in a similar manner and the child, after it has been taken from the first pack, is immediately enveloped in the second for ten to fifteen minutes, and so on for an hour, so that the decided cooling is repeated from four to six times. The difference between this method of cooling and a cool bath is obvious; between the renewed coolings the sheet warms itself inside the woolen covering and the blood remains on the surface of the skin. The result of the cooling is energetic. This procedure must not be used more frequently than two or three times a day. In the intervening periods the child is allowed to rest.

In cases in which there is marked nervous involvement, cold affusions in a warm bath are of use. The duration of this (temperature from 90 to 95 F., according to the condition of the pulse) may be five, ten, or even fifteen minutes (in older children), but may be also very much shortened. The principal indication here is the cold affusion. The children are comfortable in the warm fluid, which is always from 12 to 15 degrees lower than the temperature of the body. From a slight height water cooled by ice is poured over the head, neck, back and chest at short intervals, according to the length of the bath; from 5 to 6 liters are to be used. The external auditory meatus is closed by plugs of cotton, the parts of the skin on which the cold water is poured are gently rubbed during this procedure, as well as the trunk and extremities which remain in the bath. Each affusion causes deep respiration that can not be attained by any other method, therefore, a very

decided area of the lungs is influenced. A number of other reflexes also occur. The effect on the centers in the medulla can not be mistaken, he declares. The baths are repeated four or even six times daily. Usually after this procedure children will take a larger quantity of nourishment, followed by quiet sleep.

Frühwald recommends the use of ice compresses or Leiter's coils to the head in cases in which there is much headache, stupor or pronounced nervousness.

#### THROAT.

Frühwald further recommends the application of cold compresses to the throat when there is marked angina with secondary swelling of the glands, and the following, to be used as a gargle or spray:

R.	Acidi borici .....	3iii	12	
	Acidi salicylici.....	gr. xl	2	50
	Aquæ dest. ....	Oi	500	
M.	Sig.: To be used as a gargle every one or two hours.			
R.	Acidi carbolic.....	m. lxxx	5	
	Aquæ dest. ....	Oi	500	
M.	Sig.: Use as gargle every hour.			
R.	Hydrargyri chloridi corrosivi.....	gr. vii	50	
	Aquæ dest. ....	Oi	500	
M.	Sig.: Use as gargle every two hours.			

The above solutions may be used in an atomizer and sprayed into the throat at intervals. If the spraying can be done correctly it is much more effectual than to have the patient gargle. If diphtheria is present the usual local and constitutional measures should be employed.

#### ELIMINATION.

It is important in this disease to have all the emunctories freely opened. Early in the disease, after the vomiting has subsided, the following should be given:

R.	Hydrargyri chloridi mitis.....	gr. i	06	
	Olei gaultheriæ.....	m. i	06	
	Sacchari lactis.....	gr. l	3	
M.	et ft. chart. No. x. Sig.: One powder every half-hour.			

It is well to follow the calomel by an appropriate dose of some saline. In children Rochelle salts or the solution of citrate of magnesium are to be preferred. The use of water internally at regular intervals and in specified amounts is to be especially recommended. Parents or nurse should be told how much water is to be given and at what intervals. It should be impressed on them that this is as important as the administration of any medicine. Water keeps the kidneys flushed and is an excellent prophylactic measure against scarlatinal nephritis.

A saline should be administered during the course of disease in order to keep the bowels opened. The following has been found useful to promote elimination by the kidneys:

R.	Potassii acetatis			
	Potassii citratis, āā.....	3ii	8	
	Syrupi limonis, B. P., q. s. ad.....	f3iii	90	

M. Sig.: One teaspoonful every three hours. This dose may be given to a child from 6 to 10 years old. Each dose should be followed by half a tumblerful of water.

#### DIET.

All observers agree that scarlatinal patients should be kept on a liquid diet. Frühwald states that the diet should consist of milk with a little cocoa or malt coffee, if desired; dishes prepared from milk, wheat bread, and later thick chicken or veal broth (bouillon). After the third week, if the urine is normal, light meat, custards, green vegetables, eggs, and later a little dark meat may be permitted.

#### KIDNEY COMPLICATIONS.

Rover, in the *Pennsylvania Medical Journal*, discusses an analysis of the kidney condition in 800 cases of scarlet fever treated with routine doses of chloral hydrate, contrasted with 756 cases in which the usual remedies were employed, and reaches the following conclusions:

First. Chloral hydrate is of distinct value in the treatment of scarlet fever, and when used in doses of sufficient size to secure light somnolence does not seem to be a circulatory depressant.



Second. Chloral hydrate ameliorates nervous symptoms better than any remedy yet suggested in the treatment of scarlatina.

Third. Chloral hydrate allays the itching of the skin often found annoying in scarlet fever.

Fourth. When chloral hydrate is given as a routine measure during the febrile period, and for some days thereafter, post-febrile nephritis appears to be less frequent.

Fifth. This study would seem to justify the more extended use of chloral in the treatment of scarlet fever, and a more detailed study as to how it acts on the kidney itself.

(This subject will be continued.)

### Rheumatic Joints.

Pouehet, in *Le Progrès Médical*, recommends the following combination as a counter-irritant and absorbent application to rheumatic joints:

R. Aëdi salicylici	
Olei terebinthinæ, āā.....	3iiss 6
Adipis lanæ	
Adipis benzoinati, q. s. ad., āā.....	3iiss 75
M. Sig.: Apply locally to joints once or twice daily.	

### Potassium Chlorate in Hay Fever.

A letter from Holland in the *Wien. klin. Rundschau* for January 27 states that the well-known ophthalmologist of Leyden, Professor Koster, has long suffered from hay fever and derived little benefit from any treatment, even from the anti-pollen sera. As a last resort he used a 3 per cent. solution of potassium chlorate, gargling with it and instilling it into the nose and conjunctival sac, three times a day, during the season. This warded off the attacks entirely, and when, on suspension of the treatment, an attack was impending, he was able to abort it with a 5 per cent. solution or insufflation of 0.1 or 0.2 gm. potassium chlorate directly into the throat once or twice a day. His success, it is said, was so pronounced with these measures on himself and others that he applied the 3 per cent. solution in treatment of conjunctivitis of other origins and this has become a favorite method of treatment of conjunctivitis in Holland. The possibility of kidney irritation through continued usage should be remembered.

### Benzin Arrests Transient Redness of the Nose.

F. Bruck states that a single application of petroleum benzin on cotton or lint will at once arrest the tendency to redness of the nose from strong coffee or tea, emotions, or exposure to cold or heat, observed in some individuals. The benzin will also abolish the shiny aspect of the nose occurring with the hyperemia or without it. The benzin-impregnated cotton is pressed on the spot for a few seconds, without rubbing, covering merely the reddened parts and taking care not to allow the benzin to get into the eyes, nostrils or mouth. In a communication on the subject to the *Med. Klinik*, Feb. 3, 1907, Bruck states that the petroleum benzin does not have the slightest irritating action on the skin, and is by far the best method of cleansing the skin in acute eczema or similar conditions.

## Medicolegal

### "Practice of Medicine" Without Drugs.

The Supreme Court of New York, Appellate Division, First Department, affirms, in the case of *People vs. Allcutt*, a judgment convicting the defendant of the crime of practicing medicine without being lawfully authorized and registered. The court says that the evidence tended to establish that in the window of the defendant's residence was exhibited a sign, "Dr. E. Burton Allcutt, Mechano Neural Therapy;" that on the bell outside the door was the name "Dr. Allcutt;" that in the office building in which he had an office there appeared on the directory in the hall, "Dr. E. Burton Allcutt;" that he had and distributed a card reading, "Dr. E. Burton Allcutt, mechanoneural therapy," giving two addresses with office hours at each and 'phone number, and that his receipt for services rendered was signed "Dr. E. Burton Allcutt."

The evidence in this case further tended to establish that the complaining witness visited the defendant at the office address given; that he said he was Dr. Allcutt, and, "I usually see all my patients up town in the afternoon and I am down in this office in the morning." The witness having said that she was troubled with severe headaches, was nervous and had frequent spells of vomiting, the defendant told her that he wished her to remove her corsets in order to examine her thoroughly to find out what her trouble was. He examined her chest, heart and back by placing his ear to her heart; he tapped with his fingers. The witness asked, "Doctor, I also have a very severe pain in my left arm; do you think it is rheumatism?" He said, "You are entirely too young to have rheumatism; it is from your stomach; you have malaria and stomach disease." She said to him, "Can you cure me?" The defendant said, "Certainly I can. You will have to take twelve treatments, which will cost \$25 in advance." He said he gave no medicine at all, but quieted the nervous system. He was asked if he called at patients' residences, and he replied, "Certainly." Witness asked, "Doctor, can you cure all kinds of diseases without drugs?" He said, "Yes; I find I can cure without drugs, I can cure all diseases that any physicians can cure without drugs, and also diseases that they can not cure with drugs." He said that he had practical medicine; that he had given up drugs; that he could cure anything that physicians enred. The witness then paid \$5 for the examination and received a receipt. Subsequently the defendant called at her residence in response to a telephone call. The witness told him that she felt ill all day, that she had a chill and had been vomiting, had a pain in the region of her abdomen. The defendant took hold of her hand, felt of her pulse, looked at her tongue, examined her throat and said: "It is all from your stomach. I want you to drink a quantity of lukewarm water with salt in it." He gave it to her in spoonfuls. He said, "You must not eat pork or potatoes or any kind of sweets," and then said, "I will give you a treatment." Witness testified that the defendant started to treat her back with his fingers; he said he was treating her nerves; he treated her spine by putting the fingers on her spine, the ends of the fingers, a touching sensation, nothing like kneading; he did this for about an hour. He varied that treatment, on the neck, breast, heart and stomach in the same way, just by his fingers. He advised her in case she had pains in the night, if the pain in her abdomen were severe, to place an ice bag on it and one on her feet, and if her bowels troubled her to place a hot-water bag on her back and go to bed, not to lie on the couch, and if she got any worse to send for him. Her husband asked him, "Doctor, what are you doing?" He replied, "I am treating her nerves. Don't you see how quiet she is now?" Five dollars was paid for that visit. The witness testified that as a matter of fact there was nothing the matter with her, and that she was acting during these interviews as a detective.

The defendant in his own behalf testified that he practiced the art of mechanoneural therapy and that he was a graduate of a college of mechanoneural therapy. It was conceded that such college was not recognized by the Regents of the State of New York, and that a diploma of that institution would not give the right to practice nor to an admittance to an examination to determine the fitness of such a person to practice medicine, and that the defendant was not registered as a physician in the County of New York. The defendant also testified that prior to his attendance at said college he had been practicing massage, and was a graduate of the Mills Training School, attached to Bellevue Hospital, and had engaged in his profession as a nurse; that the statement of the complaining witness was substantially correct; that he had not studied medicine, except from the standpoint of a nurse; that mechanoneural therapy means mechanical nerve treatment, a gentle pressure on all parts of the body; that the whole theory of this science is that disease comes from lack of blood circulation, and that the treatment proceeds on the theory of assisting the circulation back into normal condition. The contention of the defendant was that, conceding all the facts proved, he was not guilty of the crime charged, inasmuch as he was not practicing medicine within the meaning



of the statute, in that he neither gave nor applied drugs or medicine nor used surgical instruments.

Section 153 of the New York Public Health Law (Chap. 661 of the Laws of 1893) provides as follows: "Any person who, not being then lawfully authorized to practice medicine within this state and so registered according to law, shall practice medicine within this state without lawful registration . . . shall be guilty of a misdemeanor."

Continuing, the court says that to confine the definition of the words "practice medicine" to the mere administration of drugs or the use of surgical instruments would be to eliminate the very cornerstone of successful medical practice, namely, the diagnosis. It would rule out of the profession those great physicians whose work is confined to consultation, the diagnosticians, who leave to others the details of practice. Section 146 of the Public Health Law provides that persons desiring to practice must pass a Regent's examination made up of "suitable questions for thorough examination in anatomy, physiology and hygiene, chemistry, surgery, obstetrics, pathology and diagnosis and therapeutics, including practice and materia medica." Diagnosis would, therefore, seem to be an integral part of both the study and practice of medicine, so recognized by the law as well as common sense. The correct determination of what the trouble is must be the first step for the cure thereof. It is a well-known fact that the disease popularly known as consumption may, if discovered in time, be arrested, if not entirely eradicated from the system, by open-air treatment in the proper climate, and that in such cases use of drugs has been practically given up. Would the physician, in such a case, who by his skill discovered the incipient disease, advised the open-air treatment and refrained from administering drugs, not be practicing medicine? It may be difficult by a precise definition to draw the line between where nursing ends and the practice of medicine begins, and the court should not attempt, in construing this statute, to lay down in any case a hard and fast rule on the subject, as the courts have never undertaken to mark the limits of the police power of the state or to have precisely defined what constitutes fraud. What the courts have done is to say that given legislation was or was not within the limits of the police power, or that certain actions were or were not fraudulent.

The defendant particularly relied on the case of *Smith vs. Lane*, 24 Hun 632, decided in 1881, and cited five cases in other states as in harmony with it. But the court does not consider the remarks of the judge in *Smith vs. Lane* as being an exhaustive or exclusive definition of the term "practice of medicine." And it says that *State vs. Lifring*, 61 Ohio St. 39, was under the peculiar language of the statutory definition which was held to require the use of drugs in order to constitute the practice of medicine. There was subsequently an amendment of the Ohio statute, and the subsequent cases of *State vs. Gravett*, 65 Ohio St. 289, and *State vs. Marble*, 72 Ohio St. 21, were decided the other way. *State vs. Herring*, 70 N. J. L. 34, was also decided on the wording of the statute. *Nelson vs. State Board of Health*, 57 S. W. 501, a Kentucky case, and *State vs. McKnight*, 131 N. C. 717, are not entitled to be considered authorities in this jurisdiction, inasmuch as they proceed on the proposition that in those states it would be unconstitutional for the legislature to limit the right to practice medicine—a doctrine counter to that held in the rest of the Union. With the *Christian scientist* case of *State vs. Mylod*, 21 R. I. 632, the court contrasts that of *People vs. Pierson*, 176 N. Y. 201. It also says that, as opposed to the cases following *Smith vs. Lane*, the courts of Massachusetts, Maine, Michigan, Iowa, Missouri, Colorado, Nebraska, Illinois, Ohio, Alabama, Indiana, New Mexico, South Dakota and Tennessee, refuse to restrict the "practice of medicine" to the administration of drugs or the use of surgical instruments. It cites the case of *Bragg vs. The State*, 134 Ala. 164, and says that in that case and in the note to *O'Neill vs. State*, 3 L. R. A., N. S., 762, may be found collected the cases in the several states as indicated above, which did not follow the definition of practice of medicine as limited and restricted in *Smith vs. Lane*.

Finally, the court says: We are of the opinion, from the general current of the authorities throughout the country and

from examination of the history and growth of our own public health statutes, that we should not apply the rule as claimed to have been laid down in *Smith vs. Lane*. When we find, as in this case, a defendant holding himself out by sign and card as a doctor, with office hours, who talks of his patients and gives treatments, who makes a diagnosis and prescribes diet and conduct and remedies, simple though they be, and who asserts the power to cure all diseases that any physician can cure without drugs and also diseases that they can not cure with drugs, and who takes payment for a consultation wherein there was an examination and determination of the trouble, that is, a diagnosis, as well as payment for subsequent treatment, even if no drugs are administered, we must hold that he comes within the purview of the statute prohibiting the practice of medicine without being lawfully authorized and registered.

The judgment of conviction should, therefore, be affirmed.

#### Expressions and Appearances.

The Court of Civil Appeals of Texas says, in *St. Louis & San Francisco Railroad Co. vs. Boyer*, a personal injury case against the railroad company, that the suffering of a party in many cases can only be ascertained by expressions of the party himself, and, this being the best evidence of which it is susceptible, such evidence is admissible if such expression is usual and natural under such condition. Whether or not the plaintiff in this case was feigning was for the jury to determine, and whether or not the expressions in question were made some time after the accident did not affect its admissibility, but might affect the weight that should be given to it. The court also holds that, under all the authorities, testimony as to the appearance of a party is admissible. It says that ordinarily it would be impossible for a witness to give to the jury such a description of the person's condition or state facts from which a jury could tell whether a person was sick or well, yet a witness by reason of being with a party and observing his conduct, manner and appearance might form an opinion of the party's condition in that regard. While perforce of the situation it is but a conclusion, the authorities hold such an opinion is admissible by reason of the situation itself. The weight given to such testimony depends, of course, on the intelligence and opportunity of the witness in forming an opinion.

#### Liability for Wrecking of Nervous System by Fright.

The Supreme Court of North Carolina says that in the personal injury case of *Kimberly and wife vs. Howland*, where it affirms a judgment for the plaintiffs, that the defendant was blasting rock with dynamite at about 175 yards from the plaintiffs' residence and a rock weighing about 20 pounds from one of the blasts crashed through a portion of such residence. It was true that the defendant did not know, at the time he fired the blast, that the wife was lying in bed in her home in a pregnant condition, but he or his agents knew it was a dwelling house, and that in well-regulated families such conditions occasionally exist. While the defendant could not foresee the exact consequences of his act, namely, wrecking the wife's nervous system and nearly producing a miscarriage, he ought, in the exercise of ordinary care, to have known that he was subjecting the plaintiff and his family to danger and to have taken proper precautions to guard against it.

It was argued in this case with much earnestness and ability, backed by most respectable authority, that the wife's injuries, if she sustained any, were the result of fright without any contemporaneous physical injury, and that she could not recover for them. This brought the court to the consideration of a question concerning which, it says, there is much conflict among the authorities. But it says that it will not undertake to either reconcile or review them. All the courts agree that mere fright, unaccompanied or followed by physical injury, can not be considered as an element of damage. The testimony offered in behalf of the plaintiffs tended to prove that the wife was lying on her bed heavy with child at the moment the rock crashed through the roof; that, although it did not strike her, it greatly shocked her nervous system and nearly caused a miscarriage, and that she had never recovered



from the effects of it. If this testimony was believed, the injury to the wife was a physical injury resulting from shock and fright and directly traceable to it.

There was much conflict of evidence, but the plaintiffs' testimony tended to prove that, had not the rock crashed through the roof, the wife would not have endured the nervous physical pain and suffering which had followed. The nerves are as much a part of the physical system as the limbs, and in some persons are very delicately adjusted, and, when "out of tune," cause excruciating agony. The court thinks that the general principles of the law of torts support a right of action for physical injuries resulting from negligence, whether wilful or otherwise, none the less strongly because the physical injury consists of a wrecked nervous system instead of lacerated limbs. Injuries of the former class are frequently more painful and enduring than those of the latter. But the jury was correctly instructed to allow nothing because of any mental suffering on the part of the husband.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### The Medical Record, New York.

February 16.

- 1 \*Supernumerary Cervical Ribs and Their Effects on the Brachial Plexus and Subclavian Artery. C. K. Russel, Montreal.
- 2 \*Conquest of Cancer. R. Bell, London.
- 3 \*Intranasal Conditions Bearing on the Etiology of Diseases of the Ear. G. Hudson-Makuen, Philadelphia.
- 4 \*Streptococcus Pneumonia. G. W. McCaskey, Fort Wayne, Ind.
- 5 \*Report of Three Epidemics of Measles with Particular Reference to Koplik's Symptom. C. J. Dillon, New York.
- 6 \*Radical Cure of Trigeminal Neuralgia by Peripheral Operations. A. V. Moschowitz, New York.
- 7 \*Pneumonia in Children: Its Successful Management by Hydratic Measures. W. P. Worster, New York.

1. **Supernumerary Cervical Ribs.**—Russel calls attention to certain clinical symptoms which may be caused by the pressure of supernumerary cervical ribs on the cervical plexus. He reports the histories of several cases. In the first case the patient complained of pain and cramp in the right hand and arm. There was wasting of the thumb muscles and general weakness of the right hand. The right hand was always colder than the left. The symptoms were gradually progressive. The supernumerary rib was removed. The operation so far has proved very successful. The patient has had no return of the neuralgic pains or cramps. In another case quoted by the writer the fingers became gangrenous. Amputation first of the fingers and later of the arm became necessary. The patient finally committed suicide. It has not yet been determined whether the abnormality was really a cervical rib or an undeveloped first thoracic rib.

2. **Conquest of Cancer.**—Bell refers to the recent work of Beard in relation to the trypsin treatment of cancer. He considers it of the first importance in the treatment of cancer to aim at restoring the functional activity of the thyroid gland and at the same time to adopt measures which will reduce the tendency to the introduction of toxic materials from the intestines. This can be accomplished only by adapting the dietary to the requirements of the body, and to the capability of the digestive organs completely to digest and to assimilate the food, aided by the thorough evacuation of the effete matter at least once in twenty-four hours. The thyroid, however, is not the only organ whose utility is impaired. It is likely, he states, that the pancreatic secretion is to a certain extent in abeyance, and, as a rule, the proportion of hydrochloric acid in the stomach is greatly diminished.

3. **Intranasal Conditions and Ear Diseases.**—According to Makuen it is not generally recognized that diseases of the ear, especially in their interval stages, are largely dependent on intranasal conditions.

4. **Streptococcus Pneumonia.**—McCaskey reports a case of pneumonia, with characteristic onset and typical signs, which was clearly due to a streptococcus infection.

5. **Koplik's Sign in Measles.**—Dillon believes that Koplik's sign is a constant, definite, early diagnostic sign of measles, of greater diagnostic value when present than even the rash. In 221 cases observed from the period of incubation well into convalescence it was definitely absent only twice.

6. **Radical Cure of Trigeminal Neuralgia.**—Moschowitz reports three successful operations for trigeminal neuralgia. The nerve was carefully isolated and divided, the accompanying vessels were treated in a similar manner and then a silver button of suitable size was driven into the foramen so as to fill it completely. The overhanging flat top of the button is moulded to the underlying bone so as to make the closure absolutely tight.

7. **Pneumonia in Children.**—Worster advocates hydrotherapy in the treatment of pneumonia in children.

#### New York Medical Journal.

February 16.

- 8 \*Physical Processes of Immunity and Infection. J. Wright, New York.
- 9 \*District Nursing and Extra Diet in Treatment of Tuberculosis. H. L. Shively, New York.
- 10 \*Cases Allied to Amaurotic Family Idiocy with Remarks on the Pathogenesis of the Affection. A. Gordon, Philadelphia.
- 11 \*Splenectomy, with Report of Five Successful Cases. W. P. Carr, Washington, D. C.
- 12 \*Typhoid Complicated by Infiltration of the Larynx and Edema of Glottis. L. N. Boston, Philadelphia.
- 13 \*How Long Shall the Patient Stay in Bed After Abdominal Section. J. Vance, El Paso, Texas.
- 14 \*Splanchnoptosis. K. C. Mead, Middletown, Conn.
- 15 Common Fallacies in Diagnosis of Diseases of Childhood. K. H. Goldstone, New York.

8. **Infection and Immunity.**—This is the first of a series of papers in which Wright expects to make it clear why in all probability the facts stated by him in previous papers as to the occurrence of infection and the absorption of bacteria can better be investigated in the light of the laws of physics than in that of chemistry. The present paper is devoted to a discussion of the conditions and activities of the mucous surfaces of the upper air passages.

9. **District Nursing and Extra Diet in Tuberculosis.**—Shively discusses the methods of nursing and the diet given in the treatment of tuberculous patients at the Presbyterian Hospital Dispensary in New York. The result has been a very satisfactory one.

10. **Amaurotic Family Idiocy.**—Gordon gives the histories of two patients who showed distinct changes in the thyroid gland; in one the gland was enlarged, in the other it was not palpable. One patient was a boy, 9 years of age, the other a girl, a sister of the patient, 13 years of age. The stigmata of degeneration were very extensive. The boy presented among many other stigmata a very unusual anomaly, namely, polydactylism of all four extremities.

11. **Splenectomy.**—Carr believes that if his method of operation for removal of the spleen be carried out carefully, the occurrence of hemorrhage, shock and sepsis will nearly be eliminated. The position of the patient is important. A large sand-bag should be placed under the back, under the upper end of the spleen, and the foot of the table lowered about six inches. The incision may be median or through the left rectus muscle. Carr prefers the latter. The incision should be ample, and, if necessary, a transverse incision may be made from the upper end of the primary wound parallel to and half an inch below the lower border of the ribs. Before attempting to isolate and deliver the spleen a careful examination should be made to determine whether this is possible. If not, the operation should be abandoned. Having decided on continuing the operation, Carr proceeds as follows:

The splenophrenic ligament should be first attacked. The operator, covering the spleen with gauze, draws it to the right, while an assistant draws the left lip of the wound to the left; this exposes the bed of the spleen and vault of the diaphragm. The spleen may be firmly held in its bed by atmospheric pressure. This is an important fact to remember. When it can be done, the splenic ligaments and all vascular adhesions should be doubly ligated in sections and cut between the ligatures; but when this is difficult the ligaments may all be clamped and the blood supply entirely cut off in this way.



The spleen may then be removed and the clamps afterward sewed round and removed, as the broad ligament clamps are usually removed in oöphorectomy. In difficult cases with extensive adhesions it is possible to grasp all the gastrosplenic ligament between the index and middle fingers of the left hand and to apply a long curved rubber covered clamp. As this ligament contains the chief blood supply of the spleen, the danger of severe hemorrhage will be greatly lessened by securing it first in this manner. The other ligaments may then be clamped or ligated and cut, after which adhesions may be rapidly separated and the bleeding controlled by gauze packing.

Carr pleads for early removal of all enlarged spleens beginning to cause symptoms, unless the operation is contraindicated. He reports five cases of splenectomy—one for ruptured malarial spleen, one for gunshot wound with uncontrollable hemorrhage, one believed to be simple hypertrophy, one for Banti's disease, and one for hypertrophy of a soft inflammatory nature which could not be diagnosticated. All the patients recovered from the operation and all were cured, except one, who was suffering from cachexia and debility, which continued after the operation and caused his death three months later.

**12. Typhoid with Laryngeal Complications.**—Boston reports the case of a man who developed symptoms simulating those seen in membranous croup during the eighth week of typhoid. A tracheotomy had to be performed to give the patient relief from the respiratory distress. Examination of the throat showed a decided infiltration of the mucous membrane of the larynx, and a variable amount of edema of the glottis.

**13. Stay in Bed After Abdominal Section.**—As suitable cases for the out-of-bed treatment of abdominal section, Vance mentions those in which traumatism within the peritoneum is slight; those in which Nature does not require rest. Above all, he states, the patient must not be sick. Vance urges great care in the selection of these cases, because he has found that union of the abdominal wound may not be strong enough to withstand the intra-abdominal pressure of sneezing or coughing even so late as the twelfth day.

**14. Splanchnoptosis.**—Mead has treated 40 cases of splanchnoptosis with an adhesive belt or elastic bandage with good results. Twenty of these patients had a retroverted uterus, some simple, some complicated, for which they wore pessaries or tampons during the time in which they were wearing the abdominal supporters. Most of these patients no longer needed a uterine support after six months. Two of Mead's patients were men who complained of indigestion. The adhesive belt gave entire relief from symptoms.

#### Boston Medical and Surgical Journal.

February 14.

16 \*Treatment of Tuberculosis of the Hip Joint. J. E. Goldthwait, Boston.

17 \*Statistics of Indigestion in Dermatologic Patients. C. J. White.

**16. Treatment of Tuberculosis of the Hip.**—Goldthwait lays down the principles that are of importance in the treatment of tuberculosis of the hip. Special forms of apparatus or other technical features are not advocated. He emphasizes the value of general hygienic measures, outdoor life, protection of the point from irritation, with as little interference with joint function as possible. In the early cases of hip-joint tuberculosis, before deformities have developed, Goldthwait puts on a plaster-of-Paris spica bandage extending from just above the knee to just above the crests of the ilia, the hip being in a position of physiologic rest. This controls the muscle spasm. The position practically consists of about 20 degrees of flexion, 15 to 20 degrees of abduction, and 10 degrees of outward rotation. The patient should be encouraged to walk about, bearing the weight on the leg. The plaster-of-Paris dressing should be removed in one or two months, and should be re-applied until evidence of active disease, as shown by pain and muscle spasm, has passed. When this time is reached, a splint made of stiffened leather of the same shape as the plaster splint is applied. In a short time, if all goes well, the splint should be omitted at night and gradually can be entirely discontinued.

In the more acute cases and those of longer duration, Goldthwait advises rest in bed with traction until the desired position can be attained. In the advanced cases associated with much destruction of tissue, or when it may be deemed desirable to remove the focus of disease in order to bring about more rapid healing, or when conservative measures fail to reduce existing deformities, surgical intervention is indicated. Goldthwait urges that in all of these cases an attempt should be made to increase the resistance of the individual to the disease, as is suggested by the theory of the opsonins.

**17. Indigestion in Dermatologic Patients.**—Being convinced that many chronic dermatoses may be due to errors of metabolism, White undertook to investigate the powers of stomacheal digestion of 438 men and women who suffered from some skin disease. During this period of investigation 61 different diseases were diagnosticated in these 438 patients. The following summary represents the results of White's study:

1. Fifty-nine per cent. of hospital-seeking skin patients have one or more symptoms of stomacheal indigestion.

2. Fifty-two per cent. of the men are so affected against 65 per cent. of the women.

3. Americans head the list of dyspeptics with 62 per cent., while the Irish follow with 57 per cent. and the Russian or Polish Jews present 55 per cent.

4. Eructations are the most prevalent symptoms of dyspepsia and occur in 39 per cent., regurgitation in 36 per cent., epigastric weight in 31 per cent., and pain in 19 per cent.

5. Our established ideas as to the digestibility of certain classes of foods and as to the indigestibility of certain special articles are correct.

6. Our previous etiologic association of certain dermatoses with dyspepsia is substantiated with one exception, for whereas our present standard is 59 per cent., we have found in acne rosacea 71 per cent., in acne vulgaris (the exception just mentioned) 55 per cent., in eczema 64 per cent., in eczema seborrhoicum 85 per cent., in pruritus 85 per cent., in seborrhea 83 per cent., and in urticaria 85 per cent.

#### St. Louis Medical Review.

February 9.

18 \*Selection of Anesthetics. P. Y. Tupper, St. Louis.

19 \*Use of Local Anesthesia. W. Bartlett, St. Louis.

20 \*Ether Anesthesia by the Open Method. H. S. McKay, St. Louis.

21 Being Sick Considered as a Business of the Patient. A. L. Benedict, Buffalo.

**18. Selection of Anesthetics.**—Tupper emphasizes the danger attending the administration of any general anesthetic and urges careful selection in the choice of the anesthetic and of the anesthetist. He says that the worst anesthetic, if well given, is fairly safe; the best, if badly given, is full of danger.

**19. Local Anesthesia.**—A relatively small number of operations are performed by Bartlett under local anesthesia. He uses eucain in the case of all patients who refuse a general anesthetic, and when operating for an exophthalmic goiter, when the pulse is under 120. He also employs it in work on the fingers and toes, and when nerve blocking must be resorted to.

**20. Ether Anesthesia by the Open Method.**—McKay claims that if ether is given on an open mask, as he has been in the habit of doing, it would be difficult to produce death in the time required for an ordinary operation, as a sufficient quantity of ether would scarcely be retained on the mask. He describes his method as follows:

An ordinary Esmarch chloroform inhaler is covered with three or four layers of gauze, over which is placed a piece of thin cloth. A towel folded three or four times is placed over the patient's eyes to prevent irritation from the ether. Ether is then slowly dropped on the mask, which is held slightly away from the face until the patient is somewhat accustomed to the fumes. The attention of the patient is diverted from the anesthetic by talking to him, while the mask is slowly lowered over the nose and mouth. Considerable space is left between the mask and face where air enters freely. After a very short time this space is lessened by placing a towel around the portion of the mask, which does not fit snugly around the face, and the amount of ether is increased. Ordinarily, surgical anesthesia is obtained in five minutes. If the patient should struggle or hold the breath as the amount of ether is increased, remove the mask, allowing plenty of air, and very shortly normal respiration is resumed and the ether may be continued without further trouble. One-half hour previous to beginning the anesthetic a hypodermic of  $\frac{1}{4}$  grain of morphin and 1-120 grain of atropin is given the patient. This serves to quiet him and there is rarely the troublesome secretion of mucus so frequently met unless this is given. The amount of the anesthetic is greatly reduced, and many times it is possible to do major operations with only primary anesthesia.

#### Lancet-Clinic, Cincinnati.

February 16.

22 Forecens. M. A. Tate, Cincinnati.

23 The True Cause of Functional Neuroses. G. G. Buford, Memphis.

24 Pathology of Idiopathic Epilepsy. J. W. Selman, Greenfield, Ind.



Medical Herald, St. Joseph.  
February.

- 25 \*New Retention Suture in Operation for Cleft Palate. J. P. Lord, Omaha.
- 26 Chairman's Address, Medical Association of the Southwest. H. L. Alkire, Topeka.
- 27 \*Adenoids. F. Vinsonhaler, Little Rock, Ark.
- 28 Eye Complications of Nephritis. E. E. Hamilton, Wichita.
- 29 Ophthalmology and a Few of Its Contributors. J. R. Hamill, Guthrie, Okla.
- 30 \*Use of Lead Styles in Treatment of Stricture of Nasal Duct. H. Moulton, Fort Smith, Ark.
- 31 \*Ophthalmic Neuroses of Menstrual Origin. R. E. Runkle, El Reno, Okla.
- 32 Mastoid Surgery. H. C. Todd, Oklahoma City.
- 33 \*An Unusual Ear Case. E. S. Ferguson, Oklahoma City, Okla.
- 34 Value of Certain Silver Salts in Ophthalmic Practice. A. W. McAlester, Jr., Kansas City, Mo.
- 35 Dr. John Thompson Hodgen. A. Van Meter, Lamar, Mo.

25. **New Retention Suture in Cleft Palate Operation.**—Lord has devised a substitute for the lead plates generally used in operations for cleft palate. Lead wires are covered with rubber tubing, and over this tubing is tied the retaining suture of celluloid linen. It is waterproof and is not likely to become septic. Subsequently Lord devised buttons to take the place of the cylinder.

27. **Adenoids.**—Vinsonhaler discusses the treatment of adenoids. Speaking of the anesthetic he says that he prefers nitrous oxid gas followed by ether, not only for removal of adenoids, but also when a tonsillotomy must be done.

30. **Lead Styles in Stricture of Nasal Duct.**—In cases of obstruction of the nasal duct in which syringing and probing fail to give any relief to the patient, Hamill has obtained good results from permanent dilatation of the duct with lead styles. He makes these styles from lead wire, fitting the style to the canal. After the first few hours the patient will not be conscious of the style and it may be worn indefinitely. Hamill has left the style in place for as long as a month without removal. In one case the patient was forced to have the style in the canal for a year and a half before it was finally and permanently removed.

31. **Ophthalmic Neuroses of Menstrual Origin.**—Runkle says that the severity of visual disturbances which are dependent on the menstrual function and its anomalies seem to rest on the extent of the departure from the normal condition of the sexual organs; that is, the greater the variation from the normal condition of the uterus and its appendages, the greater the ocular involvement proportionately.

33. **Unusual Ear Case.**—For about six years Ferguson's patient complained of a distinct ticking sound in the left ear similar in character to the ticking of a watch, about twice the rapidity of the heart beat, but slightly irregular. The ticking can also be heard by an examiner at a distance of one foot from the ear. Hearing is almost lost. Treatment of various kinds has failed to give any relief. Ferguson suggests that the condition may be one of spasmodic contraction of the tensor tympani muscle.

Journal of Experimental Medicine, New York.  
January 23.

- 36 \*Calcification of Breast Following Typhoid Abscess. W. S. Thayer and H. H. Hazen.
- 37 Toxins and Antitoxins.—Snake Venoms and Antivenins. T. Madsen and H. Noguchi.
- 38 Leukolytic Action of Blood Serum of Leukemia Treated with Roentgen Ray and the Injection of Human Leukolytic Serum in Leukemia. J. A. Capps and J. F. Smith.
- 39 \*Cytology of Multiple Non-Inflammatory Necrosis of Liver and Certain Related Degenerative Changes in Cells. D. Symmers.
- 40 \*Experimental Atresia of Ureter. T. Sollmann, W. W. Williams and C. E. Briggs, Cleveland, Ohio.
- 41 \*Hydronephrosis of Right Kidney. Congenital Atresia of Left Ureter and Marked Atrophy of Left Kidney. D. P. Allen and H. P. Parker, Cleveland.
- 42 Electrical Charge of Toxin and Antitoxin. C. W. Field and O. Teague, New York.
- 43 Cause of Increased Portal Pressure in Portal Cirrhosis. F. C. Herrick, Cleveland.

36. **Calcification of Breast Following Typhoid Abscess.**—Thayer and Hazen report the case of a negress who, during a severe attack of typhoid, developed an abscess on the breast from which *Bacillus typhosus* and *Staphylococcus aureus* were obtained on culture. Eleven days after opening the abscess and packing with iodoform gauze, a deposit of calcium ap-

peared in the granulation tissue bordering the wound which rapidly increased until the rim of the opening and the lining granulation tissue were converted into a hard, calcareous mass. Several nodules of a similar character appeared also in other parts of the breast. The abscess appeared eleven days after the injection of 5 grams of calcium chlorid under the breast and after the total ingestion of 132 grams of calcium lactate during a period of eleven days. The iodoform packing was removed after a month, and the patient was put on a carbohydrate-free diet for twenty-four days. Under this treatment the abscess almost entirely healed, with complete disappearance of the deposit of calcium. Studies of the intake and output of calcium showed that during three days under a diet of milk and eggs, there was a material calcium retention; that during two periods, amounting to three weeks in all, under a carbohydrate-free diet, there was a marked excess of calcium elimination over the intake; and that during the ten days following the last carbohydrate-free period, under a normal diet, there was a retention of calcium. The disappearance of calcium from the breast was associated with the carbohydrate-free diet and the excessive elimination of calcium. The findings in this case are strongly suggestive of those produced experimentally in animals by von Kóssa, who found that in rabbits in which the calcium content of the blood has been artificially increased, it is possible to bring about calcification with doses of iodoform essentially smaller than those required under ordinary circumstances.

39. **Cytology of Multiple Non-Inflammatory Necrosis of Liver.**—Symmers, from a morphologic study of cytology, concludes that there are two definite types of structural changes in cells in those pathologic processes which seem to depend on cytology. One is characterized by rapid, simple solution of the hyaloplasm with preservation of the cell reticulum, and the other by alteration of the hyaloplasm and reticulum with the formation of amorphous material, both the cell and nuclear membranes remaining very resistant. Extreme tenacity of the cell membrane seems to be the most constant single feature of all forms of cytology thus far recognized. Polychromatophilia is associated with solution of the hemoglobin of the red cells, and possibly it may be physiologic as well as pathologic. If the former, in the earlier developmental stage of the red cells it may represent an attempt on the part of the organism to dispose of an excess of such cells by solution, or the cells may not yet have received their full supply of hemoglobin.

40. **Experimental Atresia of Ureter.**—Sollmann, Williams and Briggs ligated one ureter in each of four dogs to study the functional changes produced in the kidney. Examinations of the kidneys were made from 31 to 185 days after the operations. In each case the renal pelvis on the side operated on was distended with fluid which was found to consist of a transudate, poor in proteids, but somewhat enriched in chlorids and perhaps in urea, phosphates and sulphates; a small quantity of pigment also was retained. The authors conclude that the fluid is probably formed by filtration through a filtering surface not freely permeable to proteids, and that a process of reabsorption also goes on simultaneously in such a manner that the soluble solids are somewhat increased (perhaps to counterbalance the osmotic value of the serum proteids). There is no evidence that the remaining specific renal elements play any part in the formation of this fluid. The anatomic findings of these observers agree with those reported by other investigators.

41. **Hydronephrosis of Right Kidney.**—Allen and Parker report the case of a boy who died of uremia 13 years after an operation for hydronephrosis of the right kidney in which, because of the patient's poor condition, the cavity was drained through the abdominal wall instead of being excised. For a few weeks after the operation a little urine was occasionally passed by the urethra, but later it was passed only through the opening in the side. At autopsy there was found a complete stenosis of the right ureter at its renal end, produced by a fan-shaped mass of fibrous tissue, with hemorrhagic pyelonephrosis and marked distension of the right kidney. In addition there was found a congenital atresia of the left ureter



associated with a marked atrophy and a chronic interstitial nephritis of the left kidney.

**Yale Medical Journal.**  
*February.*

- 44 Etiology of Syphilis. G. Blumer, New Haven.
- 45 New Haven Milk. C. J. Bartlett, New Haven.
- 46 Case of Renal Calculus; Nephrotomy; Recovery. J. B. Boucher, Hartford, Conn.
- 47 \*Unusually Large Urinary Calculus. A. R. Diefendorf, New Haven.

47. **Large Urinary Calculus.**—Diefendorf reports the case of a man who at the age of 43 began to suffer from paranoia. One year before the onset of his mental disease he was treated for pyelitis of the right kidney. Twelve months after the onset of his mental disease the patient passed a series of small urinary calculi, the largest one-eighth inch in its longest diameter. From this time he passed an occasional calculus, but it was always of small size and rarely caused any inconvenience. At the age of 47 the man began to complain of pains in the stomach which continued for five years, when cachexia made its appearance and it became evident that he was suffering from carcinoma of the stomach. He died of that disease six months later. At the postmortem a small carcinomatous growth was found involving the pylorus, but the greatest interest attached to the right kidney, which appeared enlarged and felt unusually firm and exceedingly heavy. On section of the kidney a calculus was found which completely filled the pelvic space and with its numerous projections extended up into each calix, crowding on the pyramids. Both cortex and medulla were greatly reduced and in places had completely vanished. The calculus weighed 52 grams and measured 4x2x 1¼ inches. A small calculus was found in the pelvis of the left kidney.

**Cleveland Medical Journal.**  
*January.*

- 48 Tuberculosis of Peritoneum. L. S. McMurtry, Louisville, Ky.
- 49 Bladder and Bowel Fistulas Following Abdominal Section. H. Robb, Cleveland.
- 50 The Budding Paretic. J. D. O'Brien, Massillon, Ohio.

**Chicago Medical Recorder.**  
*January 15.*

- 51 Chronic Urethral Discharges in the Male. F. A. Leusman, Chicago.
- 52 Drug Treatment of Pulmonary Tuberculosis. G. F. Butler, Chicago.
- 53 Diagnosis of Salpingitis. R. Ballinger, Chicago.
- 54 Surgical Treatment in Traumatic Ruptures of Kidney, Ureters and Bladder. W. Fuller, Chicago.

**Quarterly Journal of Inebriety, Boston.**  
*December.*

- 55 Influence of Inebriety in Railroad Accidents. H. O. Marcy, Boston.
- 56 Psychosis of Morphinism. T. D. Crothers, Hartford, Conn.
- 57 Drink and Drug Habitués. F. T. Searcy, Tuscaloosa, Ala.
- 58 Pathology of the Morphin Habit and Treatment. S. G. Burnett, Kansas City, Mo.
- 59 Effects of Alcohol in So-Called Medicinal Doses. G. E. Benton, Chester, Va.
- 60 The Alcohol Cult. J. Madden, Portland, Ore.

**American Journal of Urology, Boston.**  
*January.*

- 61 Renal and Ureteral Hematuria. A. C. Chute, Boston.
- 62 Vesical Hematuria. L. Davis, Boston.
- 63 Hemorrhage of Urethra and Prostate. E. J. McKnight, Hartford.
- 64 Pathogenesis and Treatment of Hematuria. C. G. Cumston, Boston.
- 65 Bilharzia Hematobium. F. W. Robbins, Detroit.

**New Orleans Medical and Surgical Journal.**  
*February.*

- 66 Septic Contraindications of General Anesthesia. J. D. Bloom, New Orleans.
- 67 What Every Physician Should Know of Ophthalmology. H. D. Bruns, New Orleans.
- 68 Necessity of a Knowledge of Therapeutics by the General Practitioner of To-day. A. Granger, New Orleans.
- 69 Cases Showing Necessity of Electricity as a Therapeutic Agent. S. C. Barrow, Shreveport.

**Mississippi Medical Monthly, Vicksburg.**  
*February.*

- 70 Deflections of the Nasal Septum. H. Flowers, Brookhaven.
- 71 Morphinomania. R. M. Donald, Inverness.
- 72 Dysentery. S. W. Glass, Dublin.
- 73 Leg Amputation for Gangrene. F. L. Bott, Lexington.

**Louisville Monthly Journal of Medicine and Surgery.**  
*February.*

- 74 Results of Operations for Prostatic Hypertrophy. I. Abell, Louisville.
- 75 Medical Treatment of Salpingitis. J. H. Ely, Frankfort.

- 76 \*Wounds of the Liver. J. E. Cannaday, Hansford, W. Va.
- 77 Cholesteatoma of the Ear. S. G. Dabney, Louisville.
- 78 Tabulation of Cases and Bibliography of Ruptured Kidney. A. H. Barkley, Lexington, Ky.

76.—See abstract in THE JOURNAL, Nov. 24, 1906, page 1765.

**The Military Surgeon, Carlisle, Pa.**  
*February.*

- 79 \*Tropical Hygiene in Reference to Clothing, Houses, Routine and Diet. A. Stuart.
- 80 A Mountain Litter. H. Mareschal, Paris.
- 81 Influence of Burggraave in Modern Therapeutics, with Special Reference to Military Practice. W. T. Thackeray.
- 82 A Geometrical Cyrtometer for the Easy Application of Chicault's Method of Cranio-Cerebral Localization. W. H. Bell.
- 83 New Field Latrine which Fulfills Requirements for Troops in Active Service. F. C. Herrick, Cleveland.
- 84 Military Medical Service of the Teutonic Order. J. Steiner, Vienna.
- 85 Defective Vision as a Cause for Rejection for Military Service. E. L. Ruffner.
- 86 Febrile Icterus in Port Townsend, Washington. W. G. Stimson.

79. **Tropical Hygiene with Reference to Clothing, Houses, Routine and Diet.**—Stuart, in speaking of the change that has been made in military technic by the colonization of the tropics, says that the white man in the tropics is an exotic and that recruits should never be sent on tropical service, but well-seasoned soldiers should be picked out. Troops intended for such service should be recruited from the natives of our southern states, and, if possible, men of dark complexion should be selected. Headgear for troops should be selected with great care. The sun helmet should be light, have a double body with an air space between and should be so constructed as to protect the temples, the nape of the neck and the face. A layer of tin foil between the cork and the cloth of the helmet seems to be valuable in keeping out many dangerous light waves. For clothing cotton duck for the uniform is both cheaper and cooler than linen duck. The outer garments should be white to reflect the actinic rays, and the underclothing should be of dark-colored material to prevent the penetration of rays that prove injurious. In general, the clothing should be made for comfort and not for "smartness." Stuart calls attention to the fact that most houses built by Americans in the tropics are utterly unfitted for the climatic conditions found there. He says that American architects pay scant attention to local conditions and resent any suggestions from a medical officer as impertinence. He says that the British excel all others in making things comfortable in warm climates, their long experience in colonization standing them in good stead. The bungalow built by the British in India is undoubtedly the best hot-weather house, with its large roof, single story and broad piazza running all around. It should be faced by the compass north or south, according to the point from which the trade winds blow most of the year. In speaking of garrison routine, Stuart says that white people should turn out at sunrise and the morning shower bath be taken in warm water, as cold water is much too stimulating. Fruit should always be eaten with the morning coffee, the fresh native fruit being best. Drills and fatigue work should be done in the early morning, and the important work of the day should be finished before breakfast, which should come at 11:30 a. m. Stuart recommends the "flexion step" recently spoken of by Munson as being particularly valuable in the tropics, as it permits a maximum of ground to be covered with a minimum of effort expended.

**Journal of Outdoor Life, Trudeau, N. Y.**  
*February.*

- 87 Tuberculosis Work in Europe and in the United States. J. Walsh, Philadelphia.
- 88 Tuberculosis Classes in Boston. J. B. Hawes, Boston.
- 89 Duty of the Consumptive. W. N. Beggs, Denver, Colo.

**Virginia Medical Semi-Monthly, Richmond.**  
*February 8.*

- 90 Principles of Surgery. S. McGuire, Richmond.
- 91 \*Wounds of the Liver. J. E. Cannaday, Hansford, W. Va.
- 92 Diagnosis of Certain Affections of the Liver and Biliary Apparatus. G. P. Lalioque, Richmond.
- 93 Hydrotherapy. J. C. Walton, Chase City, Va.

91.—This article appeared in the *Lancet-Clinic*, Nov. 3, 1906, and an abstract appeared in THE JOURNAL, Nov. 24, 1906, page 1765.



International Clinics.  
Vol. IV. Sixteenth Series.

- 94 Electrotherapeutics. J. H. W. Rhein, Philadelphia.
- 95 Prevention and Treatment of Chronic Nephritis. J. M. French, San Diego, Cal.
- 96 Etiology and Treatment of Chronic Constipation. J. D. Steele, Philadelphia.
- 97 Treatment of Obesity. P. Grocco, Florence, Italy.
- 98 Non-operative Treatment of Renal or Ureteral Calculi Causing Colic. H. Lillenthal, New York.
- 99 Care of Tuberculous Subjects. W. Porter, St. Louis.
- 100 Pulmonary Tuberculosis in the Middle-aged and Aged. J. E. Squire, London.
- 101 Physiologic Influence of Lowered Barometric Pressure. H. Sewall, Denver, Colo.
- 102 Obscure Renal Hematuria. A. R. Elliott, Chicago.
- 103 Myxedematous Infantilism and Incomplete Myxedema. R. S. Morris, Baltimore.
- 104 Syphilitic Aortitis. C. Dieulafoy, Paris.
- 105 Recent Progress in Disorders of the Adrenals. L. Barnard.
- 106 Treatment of Fractures of the Lower Extremities. G. G. Ross, Philadelphia.
- 107 Treatment of Hip-Joint Disease. R. A. Hibbs, New York.
- 108 Tuberculous Hip-Joint Disease, Osteomyelitis and Transplantation of Fibula; and Ankylosis of Jaw. J. F. Rinehart, Oakland, Cal.
- 109 Vesical Tumors. D. Wallace.
- 110 Treatment of Hemorrhoids. G. P. Müller.
- 111 Placenta Prævia and Its Treatment. J. B. DeLee.
- 112 Lacerations of the Cervix of the Uterus and Their Repair. W. A. N. Dorland, Philadelphia.
- 113 Chronic Cystitis in the Female. D. H. Craig, Boston.
- 114 Laryngeal Complications of Tuberculosis. E. F. Trevelyan.
- 115 The Mastoid Operation. C. W. Richardson, Washington.

Journal of the Medical Society of New Jersey, Orange.  
February.

- 116 Hysteria and Neurasthenia in Women. M. J. Synnott, Montclair.
- 117 Treatment of Chronic Nervous Conditions. W. G. Schaufler, Lakewood.
- 118 Chorea. T. B. Prout, Summit.

Journal of Cutaneous Diseases, New York.  
February.

- 119 Syringocystoma. C. J. White, Boston.
- 120 Elephantiasis of Penis and Scrotum Due to Syphilis. A. Ravogli, Cincinnati.
- 121 Case of Pemphigus Vegetans. J. M. Winfield, New York City.

FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.  
February 2.

- 1 \*Diagnosis and Treatment of Laryngeal Cancer. F. Semon.
- 2 \*Duodenal Ulcer and Its Treatment. A. W. M. Robson.
- 3 \*Repeated Abdominal Section for Perforation of Gastric Ulcer. A. Cuff.
- 4 \*Multiple Internal Diverticula of Small Intestine. A. A. S. Skirving.
- 5 \*Opsonins and Their Utility in Practical Medicine. H. French.
- 6 \*Temperature of Japanese Hot Baths. L. Hill.

1. **Cancer of Larynx.**—In this article Semon expresses his well-known views on cancer of the larynx. He advocates early diagnosis, when thyrotomy will suffice to save the patient in cases of intrinsic cancer, although total laryngectomy will remain the operation of necessity in cases of extrinsic cancer of the larynx.

2. **Ulcer of Duodenum.**—Robson discusses the clinical history of duodenal ulcer in great detail and expresses an opinion that the operation of posterior gastroenterostomy is the treatment for this affection. He has operated on 66 patients without a single fatality. Among 155 cases of acute perforating duodenal ulcer recorded in the literature there was a mortality of 66 per cent. Sixty-one patients were operated on within 24 hours of rupture, with a mortality of 37.7 per cent.; whereas among 63 patients operated on later than 24 hours after rupture the mortality was 82.5 per cent. Of 31 cases in which the time of operation was not stated, but in which the time was probably over 24 hours after rupture, 90.3 per cent. proved fatal. Robson says that it is astonishing to find how long in many of the cases of duodenal ulcer the symptoms persist, the patients being treated for dyspepsia, gout, gastroduodenal catarrh, neurosis, chronic appendicitis, etc. In some of his cases a 10, 15, 20 or even 30 years' history of dyspepsia had been given, with characteristic symptoms throughout and with irregular intervals of relief by treatment and relapses every few weeks or months. He thinks that duodenal ulcer is much more common in early age than is

generally recognized, although the condition as usually diagnosed is seen for the most part in the middle-aged.

3. **Repeated Abdominal Section for Gastric Ulcer.**—The patient whose history is recorded by Cuff was operated on twice for the perforation of two totally distinct ulcers of the stomach. Since he was 10 years of age, the patient (now aged 27) had suffered from symptoms referable to serious trouble in his stomach. For 13 years there had been symptoms pointing to mischief in the neighborhood of the pylorus or, more probably of the duodenum. The perforations occurred four years apart. An anterior gastroenterostomy was done at the first perforation. In the interval between the two operations the patient had repeated attacks of gastric pain and vomiting.

4. **Multiple Internal Diverticula of Small Intestine.**—While operating in a case of right-sided acquired strangulated inguinal hernia, Skirving noticed six equidistant depressions on the concavity of a loop of bowel. On exploration with a probe it was found that these depressions represented the mouths of hollow, finger-like processes which projected obliquely in the lumen of the gut for distances varying from one inch to two inches. All ended blindly and were apparently localized invaginations of the whole thickness of the wall of the gut. Repeated attempts to reduce these invaginations failed. The patient has had slight aching pains in the right inguinal region before and after the operation. Skirving wonders whether these pains are associated with the diverticula.

5. **Opsonins in Practical Medicine.**—French presents a general review of this subject and reports three cases to indicate the benefits that he obtained from careful vaccine treatment, particularly in cases of local tuberculous mischief and in cases of staphylococcal troubles, such as acne, boils and abscesses.

6. **Temperature of Japanese Hot Baths.**—According to Hill, the Japanese can stand a bath hotter than can the Europeans. He says that the temperature of the Kusatsu mineral springs ranges from 100 to 160 F., while the baths are generally 113 to 128 F. The patients remain in this bath from three to four minutes, and take five baths every day.

The Lancet, London.  
February 2.

- 7 \*Pain in the Groin. W. Bennett.
- 8 \*Idiopathic Cyanosis Due to Sulph-hemoglobinemia. S. West and T. W. Clarke.
- 9 \*Causation and Treatment of Some Headaches. W. Harris.
- 10 Opsonins and the Opsonic Index and Their Practical Value in Treatment of Disease. G. A. Crace-Calvert.
- 11 Present Means of Combating Sleeping Sickness. A. Kinghorn and J. L. Todd.
- 12 Paratyphoid fever in the Tropics: Mixed Infection. A. Castellan.
- 13 \*Transposition of the Viscera. F. E. Larkins.
- 14 Visual Efficiency of the Uncorrected Myope. J. H. Parsons.
- 15 Role of the Blood Plasma in Disease. H. Campbell.
- 16 German Methods of Meat Inspection as Carried Out in Berlin. H. A. Macewen.

7. **Pain in Groin.**—The cases reported by Bennett, 54 in number, had the following points in common: 1. Pain, continuous or intermittent, in the fold of the groin without swelling, tenderness or any other sign of lesion near the seat of pain. 2. An impression on the part of the patient that the cause of the pain was above or below the groin, as the case may have been, without being able to locate it. In the majority of cases, movements of the hip joint had no effect on the pain, but in some the pain was either produced or increased by extreme flexion or by forced extension. In these cases the pain was caused by many varying conditions, such as stone in the bladder and ureter, prolapse of the ovary, hernia, varicose veins, movable kidney, spinal abscess, disease of the rectum, tumor of the tibia, flatfoot, etc. Bennett presents the following conclusions: 1. Pain in the groin as an isolated symptom may arise from causes either so remote or unlikely that their existence would at first sight seem hardly worth consideration. 2. No examination in a case of pain in the groin can be effective unless it is made in the erect as well as in the horizontal position of the patient. 3. Distinctly localized pain in the presence of obvious organic disease of which the patient is aware may so assert itself as to lead to the gross condition being considered of little or no importance. 4. The belief in a "functional" or "psychic" pain would be greatly diminished



if in all cases of apparently unexplainable pain a more comprehensive search were made for a cause than is sometimes done.

**8. Idiopathic Cyanosis.**—West and Clarke report the history of a woman, aged 37, who suffered from idiopathic cyanosis due to sulph-hemoglobinemia. The most striking feature in the case was the color of the skin, resembling in tint that of silver staining, which made the patient look when asleep as if she were moribund. The cyanosis was universal. Pressure with the finger showed the skin when emptied of blood to be of the normal yellow hue. The patient was feeble, but otherwise presented no symptoms. Although the authors present several theories, a conclusion is not arrived at as to the cause of this affection. The point of chief clinical interest is the source of the sulphuretted hydrogen.

**9. Headaches.**—The headaches discussed by Harris are the paroxysmal and periodic variety, and those dependent on some form of toxemia.

**13. Transposition of Viscera.**—Larkins reports a case of this kind which was found at postmortem on an infant aged 12 months, dead of tuberculous meningitis. The heart lay in the center, inclining to the right. The right lung had two lobes; the left lung three. The esophagus lay to the left of the aorta till near the diaphragm, when it crossed over to the right. The stomach occupied the right hypochondrium and the duodenum proceeded to the left, being reflected round the head of the pancreas and turned back toward the right. The appendix was situated in the left iliac fossa and all the other organs in the abdominal cavity were reversed, including the vessels.

**British Journal of Children's Diseases, London.**  
*January.*

- 17 \*Alcoholic Cirrhosis of Liver in Children. E. Jones.  
18 Historical Notes on Rickets. J. Burnet.

**17. Alcoholic Cirrhosis of Liver in Children.**—Jones reports two cases of alcoholic cirrhosis of the liver in children, one of the patients being aged 16 months and the other 2 years and 11 months. Although there was an alcohol history in both cases, the alcohol had not been administered in excess. The first patient had received wine, about a tablespoonful, twice a day, for 11 months, for the purpose of strengthening the child's health. The second patient, following an attack of whooping-cough, was given brandy, in doses of a dram, twice a day, for about five weeks. Both patients did well under treatment. Jones discusses the subject in general very fully. The article is to be continued.

**The Australasian Medical Gazette, Sydney.**  
*December 20.*

- 19 Some Less Familiar Forms of Hydatid Disease from a Geographic and Pathologic Standpoint. A. Watson.  
20 Progressive Muscular Atrophy, with a Case of Facial Type of Erb's Juvenile Progressive Muscular Atrophy. E. S. Littlejohn.  
21 \*Guaiacol in the Treatment of Typhoid. H. W. Bryant.  
22 An Adjustable Axis-Traction Forceps. F. Barrington.  
23 \*Diverticula Spuria Intestinalis. E. A. Johnson.  
24 \*Treatment of Trachoma. E. T. Smith.

**21. Guaiacol in Typhoid.**—Bryant has treated at least 200 patients with guaiacol inunctions with only one death in the series. He says that the temperature is controlled easily in most cases, the patient feels better and the skin is kept moist, and very rarely does any diarrhea occur during the course of the treatment.

**23. Spurious Intestinal Diverticula.**—At least half a dozen cases of this kind have been seen by Johnson. He says that if medical men who conduct postmortems will keep a sharp lookout for this condition many more such cases would be found.

**24. Treatment of Trachoma.**—Smith has had most excellent results in the treatment of trachoma from the use of boric acid and protargol, the former for its mechanical effects, the latter for its chemical. After instilling cocain, a probe or match is mounted with absorbent wool twisted into a firm olivary knob. This is soaked in a 25 per cent. solution of protargol and then dipped in boric acid which coats it over. The eyelids are everted and the swab is rubbed over the whole surface of the palpebral conjunctiva until bleeding is produced. This causes a uniform scarification of sufficient intensity and little likely to cause scarring. The treatment is repeated daily. As the

condition improves and the lids get smoother, the use of the boric acid is abandoned. Smith condemns the use of copper sulphate and silver nitrate.

**Medical Press and Circular, London.**  
*January 16.*

- 25 Optic Neuritis and Its Relationship to Intracranial Tumors. R. A. Fleming.  
26 Some Aspects of Pruritus. F. H. Barendt.  
27 Medical Inspection of School Children. A. S. Arkle.  
28 Letter to a Young Practitioner. G. Cornu.

*January 23.*

- 29 \*Mental Risks of Adolescence. T. S. Clouston.  
30 History of Ovariectomy. F. B. Jessett.  
31 Tetania Parathyropriva. J. Erdheim.  
32 The Hemo-renal Salt Index as a Test of the Functional Efficiency of the Kidney. D. Turner.

*January 30.*

- 33 Chronic Non-Suppurative Diseases of the Middle Ear. M. Yearsley.  
34 Ventrofixation of the Uterus in Treatment of Backward Displacements. H. Briggs.  
35 Infective Bronchitis and Its Relation to Tuberculosis. H. P. White.  
36 Suffocative Hydrothorax in Which the Pleuræ Were Tapped Several Hundred Times. J. F. O'Carroll.

**29. Mental Risks of Adolescence.**—Clouston claims that the mental risk of adolescence is so great that 75 per cent. of the chronic insanity now existing in England results from it. Almost all the typical secondary dementias, and most of the delusional insanities arise out of, or have as a preliminary stage, attacks of adolescent insanity.

**The Clinical Journal, London.**  
*January 16.*

- 37 Paralysis of the Legs in Women. J. A. Ormerod.  
38 \*Apoplexy and Its Treatment. L. Guthrie.  
39 Diagnosis of the Common Swellings of the Long Bones. W. Trotter.

*January 23.*

- 40 \*Two Cases of Scarlet Fever. A. K. Gordon.  
41 Points in the Diagnosis of Urinary Disease. R. H. J. Swan.

*January 30.*

- 42 \*Some of the Commoner Skin Diseases of Infancy and Childhood. R. Hutchinson.  
43 Surgical Danger Signals in Acute Abdominal Disease. D. Power.  
44 \*Eye Diseases Associated with Sepsis of Neighboring Mucosæ. N. B. Harman.  
45 San Remo and Some of Its Advantages as a Winter Resort. W. S. Eccles.

**38. Treatment of Apoplexy.**—Guthrie says that while treatment may be useless in grave cases, that is no reason why it should be withheld when the symptoms and physical signs suggest rational measures for their relief. In mild cases spontaneous recovery usually takes place and active treatment is, therefore, unnecessary and may be dangerous.

**40. Scarlet Fever.**—Gordon believes that in the polyvalent anti-streptococcus serum we have a remedy of great value in toxic cases of scarlet fever. It is essential, however, that an adequate dose should be given, not under 50 c.c., and that the serum shall have been freshly prepared—under a year old, in fact. The ordinary anti-streptococcus serum is useless.

**42. Common Skin Diseases of Infancy.**—Hutchison discusses specific, drug and parasitic rashes, intertrigo, eczema, impetigo, urticaria, sweat rashes, and erythemata. For the relief of itching he has found the following ointment efficacious. It must be rubbed in all over the body at night:

R. Beta-naphthol .....	gr. xvi	1
Zinci oxidi .....	3i	4
Unguenti .....	3i	30

**44. Eye Diseases Associated with Sepsis Elsewhere.**—According to Harmon, there are three modes of communication of disorders of the eye—direct, indirect and reflex. As examples of each are given destructive corneal ulcers, following on disease of the lachrymal duct and lachrymal sac; insidious and chronic forms of iridocyclitis arising coincidentally with sepsis of the buccal cavity, and phlyctenular conjunctivitis or keratitis.

**Bulletin de l'Académie de Médecine, Paris.**

- 46 (LXXI, No. 3, pp. 105-136.) \*Prophylactic Treatment of Arteriosclerosis. (Traitement de la présclérose.) H. Huchard.  
47 Serotherapy of Tuberculosis. (Sérum antitub. de Marmorek.) C. Monod.  
48 (No. 4, Pp. 137-159.) Fowl-Serum for Serotherapy of Tuberculosis. (Sérum des poules.) Vigulier.



- 49 \*Classification and Nomenclature in Medicine. (Classification, etc.) E. Lancereaux.  
50 \*Tuberculosis and Alcoholism in Canada. (Mission au Canada.) Triboulet.

46. "Presclerosis."—Huchard has been asserting that certain functional disturbances of the blood vessels, the result of some intoxication, if not combated in time, lead to the anatomic changes and symptoms of arteriosclerosis. He calls this state of arterial hypertension the stage of presclerosis, and insists that appropriate treatment may cure it and prevent the impending arteriosclerosis. He is unable to present pathologic anatomic data to sustain this view, but from the standpoint of therapeutics and the success of appropriate treatment he claims that these assertions have been amply confirmed. The physician's task is to recognize the "condition" early, to determine the degree and the greater or less permanency of the arterial hypertension, and of the accompanying, more or less pronounced, insufficiency on the part of the kidneys. He should strive to remove the cause, which is generally poison, from the digestive tract acting on the coats of the vessels and irritating the kidneys. He should restrict the patient to a milk and vegetable diet, limiting the intake of salt, supplementing the dietetic measures by drugs to dilate the vessels and to lower the arterial tension, reducing to the minimum the alimentary toxins in the organism and promoting their elimination early and always by suitable treatment of the kidneys and diuresis, and, finally, by sustaining the heart in its incessant struggle against the peripheral obstacles. Treatment along these lines, he declares, will ward off the anatomic lesions otherwise inevitable from the almost uninterrupted overwork on the part of the vessels and the numerous complications which are the result of intoxication of the organism. Huchard's views and technic were summarized on page 397 of vol. xli of THE JOURNAL, and page 2023 of vol. xlii, 1906. He dwells here more particularly on the necessity for assisting the kidneys and the heart. For 12 years he has had the findings constantly recorded for every patient, a total of 13,000, including 10,000 with heart disturbances. It has been his frequent experience that patients with the signs of arterial hypertension when first seen, developed later, in the course of from two to four years or longer, all the cardiovascular and toxic phenomena of cardiorenal arteriosclerosis. In other similar cases, by curing the arterial hypertension and the concomitant renal insufficiency, the stage of arteriosclerosis was never reached. Robin's experience corroborates these statements, and he adds that they apply also to stomach pathology. Patients sometimes develop arterial hypertension in the course of an acute attack of dyspepsia, but it subsides with the attack at first. Later it is liable to persist. Huchard claims that if the lesions of arteriosclerosis are established during the stage of presclerosis—as some maintain—then we must recognize two phases of arteriosclerosis, the curable and the incurable. By combating the disease in the curable stage, it may be possible to ward off the incurable lesions.

49. Classification of Diseases.—Lancereaux and Paulesco comment on the haphazard way in which diseases have been named, and the necessity for a more scientific classification according to the data learned in recent years in regard to their origin. They urge the division of all maladies into five groups, those caused by physical agents, those caused by chemical agents and those caused by parasites, with the additional group of nervous disturbances resulting from any of the above, and the neoplasms as a fifth group. The natural sciences and chemistry have not hesitated to modify their nomenclature to conform to the progress of science, and medicine should do the same. They suggest the term "physinosis" for diseases due to physical agents, "eheminosis" for those due to chemical agents, "bionosis" for the parasitic affections, with "neuronosis" for the nervous affections and the termination "oma" for the neoplasms. In the subdivisions the termination "ism" should be retained, as at present, for the "cheminosis," while the "bionosis" should retain their present ending "osis," as in mycosis. The termination "pathy" after the name of an organ should be used as it is at present, in nephropathy, pneumopathy, etc. Instead of the vague terms gastritis, dermatitis or the like, he would use the name of the

organ, followed by "pathy," and preceded by the term expressing the physical, chemical or parasitic cause. This would establish the nomenclature on a solid basis, he claims, as the same causes always induce the same effects. A committee was appointed to discuss the subject and to report later.

50. Tuberculosis and Alcoholism in Canada.—Triboulet remarks that it seems strange that in the vast area of Canada and with the comfortable homes of the inhabitants that "overcrowding" is a prolific source of tuberculosis as much as in the crowded cities. Most of the rooms in the houses are kept shut up in the summer to keep out the sun and dust and in winter to keep out the cold, and the family congregates in a single living room. If one member of the family contracts tuberculosis the contamination of the whole family is almost inevitable. There is no isolation of the tuberculous in the hospitals. The death list from tuberculosis in Montreal was 700 during 1903, with a population of 300,000, and 2,200 tuberculous individuals were recorded. Alcoholism, on the other hand, is rare.

#### Archiv f. Gynäkologie, Berlin.

Last indexed, page 554.

- 51 (LXXX, No. 3, pp. 439-680.) Etiology of Wall or Ridge Surrounding Placenta. (Placenta circumvallata.) W. Liepmann.  
52 \*Experiences with Artificial Premature Delivery in Case of Mechanical Disproportion. (Künstliche Frühgeburt.) E. Möller.  
53 Four Cases of Hypersecretion of Sweat and Sebaceous Glands in Axilla, in the Puerperium, accompanied by Swelling and Stimulating True Secretion of Milk. (Hypersecretion der Schweiss und Talgdrüsen in der Achselhöhle.) L. Seitz.  
54 \*The Neutrophile Blood Picture in the Puerperium and Its Modification Under Streptococcus Serum. (Neutrophile Blutbilde im Wochenbett, etc.) O. Burkard.  
55 \*Study of Duration of Gestation. (Wann tritt die Geburt ein?) F. Schatz.

52. Artificial Premature Delivery with Mechanical Disproportion.—Möller reports the experiences at L. Meyer's maternity at Copenhagen, between 1892 and 1904, with 80 experiences with artificial premature delivery of 58 women. During this period, 21,066 childbirths are recorded, with contracted pelvis in 646 cases, about 3 per cent. of the total number. The mortality of the children, with induced premature delivery, was 20 per cent. higher than in the normal cases, but if the deliveries before the thirty-fifth week are excluded, the mortality was only 10 per cent. higher. The mortality after the first few days was approximately the same as for normally delivered children. Fully twice as many children were born alive with artificial premature delivery as in case of children carried to term by the same mothers.

54. The Blood in the Puerperium Under Antistreptococcus Serum.—The effect of the antistreptococcus serum was marked in all the cases in less than twenty-four hours, showing great destruction of the neutrophiles. The course of the cases confirmed the assumption that this destruction of neutrophiles is a salutary reaction to the serum. It was accompanied by a considerable increase in the total number of leucocytes, overcompensating the loss. This occurred, however, only in cases in which the organism was capable of a response to the serum. If no response is possible, the destruction of the neutrophiles, not being accompanied by an over-compensation, is liable to be directly injurious. The communication proceeds from Knauer's gynecologic clinic at Gratz, and is based on an experience of 16 cases of severe puerperal infection in which antistreptococcus serum was used. In 12 there was pure streptococcus infection, and in half of these the response to the serum was pronounced; all the patients rapidly recovered. In the other cases no influence from the serum was apparent and months elapsed before the patients had fully recovered.

55. Predetermination of the Day of Birth.—Schatz continues his article on this subject, the first part of which was published in volume lxxii. He here discusses the physiologic week, the physiologic double month, the various periods and periodicities and the various kinds of both in the human body and their combinations, striving to deduce conclusions for the predetermination of the date of delivery. The article is based on the study of 241 cases. He calls attention to the fact that the periodicity in the electric tension of the air, which



Arrhenius has demonstrated to be 27.3 days, is paralleled by the periodicity of menstruation which will very frequently be found also to be 27.3 days when the average of a long series is taken.

#### Beiträge zur klinischen Chirurgie, von Bruns, Tübingen.

*Last indexed, page 372.*

- 56 (L. No. 3, pp. 667-819.) Retroperitoneal Ganglion Cell Neuroma. (Neuroma gangliocellulare amyelinicum.) E. Ohse.
- 57 \*Surgery of Spleen. (Milz-Chirurgie.) M. Flammer.
- 58 Operative Treatment in 52 Cases of Gastric Ulcer (Ulcus ventriculi.) M. Hoffmann.
- 59 Blood Pressure During Artificially Induced Hyperemia. (Blutdruck bei der Bier'schen Stauung.) A. Hofmann.
- 60 \*Operations on the Hypophysis. (Operationen an der Hypophyse.) H. Schloffer.

57. Splenectomy.—Flammer reports 5 cases in which the spleen was removed, for rupture in 3 and for a chronic, infectious tumor in the spleen, or for Banti's disease in the others.

60. Operations on the Hypophysis.—Schloffer has found that, on the cadaver, the best means of access to the hypophysis is by turning back the soft parts of the nose, with temporary resection of the upper jaw. This technic is preferable in the clinic, also, he states, in case the patient is strong enough to stand it. If one eye is partially or entirely blind, it might be better to turn back the nose from one side with resection of the wall of the orbit. He believes that the hypophysis can be successfully operated on without injury of neighboring organs, with the aid of the *x*-rays, especially if the operation is done in two sittings. He does not believe that malignant disease of the hypophysis indicates operative treatment, as the merely palliative results are not enough of an advantage to outweigh the gravity and difficulty of the operation. In acromegaly he advises operation only when the symptoms are exceptionally severe and distressing. He discusses the physiologic importance of the hypophysis and the various pathologic processes likely to occur in it.

#### Deutsches Archiv f. klinische Medizin, Leipsic.

*Last indexed, page 555.*

- 61 (LXXXVIII, Nos. 4-6, pp. 325-618.) \*Length of Survival of the Tuberculous in Norway. (Lebensdauer der Schwindsüchtigen.) F. Holst, L. Nicolaysen and Y. Ustvedt.
- 62 \*Disturbance of the Chemical Correlations in the Organism. (Störung der chem. Korrelationen.) L. Krehl.
- 63 \*Normal and Pathologic Emphysema. Mechanism and Treatment. (Mittellage und Vitalkapazität der Lungen.) C. Bohr.
- 64 \*Blood Formation in Severe Anemia and Leukemia. (Blutbildung, etc.) E. Meyer and A. Heineke.
- 65 Atypical Severe Anemias. (Atyp. schwere Anämien.) P. Morawitz.
- 66 \*The Colon-typhoid Group in Relation to Affections of the Biliary Passages. (Colityphusgruppe.) F. Blumenthal.
- 67 \*Influence of Hydrochloric Acid on Pepsin Digestion. (Einfluss der Salzsäure auf die Pepsinverdauung.) A. Müller.
- 68 \*Elimination of Euglobulin in the Urine in Case of Amyloidosis. (Ausscheidung von Euglobulin im Harn bei Amyloiderkrankung.) E. Zak and F. Necker.
- 69 \*Polyuria with Contracted Kidney. (Vorkommen der Polyurie bei Schrumpfnieren.) M. Nagel.
- 70 \*Heart Block. (Leitungsstörung im Herzmuskel.) G. Joachim.
- 71 Fibrinous Bronchitis in a Consumptive. (Bronch. fibr. bei einem Tuberkulösen.) E. Gottstein.
- 72 \*Reciprocal Relations Between the Various Syndromes of Typhoid Fever. (Wechselverhältnis zwischen den verschiedenen Symptomkomplexen des Abdominaltyphus.) W. Ebstein.
- 73 Percussion. (Das Plessimeter.) R. Geigel.
- 74 Spiral Form of Nuclei in the Contracted Heart Muscle. (Spiralwindung der Herzmuskelkerne.) W. Heubner.
- 75 Case of Occasional Heptosuria. (Zeitweise Heptosurie.) F. Rosenberger.
- 76 Agglutination of Typhoid Bacilli in Proteus Infection. (Aggl. von Typh.-Bac. bei Proteusinfektion.) Steinberg.

61. Length of Survival After Tuberculous Infection.—The large proportion of survivors retaining their earning capacity after nine years is a striking feature of this statistical summary of conditions in Norway. Four of the principal life-insurance societies of the country paid physicians for their trouble in filling out and returning the question blanks sent to them by a committee appointed by the Christiania Medical Association. The probabilities of survival, according to these statistics based on the living and the dead, are that about 50 per cent. will die within 36 or at most 42 months. Correcting these statistics by basing them on the dead alone, the average length of survival was between 36 and 59 months after the first appreciable clinical symptoms. The figures tabulated show that of 2,002 tuberculous men and women, 908 were living after the fourth year, and 52.3 per cent. retained their earning capacity. After the ninth year, 322 were

still alive, with 67.4 per cent. retaining their earning capacity. The statistics are classified according to various methods and the findings compared.

62. Disturbance of the Chemical Correlations.—Krehl remarks that the method of direct treatment is undoubtedly the method of the future, but internal medicine still uses the indirect methods, and he shows by a number of concrete examples the mechanism of this indirect influencing of morbid conditions. Theoretical research is now gradually supplying the solid foundation for the therapeutic procedures built on empirical observation of the chemical action of one organ on other organs. The "chemical messengers" were discussed editorially in *THE JOURNAL*, Feb. 9, 1907, page 524. Krehl reviews their action in the disturbances of the menopause, in eclampsia, in tetany, nephritis, etc., remarking that the physiology and pathology of the future will probably place the chemical activity of the leucocytes in the foreground. Their universal appearance wherever active chemical processes are going on in the body and their relations to all the tissues indicate the general importance of the substances contained in them and their joint action with numerous other substances. The practical result of these theoretical studies is the increasing realization of the importance of treatment of the general condition of the patient in all cases. He adds that when we seek for the true essential element of the success of the great physicians, we always find—aside from the impress of their personality—an insight into and skilful treatment of the general condition as the predominant factor in the treatment of affections of single organs. Every individual has his own chemical make-up, his own special intermediate metabolism which may resemble as a whole those of others, but in certain points may differ widely from others. Study of the chemical correlations shows the tendency displayed by the cells to adapt themselves to the disturbing elements brought to them by disease-causing elements, this tendency always striving toward a spontaneous cure. Everything that stimulates the cells to overcome the disturbing influence favors the spontaneous cure. Study of the chemical correlations also shows how increased functioning or possibly merely a modification in the functioning of other tissues, which apparently have nothing to do with the organ directly affected by the disease, may yet have an indirect favorable action on the elimination of the disease-cause.

63. Functional Changes in the Capacity of the Lungs.—Bohr discusses what he calls normal and pathologic emphysema, the vital capacity, and the vital medium capacity, that is, the amount of air taken into the lungs in ordinary breathing, the residual air, the influence of the attitude and of muscular exertion on the medium and extreme capacity in ordinary air and with oxygen and carbon dioxide, etc. When the action of the lungs is increased in response to increased circulation of blood through them, temporary emphysema is normally induced. Emphysema in pathologic conditions should be regarded in the same light, he says, that is, as an ingenious reflex action designed to counteract the functional disturbances induced by the underlying affection. It is irrational to suppress it.

64. Blood Formation in Anemia and Leukemia.—Meyer and Heineke relate experiences which demonstrate, they think, that the changes in the blood in anemia and leukemia are not caused by a perverted formation of blood, but are merely the response of the blood-forming organs to some injurious influence affecting the blood primarily. This response is entirely different in myeloid and in lymphatic leukemia. In the myeloid form the myeloid transformation going on in the liver and spleen restores to these organs the aspect and functions of embryonal existence. All the changes observed in the course of pernicious anemia in the various blood-forming organs, he states, are compensating processes against primary injury of the blood, and not megaloblastic degeneration of the bone marrow. The process of myeloid transformation of the liver and spleen can be induced in rabbits by injury of the blood. The process of regeneration in the blood-forming organs in these cases parallels the restitution of the blood picture and general condition.



66. **The Colon-Typhoid Group in Relation to Affections of the Biliary Passages.**—Blumenthal reports a number of cases showing the predominance of the colon bacillus and the typhoid bacillus in the etiology of biliary affections. The colon bacilli found differed in some respects from the ordinary *Bacillus coli communis*. If the latter is found it generally proves to be a secondary invasion, probably by way of the blood. In one of the cases reported the first symptoms of cholecystitis were observed seven years after typhoid fever, but typhoid bacilli could be cultivated from the bile. In another case typhoid bacilli were found in the normal biliary apparatus six months after the patient had recovered from typhoid fever. In another case severe cholecystitis developed and typhoid bacilli were cultivated from the bile after cholecystostomy, but there were no symptoms to suggest typhoid fever at the time or previously. The agglutination test was at first negative, but later gave positive findings. In 3 other cases primary typhoid or paratyphoid infection of the gall bladder caused a more chronic cholecystitis. Blumenthal reviews a number of similar cases of extra-intestinal localization of typhoid infection, simulating and listed as pneumonia, nephritis, cholecystitis, etc., entirely free from symptoms on the part of the intestines. The bacilli probably reach the biliary apparatus by way of the blood, and may lurk there undetected for years, passing at times into the intestine and voided in the stools, thus proving a source of infection for others, the more dangerous as nothing in the past of such persons suggests the possibility of their being bacilli carriers. It is notable, he adds, that in nearly every instance bacilli carriers suffer from gallstones. The agglutination test is valuable in such cases, being positive in his experience in every case, both chronic and acute, when typhoid infection was present or had been present at any time. No connection between agglutination and icterus was evident. Operative intervention is the only means known to date for the certain removal of typhoid bacilli from the gall bladder. Paratyphoid bacilli vanished from the stool in one case after a gallstone operation, and examination a year later confirmed their absence. The typhoid bacilli also vanished from the stools in from 11 to 15 days after the gallstone operation in the cases reported.

67. **Influence of Hydrochloric Acid on Pepsin Indigestion.**—Müller's conclusions from his research are to the effect that the best conditions for digestion of albumin occur when the albumin is dissolved in a low concentration and the total bound acidity is low. Increasing amounts of free hydrochloric acid then promote the pepsin digestion to a certain favorable point, which remains constant. In case of high total acidity, the same amounts of free hydrochloric acid have no influence on the pepsin digestion, he states, or may possibly hinder it. From this point of view gastric digestion may be divided into two types: The first characterized by more solid consistency of the stomach content, high total acidity, lack of free acid (dogs, cats); the second by more fluid stomach contents, low total acidity, and an excess of free hydrochloric acid (man, pigs). The facts cited explain, he believes, the numerous contradictory findings in the literature and the behavior of the free hydrochloric acid in the various animal species.

68. **Elimination of Euglobulin in Amyloid Affections.**—Zak and Necker describe 11 cases of amyloid degeneration of kidney, liver or spleen in which the discovery of euglobulin in the urine revealed the existence of the amyloidosis. They describe the technic for the determination of euglobulin and assert that positive findings will be found a valuable aid in the differentiation of amyloid affections.

69. **Polyuria with Contracted Kidney.**—Nagel found polyuria in 47 per cent. of 63 cases in which the diagnosis of contracted kidney was confirmed by the postmortem findings. Excluding 7 patients in whom the polyuria was evidently the result of the subsidence of edema, this leaves only 33.3 per cent. Nocturnal polyuria was observed in 25.5 per cent.

70. **Disturbance in the Power of the Heart Muscle to Conduct the Impulse.**—Joachim relates the further history of the 4 patients whose cases were described in volume lxxxv of the *Archiv*, and reports 2 new cases of unmistakable disturbance

in the power of the heart muscle to pass the impulse onward from the auricle. One is particularly interesting, as the gradual return to normal could be traced. This patient was a robust young workman, with acute endocarditis accompanying recurring polyarthritides. The typical symptoms of disturbance in the conductivity occurred abruptly and subsided again; they had entirely vanished by the end of the second day. No cause for it could be ascertained. If the radial pulse and the cardiogram alone had been the criteria, the disturbance of the conductivity would not have been discovered. The venous pulse gave the clue.

72. **Reciprocal Relations Between Various Syndromes of Typhoid Fever.**—Ebstein describes a case of typhoid fever with extremely violent nervous disturbances and only insignificant typhoid lesions in the intestines, and reviews others like it from the literature. They suggest the possibility, he remarks, that mixed infection occurs with typhoid more frequently than has been generally supposed. The secondary germs may penetrate from without, but the probability is stronger in favor of the coincidence of typhoid fever and sepsis from auto-intoxication. If serum treatment of typhoid fever is to be successful, this possible factor in the symptom-complex must not be neglected.

#### Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 77 (XXXIII, No. 3, Pp. 89-128.) Behavior of Certain Reflexes During Sleep. (Verhalten einiger Reflexe im Schlaf.) R. Kutner.
- 78 Fat from the Bodies of Streptothrix an Effectual Immunizing Substance for Leprosy. (Ein bakterielles Fett als imm. Substanz bei der Lepra.) Deycke Pascha and Reschad Bey.
- 79 \*Treatment of Fracture of Humerus During Birth. (Behandlung der intra partum entstandenen Humerusfraktur.) C. Stuhl.
- 80 Treatment of Large Umbilical Hernia. (Grosse Nabelschnurbrüche). L. Fiedler.
- 81 Thermophore Cap and Brow Bandage. (Elastische Thermokopfkappe und Thermostirnbinde.) L. Gross.
- 82 Public Provisions for Pregnant Women with Venereal Disease and for Children with Inherited Syphilis. (Geschlechtskranke Schwangere und heredit. syphilitisch Kinder.) A. Buschke. Commenced in No. 2.
- 83 Medical Notes from the Gold Coast. (Ärztliche Erfahrungen, etc., auf der Goldküste.) H. Vortisch.

79. **Fracture of the Humerus During Birth.**—Stuhl gives illustrations of a simple method of pulley extension with a half pound weight which he used for the fractured humerus of a new-born infant. He allowed the skin to dry out for two days after birth, and then adjusted the adhesive plaster dressing, splint and extension, with the infant lying in its wagon, the pulley was fastened to the handle of the wagon. The child, who had screamed constantly with the pain, quieted at once after extension was applied, and the results, functional and otherwise, were most excellent.

#### Münchener medizinische Wochenschrift.

- 84 (LIV, No. 3, pp. 105-152.) The Air and the Lymph in Origin of Pulmonary Tuberculosis. (Aero-lymphogene Lungentuberkulose.) N. P. Tendeloo.
- 85 \*Transmission of Syphilis to Rabbit Eye. (Exp. Uebertragung der Syph. auf Kaninchenaugen.) A. Schucht.
- 86 \*Rudimentary Eventration. (Rud. Eventration.) F. A. Hoffmann.
- 87 \*Sanatorium Treatment of Heart Disease, and Its Indications. (Anstaltsbehandlung der Herzkranken.) T. Büdingen.
- 88 \*Permanent Cures with Tuberculin Treatment. (Dauererfolge mit Tub.-Behandlung.) W. Roemisch.
- 89 \*Treatment of Delirium Tremens. (Del. tremens.) S. Ganser.
- 90 Care of Idiots in Germany. (Idiotenfürsorge.) W. Weygandt.
- 91 Treatment of Hammer Toe. (Hammerzehen.) Mittermaier.
- 92 To Find the Round Ligament in the Inguinal Canal. (Lig. rotunda im Leistenkanale.) Reismann.
- 93 Breast Pump to Obtain Aseptic Milk. (Neue Milchpumpe.) W. Kaupé.
- 94 Polyneuritis of Fowls and Beriberi Not Due to Oxalic Acid Poisoning. (Polyneuritis der Hühner und Beri-Beri, eine chron. Oxalsäurevergiftung?) F. Eljkmann.

85. See editorial in THE JOURNAL, page 613.

86. **Practical Importance of Rudimentary Eventration.**—The conditions caused by displacement of internal organs are likely to be mistaken for affections with which they have nothing to do, and treatment based on this erroneous conception is apt to aggravate the symptoms. Distension of the stomach or intestine may push the diaphragm up on one side, and, if the diaphragm is weakened from any cause, it is liable to stretch permanently. The patients complain of feeling puffed up, especially after meals, and the region below and near the left hypochondrium protrudes. Heart disturbances are observed at the same time, oppression in the chest and



short breathing, with pronounced irregularity of the pulse and sometimes distress. These symptoms may increase to actual dyspnea, with cramp-like pains radiating to the left shoulder and to the right side, with possibly syncope. Roentgenoscopy clears up the diagnosis by showing the eventration, and treatment to avoid distension of the stomach and constipation will save the patient from severe disturbances and promote the restoration to normal of the parts. Hoffmann called attention to this class of cases some time ago, calling the condition "chronic balloon stomach" (Magenblase), and describes some cases in which he was able to trace the development of the condition almost from the first, with reproductions of some of the radiographs. Small amounts of food at a time and avoidance of much drinking and of soups and milk will help to avert distension, but still more important, he says, is the care of the left diaphragm. No violent exercise should be allowed, no running, lifting or carrying heavy weights, but the diaphragm should be strengthened by systematic exercises. Deep inspiration as the left arm is lifted, with pressure on the right side, several times a day, with the clothing removed, is the first step in such treatment, and Faradization may be useful as an adjuvant.

**87. Institutional Treatment of Heart Affections.**—Among the points emphasized by Büdingen is the great value of the rest cure in treatment of heart affections, and the benefit of quiet. In his sanatorium he has one hall in which no talking is allowed, and the patients are relieved from questions and chatter, although in the other halls there are no such restrictions. In health, the difference between the pulse, lying and standing, amounts to 9 beats in a minute, as a rule, a saving of 8,640 contractions of the heart in the course of the day. When the heart is irritable and weak this difference may amount to 30 or 40 a minute, with a total saving during the day of 28,800 contractions. The rest cure is taken out of doors part of the day, sometimes on one of the lake steamers. Everything is done to eliminate all the extra irritations of life; too affectionate and anxious friends are excluded. Büdingen allows alcohol only as a medicine, with extremely rare exceptions. He has a trained physician for each 20 or 30 patients, and the physicians meet for conference every day. Dietetic regulations are much better enforced in a sanatorium, he declares, than at an ordinary health resort, and this is especially important in case of heart disease. In impending or existing insufficiency of the heart, with complicating arteriosclerosis, he has found a milk diet useful, as also milk porridges. Whether to send a patient to a sanatorium or to a health resort depends not only on the severity of the heart affection, but also on the patient's temperament, whether he needs distraction or quiet. The optimists, who regard each trifling improvement as a complete cure, and then overtax their powers, belong in the sanatorium, as also patients with strong will who stride ahead forgetting their bodily weakness, and also lazy patients who need spurring.

**88. Remote Results of Tuberculin Treatment.**—Four years ago Roemisch of Arosa published an account of his success with tuberculin in treatment of pulmonary tuberculosis. He has since had more extensive experience, the results confirming his previous assertions. Acute febrile cases contraindicate tuberculin; its special field is in the cases of long-continued, obstinate tuberculosis, dragging along for months unimproved by other measures. He keeps the dosage at the point where a local reaction is induced without a violent reaction. The signs that the limits of tolerance are being passed are disturbance in the general health, depression, loss of appetite, disturbed sleep, pains of varied kinds and increased expectoration. A slight rise of temperature is significant, especially in the morning and evening. He has found it a great assistance to change from one make of tuberculin to another at times, thus being able to continue without reducing the dose when symptoms of disturbance appeared.

**89. Treatment of Delirium Tremens.**—Ganser witnessed the collapse and death of a robust man in delirium tremens while being given a prolonged warm bath. One of his patients succumbed in collapse during a wet pack, and he has consequently abandoned these measures. In treatment of 1,051

cases of delirium tremens in the last 16 years, he has made it a rule to allow no alcohol. In the first series of 486 cases the mortality was 6.37 per cent., while in the last 565 cases it has been only 0.88 per cent. He ascribes this improvement in the results to his observation of the fact that the cause of death in delirium tremens is generally paralysis of the heart, and he now addresses treatment to the heart regardless of whether cardiac symptoms are apparent or not. The agitation and motor excitement reacts on the heart, and signs of heart weakness soon become manifest. He makes it a rule to give digitalis from the very first, giving 1.5 gm. in an infusion in the course of the day and repeating this dose two or three times. If it can not be given by the mouth, he gives it in a rectal injection. At the first signs of heart weakness other heart tonics are used; 1 gm. of camphorated oil is injected subcutaneously every hour or so until the critical symptoms subside. A tablespoonful of ice-cold champagne every half hour was also found useful—the only way in which he allows alcohol. To promote the washing out of the toxins causing the attack, he has the patients drink copiously, and supplies them for the purpose with a drink which has the color of beer and tastes refreshing, and is taken eagerly by the delirious patient. It is merely a 1 per cent. solution of sodium acetate in water, to which a little common syrup has been added.

#### Riforma Medica, Naples.

*Last indexed XLVII, page 2178.*

- 95 (XXII, No. 48, pp. 1317-1344.) \*Importance of Abstinence from Alcohol in Treatment of Cardiovascular Affections. (Malattie cardio vascolari.) G. Galli.
- 96 \*Autoserotherapy in Serofibrinous Pleurisy. (Cura di Gilbert nelle pleuriti.) F. Fede.
- 97 \*Atypical Form of Amyotrophic Lateral Sclerosis. (Sclerosi lat. amiotrofica.) A. Santini.
- 98 (No. 49, pp. 1345-1372.) Two Cases of Sarcoma in Retained Testicle. (Sarcomi in testicoli ritenuti nella cavita addom.) V. Cocuzza.
- 99 Suture of the Heart. Recovery. (Sutura del cuore.) G. Bufalini.
- 100 \*Dechloridation in Treatment of Heart Affections. (La cura decolorante nelle malattie di cuore.) R. Massalongo and G. Zambelli.

**95. Importance of Abstinence from Alcohol in Treatment of Cardiovascular Affections.**—Galli comments on the wide difference in the views entertained by physicians in regard to the use of alcohol in treatment. The sudden suppression of alcohol, in persons addicted to its use, in the course of pneumonia may entail serious symptoms. The metabolism is exaggerated in this disease, and the excessive drain on the albumin and fats can not be met by rational feeding, so here alcohol answers a purpose. With affections of the heart and vessels the conditions are entirely different. Patients with failing compensation, edema and pronounced arrhythmia, habituated to the use of alcohol, can drop it suddenly and completely and benefit enormously thereby. His experience with 60 cases has been decidedly favorable to the absolute suppression of alcohol in case of any tendency to cardiac incompetency, even for hard drinkers, and Hernung says the same from an experience with 1,450 cases. Galli comments on the idea that alcohol gives strength, citing researches which prove that it is detrimental to literary work and that soldiers and others taking alcohol, even in small amounts, feel fatigue more readily. Galli's own special research at Baccelli's clinic has demonstrated that alcohol has a tendency to induce dilatation of the heart while lowering the blood pressure. This is noticeable even in healthy persons. Roentgen examination by the orthodiagraphic method shows that the diameter of the heart may increase by 2 cm. in the course of a few hours, even when the patient is in complete repose. The sphygmomanometer and tonometer show that during the first 10 minutes the blood pressure rises, but then it falls, the difference in the pressure reaching 30 mm. at times. It is this first rise in the blood pressure which has been the cause of the general and mistaken impression in regard to the strengthening action of alcohol, and has led to the abuse of small doses of alcohol in physical and nervous exhaustion or depression from any cause. This abuse forms a grave vicious circle, as larger and larger doses are required each time to produce the desired effect. Even when a stimulant is really needed the physician should not use alcohol, but some other tonic or some external manip-



ulation which would answer the same purpose. If physicians would do this, they would aid greatly in abolishing the popular prejudice in regard to the tonic action of alcohol and further the solution of the great and serious problem of alcoholism. The need of a stimulant is not so frequent as many suppose. In persons addicted to the use of alcohol the supposed need is merely the effect of the depression resulting from the preceding dose. Suppression of alcohol raises the resisting powers so that operations can frequently be undertaken which had little prospect of success before. Even in elderly persons with heart affections, Galli has been able to withdraw as much as 2,400 gm. of effusion from the pleura and then have the patient stand for orthodiagnostic examination, without any modification in the pulse or respiration or tendency to faint. In cardiovascular affections, the preceding use of alcohol may have been the principal or at least an adjuvant factor. He ascribes the increasing number of cases of heart weakness and heart failure to the increasing use of alcohol. Patients on the road to recovery from pneumonia or the like succumb suddenly to heart failure, as the heart muscle has been weakened by the use of alcohol. He urges physicians to study the effects of what he calls "small alcoholism" in their hospital patients, and to separate them into two groups, those treated with and without alcohol, to study its pathologic action on a large scale.

**96. Autoserotherapy in Pleurisy.**—Fede reports 5 patients with pleurisy treated by withdrawal of 1 c.c. of the pleural effusion, which was then reinjected at another point, near the posterior axillary line, on the other side. This was repeated three times, on successive days, in the acute cases, and the effects were excellent. No other treatment was used, and in every case recovery was rapid. In more chronic cases a larger amount of the effusion was reinjected, up to 4 c.c. and more. There was no reaction, local or general, except in one case of tuberculous origin, and in this the prostration and rise in temperature subsided during the night. The reaction always observed in the tuberculous cases and never in the others, suggests that this measure might serve to differentiate them.

**97. Atypical Lateral Amyotrophic Sclerosis.**—The symptoms and postmortem findings in the atypical case reported are described and illustrated. The affection had an almost acute onset, and ran a very rapid progressive course in eight months with intense, continuous pain with paroxysmal exacerbations, and localization of the contractures and of the amyotrophic changes solely in the flexor muscles of the legs, absence of the tendon reflexes, paralysis of rectum and bladder, and trophic disturbances in the skin. The lesions of Charcot's disease were accompanied by those of chronic leptomeningitis with involvement of the posterior spinal roots.

**100. Deprivation of Salt in Treatment of Heart Affections.**—Massalongo and Zambelli give the particulars of 3 cases of severe cardiac defects carefully studied under the influence of dechloridation. The first patient was a woman of 36 with mitral stenosis, the relics of acute articular rheumatism two years before. The second patient was a man of 59 with chronic aortitis in the cardio-mitral stage of aortic insufficiency, with extensive edema of the legs and slight pulmonary edema and the hypochondriac organs enlarged and congested. The third patient was a woman of 30 in the eighth month of pregnancy, with complete asystoly from mitral insufficiency and stenosis consecutive to rheumatic infection. Experience with these cases and review of the literature have confirmed anew, he declares, the importance of sodium chlorid in the phenomena of asystoly and edema in case of cardiac incompetency. Retention of sodium chlorid is a constant phenomenon in such cases during failing compensation, and the retention of sodium chlorid is accompanied by dropsical accumulations in the tissues. In these circumstances mere restriction of the amount of salt ingested daily in the food may be sufficient to restore the balance and it may be followed by retrogression of the signs and symptoms of cardiac disturbance. Testing with restriction of salt is an excellent means for investigating the functional condition of the heart, both for diagnosis and prognosis. When mere dechloridation alone is not enough to banish the signs of asystoly, then administration at the same time

of a diuretic or heart tonic will accelerate its effect. On the other hand, the heart tonic or the diuretic alone may not be able to display its characteristic and needed action until it is supplemented by withdrawal of salt from the food. As the intake of salt is reduced, the output of urine is increased and this relieves the edema and thus removes the peripheral obstacles to the action of the heart. Dechloridation has thus not only a dehydrating and regulating action on the heart functions, but also serves to relieve the system of the deleterious action of the other elements of the urine retained with it, and thus wards off uremic phenomena or dispels them if already present. Determination of the daily elimination of the chlorids in the urine should be the guide for all therapeutic indications for patients with cardiopathies. It is necessary for the physician to have an exact knowledge of the various articles of diet and of their salt content. Massalongo and Zambelli gave their patients milk and unsalted bread and unsalted meat, supplemented in the pregnant woman with a diuretic. Milk alone contains too much salt for dechloridation purposes, especially as it introduces so much fluid into the organism.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**DISEASES OF THE LUNGS.** Designed to be a Practical Presentation of the Subject for the Use of Students and Practitioners of Medicine. By Robert H. Babcock, A.M., M.D., Consulting Physician to Cook County Hospital. Twelve Colored Plates and 104 Text Illustrations. First Edition. Cloth. Pp. 809. Price, \$6.00. New York: D. Appleton & Co., 1907.

**ESSENTIALS OF OBSTETRICS.** By Charles Jewett, A.M., M.D., Sc.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, assisted by Harold F. Jewett, M.D. Third Edition Revised and Enlarged. Thirty Illustrations and Five Colored Plates. Cloth. Pp. 413. Price, \$2.25 net. Philadelphia: Lea Bros. & Co., 1907.

**MEDICAL DIAGNOSIS.** A Manual for Students and Practitioners. By Charles Lyman Greene, M.D., Professor of the Theory and Practice of Medicine in the University of Minnesota. With Seven Colored Plates and 230 Illustrations. Flexible Leather. Pp. 683. Price, \$3.50. Philadelphia: P. Blakiston's Son & Co., 1907.

**TWENTY-FIRST AND TWENTY-SECOND ANNUAL REPORTS** of the Board of Managers and Superintendent of the North Texas Hospital for the Insane, Terrell, Texas. J. S. Turner, M.D., Superintendent. From Sept. 1, 1904, to Aug. 31, 1906. Paper. Pp. 61. Austin: Von Boeckmann-Jones Co.

**A STUDY OF THE HUMAN BLOOD VESSELS IN HEALTH AND DISEASE.** A Supplement to "The Origin of Disease." By Arthur V. Meigs, M.D., Physician to the Pennsylvania Hospital. One Hundred and Three Illustrations. Cloth. Pp. 136. Price, \$5.00. Philadelphia: J. B. Lippincott Company, 1907.

**SPECIAL BULLETIN OF THE STATE BOARD OF HEALTH.** Sanitary Legislation in the United States Enacted During the Year 1906. Compiled for the State Board of Health of Rhode Island by Charles V. Chapin, M.D. Cloth. Pp. 102. Providence: E. L. Freeman Company.

**COMPEND ON BACTERIOLOGY,** Including Animal Parasites. By Robert L. Pltfield, M.D., Pathologist to the Germantown Hospital. Four plates and 80 Other Illustrations. Cloth. Pp. 232. Price, \$1.00. Philadelphia: P. Blakiston's Son & Co., 1907.

**NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.** Transactions of the Second Annual Meeting, Washington, D. C., May 16 to 18, 1906. Paper. Pp. 638. Lancaster, Pa.: The New Era Printing Co.

**SEX AND SOCIETY.** Studies in the Social Psychology of Sex. By W. I. Thomas, Associate Professor of Sociology in the University of Chicago. Cloth. Pp. 325. Price, \$1.50. Chicago: The University of Chicago Press, 1907.

**THE NEW HYGIENE.** Three Lectures on the Prevention of Infectious Diseases. By Elie Metchnikoff, with preface by E. Ray Lankester. Cloth. Pp. 104. Price, \$1.00 net. Chicago: W. T. Keener & Co., 1906.

**EIGHTEENTH ANNUAL REPORT OF GRACE HOSPITAL,** Detroit, Mich. Incorporated Nov. 28, 1888. Opened for Reception of Patients Dec. 6, 1888. Paper. Pp. 42. Detroit: Lawrence Printing Co.

**FOURTH ANNUAL REPORT OF THE COMMITTEE ON THE PREVENTION OF TUBERCULOSIS** of the Charity Organization Society of the City of New York. For the Year 1905-1906. Paper. Pp. 141. New York.

**TWENTY-THIRD ANNUAL REPORT OF THE KENSINGTON HOSPITAL FOR WOMEN,** for the Year Ending Oct. 1, 1906; 136 Diamond St., Philadelphia. Paper. Pp. 33.

**MONTHLY SUMMARY OF COMMERCE AND FINANCE OF THE UNITED STATES.** December, 1906. Paper. Pp. 1362. Washington: Government Printing Office, 1907.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII.

CHICAGO, ILLINOIS, MARCH 9, 1907.

No. 10.

## Original Articles

### THE TECHNIC OF LAMINECTOMY.\*

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SAN FRANCISCO.

From a fairly long training in the conservatism of orthopedic surgery, to which at one time I devoted practically all my efforts, I have developed a tendency to prefer, in general, those operative methods which conserve tissue, and especially if the tissue so saved can be expected to be of use to the patient. That the laminae of the vertebrae were originally of use, to protect the cord and to give points of attachment for spinal muscles was obvious; that they would still be of use if, after a laminectomy, they could be restored to position and function seemed good reasoning; that this could be done I believed had been demonstrated, and I was impressed somewhat with the description of the operation as given by Bickham.<sup>1</sup> There was nothing new in this description, but it came at a time that was, or seemed, opportune, for Dr. Leo Newmark and I had been waiting and watching many years for a tumor of the spinal cord, and one presented itself just about the time when Bickham's paper was in my mind.

The history of this tumor of the cord is not germane to this paper. It may suffice that symptoms of pressure on or involvement of the left side of the cord at about the level of the fourth cervical vertebra had gradually developed, that the pain had finally become unbearable and the disability was steadily increasing, so that the patient was ready to submit to the operation.

#### TECHNIC.

*A priori*, the osteoplastic method, because of its more nearly restoring the integrity of the spine, should be especially preferable in the cervical, and perhaps, too, in the lumbar region, for in these regions the vertebrae are not fortified and braced by the attachments of the ribs, as is the case in the dorsal region. It was, therefore, the operation I selected, and I rehearsed it on the cadaver, for, while laminectomy plain was not new to me, the osteoplastic operation in the neck was new. The extensive incisions in the muscles and the great mobility of each individual cervical vertebra were the points for comment in this rehearsal, but my general impression was that the operation was practical, and so I decided to do it. It was done by turning up a quadrilateral flap containing skin, fascia, muscles and the laminae of the third and fourth cervical vertebrae. The outlines of this flap on the skin were broader than were the incisions as they approached the bone, so that the whole flap was practically beveled, getting narrower in the deeper parts. I found it impossible to cut the muscles of the deeper

parts of the neck with the scalpel. They rolled up before the knife, or slipped to one side, or became spasmodically contracted and pulled out of the way. The latter part of the section of the muscles had to be done with scissors, the muscular tissue being caught with forceps so as to hold it still. In addition to this difficulty, there was a plentiful amount of hemorrhage from small and medium-sized vessels. The flap, when it was formed, seemed a most disorganized mass of tissue, for the areolar planes between the different anatomic layers permitted so much latitude of movement that the effect was as if the part had been mutilated. The section of the bones had been intended to have been made with the Doyen saw, but the wound was so deep that the saw was wholly inadequate, and so I used a pair of Liston bone forceps, curved on the edge that had served me before for this same purpose. The exposure of the cord, after splitting of the dura mater, was satisfactory and one could easily look up into the skull and see the under surface of the cerebellum, but the tumor, which was found as had been expected, extended down below the level of the fifth lamina, and so, without any attempt at more osteoplastic work, the laminae of the fifth and sixth vertebrae were resected by pushing the muscles away from them by blunt dissection, cutting the bones near the pedicles and removing the fragments. The tumor was a layer of sclerotic fibrous tissue closely attached to the surface of the cord and dipping down somewhat into its substance. It was impossible to remove it without serious damage to the cord, and so it was left *in situ* and the wound closed. As the flap was folded down the third and fourth laminae fell back easily in place and the muscles were then fastened by interrupted chromicized sutures. It was impossible, however, to make an anatomic union of the cut muscles. Never had the muscles of the neck seemed such a hopeless tangle. I had to be content with a few sutures at points where they seemed to be needed. The tendon of the trapezius was accurately closed and so was the skin. A small drain was put in to take away the serum that was sure to be the result of such an extensive incision in the muscles.

#### PLAIN LAMINECTOMY AND THE OSTEOPLASTIC OPERATION.

From this experience with this operation I can easily see that it would have been better had I done the ordinary laminectomy instead of doing this very difficult osteoplastic operation. I should have saved time, and I should have saved tissue, and I think I should have saved function. I do not believe that the laminae of the third and fourth cervical vertebrae, for the conservation of which the whole technic was planned, were worth the trouble; nor will they be worth it to the patient.

A laminectomy in the cervical and perhaps in the lumbar region is very different from one in the dorsal region, for in the dorsal region the spine is convex posteriorly (kyphotic) and in the cervical and lumbar re-

\* Read before the Western Surgical and Gynecological Association, August 31, 1906, at Salt Lake City, Utah.

1. Annals of Surgery, 1905, March.



gions the spine is concave posteriorly (lordotic). Now, in the lordotic region, the muscles which pass over more than two vertebræ are chords of arcs of various lengths. In kyphotic regions the muscles which pass over more than two vertebræ practically use the intermediate bones as pulleys around which their force is passed from the origin to the insertion of the muscle. Removing the laminae of the cervical vertebræ, in a lordotic region, does not interfere with the effect of the muscles which span the gap, for they are still chords of the arc, and they will still extend the spine in this region. Removing the laminae in the dorsal kyphotic region takes away the pulleys from the muscles and permits them to fall to deeper levels and makes them approach, perhaps, in function, the flexors of the spine by robbing them of their power to extend it. At any rate, it permits the balance of power to pass to the flexor side of the spine. From this reasoning it seems to me that the osteoplastic method would be preferable in the dorsal spine because of the retention of the laminae and spinous processes and the preservation of their pulley effect on the muscles of extension. But in the cervical spine (this may be true also of the lumbar spine) the preservation of the laminae is not necessary for the preservation of the extensor function of the extensor muscles.

Furthermore, in the osteoplastic method, the muscles are seriously implicated, for they are included in the flap, and consequently they must be cut across at the lower limit of the flap, and that they may unite again accurately and resume function is a question, for not only is accurate anatomic suture impossible, but the innervation of the muscle may be, and very likely is, interfered with by the lateral incisions, especially the semi-spinalis colli and the cervical multifidus, which lie wholly in the area of the flap, so that the osteoplastic method in the cervical region must be considered to be a surgical exploit, done for the sake of saving small fragments of bone whose value is questionable, and also at the risk of interfering with the musculature of the part by cross sections of large groups of important muscles, and perhaps by the sections of the motor nerves of these muscles.

To get some personal information as to the preferences of others on this point I asked the opinions of Bevan, Binnie, Willard, Cushing, Bloodgood, Munro, Moore, McArthur, Bradford, McCosh, Richardson, Gibney, and Abbe. The poll of votes was unanimously in favor of laminectomy plain, with no osteoplastic frills. The only differences of opinion were in matters which were legitimately matters of taste, to wit: the choice of instruments for cutting the laminae, after they had been cleared of the soft tissues, including, always and especially, the periosteum. Binnie prefers an osteotome. Moore a chisel; every other selected rongeurs or a Devil-bis forceps. Moore added that he no longer sutured the meninges; the omission saved time and the result was equally good: he has found, however, that sometimes a transverse cut in the soft tissues gave him more room when he wished to expose some of the deeper parts. McCosh's relation of the fact that he several times had started his operation with the intention of doing an osteoplastic resection and had reverted to the simpler technic was very frank and very consolatory. Abbe's operation differs from the others in that he saves the spinous processes and the important supraspinous and interspinous ligaments; he certainly thereby lessens the amount of hemorrhage, which is an important item, for he minimizes the cutting and one would think that in

a spine so operated on the conservation of the ligaments would lessen muscular work in the maintenance of the erect position. Cushing made the very important contribution of the fact that in repeating the operation on the same patient a year after the first event, he had found new arches produced from the conserved periosteum. If this can be expected in all cases it obviates entirely the need for the osteoplastic method in almost all instances. This bone regeneration with Abbe's saving of the spinous processes should give a spine functionally identical with the original state.

#### THE OSTEOPLASTIC METHOD PRO AND CON.

And yet, in spite of this, I think that sometimes cases may arise in which the osteoplastic method may have a place, because of the immediate restoration of the arch of the laminae without waiting for the regeneration of bone. This is in cases of vertebral tuberculosis in which the angular deformity of the kyphos is practically a right angle. In these spinal columns, as can be seen if a longitudinal section of the bones be made, the bony canal is itself contracted antero-posteriorly and the cord has very little room and surely none to spare. If such a spine be subjected to a plain laminectomy, with sacrifice of the spinous processes and laminae, the uncut longitudinal spinal muscles fall back not to their original level but to a deeper level, and lie in the sulcus between the articular processes, resting on the peridural fat. Beneath this is only the dura mater and the cord, and the latter must take the major part of the pressure which these muscles originally made on the laminae in pulling around the kyphos as around a pulley.

Because of this concept of the mechanics of the condition, I essayed the osteoplastic method a second time, shortly after the operation on the patient already reverted to, in the case of a young girl, paralyzed for more than a year from the pressure of a right-angled kyphos due to vertebral tuberculosis in the upper dorsal region. To my disappointment I could not make any ordinary forceps nor the Doyen saw cut the laminae satisfactorily at their outer limits, and I was obliged to use the Keen forceps beginning to bite away the bone at the center of the arches. This changed the osteoplastic into a plain laminectomy, and as I went on I found that absorption of the bodies of the vertebræ had been accompanied by ankylosis of the spinal articulations and fusion of the laminae, this condition accounting for my inability to get the blade of any ordinary forceps between them. Nothing much better could be asked for so far as the result in the bones was concerned, but the cord demanded relief from pressure and the laminae had to be cut away. The muscles were replaced and sutured, healing occurred without trouble, and the girl recovered in a surprisingly short time from her paralysis: in fact, the day following the operation she could move her feet and legs not a little. But each time that I have left her in bed without spinal traction, so that she could use the spinal muscles some and move her head about, or have tried to get her up, even though I had her in most carefully planned and well applied plaster-of-Paris apparatus, holding head, neck and trunk, her paralysis has deepened, while each time that I have put her back in bed and reinstituted spinal rest and spinal traction the paralysis has disappeared. Of course, it is a debatable point as to the exact tissue causing the pressure on the cord, but I can not myself put aside the idea that the muscles, even though in this case they had been cut in making the flap according



to the osteoplastic plan, made some pressure on the cord. No outside substance has made the pressure for that has been guarded against; if cicatricial contraction made it, relief would not follow simply on restoration of the spinal traction; nothing else in the spinal column or its environment could make the pressure. Spinal traction puts these muscles wholly at rest and the paralysis then disappears. I can not myself explain the phenomenon on any other hypothesis.

Now if I am right the osteoplastic plan would have replaced the laminae where their pulley function could have been continued and the muscles have been held at a proper level. Pressure again on the cord might have been avoided and the permanence of the relief have been assured. It is in such a case as this that I believe the osteoplastic plan may have a legitimate use and in another such case I would again attempt the same operation.

There is one thing more to say about the condition of the patient on whom I completed part of my operation according to the osteoplastic plan. The support of the head is not adequate and it is said to be carried as if it were balanced on a pole, while movements of it are slow and difficult. All of the gentlemen who wrote me of this point said plainly that the loss of the laminae did not seem to weaken the spine; consequently I am safe in assuming that the extensive section of the muscles in this case is to be credited with causing the disability noted.

As against the operation we may range the facts that it is done for the sake of saving fragments of bone which are not indispensable, and which are most likely to be replaced at a later date; that it necessitates a section of the muscles which leaves the spine with adequate muscular control; that it substitutes a difficult and long procedure for one that is comparatively easy and short.

In favor of the method I can only say that it seems to me to be applicable to those cases of right-angled kyphos in which it is necessary to have at once the restoration of the laminae to protect the cord from the pressure of the overlying muscles.

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## MEDICAL TENDENCIES AND MEDICAL IDEALS.\*

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The custom of opening the college session with a general address is an appropriate one, for it affords an opportunity to discuss some topics of interest alike to the medical student and teacher which are not provided for in the curriculum. It is well at times to take a somewhat general survey of our profession, to study its tendencies and get possibly a clearer vision of what should be its ideals.

### MEDICINE AND MODERN SCIENCE.

In common with every branch of knowledge, medicine has felt the influence of the great advance in modern science. The progress made in the collateral subjects, biology, chemistry, physics, bacteriology, to which medicine is so closely related, has made necessary a general

readjustment of opinion. Slowly but surely the superstition, prejudice and ignorance or half knowledge of the past are vanishing before the light of modern discovery, and almost before our eyes a new science of medicine is being evolved.

The general attitude of our profession to-day may be characterized as one of scientific skepticism. It receives nothing on authority, no matter how ancient or honored. It places above everything else the ability to see things as they are, and to draw accurate conclusions from these observed facts. It desires to submit to a fresh examination, by the methods of modern science, every theory or practice and endeavors to make the new view correspond with the latest knowledge. It seeks to establish on a scientific basis every fact in etiology, every principle in diagnosis, every method of treatment.

Huxley says that one who exposes an old error should be as highly regarded as one who discovers a new truth. Therefore, we should honor the one as much as the other, for both are needed in the development of our science. In the overthrow of much of the ancient science of medicine, we must not at the same time lose the many valuable contributions of the past to the medical art, none the less real because sometimes based on wrong theory.

But this same new scientific spirit to which we owe so much has brought with it an incidental peril. While becoming more scientific, there is a great danger that medicine shall become less human. Is it not true that in magnifying the value of medicine as a science there has come about incidentally, and perhaps somewhat unconsciously, a disposition to depreciate the dignity and importance of medicine as an art?

The men of the laboratory to-day dominate medical thought. They form a sort of oligarchy, to whose decrees those who study medicine at the bedside only must needs submit, often with a subconscious feeling of their own inferiority. I can not myself resist the opinion that the man of the microscope and the culture tube occupies just now a place of too great importance, at least in the minds of the medical student and the younger practitioner.

The laboratory is rendering\* immense service to practical medicine to-day, but it can not do away with the necessity for careful bedside observation of the sick; nor are its conclusions to be regarded with the infallibility which, in the minds of many, attaches to them. The student of to-day is likely to gain the impression that unless they rest on laboratory confirmation all diagnosis is doubtful, all prognosis uncertain, and all therapeutics unscientific. The laboratory has its limitations which are as distinct as those of clinical medicine. It is to be regarded as supplementary, but not as the whole thing.

I have already said that the important part of the training of a physician is the formation of the habit of making his own observations and of drawing correct conclusions from them. He who flies to the laboratory for a solution of every problem presented in his practice soon comes to be dependent and neglectful, to distrust his own observations, and, finally, to undervalue all clinical observations. While, therefore, we appreciate this indispensable aid to medicine, let us not lean on it to the weakening of our powers of reasoning and observation. The men of the past who have given us those marvelous descriptions of disease derived their knowledge from careful personal observations with little aid from other sources. Let us see to it that this sort of study does not become a lost art.

\* Address delivered at the opening of the College of Physicians and Surgeons, New York, Sept. 26, 1906.



## MEDICINE AS AN ART.

Time was when medicine was thought of solely as an art, and the science of medicine can hardly be said to have existed at all. Until very recently nearly all who bore the title of doctor of medicine were practitioners. To-day there is a constantly increasing number who enter medicine with a view to becoming teachers, investigators, hygienists, public health officials, etc., but our medical education should not be shaped chiefly by their special interests or needs. Even in the aggregate their number is small when compared with the great body of medical practitioners. The lives of this class will be devoted to the care of the sick and injured, which they will do more or less efficiently according to their training and individual ability. For this class the art of medicine possesses an interest and importance which is hardly exceeded by the science of medicine, indispensable as that is. More men fail in the practice of medicine from their inability to understand and manage people than from their ignorance of medicine, colossal though at times that ignorance may be.

Exactly what do we mean by the art of medicine and how is it to be studied by one entering the profession? Medicine as a science has to do with disease; medicine as an art, with people suffering from disease. The difference between these two is a very real and important one. The science of medicine the student may learn from books, from lectures, in the laboratory, and in the post-mortem room. The art of medicine, or the manner of using this knowledge, he may acquire to some degree by a study of the ways of successful physicians, but in the main he must learn it through his own experience. In this, his previous general education and training and his experience in and his knowledge of the world count for much.

*Tact.*—The natural gift that perhaps contributes most to success is tact. It is called into requisition every hour of a physician's life. To meet and greet patients properly; to take a history which shall be at once brief, but accurate and comprehensive; to inquire into the innermost secrets of the private life of a man or woman with such tact and delicacy as to encourage confidence, but not give offense; to announce a prognosis which takes away all hope from an anxious family in a manner at once honest and sympathetic; to make a physical examination without giving pain or offending the sensibilities of a patient, and, at the same time, with a thoroughness which the gravity of the responsibility assumed demand; to make local applications in the way which shall cause the minimum amount of discomfort or pain; to combine unpleasant drugs so as to obtain the effects desired without unnecessarily disturbing the stomach or taste of the patient; to give personal attention to the minor details which contribute to the comfort of the person who is ill, even though his disease may be incurable, or, on the other hand, not serious: these are some examples of the physician's art. They are well worth his time and thought. Besides, we should not omit to mention the treatment of all patients, no matter how humble their station, with courtesy and consideration.

*Ability to Inspire Confidence.*—No part of the art of the physician is so essential to success as the ability to inspire confidence. Possibly so fundamental a quality as this should not be called an art; certainly it can never be artificial. While it belongs naturally to some persons, it can, to some degree, be cultivated by all. The qualities on which it depends should at least be appreciated by every one. While a certain something which stimu-

lates confidence may be inspired by the easy-going, optimistic man of plausible speech and sufficient assurance, yet the patient soon distinguishes the real thing from its imitations. At bottom the power to inspire confidence rests on ability and strength of personal character or integrity, and on nothing else does it long endure.

Said a gentleman to me, in speaking of James J. Hill, that he never left him without the feeling that he ought to sell everything else that he possessed and invest all in Mr. Hill's properties. Such a power to influence one's fellowmen is valuable in any calling, but in medicine it is indispensable. To be able on a short acquaintance, often after but a single interview, to inspire such confidence that a person may be willing to entrust his own life or that of one of his family to your judgment or skill, is a rare gift. Something of this power must be in the possession of every successful physician. With the world at large it counts for more than scientific attainments.

*Will Power.*—Next to the ability to inspire confidence must be placed that force of character which is required to make the patient act as we wish him to do, so to influence his will that he will carry out the advice which has been given.

*Discretion in Speech.*—Again, if he would preserve the confidence he has inspired, the physician must have discretion in speech. To know the family secrets of an entire community and never by word or look betray them requires rare judgment and self-control on the part of the physician, and also, we should add, of his wife, whom he too frequently makes his confidante in such matters.

*Sympathy.*—Sympathy more than any other quality wins the hearts and confidence of patients. The cold, calculating man, even though he be exact and skilful in his science, has never a warm welcome in the sickroom. To be only "a case," however interesting, and not a suffering fellow-being, is what a patient particularly abhors, and rightly. The physician should be hopeful and encouraging without being untruthful, flippant or insincere. He must have a keen sense of appreciation of exactly what it is that people most need in a physician. They call him when they are in pain, in trouble or in alarm. Besides physical relief, they want a certain moral support, some one to lean on, to allay their fears if they are groundless, as more often than not they are found to be.

*Regard for the Sensibilities of the Poor.*—One should never forget that the poor, as well as the rich, have their sensibilities which are often sorely wounded by the thoughtless and inconsiderate way in which they are treated by the physician of the hospital or dispensary. It is certainly true, as has often been remarked, that the poor have always proved the young physician's staunchest friends, whom he can not well afford to neglect or offend.

I have dwelt at some length on the present tendency to ignore the humanities of our profession and to think too much, or more exactly, too narrowly of medical science and too little of its practical application in real life. My reason for so doing is the feeling that this tendency is growing among us, fostered, as it often is, by habits acquired through education abroad. The importance to the physician of the virtues of self-control, honesty, frankness, sincerity and of such personal qualities as tact and sympathy should never be underestimated by the young physician, but should be cultivated with the



same assiduity as physical diagnosis or operative surgery.

#### TEMPTATIONS TO BE RESISTED.

*Commercialism.*—Of the prevailing tendencies in medicine the one most to be deprecated is that to commercialism. It is perhaps not surprising that our profession, in common with other callings, should feel the baneful influence of this spirit of our age. It is only another evidence of the fact that, in the public mind, material and financial success has come to overshadow every other form of achievement. Our times have witnessed many examples of the debauching of the legal profession to attain unscrupulous corporate ends. The law, it is said, has almost ceased to be a profession and has become only a business, adopting business methods and business standards. May this never be true of medicine. It is perhaps not to be expected that human nature should be changed by attaining the dignity of writing itself M.D. But inasmuch as the traditions of the medical profession are nobler and its responsibilities more sacred than those of most of the professions, the more to be deplored is the spirit of which we are speaking.

There are several different ways in which the commercial spirit may manifest itself in medicine. One of the most common springs out of an inordinate ambition for immediate success. It is not natural, it certainly is not desirable, that great professional success should come at once to a young physician just out of his college or hospital. Time is necessary for experience to accumulate and judgment to ripen. He who makes undue haste to succeed shall not be blameless. One with such ideals before him begins by making the shortest possible cut to knowledge. He often starts in practice as a specialist and wishes to be known at once as such. He is familiar with the fact that advertising is the secret of success in modern business. That shrewd advertising may bring business in medicine as well as in trade, the success of the numerous charlatans bears witness. But he does not wish to become an advertising quack and see his card in the morning paper. He adopts other devices. He advertises himself to his friends and acquaintances. His wife bends all her energies toward placing him before the public. He cultivates the acquaintance of the newspaper reporter, and soon his name finds its way often into the public press. He is interviewed in regard to the prevailing epidemic, or he is credited with performing some remarkable operation, or with some new ideas on the subject of the treatment of cancer or tuberculosis. In medical literature, also, his name is often seen. He rarely loses an opportunity to appear at medical meetings and is always ready to discuss the paper of the evening. His written contributions are apt to take the form of a citation of cases in which the newest remedy has been used, whose real purpose is to exploit the remedy and the doctor at the same time, his reward being a check from the manufacturer. His articles are then circulated as the "latest literature" on the remedy in question. There are other ways innumerable in which the advertising doctor seeks to advance himself. To narrate them is not profitable nor interesting.

To some, such practices as those described may seem only in bad taste; to others possibly as examples of an enterprise almost meritorious. But it is hard to draw the line as to how far one may go and yet preserve his reputation. Another man whose moral standards are not so high, or whose necessities are greater, actuated by this same motive to get business by every possible means, does not hesitate to take advantage of another physician

or to gain at his expense. He may even be tempted to go to greater lengths and finally end in practices absolutely dishonest.

*Judgment Biased by Monetary Considerations.*—The man who allows his mind to be dominated by a desire for financial success readily falls into another temptation, that of allowing his professional judgment to be warped by monetary considerations. Such a thing may come about so gradually that the man himself may hardly be conscious of it.

A well-known and very successful gynecologist said to me once that he had reached the conclusion that no man could be strictly honest and conduct a private hospital. This statement, although perhaps an exaggeration, expresses an important truth. The temptation may be great. The enterprise has imposed heavy financial obligations. It has not proved the success the surgeon had anticipated. The year has been a poor one; rooms are vacant and expenses are going on. A well-to-do patient seeks his advice. An operation is not necessary, and, though at another time the surgeon would not himself have advised it, he finds it easy to do so now, and possibly justifies himself by the thought that many of his colleagues would do the same. Such a step once taken, a similar decision is reached the second time with fewer misgivings, and soon the policy of doing operations with insufficient indications may become his established practice. If not an operative case, the patient may be induced to submit to prolonged but unnecessary and even useless treatment. There is a subtle temptation here for every physician or surgeon whose eye is always on the almighty dollar; but it comes with increased force to one whose financial needs are great. His vision of right and wrong must be very clear and his ethical standards high not to be biased in such emergencies.

Two years ago I was in attendance with another physician on the young child of a wealthy merchant, who was seriously ill and over whom was hanging the possible necessity of a grave surgical operation. The parents were naturally very anxious. When, after one of our consultations, the surgeon had left the house, the father said, "Do you think that man's judgment in deciding to operate would be influenced by the fee he would receive for it?" Happily, in this instance, I could say, "Emphatically no." Nor do I believe there are many men in the profession of whom it would be true. But this anxious parent expressed a distrust which many others have felt. Conceive, if you can, a condition of society in which such a feeling of suspicion should be general, or worse still, when it should be justified. What technical skill can ever take the place of moral character in a physician or surgeon? High ethical standards have been maintained in the past by the great body of physicians to a remarkable degree, often in the face of great temptation. Let us hope that the ideals of the physicians of the future may be just as high.

*Medical Graft.*—There is one other phase of commercialism seen in our day, which may be characterized as medical graft. This man does not conceal the fact that he is in medicine for what he can get out of it. With respect to every transaction he adopts the politician's anxious query, "Where do I come in?" His methods are well known. He visits the specialist, the surgeon, or consultant, ostensibly in behalf of his patient, and lets it be known that he expects "the usual percentage" of the fee in case the patient can be persuaded, intimating at the same time that if this is made satisfactory he will need



consultations in the case of other patients, and has other work which he can turn over to the surgeon. Medical grafters of this type, I am glad to say, are not numerous, but they are, I must believe from my information, increasing rather rapidly. Such a man may not be at heart dishonest. Let us try to follow his mode of reasoning. He begins by contrasting his own small fees and modest income with those currently reported of the specialist or surgeon. "Why should I not receive a suitable commission for the business I can control? There are plenty of skilful men who are willing to divide their fee with me. The patient is well served. Who, then, can complain?" Such a man belongs in business, not in a profession. He regards the patient as something in which he has personal or property rights, as a marketable commodity, which he is at liberty to dispose of to his own best advantage. He does not state it to himself in this way, for if he did he would see his error. But when such a principle of action is once adopted the interest of the patient is no longer his chief concern, but his own pocket.

There is yet another form of medical grafter who exacts from the apothecary a percentage of the receipts from his patient. "Perfectly legitimate," he says to himself; "I can command so much business, why should it not be worth something to me?" Soon, however, his interest is not that his patient obtains the best quality of drugs, accurately dispensed, but that his prescriptions are filled by the apothecary who promises him the largest percentage.

Why have I taken your time to rehearse this unsavory tale of greed and selfishness masking itself under the cloak of professional service? Chiefly that I may warn those who have not yet begun their professional work of certain temptations they are sure to encounter. Let those of you who have never felt the pressure of financial straits be charitable and let those who have be watchful.

#### ALTRUISM.

Something more is expected in professional life than in business. Be he lawyer, teacher or physician, his first, his whole interest, should be that of his client, his student, his patient. The physician starts out in life to serve his fellow-men, and the better the service he can render the greater his success; but the moment he comes to place his own interest above that of his patient he is lost. He has yielded to the same temptation as that which has brought disgrace and wrecked the reputations of many other men in positions of trust and responsibility in the business world.

When Napoleon III, in an interview with Pasteur, expressed surprise that he should not try to turn his discoveries to a source of profit to himself, Pasteur replied that in France a scientist would consider that he lowered himself by so doing; that a man of science would complicate his life and risk paralyzing his inventive faculties if he were to make money out of his discoveries. His time would be too much occupied to be free for new investigations.

Such has always been the spirit of the great minds in medicine. Let us be thankful for this uncommercial spirit which has been and is still the glory of our profession; which has given the results of its labors freely and without stint for the benefit of humanity; which has scorned to keep secret any discovery or to protect by patent any operation, instrument or device for the cure of disease. There is no antidote for commercialism like the love for science. If this is preserved, that can not flourish.

We constantly hear the statement that made medical science is losing its hold on the public. When one witnesses the extent to which quackery in one form or another flourishes, he may perhaps be disposed to believe that such is the case. I am inclined to think, however, that as a profession we get from the public about what we deserve, and if it be really true in any community that medicine is not held in so high esteem as it once was the principal reason is not lack of skill or scientific training, but because we have departed from the traditions of our fathers and have come to adopt lower ethical standards. It is to me always interesting and instructive to hear persons discuss their family physicians. The highest praise which can be pronounced and the one fact on which they dwell with the greatest satisfaction is that he can be trusted; that he can always be depended on to do his best in every emergency, but that he will not take risks in attempting what he is not competent to do. What avails the other qualifications of the physician if he has not been able to establish this feeling in his patient?

#### ELEMENTS OF A SUCCESSFUL CAREER.

The dangers which attend professional life are many. The road to honor and success has many pitfalls which are at times difficult to see and avoid. At the very beginning of his career the young professional man should definitely settle a few things, such as what is to be his chief aim and what his standard of success. Permit me to suggest for your adoption three general principles or rules for guidance in your professional life. The first concerns your attitude toward your work; the second, your relations to your patients; the third, your relations to your colleagues in medicine.

*Love Your Work.*—The physician's attitude of mind toward his work goes far to determine his enjoyment of it. His cares are many and his responsibilities great; the drudgery of his work soon becomes wearisome, unless in all and through all he can keep his scientific interest in his profession. He must love his work if he would succeed in it. He may not retain through life all of his early enthusiasm, but as long as he lives he should be a student of medicine. It is only this interest, coupled with the thought that he is rendering helpful service, which lifts the practice of medicine above the treadmill of routine and brings genuine satisfaction and happiness in the midst of arduous labor.

*Serve Your Patients.*—The rule which should govern a physician's relation to his patient, although at times difficult of application, may be stated in a few words. He should always act in the best interest of his patient. Under no circumstances should he allow self-interest, expediency, or, in fact, any other motive to influence his judgment or his action. This principle once accepted, he can seldom go wrong; but if a firm stand is not taken at the outset, and if other considerations are permitted to weigh in his mind, little by little he may come to lower his ethical standards until he finds himself drifting in dangerous waters where shipwreck is only a question of time or circumstance.

*Treat Your Professional Brethren Generously.*—The rules by which the relations of a physician to other members of his profession should be determined have been in the past a subject of much discussion. At different times various codes have been drawn up which have attempted to formulate proper rules of conduct. The relationships of physicians to one another may be and often are among the most delightful known, whether they meet in associations for scientific discussion or as



fellow-workers in the great cause of helping humanity. They form a sort of guild or brotherhood all over the civilized world. There is among them a sympathy, a spirit of fraternalism, which all who have known it must pronounce as one of the greatest joys of life. Such the physician's relations may be; everywhere such they have always been among the great souls of our profession.

But it is humiliating to admit that, owing possibly to the very personal character of the competition in the practice of medicine, the feeling of rivalry between physicians too often predominates over every other sentiment. Even without deliberately intending to do so, they readily yield to the temptation, by unkindly and unfriendly criticism, to undermine the influence and to injure the reputation of their colleagues. In smaller places, particularly, where each man works most of the time by himself, the petty jealousies of physicians are very common, but most undignified and unworthy.

Nothing does so much to weaken the influence of the profession as this spirit. The public has no patience or sympathy with it. If the physician's outlook were a larger one, his interest in science greater, this could not endure. He should cultivate a liberal attitude and, conscious of his own mistakes, be charitable toward those of his fellows. This generous spirit always begets generosity; while the man who always stands on his dignity, ever watchful lest his rights are encroached on, finds himself with a grievance most of the time. In all intercourse with others of his profession there is only one rule for the physician's guidance, viz.: to act toward them as he would wish them to act toward him.

#### CONCLUSION.

I have pointed out some of the tendencies and alluded to some of the dangers which to-day threaten medicine as a profession. Its future glory or shame rests largely with you who are the students of to-day. See to it that you always stand for the dignity and honor of your profession. If the physician's life is a strenuous one, its rewards are many and are within the reach of every one who with diligence and unselfishness will seek to serve his generation. It is the law of the moral universe that there are no short cuts to knowledge, no such thing as ready-made experience, and no counterfeit for character. Real and lasting success rests now, as always, on honest work and personal worth; or, as Lowell has put it,

"God's price is high; but nothing else  
Than what He sells, wears long."

14 West Fifty-fifth Street.

## MULTIPLE NEURITIS SIMULATING PROGRESSIVE MUSCULAR ATROPHY.

WITH REPORT OF CASES.\*

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Although multiple neuritis and progressive muscular atrophy both have their pathology in the lower neuron, for clinical diagnosis and treatment it is necessary to differentiate between disease of the peripheral nerves and

that resulting from anterior horn degeneration. The ordinary type of polyneuritis with sensory disturbances: hyperesthesia followed by anesthesia, tenderness of muscles and nerves, combined with absent tendon reflexes, flaccid paralysis, atrophy and reaction of degeneration, will rarely cause difficulties in diagnosis. It is quite different when the neuritic processes are very extensive, when sensory symptoms are either absent or insignificant, and when muscular atrophy is found over large territories.

We have been taught to study the distribution of muscle atrophy in such cases and authorities agree that in progressive muscular atrophy the muscles are usually affected according to their physiologic grouping in the cord, while in peripheral neuritis muscles are seized that have a common innervation regardless of segmental grouping.

This rule only holds good in the majority of instances, for cases of peripheral neuritis occur in which the atrophies seem to have a distribution identical with that found in progressive muscular atrophy.

It is well to remember that cases of progressive muscular atrophy of the spinal type are rather rare and that pathologic examination has proved many a case of supposed spinal atrophy to be a neuritis.

Notwithstanding the growing tendency among modern writers to classify neuritis with anterior horn disease under "neuronitis" or lower neuron disease, it seems advisable to adhere to the old classification, because the latter compels a more minute clinical analysis, which is quite helpful in prognosis and treatment.

In the following cases of (1) alcoholic polyneuritis, (2) lead paralysis and (3) progressive muscular atrophy, a similarity and even identity of symptoms will be noted. They demonstrate among other things the futility of attempting to diagnose a case from a mere objective examination, and emphasize the necessity of studying the etiology and course of the disease.

CASE 1.—A. B., aged 30, bartender, married, gave a negative family history and an uneventful personal history; he had measles, appendicitis, and an operation for gallstones several years ago. For nine years, while a bartender, he consumed ten glasses of beer and three of whisky daily, and, in addition, indulged in a monthly "spree." Venereal infection is denied and there were no evidences of lues.

*Present History.*—About three years ago he noticed a slight wasting of both thenar eminences and a deepening of the interosseous spaces, followed by general weakness in the hands and arms, and double wrist-drop within one and one-half months from time of onset. The condition in the upper extremities was progressive, so that at the end of a year he was unable to lift the arms above the level of the shoulders and his hands were practically powerless. With the exception of occasional attacks of vomiting followed by exhaustion, no other symptoms were complained of at that time. There were neither pains, paresthesias, nor muscular twitchings in the parts affected; nor were there palsies in any other parts of the body. At various times he made attempts at abstaining from alcohol, but failed. About one and one-half years from the onset of the disease his feet became affected. The weakness and atrophy came on more rapidly than in the upper extremities, and was preceded by burning sensations, tingling and numbness. Within four months he lost the power of walking, and in addition suffered excruciating pains in the epigastric region.

He then entered Cook County Hospital. Improvement occurred rapidly and within three months his pains had entirely disappeared. The muscles of the upper and lower extremities increased in volume; partial extension of the fingers became possible and he could again walk. Four months later he left the hospital to resume his occupation of bartender. He worked several weeks and indulged in alcohol as heretofore. In consequence the pains in the feet returned with their former

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



severity and within one week from the onset of sensory symptoms he was unable to stand. Five weeks later he was unable to lift the arms from his body. At about the same time his face appeared somewhat flattened and his voice seemed hoarse. In addition, there appeared weakness of the upper lip, which made exposure of the upper teeth impossible. Vision began to fail about two weeks later; objects appeared blurred, and he was unable to read. The ophthalmoscope, however, revealed a normal fundus.

Appetite was always unimpaired, there were no disturbances of deglutition, nor of the sphincters.

*Examination.*—Patient appeared tall and emaciated, but presented no facial asymmetry, nor pupillary anomalies. Vision was markedly diminished for distance and acuity. Slight weakness was noticeable in the upper lip and whistling had become impossible. Tongue, pharynx, larynx, and neck muscles were normal. The chest was somewhat flattened and the pectoral muscles were atrophied. The viscera were normal and the spine presented no curvatures. All the shoulder muscles had atrophied, except the trapezius. The arm, forearm and hand muscles had wasted and there was corresponding loss of power. With great effort he could still elevate the arm to the shoulder level, but was unable to hold it up for more than a few seconds. There was typical wrist-drop and the fingers were slightly clawed. The thenar and hypothenar eminences had entirely disappeared and the interosseous spaces were deepened. The grasp of the hand was without power. Flexion of the fingers was barely possible, while extension was entirely abolished. The left hand was slightly less affected than the right hand.

While the lower extremities were generally weak, the atrophies were most marked in the dorsal flexors of the feet. Coordination and sensation were normal. Superficial reflexes were present and of normal intensity. The deep reflexes could still be elicited, but were much reduced.

Examination in April, 1905, showed marked improvement in all the symptoms. The typical ape-hand was still present on both sides; also the atrophy of the lumbrical and interossei muscles. The thenar and hypothenar eminences were still wasted. The extensors and flexors of the forearm were greatly atrophied and very weak so that slight passive resistance could prevent their movements.

The arms were fairly well preserved; he could now raise them over his head. No atrophies could be noticed about the shoulder girdle. There was no wasting of any of the trunk muscles and the lower extremities were not involved, except the muscles of the anterior surface of the leg and the dorsum of the foot. The typical foot-drop still persisted bilaterally. The so-called steppage gait was well marked, so that the patient was compelled to raise his knees high in order to clear the toes from the ground. Coordination and sensation were normal. The deep reflexes, though reduced, were present in the lower and absent in the upper extremities.

After having been an assistant in the ward for several months, during which time he enjoyed good health, he left the hospital feeling well, but still presenting the picture essentially as described.

*Summary.*—A young alcoholic develops a painless atrophy of muscles in the upper extremities, followed about one-and-a-half years later by similar wasting and paralysis in the lower extremities, but this time with sensory disturbances. Within four months he recovers sufficiently to resume work, but two months later relapses into his former condition, and, in addition, develops neuritis in various cranial nerves. He again enters the hospital and improves in every way, except that certain atrophies remain which do not differ essentially from those commonly seen in progressive muscular atrophy.

The unusual features are a painless atrophy beginning in upper extremities, cranial nerve involvement, accession and recession of symptoms and stationary palsies and atrophies.

Cases like the one just described are not common, but J. Dreschfeld,<sup>1</sup> after reporting a case of typical alcoholic neuritis with sensory findings, correctly says that "though hyperesthesia and hyperalgesia are prominent

symptoms in this form of alcoholic paralysis, yet both of these may be absent, and the motor disturbances occupy the foreground." He reports another case very similar to the above, with a fatal termination. "The nervous symptoms in this case," he remarks, "resembled those seen in chronic poliomyelitis, yet the history and the onset all stamp it as a case of multiple neuritis."

*CASE 2.*—C. R., aged 65, single, painter, with negative family history, excepting tuberculosis, entered Cook County Hospital April 6, 1905. He had measles at 16, never acquired venereal disease, and never drank to excess. His principal complaint was a so-called nasal catarrh, which caused respiratory troubles at times. At irregular intervals he suffered from attacks of gastric and intestinal colic, oftentimes accompanied by nausea and vomiting. In addition, he complains of anorexia and constipation.

*Present History.*—About three months ago, while at work, he suddenly felt the strength give way in his left hand. A little later he incidentally discovered that some of the muscles in the left hand and forearm appeared wasted. Later still atrophy and considerable weakness were noticed in the right hand and forearm. He experienced no pain in the muscles or nerves.

*Examination.*—Patient appeared poorly nourished and showed no anomalies of face or eyes. The thorax was flattened and revealed abnormal depth of the left supraclavicular fossa. Rough breathing could be heard, but no adventitious sounds. The hands and arms were atrophic; the thenar and hypothenar eminences had almost disappeared, the interosseous spaces had deepened. The lumbrical and interossei muscles had wasted. The thumbs were almost parallel with the other fingers, presenting a good example of the so-called ape-hand. The left upper extremity was more involved than the right.

The flexors of the wrist were more affected than the extensors, but both were very weak. The right arm was somewhat the stronger of the two. The right biceps was slightly atrophied; the other arm muscles seemed about normal size. The left deltoid was greatly atrophied in its middle and posterior portions; the biceps on this side showed only a slight degree of atrophy. The left trapezius and serratus muscles were both paretic and wasted, as shown by the winged scapula and the inability to raise the arm over the head. Other shoulder and trunk muscles revealed normal conditions. The lower extremities were extremely emaciated, but did not show localized atrophies.

Fascicular muscular twitchings were very marked, even in a moderately warm room. Coordination was normal in both upper and lower extremities. There were never either subjective nor objective sensory disturbances. The sphincters were normal. The superficial and deep reflexes could be elicited with ease wherever the muscles had not entirely disappeared. No electrical examination was made. Heart and urine were practically negative. The blood showed a moderate degree of anemia, but degenerated erythrocytes and basophilic granules could not be found.

*Summary.*—A patient presents wasting and loss of power in the small muscles of the left hand, later of the right, followed by atrophy in the forearms, and, leaving out most of the arm muscles, shows wasting of the shoulder girdle, with no noticeable disturbance of reflexes, coordination or sensation.

This is essentially a picture of the Aran-Duchenne type of progressive muscular atrophy, and yet the history of lead and the rather rapid development of atrophies must cause one to consider well before making such a diagnosis. There exists besides considerable divergence of opinion regarding the pathologic changes caused by lead; some consider lead palsy a polyneuritis, while others are equally emphatic in calling it a chronic anterior poliomyelitis, which is practically progressive muscular atrophy.

M. Bernhard,<sup>2</sup> for instance, reports two cases, one of subacute atrophic spinal paralysis, and a case of lead paralysis which he believed to be spinal in type. He

1. Alcoholic Paralysis, Brain, 1884-1885, p. 208.

2. Berlin. klin. Wochschr., 1878, p. 273.



argues strongly in favor of the view that lead palsy is a spinal paralysis and cites Remak and Erb in his support.

In discussing multiple neuritis, Oppenheim<sup>3</sup> says: "According to recent findings, pathologic examination of multiple neuritis has not only revealed changes in the nerves, but also in the cord, although the latter were rather slight. While formerly all the symptoms in peripheral neuritis were explained by the changes in the nerves exclusively, recently pathologic proof has been accumulating which shows the cord to be affected in some cases." Leyden and Oppenheim have each described such a case and so have Minkowski and Thomsen. Oppenheim concludes, that while it is impossible to localize the pathologic changes exclusively in the nerves, the poisons which cause polyneuritis undoubtedly produce the greatest damage in the peripheral nerves.

Thomas Olliver<sup>4</sup> speaks of lead palsy substantially as follows: "Besides the classical wrist-drop there is occasionally seen the paralysis of the Duchenne-Erb group; sometimes the paralysis resembles the Aran-Duchenne type and rarely the leg and peroneal types of progressive muscular atrophy."

A case reported by Arthur von Sarbo,<sup>5</sup> of progressive spinal muscular atrophy from lead poisoning occurring in a man thirty-five years of age, who had an acute anterior poliomyelitis at five years, and who had worked in lead since his thirteenth year, first in a type foundry, later as compositor. The picture presented was that of the Aran-Duchenne type of progressive muscular atrophy, but no postmortem was held. In discussing the localization of the lesion in lead palsy, that is, whether the paralysis is caused by neuritis or poliomyelitis, he concludes that we may have either neuritis, poliomyelitis or myelitis. It is as difficult to explain why in one case we have a neuritis, in another a poliomyelitis, and in a third a so-called encephalopathy, as it is impossible to give a satisfactory reason why we have in the one case arthralgias and in the other kidney disease.

Even a superficial search through the literature was sufficient to convince me that authorities differ radically in their views on the subject. It was therefore most favorable to our purpose that a postmortem examination could be had. About one week prior to his death the patient developed an obstinate cough and irregular temperature ranging from 99 degrees to 102 degrees. Large and small râles could be heard over his chest, particularly over the right side, while the left showed absence of breath sounds and dulness on percussion. During this fatal illness the pulse and temperature did not rise above 112 and 102 degrees, respectively; there were 35 respirations to the minute. The patient died Sept. 13, 1905, and the postmortem examination was held fifteen hours after death.

The results, in brief, were as follows: Numerous old fibrinous adhesions of both pleuræ; the right pleura showed fresh fibrinous adhesions and about two ounces of straw-colored fluid containing flakes of fibrin. Consolidation of the left lower lobe and a bronchopneumonia in the right lower lobe; chronic interstitial nephritis; fibrous myocarditis; atheroma of aorta; passive congestion of liver and hydatid cyst; chronic interstitial splenitis; hypertrophic gastritis; healed tuberculosis in left apex of lung. No macroscopic changes were noted in brain, cord or nerves.

Pieces from various cord levels and from the sciatic,

median and ulnar nerves were hardened and treated with Nissl, Marchi, Weigert-Pal and hematoxylin-eosin stains.

The microscope showed no degeneration of white columns and no shrinking of anterior horns. The Nissl bodies stained well with toluidin blue and no pathologic arrangement of the granules could be observed. There was an unusual amount of pigment in the cells and the vessels of the cord were moderately sclerotic.

No apparent differences could be seen on comparing sections with those of a normal cord. It was only on reaching the peripheral nerves that distinct pathologic changes were discovered which could be summarized as parenchymatous degeneration. In other words, the most important finding was a multiple neuritis which, of course, was rather a surprise, as the symptoms led one to expect cord involvement as well.

It is not the object of this article to enter into a discussion of the pathogenesis of multiple neuritis, but it may not be amiss to state that considerable obscurity still exists even in the interpretation of the pathologic anatomy of this common disorder. Some emphatically deny central disease, except as an extension of peripheral disease, while Erb<sup>6</sup> and others consider all nerve changes a result of disease of the trophic centers, whether this can be demonstrated microscopically or not.

Most observers, however, maintain that while pathologic changes have been detected in the spinal cord and anterior roots in some cases, the great majority of cases of multiple neuritis present no such changes.

CASE 3.—Z. D., German, aged 40, single, entered Cook County Hospital, Oct. 26, 1905. He gave a good family history, but stated that an elder brother had a complaint similar to his, from which he completely recovered thirteen years ago, and had remained well to this day. This brother was an alcoholic and received treatment by hypodermic medication (strychnin?). The case was probably an alcoholic polyneuritis.

The patient had been a car cleaner, was always sparing in the use of alcohol and tobacco, and had never worked in lead nor arsenic. No serious illness was recorded and he denies venereal disease.

*Present Illness.*—About three years ago he suddenly experienced pain in the right hand which lasted a few hours and then disappeared, to return in about six months, but this time it appeared in the right shoulder and arm. It came at irregular intervals and lasted from a few minutes to an hour and a half. One month later a decided weakness was noticed in the right arm, and three months later considerable wasting. He was positive that the atrophy began in the shoulder muscles and spread to the arm and forearm, and, finally involved the hand. One year after the beginning of the disease on the right side the left side became similarly affected. About six weeks ago wasting in the lower extremities was noticed, but he never experienced pain in them. Nine months ago fibrillary twitchings were first seen in the muscles of the left arm. Until a year ago he was still able to work; but at that time an extreme weakness in the hands compelled him to seek a hospital, where he remained for five weeks and then made another attempt at work. In this he was unsuccessful and then he entered Cook County Hospital for the first time. He stated that at the time of entrance his left arm was considerably stronger and his right arm in same condition as at present. After a month's stay there he was transferred to the Dunning Hospital, where he received hypodermic injections of strychnin for about five months. He is certain that this treatment caused the muscles to increase in volume and he gained sufficient strength to resume work. At the end of four months he relapsed into his former condition, was treated at home for three months, and again entered Cook County Hospital, at which time he first came under my observation.

3. Berlin. klin. Wochschr., 1890, p. 546.

4. Gaulstonian Lectures, 1892.

5. Deutsch. Ztschr. für Nerven., xix, 249.

6. Neurol. Centrbl., 1883, No. 21, p. 484.



*Examination.*—The man was slightly emaciated, with arms dangling; he was seen to drag his right foot. The difficulty appeared to be in clearing the toes from the ground, and there was a good example of steppage gait. The face showed no anomalies, eyes reacted to light and to accommodation, and the fundi were normal; the tongue could be protruded in a straight line. An examination of viscera and excretions, including urine, gave normal findings. Blood examination gave the following results: Erythrocytes, 4,800,000; leucocytes, 11,000; polymorphonuclears, 85.8 per cent.; mononuclears: small, 7.6 per cent.; large, 6.5 per cent.—practically normal figures, except for a slight leucocytosis.

*Muscular system:* Arms, forearms, shoulder-girdle, thenar and hypothenar eminences had wasted. The deltoids, supra- and infraspinati had entirely disappeared. Pectorales, latissimus dorsi and the gluteal muscles were atrophic, the right gluteal group more than the left. All the muscles showed marked fibrillary twitchings. The cranial nerves were not involved. Hands, arms and shoulders were almost powerless. Adduction and abduction of fingers was abolished, demonstrating paralysis of lumbrical and interossei muscles. The grasp of the right hand was almost *nil* and that of the left was only slightly better. Supination of the hands was impossible; pronation was barely possible in the right hand, though slightly better in the left hand. Arm and forearm flexion could not be accomplished. Extension of right forearm was impossible and was very weak in the left. The arms could neither be abducted nor adducted. The left shoulder could be slightly elevated, but not the right. All movements were better executed on the left side. The legs showed considerable loss of power, the right more than the left. Flexion and adduction were stronger than extension and abduction, although both kinds of movement were extremely weak. Head and neck muscles were unaffected and also the erectores spinæ, but the abdominal muscles were paretic.

*Sensation:* The touch, temperature and pain senses were unimpaired.

*Coördination:* Normal everywhere; muscle and joint sense perfect.

*Superficial reflexes:* Present, but sluggish, except the abdominal, which was absent.

*Deep reflexes:* Patellars were present bilaterally, but somewhat reduced; Achilles tap gave no response; there were no Babinski, Oppenheim or Gordon signs; elbow and wrist jerks could not be elicited; masseter jerk was normal. Mentality and speech were not affected.

*Second Examination.*—An examination made May 10, 1906, revealed the following: Some wasting of cheek muscles, partial atrophy of sterno-mastoids; head had a tendency to fall forward owing to weakness of posterior neck muscles; thighs showed marked wasting of all muscles; adductors were least involved. The legs were generally atrophied, less on posterior surface. Respiration showed marked impairment of diaphragmatic excursion on right side. The abdomen was distended and markedly tympanitic on account of paresis of the abdominal muscles. Owing to the development of extensive wasting and paralysis of the lower extremities, the patient had now become bed-ridden. The sphincters had never been affected. Within the last two or three weeks he had several attacks of dyspnea which were rather alarming.

*Summary.*—Gradual wasting of muscles with subsequent paralysis, absence of objective sensory disturbances, absence of sphincter trouble; reduced reflexes, constitute a symptom-complex characteristic of spinal atrophy, especially in the absence of a history of alcohol or metallic poisoning.

*Termination of Case.*—While this article was in the editor's hands the patient died during one of the attacks of suffocation from which he had lately suffered. This would indicate involvement of the bulbar nuclei, besides anterior horn degeneration.

The postmortem examination will be reported in full at some later date. Up to the present, Dec. 9, 1906, only the cord has been examined and distinct shrinking of anterior horns and wasting of cell bodies have been the most important findings. The diagnosis of progressive muscular atrophy has therefore been verified.

It will be observed that the symptomatology of this case does not differ materially from the cases reported in the beginning of this article. Pain was a first symptom; there was some improvement; then came a relapse; and altogether the course was rather somewhat subacute.

#### CONCLUSIONS.

1. Clinically, multiple neuritis may simulate a spinal atrophy as regards distribution of paralysis, absence of sensory symptoms and protracted course.

2. Progressive spinal muscular atrophy may resemble multiple neuritis in the presence of pain, remission of symptoms and subacute course.

3. Etiology and course are still our best guides in the clinical diagnosis of the various muscle atrophies.

100 State Street.

#### SOME LEGAL PHASES OF THE "PATENT MEDICINE" QUESTION.\*

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Taking the expert testimony, which has been presented on the question under consideration, to be a substantially correct statement of the facts, and conceding, in fairness to the prisoners at the bar, the "patent medicine" men, that these witnesses, filled with zeal as to the merit of their case, have perhaps gone further than the court, in the impartiality incident to its position, would go in its findings of fact, there can be no question, in the minds of those untrammelled by self-interest, that the "patent medicine" business, as exploited to-day, is a serious evil.

That the methods frequently employed for the purpose of inducing the public to buy these remedies are positively dishonest and fraudulent, and that the remedies themselves are in many instances of no medicinal value, can not be questioned.

Leaving for the moment the more serious phase of the question, the harmful physiologic effects which naturally follow the use of many of them, the fraudulent nature of the business, when existing in the case of any remedy, affords ample justification for the prohibition of its sale, and the punishment of the agency responsible for it, by the exercise of public authority. Nor is the defrauded purchaser remediless, though, as I shall attempt to show, any action on the part of the injured individual can have little effect in correcting the abuses incident to the business.

#### PRESENT LEGAL REMEDIES INADEQUATE.

When fraud has been practiced, and the purchaser has been induced by deception to buy a worthless article, and the only loss he has suffered has been to his pocket, his damages would, of course, be limited to the price paid for the article. In such cases the expense and difficulty of securing legal redress, in practically every instance, would be so far in excess of the relief sought, that resort to such measures would, of course, be foolhardy, as the time of courts and men is too valuable to be taken up with such trivial matters as the price paid for a bottle of medicine.

The same is true as to the legal remedy of an individual for damages suffered by reason of the failure of a "guaranteed" article to cure. Rarely are these guarantees framed with the idea of creating, nor do they often

\* Read before the Winnebago County Medical Society at Oshkosh, Wis., Nov. 15, 1906.



create, any liability. When they are so drawn that a legal liability can be construed out of them, it is so weighted with conditions, which must be observed by the person using the remedy, that the requisite particular combination of circumstances necessary to create such liability could rarely, if ever, exist. And in cases in which there is a positive guarantee to refund the money if the purchaser is dissatisfied after using the contents, or, as is usually the case, a specified portion of the contents, rarely does the purchaser come back for his money, and for obvious reasons; he may think he has not given it a fair trial; Nature may have corrected his condition of ill-health, or, as is usually the case, he deems it too trivial a matter to warrant the expenditure of the effort involved in getting back his money, with its attendant humiliation. When the money is refunded, the loss of the profit is merely charged up to advertising expense, the "guaranteed cure" advertisement and the sale of the remedy go on.

While on this phase of the subject, one of the many difficulties which presents itself, when an attempt is made legally to disprove some of the extravagant claims made by the proprietor as to the value of his remedy, is that he frequently has a formidable array of witnesses, who stand ready to testify to the beneficial results experienced by them from the use of the remedy. In many instances they are sincere in their statements and thoroughly believe they have been benefited. The causes which contribute to the correction of a condition of ill-health may be varied and numerous; it may be the remedy administered; it may be the psychologic effect on the mind of taking a remedy in which the patient has faith, based on the testimony of others or the claims of the manufacturer; it may be that natural processes have corrected the trouble. The effects, in particular cases, of many of the various forms of medical treatment are incapable of positive demonstration, by reason of the fact that we have no means of knowing how the patient would have come out in the absence of such treatment. The natural conclusion, however, of the ordinary individual, taking a particular medicine for a particular condition of ill-health, is to attribute improvement, if it result, to the remedy, rather than to something else. Hence the difficulty of disproving many of the extravagant claims as to cures effected, based, as they often are, on opinions, which, though truthfully held, may have no foundation in fact. Cases doubtless exist in which substantial damages might be recovered against the manufacturer of a nostrum, from the use of which in accordance with the published directions death or injurious physiologic effects have resulted. Liability in such cases, however, is greatly limited by the extreme difficulty of proving that the injury is the natural result of the administration of the remedy, uninfluenced by other causes, that the prescribed dose was taken and all directions were followed. And, further, there is frequently great inequality in the power of the respective litigants to carry on a lawsuit to a successful termination. In the greater number of instances the party seeking redress belongs to the poorer class, while the manufacturer of the remedy is well equipped with the means to fight a legal battle.

There are, it is true, a few cases of this kind in the books, in which damages have been so recovered, but, so far as practical results go in the way of any general correction of the abuses incident to the traffic, any legal remedy the individual may have for damages to body or

purse is utterly ineffective. Nor are criminal prosecutions of much, if any, more effect, on account of the increased difficulties of satisfying the requirement of proof beyond a reasonable doubt, instead of proof by a preponderance of the evidence, as in a civil action.

So far as any of the legal remedies mentioned are concerned, it seems to me that it is useless to expect from them any adequate relief, nor is it possible to formulate any law which can have any great general effect, if its application is limited to the correction of the mischief or the punishment of the offender, after the damage is done. The only practical line along which effective work can be done is along the line of limitation of the sale of remedies, demonstrated to be worthless or injurious, by means which will protect the public from the imposition of the fraud and the possibility of injury from their use.

#### THE NEWSPAPER AND "PATENT MEDICINES."

The newspaper is denounced, and deservedly, as one of the chief agencies responsible for the extent and prevalence of the evil. In a sense, the moral responsibility of the publisher, who, for a consideration, sells to another the means by which fraud and perhaps crime can be perpetrated and the accomplishment of these purposes made easy, is greater than the responsibility of the originator, in that the former uses the vantage of his position, by reason of which he can easily reach the ear of the multitude of his fellow-men, to their undoing and his profit.

In principle, there seem to be no reasons why a publisher, knowing the falsity of an advertisement, or aware of the consequences which may naturally be expected to follow the use of an article advertised, should not be subjected to the same liability as the proprietor himself, on injury resulting to a person induced to use such article, by reason of an advertisement for which the publisher is responsible. In such cases, the publisher becomes a party to the fraud or crime, and the agent of the principal and, as such, responsible for the consequences of his wrongful act. We have, however, seen the practical difficulties which attend attempts to secure damages against, or to punish the proprietor, and when we add to these difficulties the additional one of proving guilty knowledge on the part of the publisher and of fixing responsibility on any one of the numerous heads of the modern newspaper, the inadequacy of any such remedy, granting that it exists, becomes at once apparent.

I have made a somewhat diligent search of the books, but have failed to find any case reported in which a publisher has been held liable for damages resulting from a false advertisement, or punished for the publication of matter, unless the same came within the definition of matter the publication of which was prohibited by some statute or ordinance. There can be no question that the police power of the state is sufficiently broad to prohibit the advertisement of articles and matter injurious to health and subversive of good morals. Many of the states, including Wisconsin, have statutes prohibiting, under heavy penalties, the publication of obscene matter, or matter tending to corrupt good morals. We also have a statute prohibiting the publication of any newspaper or publication devoted principally to criminal news, police reports, etc. Many of the states have enacted statutes prohibiting the advertisement of articles or means for procuring abortion. The state of Washington, in 1905, passed a law prohibiting advertisements for the treatment of "venereal" diseases, and of remedies for such



diseases. In Germany, newspaper advertisements are subject to stringent regulation. An article in *THE JOURNAL* of the American Medical Association, Nov. 25, 1905, states that, in 1903, the confederated states of Germany formulated a list of secret remedies, the advertisement of which was prohibited. Some of the manufacturers then changed the names of their preparations and advertised them under the new names. Suit having been brought against one in Prussia, and one in Baden, it was decided by the Prussian court that, the name having been changed, the article could be advertised, the prohibition applying only to the advertised name; the Baden court held the product to be the thing prohibited from advertisement, and that changing the name made no difference. Even under the Prussian ruling the law should, it seems, prove effective, as it is the name rather than the composition of these articles that sells them. So far as legal measures are concerned, it seems that regulative and prohibitory measures, directed against the publication of advertisements of such articles as can be proved of fraudulent character or injurious to health, will prove the most effective.

The public is coming to understand that liberty of the press does not mean license to publish anything the publisher may see fit to put into his columns, but that the liberty of the press, protected by constitutional guarantees, is subject to the modification that such liberty shall not be used in such a way as to interfere with the proper exercise by others of their own rights. Freedom of speech and press does not include abuse of the power of tongue or pen any more than does freedom of action sanction abuse of one's powers to the injury of another in the enjoyment of his equally fundamental rights, the lawful use of his property, and the pursuit of happiness in the legitimate exercise of his occupation or business. The moral responsibility of publishers who take advantage of the public nature of their business and of the vast power thus given them to defraud the public, is becoming more and more generally recognized, and when the recognition of such responsibility becomes sufficiently extensive, and the public arrive at an appreciation of the extent to which it is abused, the resulting public sentiment will soon crystallize into measures and laws of no uncertain nature to check and limit the evil.

#### WORK OF THE POSTOFFICE DEPARTMENT.

Perhaps the most potent agency which has been found to deal with the subject has been the postoffice department, which, through its power to issue fraud orders, has put out of business countless fraudulent schemes, depending for their successful accomplishment on false and misleading published matter. Section 3929, Revised Statutes, U. S., provides that the postmaster-general may, on evidence satisfactory to him that any person or company in conducting any scheme or device for obtaining money or property of any kind through the mails by means of false or fraudulent pretenses, representations or promises, instruct postmasters to return to senders all mail addressed to such person or company, stamped "fraudulent," and to deny to such person or company the use of the money order department.

The United States' statutes further provide that certain matter shall be non-mailable. By the enactment of the simple statute that no matter advertising or concerning a lottery or similar gift enterprise should pass through the United States' mails, lotteries were put out of business. The United States laws further provide that no letter, postal card or circular concerning schemes

devised for the purpose of obtaining money or property under false pretenses shall be carried in the mails. They do not, however, specify that the advertisement of any such scheme shall be barred from the mails, as is specified in regard to any advertisement of a lottery and certain other matters. Obscene or indecent publications, articles designed or intended to procure abortion or to prevent conception, articles intended for any indecent or immoral use, and any advertisement or notice of any kind, giving information directly or indirectly, where or how, or of whom, or by what means, any of such articles may be obtained or made, are declared by United States laws to be non-mailable matter, and heavy penalties provided for their violation.

The constitutionality of these statutes as abridging the freedom of the press has been assailed, but they have been held constitutional, and it has been held that the power of congress to establish postoffices and postroads gives it the power to designate what may, and what may not, be carried as mail, and when the circulation of the publication is not prohibited in other ways, but the government merely declines to become an agent in the circulation of matter which it regards as injurious to the people, and when the exclusion applies equally to all, the court holds these statutes do not deny to the owners or publishers any of their constitutional rights.

Under the law as it stands, it hardly seems that the postoffice department has the power to issue a fraud order against a newspaper merely because it contains an advertisement concerning a fraudulent scheme, or that such newspaper becomes non-mailable under the provision referred to because it contains such advertisement. Much effective work has, however, been done by means of these provisions of law.

#### THE PURE FOOD LAW.

The Food and Drugs Act, passed June 30, 1906, another most important piece of legislation, provides that the shipment from one state to another, or from any foreign country, or to any foreign country, of articles which, within the meaning of the law, are misbranded, is prohibited. In case of drugs they are considered "misbranded" if the package fail to bear a statement on the label of the quantity or proportion of any morphin, opium, cocaine, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate or acetanilid, or any derivative or preparation of any such substances contained therein. The term "misbranded" also applies to all drugs, the package or label of which shall bear any statement, design or device regarding such article or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any drug product which is falsely branded as to the state, territory or country in which it is manufactured or produced.

#### THE WORK OF THE INTERNAL REVENUE DEPARTMENT.

Another important measure is the ruling of the internal revenue department, under Circular 673, that all medicines which contain alcohol, unless mixed with substances undoubtedly medicinal in character in sufficient quantity to give a medicinal quality to the liquor other than that which it may inherently possess, shall be regarded as liquor and require of the person selling them a revenue license.

#### WISCONSIN STATE LAW.

Section 4601e, Revised Statutes, Wisconsin, provides penalties for the sale of, or the having in possession with



intent to sell, any medicine known as patent or proprietary, or of which the formula is kept secret by the manufacturer, which contains morphin, strychnin, cocain or poisonous or narcotic alkaloid or drug, in any quantities which the state board of health shall deem harmful to the life or health of the public, unless the presence of the same be distinctly shown by a label on the bottle or package and on the outer wrapper thereof. Many of these measures are of comparatively recent origin, and it seems probable that the near future will see them supplemented and added to in various ways which will make them more effective.

So far as I have observed, the public discussion of this question, in the magazines and otherwise, has been singularly devoid of practical suggestions as to methods of relief other than such as may result from a general understanding of the facts, whereby it is claimed that the newspapers, by reason of the force of public opinion, will in time be obliged to purge from their columns objectionable advertising matter.

#### SPECIAL NATIONAL LEGISLATION SUGGESTED.

While much can doubtless be accomplished through this means, there is much merit in the publishers' position that it is practically impossible for them to determine intelligently what advertisements are meritorious and proper and what are not. While in many instances the facts can be easily obtained, in others the misleading, false or harmful nature of the advertisement comes to light only after careful investigation. In cases of doubt it is natural that the self-interest of the publisher is apt to decide in favor of accepting the questionable advertisement. It is probably too much to expect of publishers, actuated by motives of self-interest, that they will act with the same disinterestedness as an agency in which that element is not present. Thus it seems to me desirable that some responsible governmental agency be empowered to determine whether, in the case of any article, improper methods are used in its public advertisement.

It would also seem desirable that, if possible, the sphere of this agency's operation should be national in its scope rather than limited to a state. In view of its success along similar lines, the postoffice department seems to be the one most adapted for the purpose of securing the end sought. As we have seen, congress has declared certain matters non-mailable; but the only instance in which it has specifically declared that a newspaper or publication is non-mailable by reason of its containing the advertisement of an article is in the case of lotteries, although by Section 3893, Revised Statutes, U. S., it is generally provided that any written or printed card, letter, circular, book, pamphlet, advertisement or notice of any kind giving information, directly or indirectly, where or how, or of whom, or by what means certain specified articles can be obtained or made, shall be non-mailable, such articles being as follows: Every obscene, lewd, or lascivious book, pamphlet, picture, paper, letter, writing, print, or other publication of an indecent character, and every article or thing designed or intended for the prevention of conception or procuring of abortion, and every article or thing intended or adapted for any indecent or immoral use.

Let the definition of non-mailable matter be extended to include newspapers and publications containing advertisements of articles which are being publicly advertised, through the mails, by means of false pretenses,

representations or promises, or which from their nature are injurious to the life or health of the public. Give to the postoffice department, on its appearing that an article is being so advertised, or that the article advertised is of such harmful nature, the power to make a ruling that any publication containing an advertisement of such article shall be denied the use of the mails, appropriate penalties being provided for any violation of the law.

Make the rulings of the department subject to review by the courts, and afford to persons against whom the rulings may be directed proper safeguards to guard against injury from the improper exercise of such power. Proper provision should also be made for the publication of such rulings in such manner as will give adequate notice thereof to publishers before the imposition of any penalty.

It might also be provided that the ruling shall not go into effect until after a certain specified number of days from the time it is made, during which time the party against whom it is directed shall have the right to appeal to the court, and that, in case of such appeal being taken, the ruling shall not go into effect until passed on by the judgment of the court, but that, on the ruling of the department being sustained, the penalty provided in the law be inflicted. It is likely that the mere existence of such an agency, legally empowered to determine whether an article publicly advertised comes within the prohibited class, would do much in the way of regulating advertisements. And with proper safeguards the honest advertiser need have no fear that such a law will interfere with the free exercise of his legitimate business.

#### CONCLUSION.

We must not, however, expect too much of legal measures. There never has been, and never can be, enacted any law which will protect people from the consequences of their own folly. So long as mankind is constituted as it is, the fool killer will thrive and do business. But in matters so affecting the public health and welfare of society as the administration of medicine and the treatment of disease the public has a right to insist that powerful and poisonous drugs shall not be foisted on them under the guise of harmless articles; that liquor, if sold, shall be sold as such and only under proper restrictions, and that some reasonable guarantee shall be afforded that an article publicly advertised is what it purports to be, and that, if these reasonable requirements are not fulfilled, there be some sure and direct way of administering punishment on the agency responsible for such failure, be such agency the proprietor of a medicine or the proprietor of a newspaper, through whom the former is enabled to reach the public ear and confidence.

The benefits of focusing public attention on any question demanding correction can not be overestimated, as it is only in this way that the public can be brought to a realization of the facts. When this is done, when the inertia of public opinion is set in motion by an adequate understanding of the facts, the "patent-medicine" evil, like many others of greater magnitude, will find an easy solution, for it exists to-day only because the people do not understand.

Such being the case, the duty of those in positions of responsibility is clear, and the value of such work as your society is doing can not be overestimated in its effect on public opinion by directing attention to the facts as they exist.



THE OUTBREAK OF CHOLERA IN THE PHILIPPINES IN 1905.

THE METHODS USED IN COMBATING IT, WITH STATISTICS TO JAN. 1, 1906.

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MANILA, P. I.

According to the official records on file at the Bureau of Health for the Philippine Islands, the last case of cholera of the pandemic which commenced March 20, 1902, was reported to have occurred March 8, 1904. During that period 166,252 cases, with 109,461 deaths, were reported. Reliable observers are of the opinion that at least one additional case occurred for each one that found its way into the official records.

From March 8, 1904, until Aug. 23, 1905, no cases are known to have occurred. From time to time during this latter period suspicious cases, which clinically resembled Asiatic cholera, came to the attention of the Insular Board of Health, but the diagnosis could not be confirmed bacteriologically. For the two weeks immediately preceding August 23, the number of suspicious cases increased. In Manila, one occurred in San Pedro Macati, a suburb; one in a bakery in Paco; one in the San Miguel district; one case was that of a soldier in Cuartel de España, and several in the province of Rizal. The cases in Manila were all carefully examined postmortem, and the intestinal contents subjected to bacteriologic tests by such competent observers as Dr. R. P. Strong of the Government laboratory, and his assistants; and the case of the soldier was carefully investigated by the military medical authorities, and specimens examined at the Army laboratory which is maintained in connection with the First Reserve Hospital of Manila. From both of these independent sources the results were reported as negative.

THE FIRST RECOGNIZED CASE.

On August 23 a case developed in Bilibid prison which was a typical clinical picture of cholera. After a few hours the victim succumbed. At the postmortem examination the ileum was found to be deeply injected and filled with rice-water-like material, and the bacteriologic examination made by Dr. R. P. Strong revealed the cholera spirillum of Koch. Thus occurred the first officially recognized case of cholera of the present outbreak.

This patient was in an institution which is practically cut off from the remainder of the world; where all food-stuffs are permitted to enter only after the most rigid inspection, and where all food served, that could possibly convey cholera, is cooked at all times. On account of dysentery, it is said that all drinking water was sterilized. Therefore, it would seem that the routine precautions taken against dysentery should also have afforded protection against cholera. The commencement of an outbreak in this insidious manner was most puzzling, and the prospects of combating a disease whose origin was so obscure were not encouraging.

On the following day six cases, suspicious of cholera, were reported by Major Wales, from Fort William McKinley, which is located about seven miles up the Pasig River, from Manila. For the week preceding August 23, about eight cases, with profuse diarrhea and vomiting followed by collapse, had occurred at the fort. The symptoms were the same as those usually found in vino poisoning which is so common among the United States

soldiers in the islands, and in the absence of any cholera being reported anywhere in the Philippines, there was no particular reason for investigating the cases further. In view of the fact, however, that the diagnosis of some of the later cases that occurred at the fort was bacteriologically confirmed, the earlier diagnoses of vino poisoning may not have been correct.

The military medical men at once commenced active measures, and the comparatively few days during which the cholera persisted at the fort is another excellent example of how readily the disease can be eradicated when sanitary principles are intelligently applied.

On August 25 an American woman residing at the Grand Hotel, in the walled city, was attacked, and died in a few hours. On the same day an American residing on San Sebastian Street, in a section of the city nearly two miles from the previous patient, was seized and died several hours afterward. No connection could be traced between the two cases, nor could any history be obtained that the same articles of food, which would be likely to convey the infection, had been eaten by these two victims.

Cases in Manila occurred as follows:

TABLE 1.

August 23.....	2	September 1.....	17
August 24.....	1	September 2.....	12
August 25.....	3	September 3.....	27
August 26.....	8	September 4.....	18
August 27.....	10	September 5.....	12
August 28.....	6	September 6.....	10
August 29.....	9	September 7.....	8
August 30.....	5	September 8.....	7
August 31.....	7	September 9.....	4
		September 10.....	3

From this period the cases averaged about one a day until the end of the year; the total cases, from Aug. 23 to Dec. 31, 1905, inclusive, being 255.

The characteristic tendency of the outbreak continued during the early weeks of the scourge, viz.: No connection could be traced between the cases; no two cases occurred in any one house, nor did two cases occur in any one group of houses. A case almost invariably occurred in a section of the city far distant from a previous case, and furthermore, it will be noted that the next case did not occur in the same section until the likely incubation period had expired. Another especially noteworthy feature about the outbreak is that while the greatest number of cases occurred in the slum district, this section of the city was not infected until during the latter part of the outbreak.

At the commencement of the epidemic of 1902, cases in Manila were reported as follows:

TABLE 2.

March 20 .....	4	March 30 .....	11
March 21 .....	6	March 31 .....	6
March 22 .....	4	April 1 .....	17
March 23 .....	8	April 2 .....	4
March 24 .....	14	April 3 .....	13
March 25 .....	15	April 4 .....	13
March 26 .....	12	April 5 .....	9
March 27 .....	11	April 6 .....	11
March 28 .....	6	April 7 .....	9
March 29 .....	5		

By comparing this table with Table 1, it will be seen that at the end of the second week there had actually been more cases during the outbreak of 1905 than during that of 1902.

In the meantime, a telegram received August 26 from Jalajala, province of Rizal, through the Army Medical Department, contained the following information:

Cases of a disease resembling cholera have developed in Jalajala, the first case being registered on the 21st; from that



date to the 25th, 16 cases and 12 deaths have been registered, the illness lasting from twelve to twenty-four hours.

On August 26 another telegram, received from the president of the Provincial Board of Health at Pasig, reported one suspicious case followed by death, in that town. A representative of the Insular Board of Health, and another from the Bureau of Government Laboratories, proceeded at once by special launch to Pasig and Jalajala, for the purpose of investigating the cause of the outbreak in these places. The result of this investigation did not shed any light on the origin of the infection. Inquiry made by the inspectors only resulted in showing that at least one week prior to August 23 more deaths had occurred in Jalajala than usual, and that the victims had profuse diarrhea and died a few hours after the symptoms manifested themselves.

An investigation made by Dr. L. T. Hess, captain and assistant surgeon, United States Army, of the records on file at Muntinlupa and Biñan, situated in Rizal and Laguna provinces, respectively, and on the opposite shore of Lake Laguna from Jalajala, showed that death certificates had been filed during the week preceeding August 23, for a number of cases (less than 12), in which the cause of death was given as "suspicious diarrhea."

The following table will show the order in which other towns in the provinces became infected and the number of cases up to Jan. 1, 1906:

TABLE 3.

Town and Province.	Date of first case.	To January 1, 1906.	
		No. of Cases.	No. of Deaths.
1. Jalajala, Rizal	Aug. 20	28	18
2. Guadalupe, Rizal	Aug. 24	1	1
3. Taguig, Rizal	Aug. 25	68	51
4. Pasig, Rizal	Aug. 27	59	47
5. Santolan, Rizal	Aug. 28	1	1
6. San Pedro de Macati, Rizal	Aug. 28	4	4
7. Taytay, Rizal	Aug. 29	132	115
8. Guagua, Pampanga	Sept. 1	37	26
9. Indang, Cavite	Sept. 1	1	1
10. San Mateo, Rizal	Sept. 2	16	12
11. Malabon, Rizal	Sept. 2	53	50
12. Bulacan, Bulacan	Sept. 4	12	8
13. Sangley Point, Cavite	Sept. 5	1	1
14. Pasay, Rizal	Sept. 5	1	1
15. San Felipe Neri, Rizal	Sept. 5	1	1
16. Pila, Laguna	Sept. 7	7	6
17. Cavite, Cavite	Sept. 7	22	20
18. Paranaque, Rizal	Sept. 8	1	1
19. Santa Rosa, Laguna	Sept. 11	9	8
20. Mariquina, Rizal	Sept. 13	4	3
21. Binangonan, Rizal	Sept. 16	60	29
22. Morong, Rizal	Sept. 16	186	116
23. Antipolo, Rizal	Sept. 17	56	35
24. Meycauayan, Bulacan	Sept. 23	1	1
25. Los Banos, Laguna	Oct. 2	19	14
26. Imus, Cavite	Oct. 3	159	116
27. San Francisco de Malabon, Cavite	Oct. 5	12	11
28. Carmona, Cavite	Oct. 6	1	1
29. Calocan, Rizal	Oct. 13	4	2
30. Lucban, Tayabas	Oct. 12	4	4
31. San Pablo, Laguna	Oct. 18	1	1
32. Binan, Laguna	Oct. 16	111	92
33. Pagsanjan, Laguna	Oct. 20	3	2
34. Paete, Laguna	Oct. 21	3	0
35. Naic, Cavite	Oct. 21	48	45
36. Bay, Laguna	Oct. 22	1	1
37. Santa Cruz, Laguna	Oct. 23	41	37
38. Majayjay, Laguna	Oct. 24	15	10
39. Cabuyao, Laguna	Oct. 28	2	2
40. Calamba, Laguna	Oct. 31	64	43
41. Hagonoy, Bulacan	Nov. 1	197	139
42. Novleta, Cavite	Nov. 1	77	40
43. Macabebe, Pampanga	Nov. 6	9	7
44. Magdalena, Laguna	Nov. 6	4	3
45. Lilio, Laguna	Nov. 8	20	16
46. Nagcarlang, Laguna	Nov. 9	1	1
47. Tanauan, Batangas	Nov. 20	10	6

The cases and deaths in the city of Manila, from August 23 to December 31, were distributed by age as follows:

TABLE 4.

Age.	Cases.	Deaths.	Mortality.
Under 30 days	0	0	....
1 to 2 years	3	3	100.0
2 to 5 years	20	20	100.0
5 to 10 years	14	14	100.0
10 to 15 years	14	11	78.6
15 to 20 years	23	17	73.9
20 to 25 years	33	28	84.8
25 to 30 years	33	28	84.8
30 to 35 years	42	38	90.2
35 to 40 years	24	19	79.2
40 to 45 years	18	17	94.4
45 to 50 years	8	8	100.0
50 to 55 years	11	11	100.0
55 to 60 years	1	1	100.0
60 to 65 years	6	6	100.0
65 to 70 years	0	0	....
70 to 75 years	1	1	100.0
75 to 80 years	1	1	100.0
80 to 85 years	1	1	100.0
Unknown	2	2	100.0

The number of cases of cholera that occurred by race, between Aug. 23, 1905, and Dec. 31, 1905, and the date of the last case, are shown in Table 5. Table 6 shows the classification of cases by occupation.

TABLE 5.

Race.	Cases.	Deaths.	Mortality, per cent.	Ratio of 1 Case to	Date of Last Case.
Americans	11	6	54.0	339	Oct. 10
Filipinos	220	200	90.9	862.6	Dec. 31
Chinese	4	4	100.0	5307.5	Oct. 8
Foreigners	20	16	80.0	227	Nov. 8

TABLE 6.

Occupation.	Filipinos.		Americans.		Japanese.		Chinese.		Foreign.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Barber	2	..	..	..	..	..	..	..	..	..
Blacksmith	1	..	..	..	..	..	..	..	..	..
Boatman	1	..	..	..	..	..	..	..	..	..
Buttonmaker	..	1	..	..	..	..	..	..	..	..
Carpenter	4	..	..	..	1	..	..	..	..	..
Cigarmaker	2	1	..	..	..	..	..	..	..	..
Clerk	2	..	1	..	..	..	..	..	..	..
Coachman	2	..	..	..	..	..	..	..	..	..
Collector	1	..	..	..	..	..	..	..	..	..
Cook	1	..	..	..	..	..	..	..	..	..
Domestic	..	2	..	..	..	..	..	..	..	..
Draughtsman	1	..	..	..	..	..	..	..	..	..
Dressmaker	..	5	..	..	..	..	..	..	..	..
Electrician	1	..	..	..	..	..	..	..	..	..
Fireman	1	..	..	..	..	..	..	..	..	..
Fisherman	2	..	..	..	3	..	..	..	..	..
Gardener	..	..	..	..	..	..	1	..	..	..
Hotelkeeper	..	..	..	1	..	..	..	..	..	..
Housekeeper	..	5	..	..	..	..	..	..	..	..
Janitor	1	..	..	..	..	..	..	..	..	..
Journalist	1	..	..	..	..	..	..	..	..	..
Laborer	14	..	1	..	4	..	2	..	..	..
Laundress	..	9	..	..	..	..	..	..	..	..
Mason	..	..	..	..	..	..	..	..	..	..
Merchant	1	..	1	..	..	..	..	..	1	..
Messenger	1	..	..	..	..	..	..	..	..	..
Milkman	1	..	..	..	..	..	..	..	..	..
Painter	1	..	..	..	..	..	..	..	..	..
Policeman	1	..	..	..	..	..	..	..	..	..
Prisoner	29	..	..	..	..	..	..	..	..	..
Religseuse	..	1	..	..	..	..	..	..	2	..
Sailor	5	..	1	..	..	..	..	..	1	..
Silversmith	1	..	..	..	..	..	..	..	..	..
Soldier	1	..	..	..	..	..	..	..	..	..
Stonecutter	1	..	..	..	..	..	..	..	..	..
Student	4	..	..	..	..	..	..	..	..	..
Tailor	1	..	..	..	..	..	..	..	..	..
Teamster	..	..	..	..	..	..	..	..	..	..
Tendera	..	3	..	..	..	..	..	..	..	..
Trader	..	..	..	..	..	..	1	..	1	..
Water vender	1	..	..	..	..	..	..	..	..	..
Unknown	9	31	..	..	3	..	..	..	..	..
Children	20	28	1	..	..	..	..	..	..	..
Total	114	86	5	1	11	..	4	..	5	..

From Table 5 it will be seen that in proportion to their number, more foreigners (Japanese and Europeans) contracted cholera than any other nationality; that the



Americans ranked next, but had the lowest death rate, and that the least number occurred among the Chinese. The mortality of 100 per cent. among Chinese may be attributed to the fact of the very few cases that occurred, and that those patients who recovered probably escaped detection by the health authorities. That no further cases occurred among Americans after October 10 was probably due to the fact that as soon as they believed the disease to be actually present, they observed the prophylactic measures against cholera more strictly.

The high percentage of Americans and Europeans attacked may also be more apparent than real, because it is quite probable that all those persons of this race who were attacked promptly sought medical advice and thus were reported, while among the natives and Chinese, in all probability cases occurred in which the patient recovered, and thus were not reported.

In Table 7 is given the death rate per thousand for Manila, for all diseases, for the years 1903 and 1904, in which no cholera was reported. The death rate for the same months in 1905, during which period 250 deaths from cholera were reported, is also given:

TABLE 7.

	1903		1904		1905	
	Number of Deaths.	Annual Death Rate per 1000.	Number of Deaths.	Annual Death Rate per 1000.	Number of Deaths.	Annual Death Rate per 1000.
August .....	862	46.17	1032	55.28	841	45.03
September .....	1228	67.97	1064	58.89	1013	56.06
October .....	1217	65.19	1018	54.53	850	45.51
November .....	974	53.91	957	52.97	944	52.24
December .....	894	47.89	794	42.53	841	45.03
Average .....	.....	281.13	.....	284.20	.....	243.87
		56.22		56.80		48.77

From the above table it will be seen that the death rate for the years in which no cholera was reported was actually higher by more than 8 per thousand than in 1905, when cholera was reported. The death rate is of particular importance, in view of the fact that an increase in the general mortality has been almost universally accepted as being a strong factor in indicating that deaths from communicable diseases were occurring. Many epidemiologists who have written on this subject in the past have laid especial stress on the fact that when a sudden increase in the death rate for a community takes place, it should be regarded with suspicion, and the possibility of a dangerous communicable disease being present, should be considered.

#### THE SOURCE OF THE INFECTION.

It will now be interesting to consider whether or not the infection was introduced from without, and in this connection it will be important to ascertain in what other nearby countries cholera was present at the time it made its appearance in the Philippine Islands.

Manila is in active communication, by direct steamship lines, with the following Oriental ports: Yokohama, Kobe, Nagasaki, Moji, Shanghai, Amoy, Hong Kong, Saigon, Singapore, Rangoon, Calcutta, Madras and Bombay, and indirectly, with Sourabaya and few other Javanese and Bornean ports. Examination of the official sanitary statistics received from the ports mentioned discloses the fact that cholera was present in an isolated manner in the country back of Kobe, Japan; in Cal-

cutta and in Bombay. In the case of the two last mentioned ports, the sailing time to Manila by the most direct steamers is at least nine or ten days from Calcutta, and at least fifteen days from Bombay. The fact that the incubation period is only five days, that no sick were found on any of these vessels, and that, from laboratory experience, it has been ascertained the class of vegetables and other cargo which come from these ports will not serve as media for the growth of the cholera bacilli for a greater period than five days, shows that for practical purposes these two ports may be dismissed from further consideration. At any rate, the only importations from India are rice, onions, potatoes, textiles, ivory goods and other articles not at all likely to convey cholera organisms.

No cholera was reported in Hong Kong, and none was known to exist in Canton, but in view of the fact that the actual status of the public health in Canton is not well known at any time, that place can not be excluded with any degree of positiveness. The time from Canton to Manila, by way of Hong Kong would be at least from four to five days, but in view of the fact that only onions, potatoes, garlic and such other vegetables as are necessarily forwarded in a dry state, were shipped from these ports, it is not likely that cholera organisms could have been introduced with them; furthermore, since Canton vegetables are used freely aboard vessels which entered the Philippines from Hong Kong, and since no sick were found on these vessels, it is reasonable to exclude that port from the list of places likely to have been the cause of the introduction of the infection.

The records show that from Kobe a number of vegetables were shipped, but they consisted principally of onions and potatoes, and a very small amount of cabbage. The vessels that arrived from that port for the month preceding the outbreak of cholera in Manila did not have any cases aboard which were in any way suspicious of cholera. In view of the fact that cabbage is the only vegetable which could possibly have been the cause of the introduction of cholera, and since at least five days is consumed in the voyage, and more time must necessarily have elapsed before it could have been placed on the market, and since experiments made in the laboratory of the Public Health and Marine-Hospital Service show conclusively that cholera organism can not be kept alive on cabbage for longer than five days, this method of the introduction of the infection may also be excluded. The only other articles which are open to suspicion, imported from Kobe, Japan, are classes of food peculiar to the Japanese, and which are not eaten by other nationalities. Many of these consist of vegetables in a fermented state, which in itself precludes the probability of cholera organisms existing therein; and furthermore, since no Japanese persons are known to have been attacked in the city of Manila until the disease was present at least five days, and after more than 25 cases had occurred among other nationalities, it is not likely that the infection can be ascribed to Japanese food products.

From the foregoing it will be observed that so far as the records show, at least, it is not likely that the infection gained entrance into the Philippine Islands from without. Of course, there is always the possibility that cholera organisms may have been present in the intestines of an incoming passenger, but in view of the fact that the first cases known to have occurred were in persons known to have been in the islands many weeks immediately previous, and also, that they were not per-



sons likely to ingest foreign food, this last contingency would also seem remote.

#### FIGHTING THE EPIDEMIC.

In mapping out a campaign for the suppression of the disease, the work was divided into four parts:

1. Isolation of the sick in the cholera hospital, and the rigid disinfection of their houses and effects.
2. The protection of the city water supply, including the closing of wells located in the city of Manila.
3. Prohibition of the sale of foodstuffs likely to become contaminated, and the proper protection, with fly screens, of the remainder.
4. The education of the public in the precautions to be observed in order to avoid the disease.

The carrying into effect of the isolation of the sick, and their treatment at the cholera hospital, was so well organized as the result of the experience gained in the former epidemic that this particular feature worked very smoothly; but in other respects the work was attended with considerable difficulty on account of the strong antipathy of the Filipinos to be treated elsewhere than in their homes.

The native daily papers took the matter up and drew a vivid pen picture of the mental agony that would be endured by the relatives and friends of those who should be unfortunate enough to be stricken with cholera, and separated from them by being compelled to go to the cholera hospital. The direct effect of the publication of such articles was that many cases were concealed, and just so many infected centers remained undiscovered. The newspaper attacks were borne patiently, and constant endeavors made to show prominent Filipinos and the representatives of the press the magnificent manner in which the cholera hospital was equipped, and how much the chances of recovery from an attack were increased by hospitalization, and the fact was particularly pointed out of the great injustice done to the patient by depriving him of these increased chances for recovery. Fortunately, a number of well-known citizens recovered at the cholera hospital about this time, which had the effect of at least silencing the critics, after which the work of isolation was carried on with much less hindrance and with ever-increasing effectiveness.

To the American press of Manila too much credit can not be given for the manner in which it pointed out the danger that existed in concealing cases.

No attempt was made to quarantine "contacts," nor was any attempt made to institute a land quarantine at any place in the islands. This was a radical departure from the manner in which, in 1902, the campaign against cholera was conducted. The infection was followed from center to center; the sick were isolated, and every practicable measure was taken to destroy the infection and thus to prevent its spread. It is believed that this method was of more value than an attempted quarantine would have been, as the latter would necessarily have had to be too despotic to have been of any permanent value. The policy was to educate rather than to antagonize, and what has been lost in some respects has been more than compensated for in others.

By comparing the disease during this epidemic, with that of the previous one, it will be seen that the disease actually spread more slowly this time than before. To quarantine effectually the infected area in and around Manila, not to mention the provinces, would have required from 30,000 to 50,000 armed men, and unless this quarantine had been made effective, it would have

been useless. The cost of maintaining such a quarantine, in the salaries for guards and delays and losses to business, would have been enormous.

It may be contended that the infection this time was milder in character, and for that reason did not spread, but when it is remembered that the mortality was over 90 per cent., and that nearly all the victims succumbed in a few hours after the first symptoms appeared, and that almost without exception the disease spread rapidly unless prompt disinfection was done, it will be seen that this contention has very little basis in fact.

The beneficial effect of not alarming the populace, and thereby causing a great emigration from the centers in which the disease appears, can scarcely be overestimated. By the plan followed, cases of cholera, instead of being carried far and wide in every direction, were confined largely to Manila, where the patients could be promptly isolated and the necessary disinfection performed; the consequence of which, of course, was that there was little danger from the spread of infection in such cases.

The one idea that was kept constantly in mind was to so arrange the inspection system that the disinfectors could reach the cases in the shortest possible time. The disinfection was made as simple as possible, and strict instructions issued that nothing must be destroyed or damaged, with the exception of the prepared food which was found in the houses; the stools of the patients and the places where they were thrown and the clothes which they soiled were diligently sought for and thoroughly disinfected with a 1 to 1,000 solution of bichloride of mercury, or a 5 per cent. solution of carbolic acid. The floors and walls were thoroughly saturated with the same solution, by means of a pump.

All containers in which water was stored, as, for instance, water coolers, earthen jars, filters, barrels, wells, etc., were treated with potassium permanganate. "Contacts" were required to take an antiseptic bath. The disinfecting carts were used in much the same way as the apparatus of a fire department. The horses were kept hitched up, night and day, and as soon as a case was reported, the disinfectors reached the infected house a few minutes later. The fact that no second case occurred in any house shows most effectively how efficiently the disinfection was done.

#### PROTECTION OF WATER SUPPLIES.

A few days after the outbreak of cholera in Manila, a few isolated cases of the disease were carried to the water-shed from which Manila obtains its drinking water. These cases probably came from Taytay, a small town in Rizal province, located near the water-shed. The importance of properly guarding the water supply of a city of 219,000 inhabitants will be readily appreciated. Arrangements were promptly made for sending an adequate patrol to the Mariquina Valley, to prevent the pollution of the water. Through the courtesy of the Commanding General of the Philippines Division, four troops of the Eighth Cavalry were promptly ordered to the valley, and remained there until long after the time that the last case of cholera was reported. The water-shed is inhabited by about 10,000 persons, and from time immemorial it has been their custom to bathe and wash in the Mariquina River, from which the Manila water supply is drawn. To deprive them, suddenly, of this privilege produced great opposition among the people, and made it difficult for effective work to be done. For that reason, to the American troops great credit is due on account of the great patience which they exer-



cised. The fact that the river was not polluted, although many cases of cholera occurred immediately along its banks, shows most conclusively how effectively the troops carried out the duties to which they were assigned.

As an additional protection, during the time that the cholera on the water-shed was at its height it was deemed advisable to place a sufficient amount of copper sulphate in the city reservoirs to make a solution of 1 to 2,000,000. Subsequent experiments made at the laboratory with the regular city water, however, showed that a solution of at least 1 to 50,000 would be required to kill cholera organisms with certainty in thirty minutes' time. As this would be unsafe for drinking purposes, for continual use, it is of course obvious that cholera organisms can not be successfully removed from the public water supply of Manila by the use of copper sulphate.

In the city of Manila there still remain a great many wells which, ostensibly, are used only for the purpose of sprinkling streets, washing carriages and other uses; but the danger is always present that they will be used for drinking purposes, and for that reason an order was issued which directed the closing of all wells in the city of Manila.

After the large city mains were protected, and the wells were closed, it could almost be said with certainty that no large epidemic could take place in the city of Manila, and this proved to be the case.

#### PROHIBITION OF THE SALE OF FOODSTUFFS AND PROTECTION BY FLY SCREENS.

For one who has never seen the local native markets, it will be difficult to understand the great variety and kinds of foodstuffs that are offered for sale, and the ideal culture media which they offer for cholera organisms. Among them are snails, fish of various kinds, crabs and other shellfish, cooked vegetables, etc. There are also many green vegetables which, of necessity, must be continually watered in order to keep them in a fresh condition. The great amount of handling by prospective customers, which all the foods in the public markets receive, makes it clear that they are likely at any time to become contaminated by persons who are either in the incubation stage of cholera or have come in contact with infected material.

The chewing of the betel nut has long been under suspicion as being perhaps the most common manner by which cholera is propagated and continued in the Philippine Islands. The betel is prepared for chewing by extracting the kernel from the nut, which is from 5 to 8 centimeters long, with a diameter of 2 centimeters. The outer cover of the nut is a thick husk, comparable to that of the green walnut or butternut of the United States. The kernel, when extracted, is cut into discs, each of which is wrapped with a piece of moist green buyo leaf. It is in this leaf that the danger is supposed to lurk.

In order to keep the leaves in good condition, they are kept in an earthen pot and thoroughly sprinkled with water every few hours. As new supplies of the leaves are received at the markets, the old water that accumulates in the bottoms of the vessels is not always replaced with fresh water. Each prospective buyer of the buyo leaf usually fingers all the leaves that are found in the pot in order to find those which are most tender. In this way the buyo leaves in a given vessel are probably handled by different persons many times each day before they are finally disposed of, and if there is any cholera

in the neighborhood it is quite easy to conceive how, sooner or later a person who has cholera organisms on his or her fingers, will come in contact with the buyo leaves. To prevent the sale and use of the betel nut and this buyo leaf is probably one of the most difficult things which the Bureau of Health had to attempt. Confirmed betel-nut chewers are almost as insistent on having their chewing material as the average opium habitué is in obtaining his supply of opium, and they will go to every possible trouble and risk to obtain it.

Street peddling was entirely forbidden. The sale of fruit that grows well above the ground, as, for instance, those fruits grown on trees, exemplified by bananas, cocoanuts, mangoes, etc., was not interfered with to any great extent. These fruits, fortunately, are not handled very much by prospective buyers, before being bought, and, therefore, are not likely to become contaminated. Some of the cheaper articles, which are absolutely indispensable to the poorer classes, were permitted to be sold, provided the shopkeeper agreed to keep the product under fly screens, and to prevent intending purchasers from handling the same.

With the aid of the police, these regulations were fairly well carried out, and perhaps aided considerably in preventing the spread of the disease.

#### THE EDUCATION OF THE PUBLIC IN THE PRECAUTIONS TO BE OBSERVED IN ORDER TO EVADE THE DISEASE.

Education of the public was probably the most important work that was done by the Bureau of Health, and the success in controlling the outbreak was no doubt largely due to the co-operation which was given.

In order to place something practicable before the public, something which required very little expense, trouble or knowledge to carry out, the following rules were printed in the newspapers and then issued in the form of a handbill, in English, Spanish, Tagalog, Ilocano, Visayan, and other native dialects:

1. Boil all drinking water and place it while hot in covered vessels. Do not dip up the water when needed, but pour it into drinking cups, otherwise cholera germs may get into the water from the hands.
2. Do not touch drinking water or food with the hands unless they have just been washed in water that has been boiled.
3. Eat only cooked food. Avoid all fruits, raw vegetables, and raw fish. Dried fish may be made safe by thoroughly heating. Fruits may be made comparatively safe by dipping them a few seconds into boiling water.
4. Flies may carry cholera germs on their feet from human excreta to food; therefore, to protect it from flies, cover all food immediately after it is cooked.
5. If cholera appears, build smudges under houses to drive flies away.
6. Boil all water used for diluting milk.
7. Cook all meats and fish thoroughly so as to heat the same throughout.
8. Keep kitchen and table dishes thoroughly clean and scald them before using.
9. Keep the place in which you live, the ground under the house, and everything pertaining to it, clean.
10. Outhouses, closets, and vaults can be made safe by putting in lime or carbolic acid. When this can not be done dejecta must be buried or thoroughly covered with earth.
11. Isolate all the sick. It is recommended that a house in each barrio be set aside for this purpose.
12. All the dead should be embedded in lime and buried three feet under the surface.
13. Filth or vomit and the dejecta of the sick should be promptly cleaned up with boiling water and buried.



14. Clothes and bedding used by sick persons must be either burned or boiled. Do not wash any clothes near wells or springs, nor permit surface water to run into any well or spring.

15. Municipal presidents and municipal councilors should enact these rules as ordinances, and see that they are enforced.

16. All school children are requested to inform their parents of these rules, which, if observed, will prevent great loss of life.

The Bureau of Education sent these circulars to every school teacher in the islands, with instructions that the rules should be taught to all pupils so that they could recite them, and then the pupils were requested to repeat them to their parents. The Archbishop of the Catholic Church of the Philippine Islands sent the circulars to every priest, with instructions that they should explain their contents to their parishioners. The Aglipay Church and other denominations did the same. Very large flaring red cardboard posters, with the rules printed in several languages, were posted in the postoffice, municipal buildings, and other public places throughout the islands. Later, a more advanced cholera circular was prepared for the use of teachers. The information contained in these later circulars enabled many teachers to cope successfully with the disease when it made its appearance in the small towns at which they were at work.

Many thousands of Filipinos soon learned that they could easily avoid contracting the disease. How different was this picture from that presented in 1902, when only fatalistic indifference was shown, and the only measures taken by the natives themselves consisted in nightly religious processions. With the exception of a few instances, in districts in which dense ignorance prevails, these latter are scarcely ever encountered. The number of persons who boiled their drinking water was astonishing.

#### CONCLUSIONS.

1. From the evidence obtainable at this time, it is impossible to state whether the cholera was reintroduced into the Philippines, or remained here in some latent form for the year and a half during which no cases were detected.

2. While there is no evidence to show that the disease spreads by other means than that of enteric fever, yet the rapidity with which it makes its appearance in many widely separated places, puts it in an entirely different class, so far as combating it successfully is concerned.

3. Maritime quarantine can practically insure the prevention of its spread by sea.

4. It is practically impossible to make a land quarantine effective, hence, it is useless to engender the opposition with which it is usually met, and the time and money required by such a quarantine, will yield much better results when put to the education of the public in the manner in which the disease spreads.

5. The education of the public is a much more effective measure in its suppression than methods requiring force in their application.

6. In order, finally, to make serious outbreaks of cholera in the Philippines impossible it will be necessary to replace the present insanitary water supplies with artesian wells, or other sources from which infection by surface drainage can be avoided, or to correct it by filters or other means where it does occur.

## CEREBRAL SYPHILIS IN CHILDREN.\*

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BOSTON.

In part, this paper is based on the study of somewhat over 100 cases of undoubted syphilitic cerebral disease in children from the literature. A large number of other cases, undoubtedly of similar character, have been excluded merely because unequivocal evidence of syphilitic infection was wanting, or postmortem examination had not been made.

The paper is really a consideration of hereditary cerebral syphilis, but it is thought best to employ the broader title in deference to the opinion of certain well-known observers who believe that many cases of syphilis developing late in childhood are instances of acquired and not of congenital infection.

A study of a large number of cases from the literature does not indicate that there is much ground for this belief. Certainly, the great majority of the cases are undoubted instances of inherited disease. There is no reason, however, why cerebral symptoms of presumptive specific character, appearing late in childhood, may not in fact be the so-called "tertiary" phenomena of a specific infection acquired in earlier years. So far as the symptoms and the clinical interest of the affection are concerned, it makes but little difference when the infection occurred. It is with the fact of the frequency of cerebral syphilis in childhood and with the interesting clinical and pathologic manifestations of the disease that we have to do rather than with the question of the manner of infection.

It is not possible to obtain an adequate conception of the relative frequency of this affection in the period of childhood, by judgment based on the space devoted to the subject in the text-books. It is a field of research as yet almost unexplored in special pediatric literature, but one which as time goes on will be recognized as of the greatest interest and of far-reaching importance.

That the subject is deserving of a special chapter in pediatrics is evinced by the large number of instances of the affection to be found in the literature, and by its unquestionable relation to other and very common affections in childhood, not usually regarded as of specific nature.

When we consider the frequency of these other conditions in childhood, and the probable specific character of many of them the entire subject assumes a position of the foremost importance in the study of disease in children, and may justify a brief study of the subject and the placing on record of a grouped and condensed summary of some of the cases.

The words of Fournier,<sup>1</sup> in his treatise, page 422, may well be repeated as preface to any consideration of the subject:

Avec les affections du système nerveux nous allons aborder un chapitre des plus importants de notre programme, et je puis ajouter des moins connus.

In the consideration of this affection we must study first the clinical phenomena in each case; second, the probable character of the morbid changes in the central nervous structure, responsible for these phenomena.

There are three pathologic conditions in the brain, which, singly or in combination, may be responsible for

**Strychnin in Shock.**—Dr. Graeme H. Hammond, New York, states that whatever the effect of strychnin in surgical shock, it is absolutely injurious in psychic shock.

\* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.  
1. Fournier: Syphilis Héritaire Tardive, 1886.



the symptoms of cerebral syphilis. They are, in the order of apparent frequency of occurrence: Meningitis (usually leptomeningitis); arteritis (usually endarteritis); syphilomata (usually of meningeal origin). To these conditions all other changes are probably secondary.

What are the grounds on which, in any given case with nervous manifestations, we base our assumption that those phenomena are of specific origin? In themselves alone the symptoms, considered individually, and only from the standpoint of the phenomenon at any one time, do not present any characteristics that can be regarded as specific, for similar symptoms may be produced by diverse etiologic causes. It is only when we consider the phenomena collectively, the character of their onset and progress, and their relation with one another, that any special peculiarity is apparent.

When produced by syphilitic lesions of the central nervous structure, these phenomena present the following characteristics: First. They are multiform, having often no apparent relation to one another, associated together in an apparently random manner, often rendering their explanation, on the basis of any single lesion, impossible. Second. The onset of the phenomena is as a rule subacute, with the occasional occurrence of individual symptoms of very acute character and severe degree. Third. These latter phenomena are characterized by their tendency to disappear in the most unexpected manner, after a very brief duration, and by their equally striking and practically certain recurrence in the same or in some other locality; with the eventual persistence, after several such recurrences, of peripheral evidence of a destructive and permanent central lesion. Fourth. The striking rapidity with which some of the symptoms yield to specific treatment, and the equally remarkable manner in which other phenomena persist or pursue their course without the slightest regard to energetic therapeutic measures, or even make their appearance while such treatment is in force.

The phenomena are manifold, varying from time to time in character and degree, but at some one time during the course of the affection some one class of symptoms render themselves conspicuous by special predominance, occupying the foreground of a clinical picture whose background is the multiform symptom-complex to which reference has been made. Thus, motor phenomena may dominate the scene: epileptiform convulsions, general or unilateral; monospasms may occur; tremors; involuntary irregular movements without loss of consciousness; motor aphasia; paralytic conditions of any degree of severity or extent.

The ocular palsies, so frequent and conspicuous, belong to the instances in which the involvement of the cranial nerves is a prominent feature of the case.

Sensory phenomena; neuralgic pain, numbness, anesthesia and various parasthesic phenomena may prevail for a considerable time, especially in the early stages of the disease, while the background of other symptoms is still indefinite and vague. In other cases the psychical features, changes in character, irritability, apathy, depression, impairment of memory, diminution of mental capacity, dementia, and very rarely mania, may either usher in or close the scene, or remain throughout the essentially predominant manifestation of the central process.

It is by careful consideration of the nature of the onset, progress and duration of the predominant phenomena that we are enabled to draw some inference as to the probable pathologic type with which we have to deal

in any given case. The subacute and often vague character of some of the early manifestations has led to their classification as prodromal or premonitory symptoms. Such a distinction is artificial, although in some respects convenient. These phenomena are as much a part of the symptom-complex as the later manifestations, and are, in their degree of vagueness or distinctness, no accurate index of the severity or extent of the morbid process at the time when they appear. Moreover, the premonitory symptoms of one case may be later developments in another instance.

It is not so much the initial phenomena themselves as it is the manner of their onset, and especially their course, that gives them a premonitory character. These early symptoms are characterized often by the insidiousness of their onset; frequently by their transient character and erratic course. Thus, following change of character and weakening of intellectual power, so insidious and slight as to be often unnoticed by the parents, and only remembered in the light of subsequent events, the child suddenly loses its speech, which, however, may last but a few moments or continue for days, complete restoration of the function ensues, only to be followed later on by a sudden loss of consciousness, with or without convulsive movements of general or local character. This may disappear entirely or the child may be left with partial paralysis of some part of the body. In another case in which for many weeks the only complaint has been of dull, diffused headache, with occasional attacks of vertigo, there develops, either suddenly or more slowly, a hemiplegia; this may disappear in a few days in the most unexpected manner, leaving no trace of muscular weakness, but appears again later, this time perhaps in the other half of the body. Or a child may show an unnatural tendency to sleep with an occasional complaint of nocturnal headache continuing for weeks or months, when finally the sudden advent of epileptiform convulsions indicates the cerebral nature of the condition; or gradual diminution of visual power incites the parent to seek medical advice and choroiditis or optic atrophy is found. Or, in another such case, paralysis of the ocular muscles may suddenly appear. Thus the features of nearly any period of the affection may appear early in its course, but are then usually of fleeting nature and erratic course.

Headache is frequently a very early symptom in childhood, as in a lult life, but differs somewhat from the adult type in that it is often not well defined, more diffused in character and does not appear to reach the intense severity of the cephalalgia of later life. Insomnia, so common and so obstinate in adult life, is far less common in childhood, except in cases in which it depends on the nocturnal exacerbations of the headache. It may indeed be said to be, in children, one of the rarest of the symptoms so prominent a feature of cerebral syphilis in adults.

Of all the early symptoms of the affection in childhood, changes in disposition and in the intellect are perhaps the most common initial manifestations. Such alteration in character or intellect does not, however, always appear in the history we obtain from the parents of the child, unless they are very observant or the alteration very marked.

Early in the course of the disease in childhood may appear headache, brief sensory phenomena, oculomotor disturbances and fleeting motor palsies, especially transient difficulties with speech and convulsive attacks. While these symptoms may occur without premonition, and in the majority of cases seem to do so, more careful scrutiny of the child's life would in many instances re-



veal earlier premonitory evidence in the shape of insidious alteration in the psychical nature of the child. This change in the mental state of the child may be so slight as to consist merely in a retardation of the normal mental advance, or it may be so pronounced as to include an infinite variety of psychical phenomena; unusual irritability, causeless fits of grief or anger, moods of depression or excitement, bizarre ideas and hallucinations, apathy, loss of desire to play or to associate with its former companions, diminished interest in previously enjoyed occupations, impairment of memory, diminished mental capacity and ability to reason.

It is possible for a majority of these phenomena to make their appearance before the advent of motor or sensory disturbances. Usually, however, before this background of mental disintegration is fully unrolled, individual symptoms of more definite character appear in the foreground. There is another class of initial phenomena that may co-exist with, or may occur in place of the psychical symptoms. These phenomena are considered by Fournier<sup>1</sup> (page 471) as of the congestive order, but, as it seems to me, may more accurately be termed "circulatory disorders." The most common of these disturbances in children is vertigo. Of frequent occurrence also are brief interference with the function of speech, fleeting disturbances of vision and sudden attacks of syncope. Somewhat less frequent, perhaps because more difficult to detect in childhood, are brief periods of mental confusion or sudden lapses of memory. Tinnitus aurium may also be present.

Sooner or later after the appearance of the initial phenomena appear symptoms of a more positive type, inequality and fixation of the pupils, facial palsy, hemiplegic attacks or epileptiform convulsions. These symptoms, especially the epileptiform and the hemiplegic attacks, may be, in the little child, previous to the third or fourth year, the first apparent indication of the cerebral disease.

The earliest possible recognition of the true nature of the initial symptoms of this affection is imperative, for on the early diagnosis and the immediate institution of specific treatment depends the welfare of the child. If we can not obtain from the parents information of specific infection in themselves or symptoms of infection in the early history of their child, we must endeavor to find on the body of the child itself some evidence of previous disease, or, failing in this, seek for such evidence in the other children of the family, in the shape of recent or old traces of syphilitic lesions. If these are not found, careful scrutiny of the family history may by its revelation of numerous unexplained miscarriages and stillbirths, or the existence of excessive infant mortality, from convulsions or marasmus, give strong presumptive evidence of the probable specific nature of the case. In every such case the therapeutic test should be applied for the benefit that may result is incalculable and the harm nil.

In not a few instances nothing in the history or examination of the patient or the family will be found to enlighten us in our doubt. but suddenly an interstitial keratitis appears on the scene and yields the clue for which we have vainly sought. Or keratitis may occur in one of the brothers or sisters, or a chance ophthalmoscopic examination may reveal in one of them, or in the patient, evidence of choroiditis, reminding us that in searching for specific stigmata in the shape of deformities of the teeth and nose, scars about the mouth or in the throat, impairment of hearing, etc., the fundus as

well as the cornea of the eye should be invariably examined, in the other children as well as in the patient.

The prognosis depends, first, on the early recognition of the nature of the affection; second, on the probable pathologic type, as far as can be determined by the clinical signs; third, on the period in the life of the child at which the process begins.

Determination of the type of morbid change in a given case is not always easy or possible, but certain inferences may be drawn from the clinical symptoms. Those instances in which occur intense headache, cranial nerve palsies, excessive reaction to sensory impressions, especially hearing and sight, dulness or torpor, insomnia or an unnatural tendency to sleep, and convulsive attacks and psychical disorders, especially when accompanied by a choroiditis, are indicative of a meningitis. When the cranial nerve palsies are an early or a predominant feature, a meningitis commencing or concentrated at the base is probable. Convulsive attacks and psychical irritability or depression, dulness or insomnia suggest the cortex as the seat of the greater meningeal involvement.

Those cases in which vertiginous attacks, sudden losses of consciousness or brief mental confusion, transient disturbances of speech and paralytic affections of short duration or eccentric type prevail, are instances in which arterial change is probably the predominant morbid process.

Certain features are common, however, to both the meningeal and the arterial form, and this is especially true of the mental symptoms, changes in disposition, irritability or apathy, progressive deterioration of mental power, paralytic conditions and convulsive attacks. They may result, in the former case, from secondary changes in the gray matter induced by a chronic meningitis or from a specific meningo-encephalitis, with subsequent atrophy of the hemispheres or cyst formation; or they may be produced by atrophy, sclerosis or softening in the gray and white matter, secondary to arterial disease, with its occlusion of the arteries and consequent impairment of nutrition. In many cases the two conditions are combined, and it is not then possible always to determine which morbid process is responsible for those individual phenomena which may be produced by either.

Tumor formation, in the strict sense of the word, usually gives rise to focal symptoms depending for their nature on the situation of the growth. The gummatous growth of specific cerebral disease, however, is more commonly a diffuse gummatous infiltration of the meninges, its symptoms being consequently those of meningitis, and especially meningitis at the base, with resultant cranial nerve disturbance.

The prognosis depends to a considerable extent on the pathologic type. Purely gummatous lesions yield readily to specific treatment. Meningeal processes, if not of too long duration, and taken at a time previous to the occurrence of secondary atrophy and sclerosis in the gray matter, also possess a favorable prognosis. If destructive involvement of the hemispheres has already occurred, specific treatment may check the advance of the meningo-encephalitic process, but the destroyed areas remain, with atrophy, sclerosis and softening and adhesions between the meninges and brain.

Of all the forms of syphilitic cerebral disease the arterial lesions present the most unfavorable prognosis. While some cases respond to treatment, others not only do not yield, but, even while treatment is in force, may present an increase in clinical phenomena due to ar-



terial disturbance. Hemorrhage is very rare in children with specific cerebral arterial disease. Occlusion from thickening of wall or thrombosis is the rule.

Finally the prognosis depends greatly on the time when the cerebral disease commences. If it begins at a period of childhood when reasonably reliable subjective complaint is possible, or when the mental evolution has reached a degree at which early changes in disposition and insidious weakening of the intellect are likely to be conspicuous, earlier recognition, and therefore more effective treatment, will result.

Syphilitic lesions in the brain have been found immediately after birth, or so soon afterward that they furnish conclusive evidence that it is possible for the involvement of the cerebral nervous structure to antedate birth.

#### CASE REPORTS.

##### CASE 1.—Still-born syphilitic child.<sup>2</sup>

Extreme pachymeningitis and leptomeningitis of base of brain and upper posterior portion of cord, with adhesions between the membranes and extreme fibrous tissue proliferation in the pia, invading and involving the white and gray matter of the cord. Syphilitic arteritis of the basilar and both vertebral arteries. Gummatous infiltration in bones, liver and intestines.

##### CASE 2.—Death $\frac{1}{2}$ hour after birth. Mother syphilitic.<sup>3</sup>

Inflammation and adhesions of the meninges and increased fluid in lateral ventricles. Gummata in both lungs. Adhesions of dura to skull with necrosis of inner table.

##### CASE 3.—Death 20 hours after birth. Mother syphilitic.<sup>3</sup>

Inflammation and adhesions of the meninges with fibrinous exudate along the vessels. Adhesions of dura to bone with necrosis of inner table.

##### CASE 4.—Death 5 days after birth. Child syphilitic.<sup>2</sup>

Multiple foci of softening throughout the cortex. Proliferation of neuroglia. Diffuse gummatous leptomeningitis. In the cord, diffuse pachymeningitis and leptomeningitis with adhesions, and of fibrous character, of lighter grade and without involvement of the cord itself. Gummata in the suprarenal glands. Specific osteochondritis of the femur, tibia and vertebrae. Diffuse bronchopneumonia and follicular enteritis.

##### CASE 5.—Death 10 days after birth. Child syphilitic.<sup>4</sup>

Meninges normal. Extreme thickening of the basal arteries with great reduction of the lumen. Endarteritis obliterans. Syphilitic pemphigus, hepatitis, and amyloid spleen.

##### CASE 6.—Death 6 weeks after birth. Child syphilitic.<sup>5</sup>

Diminution in size and number, deformity of contour and changes in protoplasm (degeneration and atrophy) of ganglion cells of gray matter of the cord, with proliferation of the neuroglia. Central canal filled with transparent mass, about which small round cells are massed 5 to 6 rows deep.

##### CASE 7.—Death 6 weeks after birth. Child syphilitic.<sup>5</sup>

Atrophy of cells in gray matter of the posterior and lateral portions of anterior horns and in the column of Clarke. Circumscribed homogeneous foci in the entire extent of dorsal region and about the vessels of the anterior commissure.

##### CASE 8.—Boy 23 weeks old. Illegitimate.<sup>6</sup>

Coryza and specific eruption at birth. Fourteen weeks later head began to enlarge, reaching extreme size. Seventeenth week, convulsions of brief duration, involving mainly the eyes. Twenty-third week, death. Pachymeningitis hemorrhagica.

##### CASE 9.—Death 5 months after birth. Child syphilitic.<sup>7</sup>

Beginning affection of vessels of cord.

These cases and those immediately following show how very early the central nervous system may become the seat of syphilitic disease. In such early instances it may be impossible to detect the brain involvement unless the process is clinically indicated by gross symptoms such as repeated convulsions or pronounced paralysis.

##### CASE 10.—Girl, 10 months. Father syphilitic.<sup>8</sup>

At age of 1 month snuffles, no rash. Up to age of 4 months eleven convulsions of epileptiform character, then extreme emaciation and ulcers on nates, both conditions yielding to mercuric inunctions. Seventh month disseminated choroiditis was discovered. Tenth month death from marasmus, without other nervous symptoms.

*Postmortem.*—Scattered adhesions between the dura and the pia-arachnoid. Sylvian fissures glued together by old exudate. At the base near the optic commissure a patch of greenish lymph. In many places on the vertex and under surface of temporosphenoidal lobes the pia is thick and fibrous. On upper surface of left parietal lobe a small patch of calcification. Pia especially cloudy and thickened along the course of the vessels, and growths of connective tissue septa extended from the pia into the brain. Vessels of the circle of Willis normal, but the arteries of the pia showed microscopically a high degree of arteritis, involving chiefly the inner and middle coats, and in places leading to complete occlusion. Few areas of superficial softening in the cortex.

This case illustrates remarkably the considerable degree to which the cerebral or, more properly, the meningeal process may attain in the early months of life, with comparatively slight clinical evidence of the same. It is well termed a case of "chronic smouldering disease."

##### CASE 11.—Boy, 15 months. Child syphilitic.<sup>8</sup>

Coryza from birth. No history of rash. Two or three weeks after birth had sore nates lasting eight months. Extreme emaciation. Double coarse inconstant nystagmus, with tendency to deviation of axes to left. Pupils equal and of moderate size. Fundus negative. Double facial paresis, involving also upper branches more marked on left, and chiefly evident on movement. F. reaction diminished on both sides, especially the left. G. reaction increased on both sides, especially the left. Frequent fine tremors of facial muscles about the corner of the mouth and of the orbicularis palpebrarum on the right side and to a less extent on the left side as well. Death from exhaustion at 15 months.

*Postmortem.*—Some opacity of the pia at the base. Both third cranial nerves at superficial origin swollen to conical tumors, and also swelling of the fourth, fifth, sixth, seventh and eighth pairs as well. Microscopic examination showed almost complete atrophy of axis cylinders, abundant infiltration of new cells with fine stroma. The new growth was especially abundant in the funiculi, but also in the interfunicular areolar tissue. The basilar and all the arteries of the circle of Willis were extensively diseased, appearing white, opaque and semi-cartilaginous. Thickening continuous along entire course but no nodules and no calcification. On section the lumen was greatly narrowed, in places eccentric in outline, in many places nearly completely obliterated. Microscopic examination of the middle cerebral artery showed the typical changes described by Heubner. Invasion of all the coats by a cellular growth, with concentration of the process in the intima, although in places the muscular layer itself was destroyed.

This case is unique and remarkable on account of the very unusual gummatous infiltration of the cranial nerves, of perfectly symmetrical character, the extreme affection of the arteries, with the practical absence of meningitis. It is a very rare condition in childhood. This child during life had "odd" attacks of laryngeal spasm and gasping, becoming "blue in the face," which

2. Jürgens: "Ueber Syphilis des Rückenmarkes und seiner Häute." *Charité Annalen*, 1883, p. 729.

3. Howitz: Reference in Behrend's *Syphilodologie*, II, p. 60.

4. Marchiafava: "Sulla sifilide delle cerebrali; studi clinici ed istologici." *Atti dell' accademia med. di Roma*, 1877, III, No. 2, p. 101.

5. Jarisch: "Ueber den Rückenmarksbefund in 7 Fällen von Syphilis." *Arch für Dermat. u. Syph.*, 1881, p. 621.

6. Heubner: "Pachymeningitis hemorrhagica bei hereditärer Syphilis." *Virchow's Archiv*, 1881, LXXXIV, p. 267.

7. Kahler and Pick: "Befunde im Rückenmarke eines syphilitischen Kindes." *Prager Vierteljahrsschr.*, 1879, II, p. 1.

8. Barlow: "Meningitis, Arteritis and Choroiditis in a Child the Subject of Congenital Syphilis." *Trans. Path. Soc., London*, 1877, XXVIII, p. 287; also *Medical Examiner*, 1877, p. 68, and "Gummata on Cranial Nerves; Disease of Cerebral Arteries in a Case of Congenital Syphilis." *Trans. Path. Soc.*, loc cit., p. 291.



Barlow thought might be due to some affection of the vagus. I think it was probably tetany, which at this time (1877) was not generally recognized. The child had had much gastrointestinal trouble, vomiting, etc.

CASE 12.—Child born with specific eruption.<sup>9</sup> Age not stated. Mother syphilitic. Eruption cleared by inunctions. Later, periosteal gumma of jaw; some weeks later, death with apparent meningeal symptoms, in coma.

*Postmortem.*—Specific arteritis of vessels of circle of Willis. Foci of softening in the cerebrum and cerebellum.<sup>9</sup>

CASE 13.—Boy, 2 years.<sup>2</sup>

Abnormal over-development of skull with mental changes, curious alternation between brightness and dulness, talking often constantly to himself. Death from diphtheria and bronchopneumonia at 2 years.

*Postmortem.*—Gummatous pachymeningitis and leptomeningitis with adhesions. Numerous gummata in cortex of considerable size and a very small one in cord. Chronic internal hydrocephalus. Syphilitic periostitis of tibia and phalanges. Gumma in left kidney. Fibrous adhesive perihepatitis and perisplenitis.

This case shows the relatively rare condition in children of circumscribed multiple gummata of the brain. They were in the cortex, however, and therefore undoubtedly of meningeal origin.

As we come to the consideration of the affection in childhood proper, that is over 2 years of age, the clinical phenomena become more prominent and the cases assume greater clinical interest. Frequent in its occurrence in children is the involvement of the cranial nerves, and this occurs as the sole manifestation of the cerebral lesion, or as the predominant feature, or only as an incidental precursor or accompaniment of other phenomena. It will be noticed in many of the cases that follow, but in the series immediately following it will be seen to exist as the most striking or the sole feature of the affection.

CASE 14.—Child, 2 years.<sup>10</sup>

Specific papular eruption over entire body. Loss of sight in right eye, specific iritis. On the left ptosis, divergent strabismus, dilated fixed pupil. Specific treatment caused disappearance of rash but no change in the cranial nerve condition. Death from marasmus.

*Postmortem.*—Right optic atrophy. Left oculomotor atrophy with gummatous infiltration. Focus of softening in the left lenticular nucleus, and in the right cerebral hemisphere.

CASE 15.—Girl, 15 months. Parents both syphilitic.<sup>11</sup>

Following specific eruption shortly after birth, paralysis of motor oculi and right facial occurred at tenth month; ptosis on right and dilatation of left pupil; with hemiplegic symptoms when 14 months old, and death at 15 months, following 12 days of epileptiform convulsions.

*Postmortem.*—Leptomeningitis. Diffuse thickening of basal arteries, the basilar and vertebrals nearly obliterated and thrombosis of the closed vessels above. In the cerebral arteries were extreme changes, destruction of the media, thickening and small cell infiltration of the adventitia and thickening of the intima. Minute foci of softening were in the gray and white matter of the cerebrum. Right facial nerve showed small cell infiltration of the neurilemma. Ventricles were normal. Numerous macular-like foci of granulation tissue were in the meninges with hyperemic vessels. Carotids were thickened.

CASE 16.—Girl, 9 years. Child syphilitic.<sup>12</sup>

Sudden onset of signs of cerebral pressure. Later transient squint, three attacks of unconsciousness, diplopia, nearly com-

plete blindness and deafness. Eight months after onset there was no wink reflex and beginning optic atrophy. Pupils dilated, equal, with hardly any reaction to light. Deaf on right except to very loud sounds and complete absence of hearing on the left. Taste for sweet gone. Alternating rapid and slow pulse.

In further course there were nocturnal exacerbation of headache, weakness of lower extremities, and three months later extremely painful stiffness of the neck for 14 days, and for 3 months monospasms, hemispasms, and general epileptiform convulsions occurred. During latter part of their course the knee jerks were affected, being absent on right, weakened on left. Then ensued attacks of intense pain, especially in the legs, then spastic signs, first as attacks of perfectly symmetrical paraspasm, finally permanent contractions. Legs more affected than the arms. Vagus paralysis, bronchopneumonia and death at 9 years.

*Postmortem.*—Non-ossified bulging cranial sutures, internal hydrocephalus, some ependymitis, closure of fourth ventricle by tumor of inferior vermiform process of cerebellum, of meningeal origin, and adherent to floor of fourth ventricle, circumscribed destruction in region of calamus scriptorius and the ala cinerea. Chronic meningitis at the base involving the cranial nerves and chronic diffuse meningo-encephalitis over cerebellum. Extreme chronic meningo-myelitis in the cord, with vascular changes. Arteries of base unchanged.

This case is remarkable in that the intelligence was unimpaired to the end. It was a basal, cerebellar and spinal process essentially.

CASE 17.—Child, 12 years. Father syphilitic.<sup>13</sup>

Violent pain in left temple and eyeball, with protrusion. External squint, ptosis, diplopia. Complete disappearance with specific treatment in two months.

CASE 18.—Boy, 2¼ years.<sup>14</sup>

Syphilitic skin and pharyngeal lesions cleared with mercury. Two months later sudden attack of aphasia, paralysis right lower facial branches and right arm. Under potassium iodid all symptoms disappeared in 14 days.

CASE 19.—Girl, 12 years. Parents syphilitic.<sup>15</sup>

Skin lesions in early life. Periodical headaches for years. Suddenly following 12 days after fever and vomiting, tenderness of cervical muscles, and intense frontal headache; right ptosis, paralysis of palate and paresis of right arm appeared with intense vertigo, while in upright sitting position, and double nystagmus. Pupils negative. Two or three days later abducens paralysis and diminished sensibility on right thigh, pains in right arm and leg. Complete left facial paralysis and anesthesia in territory of left fifth, with trophic disturbance on skin. Intercurrent keratitis and iritis. Specific treatment produced marked but not complete improvement in 6 months.

CASE 20.—Girl, 6 years.<sup>16</sup>

Diffuse maculopapular eruption over body. Chill, fever, delirium, coma, retraction of head, Kernig's sign, temperature, 104.8; pulse, 140; leucocytes, 25,000; cerebrospinal fluid sterile. Extension of eruption to face and extremities. Some clearing of sensorium with irritability and headache. Six days after onset left facial paresis of all branches. Interstitial keratitis. Fundi normal. Specific treatment caused improvement of all symptoms, except slight remaining facial paresis and internal ophthalmoplegia of left eye.

CASE 21.—Girl, 8 years. Parents syphilitic.<sup>17</sup>

When five weeks old lost power in right arm for five weeks. Eighth week papular eruption on back, buttocks and around genitals and arms. Cried much at night and buried head in pillow during infancy. Third year double keratitis. Fifth

9. Declercq and Masson: "Contribution a l'Etude de la Syphilis cérébrale chez l'Enfant," *Annal. de dermat. et de syph.*, 1885, p. 708.

10. Engelstedt: "Die Constitutionelle Syphilis," German. By Uterhart. Würzburg, 1861, p. 148.

11. Chiari: "Hochgradige Endarteritis luëtica (Heubner) an den Hirnarterien eines 15 monatlichen Mädchens bei sicher konstatiirter Lues héréditaire," *Wien. med. Wochschr.*, 1881, pp. 475 and 507.

12. Böttiger: "Beitr. zur Lehre von den luetischen Rückenmarks Krankheiten," *Arch. für Psychiatric*, 1894, p. 649.

13. Galezowski: "Contributions a l'Etude des Tumeurs syphilitiques de l'Orbite," *Recueil d'Ophthalmologie*, 1879, T. I., p. 454.

14. Szontagh, F. von: "Diseases of the Central Nervous System in Congenital Syphilis," *Orvosi Hetilap*, Budapest, 1888, p. 1425; also *Trans. Pester med. chir. Presse*, 1888, xxiv, p. 1093.

15. Thiersch: "Zur Casuistik der Hirnsyphilis," *Münch. med. Wochschr.*, 1887, p. 445.

16. Butler, William J.: "Cerebral Hereditary Syphilis," *Am. Med.*, x, pp. 989 to 992.

17. Mackenzie: "Contribution to the Study of Congenital Syphilis," *New York Med. Jour.*, 1884, xxxix, p. 605.



year double ptosis with intense occipital headache, all disappearing in a month on unknown treatment. Then right internal squint and deafness in right ear with slight discharge, followed by a specific inflammation of the throat of great severity.

CASE 22.—Girl, 5 years. Child syphilitic.<sup>18</sup>

Was treated soon after birth when signs appeared. Fifth year sudden complete oculomotor paralysis. For several months had had headache and vomiting. Considerable improvement under specific treatment.

CASE 23.—Girl, 14 years. Father syphilitic seven years before her birth.<sup>19</sup>

Well marked congenital syphilis. Paralysis of right third and sixth and anesthesia in the distribution of the ophthalmic and superior maxillary division of the fifth. Corneal opacity and old iritis on the right.

Hutchinson remarked, at the time this case was shown, that it was "a very unusual case." In view of the other cases here mentioned, it can not be so considered at the present time.

One of the most frequent manifestations of specific cerebral disease, in the earlier years of childhood, is the occurrence of convulsive attacks. They may usher in, accompany, or follow other phenomena; they may give place to these phenomena eventually, or they may remain throughout the predominant or the sole manifestation of the central lesion.

In Case 10 convulsions are the first and only clinical evidence of what proved to be marked cerebral involvement. In Case 15 they close the scene of brief but well-marked clinical signs. They may be of any form and every degree of severity and extent. They may or may not be characterized by loss of consciousness. They are frequently of such a character that no clinical differentiation from epilepsy, either petit mal or grand mal or the Jacksonian type is possible. So typical are many of these cases that no other classification is justified and one is forced to the conclusion that they differ from any other order of epilepsy, only in their etiology and in their manner of response to therapeutic agents. Cases of epilepsy of specific origin may commence in early infancy as the result of damage done to the brain from an earlier, sometimes perhaps intrauterine, specific lesion, or they may begin at any other period, even late in childhood, from the same cause. In these cases the epilepsy may not be accompanied by any other evidence of the central damage, or it may be associated with idiocy or feebleness of mind, or with impairment of motor power of greater or less extent; all of these conditions being the secondary result of damage done to the brain, and analogous to similar conditions brought about by other etiologic factors, such as the epilepsy, enfeeblement of mind, or palsy, secondary to lesions of the brain produced by trauma, at birth or otherwise, meningitis, or by the toxic injury or encephalitic processes brought about by infectious diseases, other than syphilis; or to lesions induced by arterial conditions, other than specific. Since pathologic examination of many cases in which the syphilitic factor is known shows lesions similar to those of which the etiology is obscure, it is not unreasonable to assume that some of the latter may have been originally of specific origin. These secondary conditions from old lesions may be of constant or fixed type, but the convulsive attacks, palsies, and mental phenomena that are the direct primary result of active, progressive syphilitic disease are not fixed

or constant, but are characterized by their variability of form and duration, enduring for a time, then giving place to other phenomena, eventually perhaps returning to assume permanent form.

CASE 24.—Boy, 9 years.<sup>20</sup>

For six months in infancy had convulsions, then they ceased but returned in his seventh year without evident cause and continued several times each day with occasional day or two of freedom until his ninth year, with no relief from bromids. Then it was discovered that his mother had a specific ulcer on her foot and the father was found to be badly affected, nodes on tibia, severe nocturnal headache and ptosis on the left. Potassium iodid gave the child quick relief and four months later there had been no return of the epileptiform seizures.

CASE 25.—Boy, 14 years.<sup>21</sup>

When three months old had general eruption over body for which he was treated nine months. In his fourth year had a convulsion lasting six hours, followed by right hemiplegia and loss of speech. Six months later another convulsion, becoming of weekly occurrence and only on right side, until recently, near his fourteenth year, when they changed to the other side. In his eleventh year double keratitis appeared. Upper central incisors typically specific. Mind enfeebled.

CASE 26.—Girl, 12 years.<sup>21</sup>

Father died of cerebral syphilis. Eight weeks before first seen, the child was suddenly taken with convulsions which recurred uninfluenced by treatment. Teeth called typical by Hutchinson. Corneæ cloudy, bridge of nose sunken.

CASE 27.—Boy, 12 years. Father syphilitic.<sup>22</sup>

Convulsive attacks repeated at irregular intervals, never exceeding two months for 10 years without other symptoms. Then tibial and clavicular exostoses appeared. Specific treatment cleared both the bone lesions and the convulsive attacks.

CASE 28.—Boy, 15 years.<sup>23</sup>

Number of family died in early life. He had suppurative destructive lesion of nose following accident in early life. For some time had had epileptic attacks in right half of body. Died during one.

*Postmortem.*—Chronic gummatous meningitis of the left half of the dura. Sclerosis and atrophy of left cortex with softening in subjacent white matter.

CASE 29.—Girl, 2 years.<sup>24</sup>

Mother infected at time of conception of second child, which pregnancy resulted in a still-birth. Third child, boy, divergent strabismus, coryza, conjunctivitis, convulsion, macular rash on hands and feet and osteochondritis of epiphyses all within the first six weeks of life. Late development mental and physical. Fourth child, the patient. In fourth month, sudden, rigid, painful contracture of right leg, lasting two or three minutes, increasing to from three to ten a day, without loss of consciousness and without resulting palsy. Rapid mental and physical development. Anemia and splenic enlargement. Specific treatment without result.

CASE 30.—Boy, 8 years. Parents syphilitic.<sup>25</sup>

Specific eruption in early life. In eighth year onset of epileptiform convulsions, stopped by specific treatment. Death later from typhoid.

*Postmortem.*—Thickened dura and slight atrophy of cerebral substance in region of paracentral lobule.

(To be continued.)

20. Althaus: "Case of Infantile Syphilitic Epilepsy," *Med. Times and Gaz.*, 1874, p. 398.

21. Jackson: "Cases of Disease of the Nervous System in Patients the Subjects of Congenital Syphilis," *St. Andrews Med. Trans.*, 1868, 1, p. 146.

22. Ripoll: *Accidents tardifs de la syphilis héréditaire*, *Rev. méd. de Toulouse*, 1880.

23. Hayd: "Zur Casuistik der Gehirnsyphilis," *Inaugural-dissertation München*, 1886.

24. Fischl: "Corticale (Jackson'sche) Epilepsie, congenitale-syph. Ursprungs," *Zeitschr. f. Hlk.*, 1890, p. 279.

25. Pellizzari: "Della Syphilide Epilettiforme," *Lo Sperimentale*, 1879, p. 5.

18. Zappert: "Left Oculomotor Paralysis the Result of Hereditary Syphilis," *Neurol. Centrbl.*, 1895, p. 41.

19. Nettleship: "Paralysis of the Cranial Nerves in Congenital Syphilis," *Brit. Med. Jour.*, 1880, 11, p. 707.



THE RIPENING OPERATION FOR IMMATURE  
SENILE CATARACT; ITS PLACE.\*FRANK C. TODD, M. D.  
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The earlier belief that a patient must await the time of complete maturity of a cataract before extraction could be performed with safety, led to the development of various artificial methods to hasten ripening. But this meant the performance of a preliminary operation, and Schweigger, in 1890, advocated the removal of immature cataracts after the age of 50, claiming that sufficient hardening of the lens has taken place at this age to enable the operator to remove the entire cortex. Many operators have followed and advocated this practice and the number seems to be constantly on the increase.

Yet it is a fact that ripening operations are still practiced by some surgeons with success, in all cases in which conditions make it humane not to wait for nature to bring about maturity, in preference to extracting an unripe cataract, while many other operators often perform the ripening operation under like conditions. Thus there seems to be a great difference of opinion regarding this very important question.

The ultimate question to be determined is, whether in those cases in which, for reasons to be mentioned later, we think it unwise to wait for maturity, we shall always extract an immature cataract, always perform a preliminary ripening operation, or whether there are not cases in which it seems best to do a ripening operation, and other cases in which the extraction of an immature cataract seems the wiser course. It is for this purpose that I present this subject at this meeting, and ask for the experience of the members of the section.

In years past this section has discussed the ripening operation,<sup>1</sup> and last year it expressed the almost unanimous opinion, in answer to Dr. Bulson's<sup>2</sup> inquiries, that it believed the practice wise, in selected cases, either to remove an unripe cataract or to perform trituration and then to extract. In order to secure the most recent expression from operators of experience, I have addressed letters to many prominent ophthalmologists of the United States, from whom sixty-nine replies have been received. These replies form a supplement to my paper, and for the detailed statement of the questions asked, with their replies, the reader is referred to this portion of the paper.

As evidence that trituration has not yet been discarded by many operators, the fact should be noted in these replies that twenty-six surgeons still practice the operation when occasion demands, that four rarely practice it, but nineteen who have had some experience now do not practice it at all, preferring the extraction of immature cataract, usually with irrigation. Of those who continue to practice trituration with satisfactory results, note the opinion of Colburn, who has operated on forty-seven patients; of Ayres,<sup>3</sup> Wescott, White, Prince and others, who frequently practice intraocular massage with preliminary iridectomy, and have satisfactory results; of Ball, who has had much experience and similar results; of Wilder, who practices Forster's method in "certain cases" in which he performs preliminary iridectomy,

but otherwise prefers to extract an immature cataract. The following significant paragraph is by de Schweinitz:<sup>4</sup>

The safest plan is to wait for maturity; but if this is impossible or very undesirable, the author has been in the habit of extracting an unripe cataract in preference to performing a ripening operation. This formerly was also the practice of Knapp; but recently he has ripened immature cataracts in a certain number of cases by the method of internal trituration, as employed by Boerne Bettman<sup>5</sup> and others, and has been satisfied with his results.

That Knapp approves of artificial ripening under certain conditions is shown by his opinion expressed at the end of this paper.

On the other hand, however, note the statement of Risley, who tried a series of twenty-five cases, mostly by trituration directly on the capsule, and does not think his results were as good as after extraction of immature cataracts. He has entirely given up the operation, and does not think it is to be commended.

Many others, as Kipp, Callan, Lewis, Hubbell, Bull, Ellëtt, Griffin, Reynolds and Posey performed trituration formerly but never do so now. Others, as Taylor, M. Black, and Carrow, have not cared to practice the operation, having secured satisfactory results with premature extraction and irrigation.

There is only one point on which there is a general agreement, and that is, regarding the question of determining in what cases we shall not wait for maturity.

With one exception, all believe that, under the circumstances to be mentioned later, either an immature cataract should be extracted or a preliminary ripening operation performed; but Fox, in answer to Bulson's questions a year ago, states: "I do not extract immature senile cataracts, for I do not believe in taking the risk of serious secondary complications which nearly always take place, and render the ultimate results unfavorable;" and in reply to my question as to whether or not he ever performs the ripening operation, he states: "I do not," but modifies this statement, in answer to the question: "Under what circumstances would you perform the operation," by saying: "Only when the nucleus is translucent or sclerosed, and it becomes imperative to obtain better vision quickly." He further says: "It is always dangerous to operate on an unripe cataract. The early removal of an unripe cataract leads to a great deal of trouble."

The methods which have been devised for the purpose of ripening an immature cataract, are:

1. Puncture of the anterior capsule combined with iridectomy (Mooren, 1858).
2. Puncture of the capsule combined with trituration (Rhomér, 1886).
3. Preliminary iridectomy with trituration through the cornea, indirect trituration (Forster, 1881).
4. Trituration after simple paracentesis without iridectomy (T. R. Pooley<sup>6</sup> operated on rabbit, 1885, and soon after J. A. White operated by this method on a human being).
5. Paracentesis, with or without iridectomy, and direct trituration on the anterior capsule (Ricaldi, 1888, and Bettman, 1892).

From investigation it appears that the last two methods are practiced to almost the same extent. Two operators, Dr. J. A. White and Dr. Edward Jackson, however,

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Weeks: "Treatment of Immature Cataract," *THE JOURNAL A. M. A.*, p. 955, Sept. 30, 1905; also de Schweinitz: "Immature Cataract and Its Treatment," *THE JOURNAL A. M. A.*, p. 1467, Dec. 8, 1906.

2. Bulson: "The Extraction of Uncomplicated Immature Senile Cataract," *THE JOURNAL A. M. A.*, Sept. 23, 1905, p. 905.

3. Ayres: "Artificial Ripening of Cataract," *Cincinnati Lancet-Clinic*, Oct. 10, 1896.

4. "Diseases of the Eye," 1906.

5. Boerne Bettman: "Ripening of Immature Cataracts," *Ann. of Ophth. and Oto.*, Jan., 1893.

6. Pooley: "A Modification of Förster's Method of Artificially Ripening Cataract," *N. Y. Med. Jour.*, Dec. 26, 1885.



practice exclusively and with great success, the method of Pooley. Knapp considers needling the capsule or direct trituration the only efficient method.

Operators of experience disagree regarding the selection of the method of Forster or Bettman. Ayres, Wilder, Prince, Wescott, and others prefer the former. Wilder is strongly opposed to direct trituration, having had two serious results following this method, but Colburn, Ball, Weeks<sup>1</sup> and others prefer it to trituration outside of the cornea.

#### THE SAFETY OF TRITURATION OF THE LENS.

Considering the large number of operators who have performed this operation, the number of cases in which ill results have occurred have been very few. Only three are reported in which loss of life resulted, and two of these might be excluded, because one proved to be an unfavorable case (Wilder's), and the other was due to iris prolapse and infection (Colburn's). In one there was so much reaction that later it became necessary to remove the eye. This was Wilder's case, in which he did trituration directly on the capsule, "which, however, was found to have a choroiditis, together with posterior staphyloma, so that it would not have been a favorable case for any kind of intraocular operation." Baker's case was one of glaucoma, in which the eye subsequently had to be removed on account of pain.

There have been a number of cases of iritis, but no cases in which ultimate poor vision resulted, though Wadsworth feels that vision was not so good in some cases (Wadsworth, Callan, Reynolds, Hansell). Four cases of glaucoma were reported, one each by de Schweinitz<sup>1</sup> and Griffin, both ending well, likewise another by Donovan, in which it became necessary to remove the lens. Poscy had a case in which he suspected retinal detachment, but if so, it was cured by rest in bed, and the ultimate results were good. With very few exceptions, operators who have had experience do not regard the operation as unsafe in uncomplicated cases.

#### THE EFFICIENCY OF THE OPERATION.

A study of the opinions expressed shows that the operation is most effective in ripening senile cataracts when a hard nucleus is present and it is in just such cases that the operation would be most needed, but that it is entirely ineffective in young people, and in cases of soft cataract. This is expressed by Dr. Edward Jackson,<sup>7</sup> who practiced Pooley's method. He says: "In the matter of efficiency, my experience indicates that indirect massage is efficient only in senile cataract, that is, only when the opaque lens contains a rather large, firm nucleus." Dr. J. A. White<sup>8</sup> has had some success with the same method in cases of cortical cataract, though he has had to resort to a repetition of the operation in two cases. He also states, however, that the operation is most successful when a hard nucleus is present, which, he says: "Acts as a base on which to crush the cortex." Several operators express some dissatisfaction, i. e., inability always to secure ripening, but do not stipulate the character of cases. Weeks says: "I have not found that the lens substance escapes more readily after the ripening operation than when the immature cataract is extracted," and Knapp, Lewis, Bull and Hubbell make similar complaint of failure in some cases. These, however, are exceptions, and there is not much complaint on this point.

#### TIME REQUIRED FOR RIPENING.

From one to four or five weeks are necessary, according to most of the opinions expressed, but extraction is not practiced usually for ten weeks.

It would seem that a second operation for membranous cataract is not required so often after extraction following a ripening operation, as after extraction of immature cataract, though many operators state that they do not think there is any difference in this respect.

#### OBJECTIONS TO THE OPERATION.

It does not appear that the objections to the operation by those who have had experience and do not commend it arise from ill results, as these have been comparatively rare, but rather because it is believed by many that an immature cataract can be removed as easily as an artificially ripened one, many believing that the trituration thickens the capsule and causes it to adhere to the lens substance.<sup>9</sup> One operator (Bulson<sup>2</sup>), who prefers the extraction of immature cataract, and presented a paper on this subject before this section a year ago, believes that this is the only place for the ripening operation, i. e., "unless patients having immature cataracts, should, from nervousness or other reasons, give the operator a feeling that but little manipulation at the time of extraction should be employed."

An immature cataract can sometimes be well removed after the age of 60, and even before that time if it is not very immature, but without irrigation before that age, and often after 60, considerable cortical matter is apt to remain, to cause much trouble later with iritis and membranous cataract. The enthusiasm with which those who practice irrigation in cases of extraction of immature cataract (with the apparatus of Lippencott, Carrow or Reik) leads one to believe that it is of great value under such circumstances. Carrow practices irrigation in all cases, ripe or unripe, and extracts "whenever the patient loses reading ability."

Some object to trituration on the ground that it means an extra operation, and this is valid where it is not required, in those cases in which an immature cataract can as well be extracted; but, on the other hand, some operators often perform preliminary iridectomy, which also is an extra operation. Thompson, of Indianapolis, advises preliminary iridectomy in all cases in which for any reason there is doubt regarding successful results. Weeks still practices trituration occasionally when he does a preliminary iridectomy, evidently believing it to be an aid, but not of enough value to warrant the extra operation unless preliminary iridectomy is to be performed.

#### CONTRAINDICATIONS AND INDICATIONS.

In no case of immature cataract would operative measures be resorted to when the patient had sufficient vision in the other eye. No definite degree of loss of vision can be defined in exact figures, for other things have to be taken into consideration in deciding the advisability of the removal of, or ripening of, an immature cataract. The slow and equal development in both eyes, of central cataracts; the loss of ability to earn a livelihood when dependent on the same, and especially when others, too, are dependent; the unhappiness which may result to the patient and those about him; and the general and local conditions have to be considered.

I have been in the habit of performing the Förster

7. Jackson: "Indirect Massage of the Lens for the Artificial Ripening of Cataract." N. Y. Med. Jour., Oct. 28, 1893.

8. White: "Remarks on Immature Cataract and the Best Method of Hastening Maturity," Ann. of Ophth., 1892, vol. xxi, No. 4.

9. Crumb: "A Unique Point in Removing the Soft Lens Matter from the Capsule of an Unripe or Over-ripe Lens." Amer. Jour. of Ophth., March, 1899.



operation in uncomplicated cases of immature senile cataract having much soft cortex (recognizing the fact that many lenses are hard, even though not opaque, particularly in patients over 60), and in those patients having two eyes with slowly maturing cataracts and poor vision, enough to interfere with earning ability or to cause the patient unhappiness. This has been done with satisfaction. In no case has a secondary operation been necessary, and in all cases good results have followed, but I am not prepared to say that equally good results might not have followed extraction with irrigation, though I am sure irrigation would have been necessary. As an example the following case is reported.

*Patient.*—A. T., male, aged 54, came under the observation of one of my patients, who elicited the following facts:

*History.*—The man had been a barber, supporting comfortably a family of six, up to two years previous, when his sight became so poor that he was obliged to seek other work. He took up the making and peddling of candy, and left his small home town to come to the city. He was not able to earn more than enough to support himself, and his wife was supporting the remainder of the family by taking in washing. He demurred at coming to see another oculist, as he had seen several, and had been told that he would have to wait for his cataracts to mature.

*Examination.*—Showed nuclear cataracts, just about the size of his pupils, equal in the two eyes, and vision 10/200, improved but little with a mydriatic.

*Treatment.*—The patient was advised to have a ripening operation, and the risks were explained. He consented gladly, and a preliminary iridectomy was performed on one eye, with careful trituration outside of the cornea. Three weeks later, the lens, being entirely opaque, was removed, a small amount of cortex remaining. Only slight reaction took place.

*Result.*—He left the hospital two weeks later and soon went home. In three months he returned and was fitted with glasses, giving 20/30 vision. I saw him some months later, and the other lens showed no further development of the opacity. He has returned to his trade, and is able to support his family.

The details of this case are recorded as it furnishes a good example of the circumstances which make it practically imperative that some such procedure should be practiced for humane reasons.

It is evident that the operation is not to be commended in cases complicated with high myopia, choroiditis, or other inflammatory conditions, nor in cases predisposed to glaucoma, nor where adhesion to the iris is present. Nor is it necessary where a cataract is nearly mature, nor in cases of patients over 60, when the cortex is apt to be of such consistency that it may be removed without much difficulty. In such cataracts the cortex may appear translucent, or amber-colored. Nor would it seem necessary in the case of well-behaved patients, when irrigation is used by an operator experienced in this practice. In this matter, I do not speak from experience, for I have not yet practiced irrigation, but I judge from the favorable comments made by colleagues whose judgment I respect, and the fact that the method is gaining in favor despite opposition formerly expressed.

#### CONCLUSIONS.

If, therefore, we grant the success and safety claimed by those of much experience in irrigation, the operation of ripening is indicated. 1. In case of immature cataract (not mentioned as contraindicated), in which a preliminary iridectomy is to be performed. 2. In those patients who would not be likely to behave well during the extraction, thus preventing the operator from performing much toilet or from practicing irrigation.

If irrigation is not practiced, trituration of the lens would be indicated in all patients with immature senile cataract under 60, in whom for reasons mentioned, relief is required.

Questions asked were:

1. Do you ever perform the ripening operation in the case of immature senile cataract?
2. Have you had any ill results from the operation; if so, of what nature?
3. Under what circumstances would you perform the operation?
4. If you do not perform the operation, what are your reasons? Are they based on your own experience?
5. Have you secured as good results after extraction following the ripening operation, as after extraction in the case of very immature senile cataract?
6. Do you find from actual experience that an operation for membranous cataract following extraction is required as often when the ripening operation has been performed, as after extraction of a very immature cataract?

#### OPINIONS OF PROMINENT OPERATORS.

HERMAN KNAFF, New York: I regard external trituration as efficient, and practice internal trituration or needling the anterior capsule at different places and use irrigation following extraction, but all of the ripening methods are more or less unsatisfactory; their shortcoming is insufficiency. Experience with the ripening operation has made me more conservative than I was formerly. I approve and do an artificial ripening of immature cataract (in selected cases), but prefer to let the cataract ripen naturally.

J. E. COLBURN, Chicago: 1. Yes, usually with preliminary iridectomy, direct massage (Bettman), followed in about ten weeks by extraction. 2. None that could be attributed to the procedure. One failure in 47 cases, due to prolapse of iris and secondary infection. Two cases of iritis, making good recovery. 3. When both eyes are involved, sufficient to prevent useful vision, and in monocular amblyopia. 5. Yes. 6. Yes, rather thick in some cases.

S. C. AYRES, Cincinnati: 1. Yes. 2. No. 3. When the opacity of both lenses was advancing about equally. 4. I never recommend the operation unless the perception and projection are good, and the eyes apparently healthy. 5. I never extract "very immature senile cataracts." My results after trituration have been very satisfactory.

A. E. PRINCE, Springfield, Ill.: 1. I frequently make a preliminary iridectomy in immature cataract, and use extraocular massage of the eye, after the iridectomy is completed. 2. I never had, to my knowledge, any unfavorable result which I can attribute to this operation. 3. I perform the operation usually in cases of middle life, where, from any cause, it is desirable to hasten the time of extraction. 5. I think the results are satisfactory after the ripening operation. 6. I consider the question of whether a membranous cataract is more liable to follow, to depend on the thoroughness with which the irrigation has been carried out. If considerable cortex is taken into the capsule, a membranous cataract would be liable to follow.

J. MOORES BALL, St. Louis: 1. Yes, frequently. 2. No. 3. In cases of slowly maturing binocular cataract. 5. Yes. 6. I am unable to say. I performed a number of these operations in the last fifteen years. I am partial to preliminary iridectomy. In nearly all cases in which I make a preliminary iridectomy I also triturate the lens directly, the so-called method of Bettman. I have done thirty or forty of these operations.

H. V. WÜRDEMANN, Milwaukee: 1. Yes. 2. No. 3. Slowly progressing lenticular opacities in both eyes of active adults under 60 years of age. Over that age the lens is sufficiently hard to permit of successful extraction, even though nearly clear. 5. Yes. 6. I endeavor (a) to extract lens in capsule; (b) failing in that, I make large capsulotomy with forceps; (c) I use lavage to remove lenticular debris, and hence, in recent years have much smaller percentages of secondary capsulotomies.

FRANK ALLPORT, Chicago: 1. Yes. 2. No. 3. When patient is blind in both eyes, but neither lens is ready for operation. Still, I prefer to operate on an immature cataract, rather than to ripen one artificially. 5. Yes.

C. D. WESCOTT, Chicago: It is my custom to do a preliminary iridectomy in all cases of immature senile cataract in which I operate. After making the coloboma, I usually stroke the cornea a number of times with the spatula, making sufficient pressure to bring it in contact with the anterior surface of the lense. A few times I have introduced the spatula into the anterior chamber, stroking the anterior capsule directly where it was necessary to use the instrument to replace the pillars of the iris. I believe that the ripening of the cataract is hastened by the iridectomy alone, and still more so by the procedure which I have described, although it can not be proved. My results have been satisfactory. I can not say that the operation for membranous cataract following the extraction is influenced by the procedure.

W. B. MARPLE, New York: 1. Only occasionally. 2. I have had no ill results. 3. I perform it less and less frequently and have not done it on any private patient. 4. In the nuclear cataract or sclerosed lens I get perfectly good results, even when vision is still good. If I had a patient whose vision was much impaired in each eye, from ordinary senile cataracts (not sclerosed lenses) which were immature, I would not hesitate to perform a ripening operation, but not if one eye was fairly good. 5. Yes. 6. I have seen no especial difference, as I use irrigation of anterior chamber rather freely.

GEORGE C. HARLAN, Philadelphia: 1. I have done it in a few cases. 2. No serious results. 3. When opacification is excessively slow, and vision is not sufficient to earn a living. 5. Better. 6. Experience too limited to decide.

H. GIFFORD, Omaha: 1. Yes, a discission. 2. I have twice had an infection of the lens, one with final good result and one with bad result. Both these cases were in old people. I now do preparatory discission on people under 50 years of age. 3. When in patients under 50 something has to be done to an unripe cataract, or allow the patient to go on indefinitely with poor vision. 5. About the same. 6. I think more often.



LUCIEN HOWE, Buffalo: 1. Yes, occasionally, Rhomer's method. 2. No. 3. Only when the condition of the other eye makes some such hastening essential. 5. About the same. 6. No difference ever observed. I must add, however, that it is still a question in my mind whether this or any other of the ordinary ripening operations does really ripen, at least, in the majority of cases.

S. THEOBALD, Baltimore: 1. Yes. 2. No, except at times a little rubbing off of the pigment from the posterior surface of the iris, near the pupil, and some iritis, more than would follow a simple iridectomy. 5. Better results. 6. I do not.

DUNBAR ROY, Atlanta: 1. Occasionally. 2. None. 3. In cases of preliminary iridectomy. 5. Yes. 6. It is not required as often.

H. F. HANSELL, Philadelphia: 1. I have operated in several cases of young senile cataracts, those developing in individuals under 50 years of age. 2. Yes, iritis. 3. In the circumstances mentioned under No. 1. 5. Yes. 6. I have found no difference.

EUGENE SMITH, Detroit: 1. Seldom. 2. No. 3. To enable patient to work when necessary to support family. 5. Yes, though greater danger of iritis. 6. Yes.

CHARLES A. OLIVER, Philadelphia: 1. Yes. 2. No. 3. Long-standing, uncomplicated (particularly unclear) cases. 5. Yes. 6. No.

WILLIAM CHEATHAM, Louisville: 1. Yes, iridectomy with massage on cornea of capsule. 2. No. 3. Any reason necessitating an early operation more often in those cases in which both cataracts are progressing evenly. 5. Yes. 6. Yes. My experience is not large enough for my statistics to be of much value.

N. M. BLACK, Milwaukee: 1. Yes, occasionally. 2. No. 3. In cases when there was some clouding of the lens sufficient to interfere with vision in a patient who needs to use eyes for purpose of carrying on his business. 5. Practically no good, I think. 6. Can not say.

LYMAN WARE, Chicago: 1. Yes. 2. No. 3. In cases of binocular cataract, when necessity compels use of eyes. 5. Yes. 6. Have no data, but think not.

J. H. CLAIBORNE, New York: 1. Yes. 2. No. 3. In slowly growing cataracts, chiefly in myopia, and in persons who can not afford to wait. 4. Yes. 5. Yes. 6. Yes.

C. R. ELWOOD, Menominee, Mich.: 1. I have not. 3. When both eyes were about equally advanced and ripening slowly, or probably if only serviceable eye was cataractous and ripening slowly. 4. I believe natural ripening safest, and my patients have happened to have one eye much more advanced than the other, or one lens ripe, when presented. 6. My experience has been only after natural ripening. With slowly ripening cataract in patient's only eye, I would do a preliminary iridectomy, and at the same time very carefully massage lens.

HORACE M. STARKEY, Rockford, Ill.: 1. Yes, the Forster operation as modified by Bettman. 2. No. 3. When vision is reduced in each eye by small, non-progressing or slowly progressing central opacities. 5. Yes, or as in mature senile cataract. 6. Have observed no difference.

A. E. BULSON, JR., Fort Wayne: 1. Yes, in the few instances in which I have performed preliminary iridectomy before cataract extraction. It is my opinion that preliminary iridectomy alone, without trituration, will hasten maturity of cataract. 2. No. Once had considerable swelling of lens, but it did not prove serious in results. 3. In the few instances in which preliminary iridectomy was indicated. In nervous patients, in whom manipulations to extract immature cataract might be disastrous, and seldom, if ever, in patients beyond 65 years of age, as there are no advantages to be obtained in such cases over extraction of immature cataract. 4. I do not believe advantages, taking all risks into consideration, are more than in extraction of immature cataract under proper conditions (combined operation, irrigation, atropin, etc.). 5. Yes, have only very few cases in which ripening operation was performed. 6. My experience is limited, but would say yes. I have not attempted the ripening operation except in a very few cases, and in all of those I started out to do a preliminary iridectomy with the intention of making extraction later. My experience has been that a preliminary iridectomy alone is sufficient in most cases to hasten the maturity of a cataract. Therefore, inasmuch as I do an iridectomy in all cataract extractions, it occurs to me that preliminary iridectomy is all that is indicated in case the operator does not care to undertake the extraction of an immature cataract by the combined operation. I have had such good results from the extraction of immature cataract that I have not given much thought to the value of the ripening operation, but I believe there is a place for the ripening operation, and I would probably prefer to use the operation, if used at all, in those patients having immature cataracts, who, from nervousness or other reason, give the operator a feeling that but little manipulation at the time of the extraction should be employed.

J. L. THOMPSON, Indianapolis: 1. The only perfectly safe ripening operation for immature senile cataract in my opinion, is a preliminary iridectomy. 2. I have never met with any ill results from this operation. 3. It is called for in cases of nuclear cataract in both eyes, when the acuity of vision is not sufficient for one to read large print, when the patient becomes tired of waiting, as he frequently has to do, for many years. 5. By this method I obtain better results than when I do iridectomy and extraction of the lens in one operation. 6. Fewer cases of thickened capsular threads are met with after this preliminary operation.

J. E. WEEKS, New York: 1. I have performed it, but do not do it now, except in cases in which I perform a preliminary iridectomy directly on the anterior portion of the lens capsule. 2. No, but I have not found that the lens substance escapes more readily, after the ripening operation than it does when the unripe or immature lens is extracted. 3. None, except when preliminary iridectomy was performed. 4. I have not found it to be of sufficient value to make it worth while. My opinions are based on personal experience. 5. About the same. 6. Yes.

S. D. RISLEY, Philadelphia: 1. I did so in a considerable series of cases, but abandoned the operation. 2. Never had any immediate ill results from inflammatory reaction. 3. I would not perform it under any circumstances. 4. My experience very soon taught me, or seemed to teach, that the difficulties of extraction were enhanced. The cortex seemed glued to the capsule, and the capsule itself tough and gray, in cases in which the cortex became opaque after trituration. In cases in which this did not follow, the lens, when amber colored or translucent, was found already

hard, and operation therefore was unnecessary. 5. My results after ripening were no better; I think not so good. 6. I have no compiled statistics on this point, but my impression is that it is required as frequently and is usually more difficult because of greater toughness of capsule. I did the ripening operation in 25 consecutive cases of immature cataract, most of them by direct trituration of the capsule, some of them by the method of Forster, but I had such discouraging results in the subsequent extractions as compared with the results obtained in the case in which the operation had not been done, that I was quite glad when I was through with them, and have never ventured on it since. This was about ten years ago. I do not think the operation is to be commended.

GEORGE E. DE SCHWEINITZ, Philadelphia: 1. Not often. 2. Once only, in secondary glaucoma from swelling of lens, the ultimate result was perfectly good. 3. In very slowly maturing central cataracts with much clear cortex in patients under 50. 4. It is best to wait for maturity, but no serious objections to removal of unripe cataract after 60, and do not advocate ripening operations. 5. Yes. 6. Yes.

W. H. WILDER, Chicago: 1. In certain cases I perform preliminary iridectomy, and at the same time practice massage of lens through the cornea, according to method of Forster. I never triturate the lens with an instrument pressed into the anterior cornea, as I used to do occasionally. 2. With two cases treated with anterior cornea trituration I had very serious results. In one of these there was violent reaction that fortunately subsided. In the other the reaction was so violent that the resulting iridocyclitis necessitated removal of the eye, which was found to have a choroiditis, together with posterior staphyloma, so that it would not have been a favorable case for any kind of intraocular operation. 4. The reasons given above have influenced me against performing the operation, for I would rather operate on an immature cataract and do a subsequent needling operation. 5. I am unable to judge. 6. I can not say.

T. R. POOLEY, New York: 1. I formerly did, but not now. 2. No. 3. None. 4. It is safer and better to wait, and the operation is easier and safer. 5. Yes. 6. I do not know; I have kept no statistics on this point.

O. F. WADSWORTH, Boston: 1. I have done so, not often, and not of late years. I presume you refer to massage after evacuation of aqueous. 2. Iritis, with posterior synocha, etc. 4. In part, I think the dangers from the operation at least as great as those which immaturity adds to the ordinary cataract operation. 5. In some instances, yes. 6. No.

A. A. HUBBELL, Buffalo: 1. Not for eight or ten years. Before that I practiced it considerably. I did a small iridectomy, and then with the elbow of a strabismus hook trituated (kneaded) the lens through the cornea. 2. None whatever. 3. None. 4. Yes, my own experience. I gave it up because the ripening did not always take place, especially when the opacity was nuclear, because the trituration or kneading affected only the anterior portion of the lens, but more particularly because removal of immature cataract without the ripening process gave just as good results. 5. Yes, but no better. 6. Yes.

C. S. BULL, New York: 1. I formerly did, but for some years have given it up. 2. None but failure to succeed, and in several instances the manipulation caused partial disappearance of the opacity. 3. This question is practically answered under No. 1. 4. This question is practically answered under No. 2. 5. No. 6. Fully as often.

O. DODD, Chicago: 1. No. 2. No serious results myself, but have seen very serious results from the operations I have witnessed by others. 3. Not at all. 4. In my experience it has been of no benefit, as the lens does not come out more easily or completely than without it. It is necessary to wait some time after operation before extraction can be done, and had rather do extraction and wait after for cortex to clear. 5. Yes, in the few cases I have done. 6. I think so, but my experience is not large enough to say.

E. E. HOLT, Portland, Maine: 1. No, not in recent years. 2. No. 4. My reason, take it all in all, is that it is better to perform the regular operation. 5. Yes, in the few cases in which it was employed years ago. 6. Not sufficiently to state.

P. A. CALLAN, New York: 1. I formerly did the operation, but not for several years. 2. Yes, iritis. 3. I should rather extract the immature cataract, having made a preliminary iridectomy. 4. I get better results from a preliminary iridectomy, as my results from the ripening operation were not satisfactory. 5. About the same. 6. Very little difference.

C. J. KIPP, Newark: 1. Not now. Years ago I did several, but as they failed to hasten the ripening materially, I have given up the operation. 2. No. 5. Yes. 6. Yes.

H. D. BRUNS, New Orleans: 1. Which operation? I have done iridectomy and trituration without much, if any, effect, often. Tried discission many times, years ago, with too much effect. 2. Senile eyes, on which discission has been performed, do not quiet down readily, and one has usually to do the extraction in an eye not entirely healthy. My experience is that the slightest pathologic condition, sometimes one which we hardly believe to have any importance, militates against perfect success in the extraction of senile cataract and the final result. I would rather take the chances of operation on a very unripe senile cataract, using lavage if necessary, if driven to it by humane motives, than risk discission and subsequent extraction. From trituration after preliminary iridectomy. I am not sure that I have seen any result. I write entirely from my own past experience.

O. A. GRIFFIN, Ann Arbor: 1. I did formerly, but rarely now. 2. Yes, an acute glaucoma, but it ended well. 3. When cataract exists in each eye, is partially matured, and the process has become stationary. 4. Have extracted immature senile cataracts in few cases without ripening, and obtained good results. 5. Yes, but not better, as stated above. 6. Have not sufficient data on this point.

A. R. BAKER, Cleveland: 1. Yes, formerly. 2. Yes, iritis two or three times, and glaucoma once. 3. I would not perform operation, except in patients under 45 years of age. 4. More satisfactory results are obtained by extracting immature cataracts, first making preliminary iridectomy and extracting immature lens, two or three weeks later, with preliminary capsulotomy. 5. No.



M. BLACK, Denver: 1. No. 3. I really can not conceive of any condition which would cause me to subject the patient to this unnecessary operation. 4. I believe the lens of a patient which is sufficiently opaque to demand extraction at all is hard enough to remove without preliminary ripening. If any doubt remains as to the cortical substance being all removed, anterior chamber irrigation should be practiced.

H. M. POST, St. Louis: 1. I performed the operation several times fifteen or twenty years ago. I have not done it since. 2. No. 3. I do not now think of any. 4. Under antiseptic precautions I do not hesitate to perform extraction with an iridectomy, as soon as the difficulty in reading is serious. I have had excellent results in such cases.

E. C. ELLETT, Memphis: 1. I do not do it now, though I have done it a few times. 2. No. 3. I would as soon extract an immature cataract as to do the operation. 4. I regard it as unnecessary. 5 and 6. Too few cases to say.

J. M. RAY, Louisville: 1. I did up to the last five or six years. 2. None, except I think that the massage produces adhesions of lens substance to capsule, and therefore the lens sticks and is more difficult to get out of capsule. 3. Only when there is one eye, and if I did a preliminary iridectomy I might massage the lens. 4. As given above, and from experience, I found myself less inclined to the operation, and more inclined to remove a semi-transparent lens. 5. I have no statistics on subject at hand. 6. While I have no exact data, I should think just as often.

C. A. VEASEY, Philadelphia: 1. No. 2. Difficulty in extracting the ripened lens, which is apt to adhere and to require greater pressure. There is more severe reaction. 4. As stated above, difficulty in expelling the lens, because of adherence, more frequent loss of vitreous delivery and more severe inflammatory reaction. 5. No. 6. I have not noticed any difference.

D. S. REYNOLDS, Louisville: 1. I have abandoned all ripening operations as unsatisfactory and unnecessary. Extraction of immature cataract is more satisfactory, because it saves time and avoids the complications of iritis, etc. 2. Yes, iritis frequently; opaque capsule; in two cases, cyclitis. 3. I formerly did it when both eyes were unable to read and neither mature. 4. Yes, as stated above. 5. Sometimes. 6. Yes.

A. BARKAN, San Francisco: The only operation for ripening cataract done in a normal eye, if slowly developing nuclear cataract, was an iridectomy. The cornea was very gently smoothed out by means of the strabismus hook. Reaction was very great. Iritis and slight cyclitis followed, and the case never came for operation subsequently. I have never since then done a truly ripening operation of immature or senile cataract. The preliminary iridectomy I have done repeatedly, especially when one eye was at stake, and with no results so far as ripening was concerned, but facilitating and rather helping to secure good results when the time for extraction came on the other eye. I am opposed to this measure on the grounds of conservative surgery, and think the massage, if done at all efficiently, is likely to be extended through the lens proper to the surrounding uveal membrane. I would certainly object to these operative proceedings on my own eye.

F. PARK LEWIS, Buffalo: 1. Of late years I have entirely given up the ripening operation. 2. In many cases it did not prove satisfactory. Ripening did not seem to be hastened in some instances; on the other hand, it seemed to retard the process of opacification. It moreover thickened the capsule and made it more unruly for subsequent management. 3. I doubt if any. 4. The reasons are as given as above, and are wholly based on my own experience. My reasons for not employing artificial ripening are that I believe that with normal salt irrigation or extraction in the capsule it is possible to get better results in the case of an unripe lens than that which follows when the capsule has been thickened by trituration. 5. My impression is that I have. I have not, however, made statistical comparison. 6. More so, with the same qualification as above.

WILLIAM CAMPBELL POSEY, Philadelphia: 1. Prior to five years ago I did several ripening operations for cataract, but I have given up the operation. I have found that I secured as good results in operating on immature cataracts without previous ripening, as I did when this operation was performed. 2. In one case, in which the lens was directly tritured, I think I obtained a detachment of the retina, as the tension became much diminished, and I feared for a time that the eye would be lost. Under treatment for detached retina, i. e., rest in bed with a pressure bandage, the eye finally gained its normal tension, the lens was removed and the patient obtained good vision, which has been retained for four or five years. I believe that the procedure of washing the anterior chamber after the removal of an immature lens has done away with the necessity for the preliminary ripening procedure.

D. T. VAIL, Cincinnati: 1. I have done so a number of times. 2. No, bad results, in some cases the cataracts were not influenced. 3. None. 4. Yes. I find I can extract without, and the ripening is unnecessary, also that it is not at all reliable. 5. About the same, but hard to judge; each case is its own rule. 6. Yes, all had to be discussed.

FLEMMING CARROW, Detroit: 1. I never perform a ripening operation in cases of immature senile cataracts. I remove the lens as soon as the patient begins to lose reading ability. I might say that in the last three or four years I always remove the lens when the patient loses reading ability. I do this because in such cases I have a little instrument with which I wash out the anterior chamber. Knowing that in cases in which the lens is immature, there is more or less of the lens debris left. To put it plainly, I always remove the lens, and I always wash out the anterior chamber after removing it. I do this, whether the lens is hard or soft, diabetic or otherwise.

WILLIAM ZENTMAYER, Philadelphia: 1. No. 4. Because in the exceptional cases in which it might have been indicated I have not hesitated to remove the lens, either after a preliminary iridectomy or with iridectomy at the time of extraction. 5. Not having done the ripening operation, I can make no comparison, but the results after the removal of unripe cataract have been satisfactory.

H. B. YOUNG, Burlington, Iowa: 1. Have done it once only. 2. No trouble of any kind. 3. Governed by the needs of immediate vision. 4. With Reik's flushing apparatus, I would about as soon extract the immature cataract. 5. In my one case, quite as good. 6. My patient was from a distance and I did not see him again.

A. J. DONOVAN, Butte, Mont.: 1. No. 2. A few years ago I had a severe reaction, increased tension and had to remove lens. Since then I prefer to do it at once, as I consider the risk to be less. 4. Yes, if the patient consents, I remove cataract as soon as vision is not useful. I always wash out the anterior chamber with boric-acid solution, and so far I have never had a single case in which I had cause to regret it.

G. C. SAVAGE, Nashville: 1. No. 2. I have never attempted it. 3. Under no circumstances. 4. For the reason that an immature cataract can be removed easily. 5. I have never done the former. 6. After any operation that does not include the removal of the capsule, the latter, sooner or later, becomes opaque.

H. B. ELLIS, Los Angeles: 1. I do not. 2. No. 4. Poor results in hands of others—no personal experience.

W. H. HULEN, San Francisco: 1. No, I prefer to extract the immature cataract in all the cases that have come to me, and, so far, my experience has been favorable in such cases.

F. B. EATON, San Francisco: 1. No. 3. Under 60 years of age in double cataract (uncomplicated) when vision in each eye was too low for earning a living and for endurance. 4. Rarity of my cases below 60 years and my fear of uveal trouble. They are not formed on my own experience.

MARK D. STEVENSON, Akron, Ohio: 3. In very immature, uncomplicated cataract in a patient from 30 to 40 years of age, when the vision of each eye is insufficient for the patient's common needs and vocation. 4. I avoid as much as possible the ripening operation for the following reasons: 1. At least two operations requiring opening of the eyeball are required, and of capsulotomy, with attending dangers. 2. If ripening is not performed, only one operation is sometimes needed, and two at most. 3. The danger of glaucoma. 4. Others have told me that the cortical matter is more sticky and is removed with greater difficulty after ripening. Personally, I can not say as to this.

LEARTUS CONNER, Detroit: 1. No, as it has not impressed me as helpful, while the extractions of such cataracts remained satisfactory. 2. I never did the operation. 3. I do not know any circumstances. 4. I think that there is less risk in immediate extraction. My results from this operation have been so satisfactory that I have no call for artificial ripening. 5. I never made the comparison. 6. I have no experience.

J. A. WHITE, Richmond: 1. Yes, I do this operation both with and without iridectomy—trituration through the cornea. 2. No bad results, except occasionally some iritis. 3. In very slowly developing cataracts, when both eyes are involved, and I do it on one only, and usually only when patient is under 60 years of age. 5. Yes, better. 6. I have not done enough immature extractions to make a fair comparison.

J. O. MCKEYNOLDS, Dallas: 1. I have done so, but I have about abandoned the procedure. 2. None. 3. I do not favor the operation. 4. My experience has been that the operation secures no material advantages, but increases the number of operations. 5. Yes. 6. About the same.

CHAS. A. MAY, New York: 1. No. 4. No, I do not resort to the ripening operation, simply because I never hesitate to extract the immature cataract when vision is sufficiently interfered with to demand it, especially since resorting to irrigation of anterior chamber in these cases.

LEWIS H. TAYLOR, Wilkesbarre: 1. Practically, no. My experience is so limited with the ripening operation that I can not answer the other questions. I have done no ripening operation except a preliminary iridectomy. 2. No. 3. When a man had not vision enough to perform his work, and needed especially to earn his living. Even then, I think the immature cataract might be operated on, especially with irrigation. 4. It has seemed to me better to wait. I have no adverse opinion based on experience.

F. T. ROGERS, Providence: 1. I have done it frequently up to three or four years ago, when I became convinced that the immature lens could be safely extracted, and since then I have had no occasion to do the ripening operation, although I frequently do a preliminary iridectomy without disturbing the lens. 2. One case of dislocation of the lens. 3. When the vision was so impaired that the usual avocation could not be pursued, but the peripheral changes were not far enough advanced to promise a successful extraction. 5. Yes, save in one case. 6. I have noticed no marked difference.

E. E. HOLT, Portland, Me.: 1. I have not had occasion to do it for years. 2. No. 3. After stating all the facts, and the operation was selected by the patient or his friends. 4. I generally prefer to remove the lens direct. 5. Yes. 6. My experience is insufficient to make a statement.

L. WEBSTER FOX, Philadelphia: 1. I do not. 2. No. 3. Only when the nucleus is translucent or sclerosed, and it becomes imperative to obtain better vision quickly. 4. It is always dangerous to operate on an unripe cataract. The early removal of an unripe cataract leads to a deal of trouble. 5. No. 6. More so, always requires a secondary operation.

GEO. F. SUKER, Chicago: 1. I have not employed it in the last five years in patients at or over 50. If under this age, and both lenses are in the incipient stage and vision is reduced so as materially to interfere with the comfort and occupation of the patient, then I employ Forster's method; but these cases are rare. 2. I have seen iritis follow, also failure to induce hastening or even actual maturation of the lens. 3. Under no circumstances, if patient is at or beyond 50 years of age. See No. 1. 4. At or beyond 50 the lens is readily delivered, even if not in the so-called mature state. In patients beyond 50, see my answer to Dr. Bulson's questions on same topic presented at the Portland Session of the American Medical Association, 1905. 5. Yes, but ripening means the subjecting of the patient to an extra operation, therefore, another hazard. 6. If the capsule is in size peripherally in a line corresponding to the corneal section, capsular extractions are not so prone to occur. If the anterior chamber is thoroughly irrigated and every effort is made to remove soft substances, capsular cataracts are not more prone to occur than in any other method.

C. H. BEARD, Chicago: 1. Twelve to eighteen years ago I made a number of operations according to the methods then in vogue. I have not tried any of the later ripening measures, such as the salt irrigation of Jock, the hot-air douche of Wolfberg and the rapid method recommended by Bahr at the Lucerne congress. 2. I can not say that I noted any positive ill results. 3. I find no further indications for it, being satisfied with preliminary iridectomy and



the subsequent extraction of the lens, mature or immature, as the case may be. 4. Unwillingness to subject the eye to needless surgery and manipulation. My experience with artificial ripening caused me to conclude that the perplexities of the extraction were in no way relieved by it. The cortex, instead of being loosened from the capsule, seemed to be made more apparent and the extraction more difficult. 5. Certainly the results were not appreciably better. 6. Yes.

C. R. HOLMES, Cincinnati: 1. I did formerly, but do not any more. 2. Never very serious, but some unpleasant results, imperfect ripening requiring a repetition and rupture of the capsule and dislocation of the lens. 4. For the reason given above. 5. I have secured better results by extracting the immature senile cataract without ripening. 6. Not positive as to this point, but as the membrane varies in nearly all cases from a mere film to a dense membrane I needle in nearly all cases, as there is no reason why the transparent media need not be absolutely clear.

R. L. RANDOLPH, Baltimore: 1. No. 2. Nothing more than iritis. 3. Have no confidence in the operation. 4. Have operated, as well as I remember, about twenty times, and succeeded in ripening twice. In nearly all the cases had an iritis. 5. In the two cases, yes. 6. Am not prepared to say.

[THE SYMPOSIUM ON CATARACT, OF WHICH DR. TODD'S PAPER IS A PART, WILL BE CONTINUED NEXT WEEK.]

## Clinical Notes

### A CASE OF CARCINOMA OF THE SPINAL CORD.

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TRENTON, N. J.

While carcinoma of the vertebral column is not so infrequent and may affect the spinal cord secondarily, the growth of a cancer in the cord itself is very rare and when it occurs its point of origin is usually in the meninges. Schlesinger<sup>1</sup> states that carcinoma in the interior of the vertebral canal, with the exception of that growing from the bony structures, is always secondary and very rare and that growths in the cord itself are exceedingly infrequent, having so far been found in cases of general carcinomatosis only. Spiller and Weissenburg,<sup>2</sup> in a recent review of the subject of carcinoma of the nervous system also speak of the rarity of growths in the spinal cord itself. Among the 11 cases which form the basis of their paper, there were 3 cases of cancer of the vertebral column with a fourth case presenting symptoms suggesting such involvement, which, however, did not come to autopsy, but in no instance was a growth, arising in the spinal cord itself, noted.

The rarity of this condition then and the fact that it was accompanied by secondary changes, which, in the absence of previous history, might make the diagnosis a matter of some difficulty seems to justify putting on record the following case:

*Patient.*—Female, aged 65 years, a terminal dement, inmate of the State Hospital for 30 years.

*History.*—During the latter part of the spring of 1905 she was found to have a lump in her left breast. About six months later this broke down and formed an ulcer which would not heal. In March, 1906, it was noticed that she had difficulty in walking, and by the middle of April she could no longer get about. She was first examined by me Aug. 19, 1906, at which time she presented the following picture:

*Symptoms.*—Patient was much emaciated and bedridden. In the left breast was a tumor about the size of a small orange which had broken down and was discharging ill-smelling pus. Over the sacrum there was a bedsore about four inches in diameter with a gangrenous base, which had involved the bone. The movements of the head and upper extremities were normal. The legs were completely paralyzed, their muscles flabby and atrophied, and in them no reflexes could be obtained. The left leg was much swollen. The middle of the right thigh

measured 11¾ inches, while the left thigh measured 31 inches. The circumference of the right calf was 5½ inches; the left calf, 9⅝ inches. The testing of sensation was unsatisfactory owing to the mental condition of the patient, but there was apparently complete anesthesia over both lower extremities. There was complete paralysis of the bladder with retention of urine and dribbling. She died Aug. 21, 1906.

*Autopsy.*—Thirteen hours after death an autopsy showed the following: Nothing was macroscopically abnormal in the brain. The bedsore over the sacrum had extended to the bone, causing an osteitis of the lower lumbar and sacral vertebrae whose bodies were soft and on manipulation crumbled to a grumous mass. There was necrosis of a considerable portion of the sacral arch on the left side. The spinal dura mater was thickened and pigmented. The cord in the lower lumbar and upper sacral regions was inflamed and softened to a pulpy consistency. The cervical and dorsal regions appeared normal and cross sections showed no gross changes above the softened area. The heart was small, pale and flabby, its valves normal. The lungs showed a few adhesions and were much congested. Distributed throughout both lungs were a great number of cancerous nodules varying in size from that of a millet seed to that of a split pea. The bronchial glands were enlarged. The liver contained a number of cancerous nodules of sizes varying up to that of a small orange. The kidneys were small, hard and contained extensive cancerous deposits. The aorta was much enlarged and there was thrombosis of the left external and common iliac veins.

*Microscopic Examination.*—Sections from the cerebral cortex



Photograph of cross section of the cord. C, cancerous nodule. I, infiltration of cancer cells.

showed much pigmentary deposit in the cells of Betz of the paracentral lobule and slight thickening of the pia-arachnoid. Sections of the spinal cord showed great thickening with round cell infiltration of the pia-arachnoid in the lower dorsal, lumbar and sacral regions. In the latter location there was extensive necrosis involving a large part of the posterior portion of the cord. This was most intense in the middle and lower lumbar region, the area affected becoming smaller as the upper lumbar region was reached. In the upper lumbar region, extending through less than one segment about the level of the border between the first and second segments, there was a small cancerous mass which had apparently grown from the pia-arachnoid into the anterior fissure. It had compressed the anterior pyramids, interfered with the anterior nerve roots and from it small nests of cells had invaded the anterior column and anterior horn on one side. The whole cross section of the cord at this level was distorted (See illustration). The nerve cells here and in sections immediately below were swollen, showing intense chromatolysis and loss of nuclei. There was degeneration of the posterior columns extending from the lumbar region to the medulla. This was confined in the dorsal and cervical regions to the tracts of Goll. This degeneration was shown both by the Weigert and by the Marchi methods. The Marchi method demonstrated in the softened area in the lumbar region, diffuse degeneration, involving the whole cross-section of the cord. The cancerous nodule was, in structure, an adeno-

1. Flatau, Jacobsohn and Minor: Handbuch der Pathologischen Anatomie des Nervensystems.

2. Jour. of Nerv. and Ment. Dis., August, 1906.



carcinoma. The nerves of the sciatic and lumbar plexuses showed no degeneration by Weigert's method, but by Marchi's method some of the sections showed some black scales. This was more marked in the nerves of the right side. The primary growth in the breast was an adeno-carcinoma, the metastatic deposits in the lungs, liver and kidneys corresponded with it in structure.

In this case the primary paraplegia was undoubtedly due to the growth of the cancerous nodule which interfered with the anterior columns and nerve roots and compressed the cord in general. The myelitis in the lumbo-sacral region was due to an extension of the inflammation from the bed sore through the bones. The ascending degeneration was due to this latter lesion.

## LARGE SOLID TUMORS IN THE INGUINAL CANAL.

W. LOWNDES PEPLE, M.D.  
RICHMOND, VA.

### A REPORT OF THREE CASES.

I report the following cases because, from a casual search, I believe them to be somewhat unique both as to the gross and microscopic findings. The first two cases I saw with Dr. Stuart McGuire as his clinical assistant,

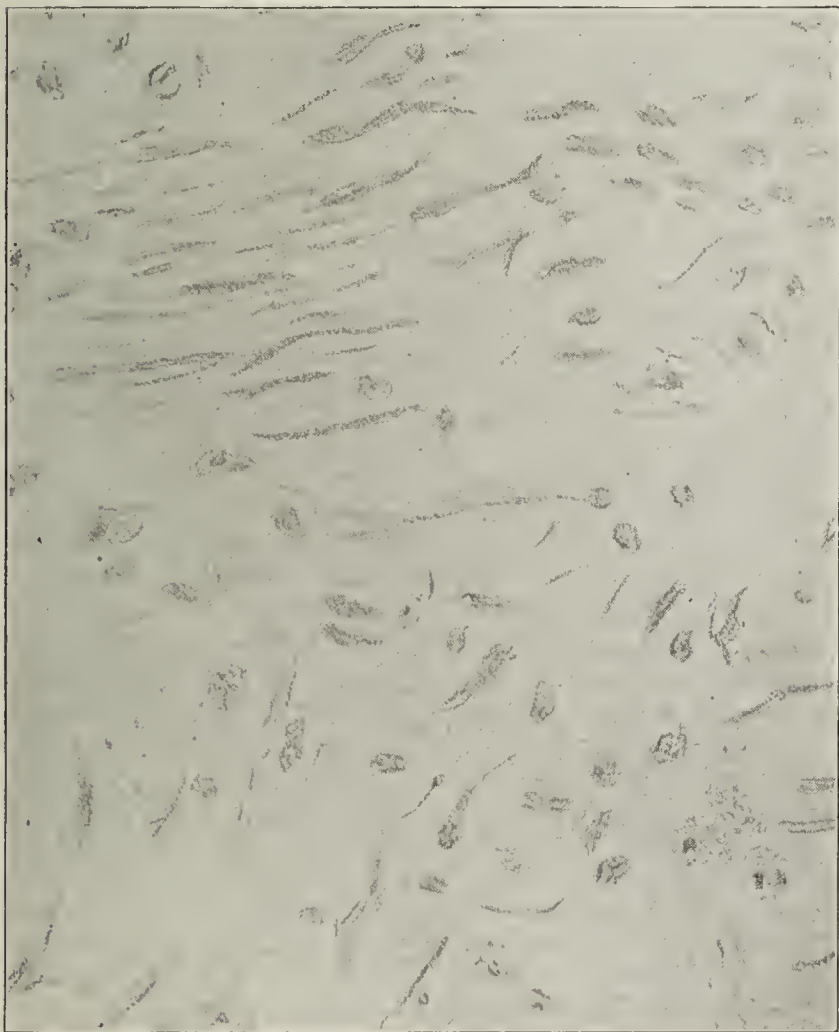


Fig. 1.—Drawing of section from specimen. Case 1. Magnified 400 diameters.

the third in consultation with Dr. M. E. Nuckols. For the microscopic findings I am indebted to Dr. E. Guy Hopkins, of the Laboratory Department of the University College of Medicine.

CASE 1.—Referred to the Virginia Hospital by Dr. G. S. Bell of Oriental, N. C., and operated on by Dr. Stuart McGuire, May 1, 1903.

*History.*—Mrs. W., aged 19, married, unipara, has always been a strong, healthy girl. She had the diseases of infancy, except diphtheria and scarlet fever. When she was 10 years old she fell across a wagon wheel and hurt her side, not

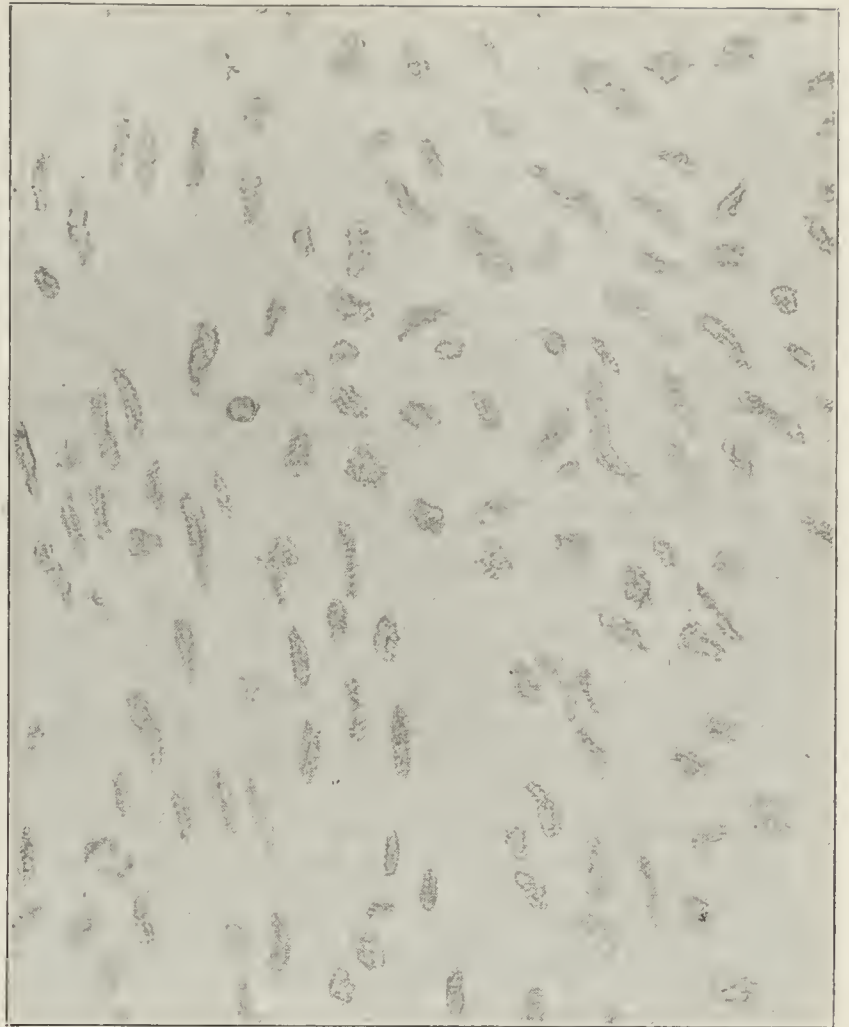


Fig. 2.—Drawing of section from specimen. Case 2. Magnified 400 diameters.

seriously enough to confine her to bed. She has been perfectly well, doing her own cooking, washing, and housework during her first pregnancy, which ended in a natural easy labor, with no physician present, just eight weeks before entering the hospital.

Two months after conception she noticed a small hard lump.

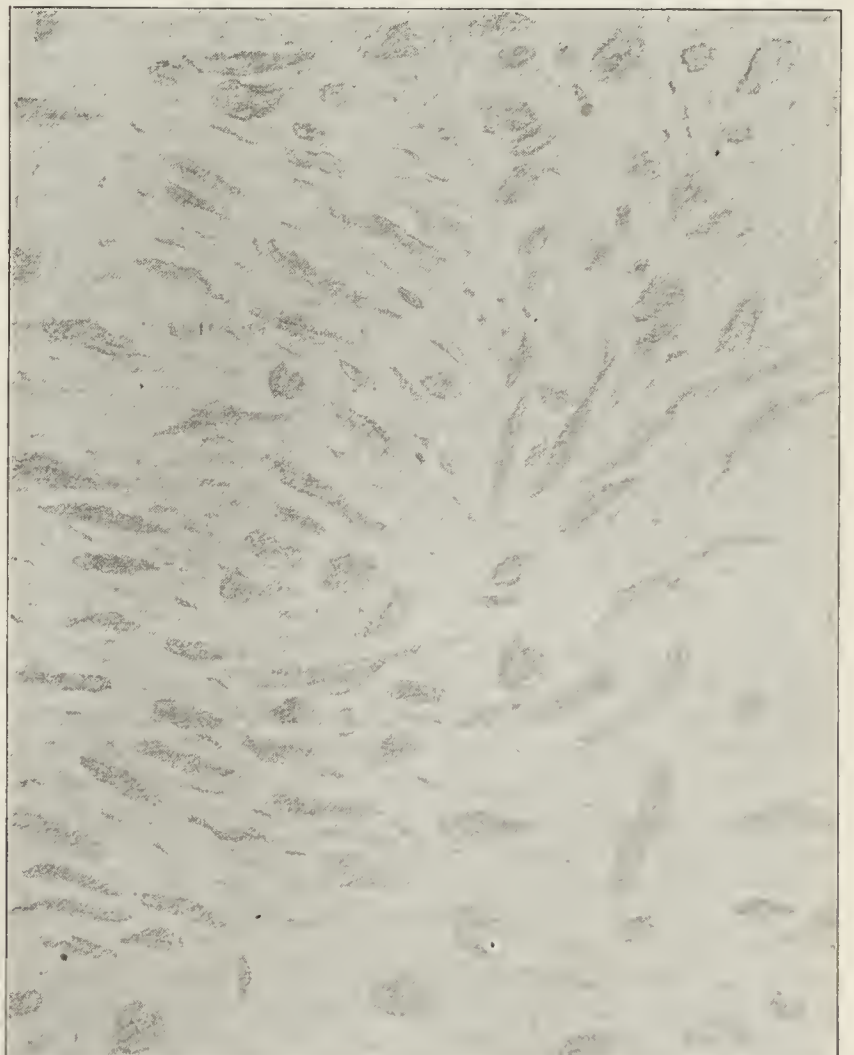


Fig. 3.—Drawing of section from specimen. Case 3. Magnified 400 diameters.



the size of a Malaga grape, painless and slightly movable, in the left inguinal region. It did not interfere with her daily work, and did not cause her any inconvenience whatever until after her baby was born, when, in the subsidence of the abdomen, it was not only very apparent, but began to grow rapidly, until it attained its present considerable size.

*Physical Examination.*—A hard, globular tumor was found about the size of child's head at birth, apparently occupying the right inguinal canal. It was freely movable, with smooth round surface, and was not attached to the uterus or the ileum. There was no pulsation or bruit and no enlarged inguinal nodes, nor was there any evidence of hernia.

*Operation.*—The thinned fibers of the external oblique were slit, and the tumor quickly hulled out of its bed in the canal. There was no pedicle. It seemed to have developed in the canal. The wound was closed as in Bassini's operation for hernia, for both the floor and roof of the canal were stretched to extreme thinness, requiring lapping of the external fascia and suturing to the right rectus.

*Post-Operative Course.*—The patient made an uneventful recovery and has since given birth to another child in a labor easier than the first, and unattended by a physician. At this time, three and one-half years after the operation, there has been no return of the growth, and her general health has been excellent.

*Gross Appearance of Specimen.*—The tumor was smooth and free from nodules and distinctly encapsulated. It weighed between 2 and 3 pounds, and was white in color. Section revealed a plane, white surface, with no cysts or pockets of fluid. The blood vessels were few in number and small in size, but all presented well defined walls.

*Microscopic Appearance of Specimen.*—The structural elements and their arrangement proclaimed it a fibromyxoma. The connective tissue cells were scattered without plan through a matrix consisting of myxomatous material, through which a tangle of tiny fibrils was interwoven. The preponderance of matrix over cells at once attested the benign character of the growth. As will be seen in Figure 1, the spindle was the prevailing type of cell, with thread like tapering ends characteristic of myxomatous tissue. The field shows no blood vessels, but in other areas vessels were noted, always with well defined walls.

CASE 2.—Referred to St. Luke's Hospital by Dr. J. P. Roy of this city and operated on by Dr. Stuart McGuire.

*Patient.*—Mrs. S. E. G., aged 26, married. Family history negative.

*Personal History.*—Had the mild diseases of childhood. Has two children, the youngest 2¼ years old. Menstruation always normal. Never did hard work or heavy lifting, or had a chronic cough that might cause hernia. Trouble dated from three years ago, when she first noticed a sharp pain in the left groin, and on examination found a small lump, which gradually increased in size. The local pain had persisted and increased in severity, especially in damp weather. She had also suffered occasional paroxysms radiating from the inguinal region over the lower abdomen and into the back. These were sometimes brought on by long walks or long standing. The tumor was uninfluenced by menstruation, and had never become inflamed, nor had it interfered with urination. It did not decrease in size on lying down, and did not affect her general health.

*Physical Examination.*—In the left groin, above Poupart's ligament, was a mass about the size of the closed adult fist, oblong in shape, and directed downward and inward. Over the mass the skin was freely movable. The veins of the skin were slightly engorged, but not markedly so. On palpation the tumor was hard and somewhat elastic in consistency, and could be slightly moved. It was clearly outlined, and seemed to have an attachment to the outer wall of the pelvis. There was no pulsation or bruit. About the anterior superior spine of the ileum there was marked tenderness.

In the region of the external abdominal ring, when the patient stood erect, a small lump about the size of an almond was seen, which disappeared when she was on her back. With a finger in the ring an impulse was felt on coughing, which was not noticeable elsewhere on the tumor. Percussion over

the large tumor elicited a partially dull, but not a flat note. Heart, liver, lungs, spleen, etc., were normal.

*Diagnosis.*—Tumor of left inguinal canal, apparently attached to crest of ileum, probably osteosarcoma. Complication: Left incomplete indirect inguinal hernia.

*Operation.*—The thinned external oblique was slit up from the external to the internal ring, and the tumor exposed. It was firmly adherent to the fascia, and was attached by a broad pedicle to the inner aspect of the ileum. What was thought to be a hernia was found to be the cystic lower end of the tumor. It was hulled from its bed and its pedicle stripped away from the ileum. There was much bleeding from many thin-walled veins; this was readily controlled by pressure.

There was far more suggestion of malignancy about this case than in the preceding, both as to its bleeding and its firm periosteal attachment. Closure was effected as in Case 1, by uniting the cut external oblique to the border of the rectus over the approximated conjoined tendon and Poupart's ligament. The wound was drained by a stab wound, behind and below the anterior superior spine of the ileum.

*Post-Operative Course.*—The wound drained very freely, but united without pus formation. Patient made a good recovery, and at the present writing there has been no return of the growth.

*Gross Appearance of Specimen.*—An oblong mass, firm in consistency, with several loculi of clear fluid at the lower extremity. Section showed a firm surface, with many well defined vessel walls.

*Microscopic Appearance.*—In Figure 2 it will be seen that the intercellular structure is greater in amount than the cells, though the cells are far more numerous than in Figure 1. The matrix is of the same character as seen in Figure 1, but the cells, while still retaining the spindle shape, are shorter and more rounded at the ends. Vessels, where found, had well defined walls.

CASE 3.—Seen at the Virginia Hospital, with Dr. M. E. Nuckols, April 4, 1906.

*Patient.*—Negro woman, aged 23, with one child 3 years old. Family history negative.

*Personal History.*—Regular menstruation. Eighteen months ago a small tumor appeared in the left inguinal region and grew slowly and painlessly until a few days ago, when she began suffering with an aching pain in the region, which led her to seek relief.

*Physical Examination.*—A large, firm, somewhat oblong rounded tumor of the left inguinal canal, extended from the crest of the ileum beyond the median line. It was quite movable, though apparently attached to the ileum externally. It was not attached to the uterus, gave no bruit on auscultation, nor any impulse on coughing.

*Diagnosis.*—Myxomatous tumor of the left inguinal canal.

*Operation.*—This was performed by Dr. Nuckols just as were the foregoing. The tumor was easily separated except at its pedicle, which sprang from the periosteum over the anterior superior spine, from which it had to be torn. Care was taken to take a portion of the periosteum away with the pedicle, as the tumor was quite vascular, and had rather an ugly look. Repair of the canal was effected as in the two foregoing cases.

*Post-Operative Course.*—Uneventful recovery. Case lost sight of since leaving the hospital.

*Gross Appearance of Specimen.*—Firm, smooth, oval tumor, weighed 3½ pounds, presented a uniform interior, free from cysts.

*Microscopic Appearance of Specimen.*—As seen in Figure 3, the cellular elements, while more numerous than in either Case 1 or Case 2, still constitute less of the tissue than its intercellular substance. The intercellular substance consisted of myxomatous material and fibrils like the foregoing. The prevailing type of cell here was also the spindle, though larger than the foregoing.

#### SUMMARY.

These tumors occurred in women between the ages of 19 and 26. All three had borne one or more children, and in one at least pregnancy seemed to accelerate the growth. Two of the growths sprang from the perios-



teum or fascia covering the inner face of the ileum, while one lay free in the canal, attached only to its coverings. All were of comparatively rapid growth, the average duration from the earliest detection to the time of operation being 22 months.

The growth was most rapid in the younger women. The smallest tumor was the oldest growth, occurring in the oldest woman. All were probably fibromata, which underwent myxomatous degeneration, and the first two were distinctly benign in appearance, but the size and appearance of the cells in Case 3, coupled with the proportion between the cells and the matrix, is suggestive of that strange borderland type which is so perilously near to sarcoma.

1000 West Grace Street.

## TURNIP TOP TREATMENT OF CHRONIC DIARRHEA AND AMEBIC DYSENTERY.

CUNNINGHAM WILSON, M.D., AND H. E. PRESSLY, M.D.  
BIRMINGHAM, ALA.

Nothing has given more concern than the treatment of chronic diarrhea and dysentery. In reporting our experience in the treatment of such conditions with the boiled tops of the turnip, spinach, mustard and phytolacca we feel fully convinced of the specific action of this diet, and append the report of some cases so treated. Our attention was first called to this treatment during 1904 in the following manner: A patient, male, white, aged 28, consulted us for a chronic diarrhea. He had suffered for several months and had tried the various astringent and dietetic remedies commonly employed in such conditions. He was pale; had lost in flesh; had four to six stools a day with very little pain. The stools were chalky in color, semi-solid and very offensive. We advised him to go into a hospital, where he was put on rigid milk diet with astringent enemata. He grew worse, and his diet was changed to cereals and meat juice. On this he was kept for six weeks without much trouble, but gained nothing in weight nor strength. In disgust he left the city and went home, as we supposed, to die; certainly rest in bed and the hospital régime had not benefited him. Some months later he walked into our office a well man. He had gained largely in weight and had the appearance of perfect health. When we inquired for the cause of his recovery, he replied: "Poke salad" (phytolacca top). He had begun, shortly after leaving the hospital, to eat cooked sprouting tops of phytolacca and, when these could not be obtained, turnip tops, mustard or spinach, with the result stated. We watched this man for some time and saw him return to his regular work, bridge builder. We lost sight of him after a year, but have lately learned that he has died; from what cause we do not know. We have prescribed turnip or mustard "greens" in four cases of chronic diarrhea since this, and in every case the result has been most satisfactory. The diet at first should be rigidly "greens," and later cereals, as they can bear them. Meat seemed to be the hardest thing for our patients to digest.

We are giving the reports of six cases, four of chronic diarrhea and two of amebic dysentery. Of the patients with diarrhea one has died.

### CHRONIC DIARRHEA.

CASE 1.—An old lady who had a severe chronic diarrhea, had all her symptoms relieved on the "greens" diet and went to the country for a change. While away it was impossible for her

to get the diet; she had a relapse and died after six weeks in bed.

CASE 2.—Mr. A., aged 40, white, married, real estate agent. First noticed diarrhea January, 1905; until June, 1905, had irregular diarrhea, alternately better and worse. Had been put on a low diet with bismuth, but on the whole was losing ground, and the diarrhea continued. June 1905, he began taking "turnip greens" almost exclusively for four months; improvement was prompt, and he soon began to gain in strength and weight. The diarrhea was controlled at once. It is fair to say that for a while he took a mixture of chalk and bismuth. In a letter received from him to-day he states that he gained 10 pounds on this strict diet and he now eats anything, and has gained 15 pounds more, 25 pounds in all.

CASE 3.—Male, white, aged 45, railway conductor. First noticed diarrhea in March, 1902. His stools numbered from four to twelve a day, keeping up throughout the twenty-four hours; they were semi-solid, frothy, pale, chalky in color and of extremely offensive odor. There was no jaundice nor pain, but a great deal of gurgling in the bowels. He stated that milk always aggravated his symptoms. For twelve months he was sick this way, sometimes apparently improved for a day or two, only to relapse and find himself weaker than before. During this time he was able to work on an average one-third his regular time. He was continuously under medical care. In February, 1903, he began taking "turnip greens." He ate them exclusively for two weeks, and improvement began at once, even though he was taking no astringents. After two weeks his diet was gradually enlarged until at the end of two weeks he was on full diet. During this period he gained 30 pounds and felt well and strong. He now eats anything and is not troubled in the least; he occasionally eats the salad, but not systematically.

CASE 4.—Mrs. M., white, aged 65, first noticed trouble in the fall of 1903. Stools numbered from four to twelve a day; usually more trouble in the morning. Movements were pale yellow, semi-solid, frothy and very offensive. There was no jaundice. Milk always aggravated the symptoms. She endured this for eighteen months, taking the usual remedies with periods of temporary improvement, followed by relapses. In June, 1905, she began taking "turnip greens," and took them exclusively for three days and almost exclusively for six weeks. During this period she improved steadily; the diarrhea was controlled and she gained materially in weight and strength. She is still eating "greens" and with them anything else she wishes. Her health is entirely regained and she is as strong as she ever was. Weight on beginning treatment, 115 pounds; weight to-day, 148 pounds.

These facts have been obtained from the patients living to-day; we regret the incomplete record of the fatal case. Of the five patients, all but one had symptoms that closely resembled tropical sprue; the tongues were red and bare of epithelium; there was great weakness and pallor, with pale, semi-solid, frothy stools, but all did badly on milk. None of these cases had bloody stools.

Our experience with this diet in amebic dysentery, though limited, is most satisfactory. The two patients had tried all the ordinary remedies, and the first was ready to undergo an appendicostomy or an enterostomy. He had quinin and nitrate of silver irrigations, rest in bed, carefully restricted diet, and, in fact, had carried out every detail of directions given him, and his condition was extreme. The patient in the second case was not so bad, but he had given up his work and did not expect ever to return to it. He had been in the hands of good physicians, and we lost no time in putting him on "turnip greens." You will note the result in the report of the case below.

### AMEBIC DYSENTERY.

CASE 1.—White, aged 29, married, merchant; was first seen Oct. 28, 1905. He gave a history of having had an attack of dysentery in 1904, lasting three months, and from which he seemed to recover. He had, however, never regained his for-



mer weight by fifteen pounds. In July, 1905, the dysentery returned with bowel movements of from three to ten daily. He was very pale and thin; the skin was dry, abdomen soft and slightly tympanitic, with tenderness extending from cecum over the entire colon. The bloody mucus, removed with rectal tube, was loaded with amebæ. None of the ordinary remedies had any effect on him; in fact, he grew steadily worse. From our experience in the diarrhea cases, he was put on "turnip greens" and his improvement began at once. In a month he had gained in strength and flesh to a remarkable degree. He was required to keep up irrigations of normal salt solution, but all other treatment was discontinued. By the end of the second month he was entirely well; he reports occasionally to show that he continues well, and he is able to take any kind of food.

CASE 2.—C. A., white, aged 30, locomotive engineer; was seen Oct. 8, 1906, and stated that on Jan. 6, 1906, he began to have bloody mucus discharges from his bowels; he was able to continue work most of the time until July, 1906, when he had to take to his bed. He was able to be up part of the time, but would often have from eighteen to twenty bowel movements a day. His appetite was ravenous. There was a great deal of tenesmus and he was very thin and anemic; examination of the chest was negative; there was some tenderness over abdomen. Bloody mucus removed from rectum showed abundance of amebæ. He was put on "turnip greens" at once, of which he would take four or five meals a day; at the end of two or three days he was entirely relieved of his tenesmus, and the bowel movements were becoming much less frequent. He was kept in bed most of the time for the next month, taking nothing but "turnip greens" for the first two weeks, when he began to increase his diet by the addition of a glass of milk and a little toast. November 15 he began to lose his appetite; his skin looked thick and his tongue was heavily coated; he was given 1/10 gr. calomel three times daily. He thought this did him a great deal of good and he kept it up for two weeks. December 1 he returned to his work and is now as well as ever.

It may be as well to add to this report the fact that we have recently seen two patients suffering from well-defined stomach ulcers take this food when everything else disagreed. One has, to all appearances, recovered. He was extremely weak when he began the diet, having just had a severe hemorrhage from his stomach. He could take this food without pain or inconvenience and is now entirely free from symptoms and in better health than he had been for years. The other case was reduced to the last extremity when he was given this diet. It caused him no pain and he took it with a relish, while he was unable to take any other food without great pain. He died from exhaustion.

It may be well enough to speak of the preparation of "turnip greens." It is a common diet all over the South, especially in the country districts. The tender young sprouts of the common poke (*phytolacca*) are also used in the same way among the negroes and poorer classes. The cooking is of great importance, as the dish is most unpalatable when badly cooked. In the preparation of the turnip greens, ordinary bacon is used, which is boiled about half an hour, and then the turnip tops, spinach, mustard or *phytolacca* tops are added and let boil from one to two hours.

## MATERNAL IMPRESSIONS.

J. W. ROBINSON, M.D.

M'CAMMON, IDAHO.

The article and discussion on "Superstition in Teratology" in THE JOURNAL, Jan. 26, 1907, prompts me to report the following case, as I believe that only collection and comparison of statistics, in addition to careful study of cases, will clear up the subject.

*Patient.*—Mrs. T., aged 36, American, white, mother of five children.

*History.*—The youngest child is 4 years old. At the age of eighteen months it suffered from what was evidently anterior poliomyelitis, but had no medical attention. Before the attack the child was able to walk, but following the attack it was unable to do so. Six months later the parents consulted a physician who diagnosed the trouble as "hip disease." He did little in the way of treatment, and did not help the child any. Examination of the child in November, 1906, by Dr. W. F. Howard and myself, showed a talipes equinovarus of the left foot. Measurements showed one inch shortening from the anterior superior spine of the ileum to the internal malleolus. The left calf was one inch smaller than the right. Appropriate treatment was instituted.

In November, 1906, I was called to attend Mrs. T. in labor at term. The child was a healthy male, but with well-marked talipes varus of the right foot. This was easily reduced, but returned almost immediately. One month later I over-corrected it and held it in place with a plaster cast.

The mother had worried very much over the possibility that the child might have a deformity similar to that of her other child. Whether the occurrence of the deformity is a mere coincidence or not I do not know nor claim to explain.

## DUPLEX STETHOSCOPE.

P. A. AURNESS, M.D.

MINNEAPOLIS.

This instrument consists of a metal shell, forming two focalizing sound-wave receivers having a common central body and sound-exit. An adjustable hollow plug attached to flexible transmission tubes permits the use of the larger or smaller receiver simply by half turning the plug. As made for me by the American Rubber Company, Minneapolis, the receivers, covered by a drum membrane, are of a metal composition (copper, zinc and lead), found very dead to air vibration—a feature of importance in the transmission of pure chest sounds and in the elimination of instrument vibration or the adventitious noises commonly found in instruments of this kind.



Sound-refractory lenses (sound, like light-waves, being subject to refraction), adjusted so as to focalize the sound-waves at the sound-exit, make the instrument one of unusual sensitiveness and accuracy. The flexible tubes, wound around the neck of the instrument, permit it to be conveniently carried in the vest pocket, occupying only the space of an ordinary watch. The ear tips are made to fit the auditory canal by a sliding, adjustable rubber ring in order to more effectively exclude disturbing sounds.

The objects attained in the design of this instrument are superior efficiency combined with simplicity of style and construction.

*Cause and Effect.*—Don't think you can sow the seeds of disease and reap a crop of health. The books of Nature are squared occasionally and full account is exacted for every item.—*Journal of the Outdoor Life.*



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(A list of all accepted articles is published on one of the advertising pages of *The Journal* in the first issue of each month.)

(Continued from page 421.)

### VIOFORM.

#### NIOFORM. IODOCHLOROXYQUINOLIN.

Vioform,  $C_9H_4N.OH.I.Cl = C_9H_5ONClI$ , is a substitution compound of anachlor-orthohydroxy-quinoline, resulting from the introduction of one atom of iodine.

Hydroxy-quinoline is first chlorinated and dissolved in an alkaline solution, which is then treated with a solution of iodine in potassium iodide when a voluminous yellowish brown precipitate of vioform is produced. This is washed with a solution of sodium thiosulphate to remove free iodine and then with 1 per cent. hydrochloric acid until the dried residue melts at from 170° to 175° C. (338° to 347° F.).

It is a very voluminous, greenish yellow powder; crystallizing from glacial acetic acid in needles melting at 177° to 178° C. (350.6° to 352.4° F.), practically odorless, and insoluble in water and slightly soluble in alcohol; it permits sterilization without decomposition; it is about six times as bulky as iodoform.

Vioform contains 41.57 per cent. of iodine—it gives a green coloration with Millon's reagent or when the alcoholic solution is treated with ferric chloride solution. It dissolves with a brown color in concentrated sulphuric acid and the solution evolves iodine on warming. If this solution, after driving off the iodine, be diluted with water, chlorine can be demonstrated by the usual test with silver nitrate. If a solution of vioform in chloroform is shaken with nitric acid, the chloroform acquires a violet red color, and the nitric acid becomes somewhat yellow.

**Actions and Uses.**—It is antiseptic, haemostatic, cicatrisant; non-toxic and non-irritant. It is claimed to be an ideal substitute for iodoform, preventing decomposition in wound secretions to a much higher degree, and drains and tampons may be left *in situ* for a considerable time.

**Dosage.**—As dusting powder, and as ointment, spray, suppository, or in form of gauze (which see).

Manufactured by Baseler Chemische Fabrik, Basel, Switzerland (C. Bischoff & Co., New York). German Patent No. 117,767.

### VIOFORM GAUZE.

Gauze impregnated with a solution of 10 Gm. (150 grains) of vioform, 50 Gm. (750 grains) of absolute alcohol, 10 Gm. (150 grains) of sugar, 25 Gm. (375 grains) of glycerin, and 500 Gm. (1 1/12 pints) of water.

**Actions and Uses.**—See Vioform.

Manufactured by Baseler Chemische Fabrik, Basel, Switzerland (C. Bischoff & Co., New York).

### CELLOIDIN.

A name applied to a preparation of the character of a purified Pyroxylin, U. S. P.

Celloidin is prepared by solution of pyroxylin in a mixture of alcohol and ether, filtration and recovering the solvent from the filtrate. It is supplied in shreds immersed in water.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin, Germany (Schering & Glatz, New York). U. S. patent No. 299,857.

### COMPOUND EMULSION PETROLEUM, S. & D.

An emulsion containing 5 per cent. of refined petroleum and 28 1/3 per cent. petrolatum oil with 0.6 Gm. (10 grains) of calcium hypophosphite and 0.6 Gm. (10 grains) of sodium hypophosphite in each 30 Cc. (one fluidounce).

It is a white emulsion practically free from odor and taste.

**Actions and Uses.**—It is claimed to be a stimulant, diaphoretic and expectorant.

It is claimed to be useful in catarrhal affections of the respiratory tract.

**Dosage.**—8 to 16 Cc. (2 to 4 fluidrams) three times a day.

Manufactured by Sharp & Dohme, Baltimore, Md.

### DUOTAL-HEYDEN.

A name applied to Guaiacolis Carbonas, U. S. P.

Manufactured by Chemische Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York). U. S. patent No. 466,913. U. S. trademark No. 28,957.

### ESSENCE OF PEPSIN-FAIRCHILD.

A solution of the milk-curdling and proteolytic ferments of the gastric glands in a menstruum containing 18.5 per cent. of alcohol by volume.

The solution is prepared by direct extraction from the peptic glands of the stomach.

One Cc. will curdle 250 Cc. of milk at 38° C. in a few minutes, and dissolve 25 Gm. of coagulated egg albumin when tested according to the directions of the United States Pharmacopeia.

**Actions and Uses.**—Essence of pepsin has the action of rennin and of pepsin and is recommended by the manufacturers for preparing milk for ingestion and in cases in which pepsin is indicated.

**Dosage.**—4 Cc. (1 fluidram) or more.

Manufactured by Fairchild Bros. & Foster, New York.

### FIBROLYSIN.

Fibrolysin is a sterilized solution of a double salt of thiosinamine and sodium salicylate ( $NH_2.CS.NHCH_2.CH:CH_2$ ) +  $C_6H_4(OH)(COONa)$ , containing 15 per cent. of the double salt.

It is prepared by mixing the two components in solution.

It is an aqueous odorless solution. It does not keep well in the air but is marketed in sealed, brown glass vials, each containing 2.3 Cc. (37 minims) of the solution, equivalent to 0.2 Gm. (3 grains) of thiosinamine.

The tests are those of thiosinamine and sodium salicylate.

**Actions and Uses.**—Those of thiosinamine (which see), with the advantage of quicker absorption and freedom from pain or irritation, on account of its solubility and aqueous vehicle.

**Dosage.**—The contents of one vial (2.3 Cc. = 0.2 Gm. thiosinamin) by subcutaneous, intramuscular or intravenous injection; one injection being administered daily or every second or third day.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. trademark No. 49,160.

### HEMOL.

REDUCED HEMOGLOBIN. PARAHEMOGLOBULIN. HEMOGLOBIN DEOXIDIZED BY ZINC, MERCK. HAEMOL.

Hemol is an organic iron compound produced from blood by reduction.

Neutralized blood is shaken with zinc dust and water and the zinc removed from the product of the reduction (Zinc parahemoglobin).

Hemol is a dark-brown, almost tasteless powder, insoluble in water, alcohol, etc. It contains traces of zinc oxide.

**Actions and Uses.**—It is claimed to have the action of an organic iron compound.

Hemol is claimed to be useful in anemia, chlorosis, etc.

**Dosage.**—0.12 to 0.5 Gm. (2 to 8 grains) in powder with sugar or in wafers.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 541,933.

(To be continued.)



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, MARCH 9, 1907.

## CERVICAL RIBS.

The Bible story of the creation of Eve from one of Adam's ribs is doubtless responsible for the not uncommon impression, even among intelligent laymen, that the male sex normally possesses one less rib than the female. Scientific knowledge of accessory ribs dates back to antiquity, and, on account of the fact that they are not only more frequent, but also more easily detected and more apt to give rise to symptoms, most attention has been given to cervical ribs. Of recent years, presumably on account of the use of the *x*-rays, cervical ribs have been frequently described, but as yet no extended discussion of the symptoms which they may produce has been incorporated in the average text-book.

The accessory ribs are due to errors in development of which we have no certain knowledge. The abnormal rib, or ribs, for they are often bilateral, may exist alone, or, as is common with developmental errors, may be associated with other defects, especially with lesions in the spinal cord. The manner of their development is easily understood when it is recalled that the normal ribs are merely modified processes of vertebræ, and these same processes in a rudimentary condition are always to be made out in the cervical, lumbar and sacral regions. The cervical ribs usually spring from the seventh cervical vertebra, are often bilateral, and may terminate free in the tissues of the neck or articulate with the first rib or the sternum. As Barker has shown, all varieties of articulation with the vertebræ and all sorts of shapes and terminations are met. When the ribs are bilateral, and the *x*-ray has shown that this is much more frequent than was formerly supposed, one is usually much larger than the other, so that symptoms of cervical rib are usually unilateral.

It would be expected that cervical ribs, being congenital, should give rise to symptoms in early life. As a matter of fact, this is not the case, most individuals showing no symptoms before the age of 15, while not infrequently the signs first appear late in life. This has been explained by the fact that until the rib has reached a certain size it can not exert pressure on important structures. Other observers ascribe it to greater fixity of the rib after the period of ossification, and still others to the alteration in relation to other structures due to sagging of the shoulders from lack of muscle tone from advancing age. In individuals with arterial changes

the effect of age on the arteries must also be considered. In any event, it is by no means unprecedented for a lesion to be present for years without producing symptoms, these suddenly appearing coincidently with some condition depressing the general health.

The symptoms of cervical rib are admirably analyzed by Keen<sup>1</sup> in a recent article, which should be consulted by all wishing full details on the subject. Local symptoms are necessarily present, as the extra rib appears in the neck as a bony prominence, usually one or two fingers' breadths above the clavicle about its center. The tumor is usually hard, rounded and immovable, though in some instances slight mobility may be made out. Attention has been called by several observers to the unreliability of palpation alone in detecting cervical ribs, and Keen strongly advocates the use of the *x*-rays in all doubtful cases. There seems more danger of diagnosing a cervical rib when it is not present than of making the opposite mistake. The most important symptoms of cervical rib are due to its anatomic relations with the nerves and vessels of the neck. In the individuals who present symptoms, perhaps 10 per cent. of those who have the accessory rib, the most prominent are neuralgic pains in the neck and radiating down the arm or to the head or chest. Signs of pressure on the lower strands of the brachial plexus are common, and disturbances of sensation in the arm and hand, sometimes of an elective character, are to be expected. In a few instances there have been signs of a paralysis of the cervical sympathetic nerve on the side on which the rib was situated. The relation of the rib to the great vessels at the root of the neck may also cause weighty complications. Aneurism of the subclavian artery has been described, but it seems likely that many cases thus catalogued were not true aneurisms, the fact that the vessel passes over the rib often giving rise to a false impression of dilatation. In some cases thrombosis of the artery with gangrene of portions of the fingers has occurred, and more or less impairment of the arterial circulation is common. Similar changes may take place in the vein, but edema in such instances seems to be rare. Changes in the muscles, in the form of wasting of the arm, and even of the shoulder girdle and chest, on the affected side are seen, and there may be an inability to perform the finer finger movements. The subject is an interesting one, and though not of paramount importance should be borne in mind in all unilateral painful affections of the neck and upper extremity whose origin is obscure.

## PROGRESS OF PHYSICIANS' REMUNERATION.

In an article in the well-known French magazine *Revue des Deux Mondes* a distinguished French writer on economic and social questions, le Vicomte Georges d'Avenel,<sup>2</sup> discusses the fees that have been paid to physi-

1. Amer. Jour. Med. Sci., February, 1907.

2. Vicomte Georges d'Avenel began a course of lectures on Economic History at Harvard University, February 27. He is recognized as the leading French historian.



sicians in France for the last seven hundred years. This article is one of a series on the richer classes since the middle ages and is of special interest because it furnishes ideas for the estimation of the comparative amounts paid the different liberal professions, law, medicine and teaching. His figures are given in terms of the money of the present day, that is, not only converting the intrinsic value of the gold and silver of that time into terms of modern French currency, but also transforming it so as to make it express the buying value of money in our own day.

The physician, like the artist, and very often the literary man of the middle ages, could only obtain a definite salary by being attached to the court of a prince or to the domestic circle of a member of the nobility. These royal physicians received what would not be considered very good salaries at the present day. The physician to Charles the Wise of France, it is true, received 22,000 francs, about \$4,500, and the medical attendant of the Prince Royal of Aragon about 15,000 francs, nearly \$3,000, but these, like the 20,000 francs allowed to the chief physician of the Court of Queen Anne of Brittany at the end of the fifteenth century, were extremely exceptional. Practically, salaries ranged from 4,000 to 8,000 francs, that is from \$800 to \$1,600. The Duke of Burgundy in the thirteenth and fourteenth centuries had two physicians, the first of whom received about \$1,500, the second less than \$1,200. The Duke of Berry's physician and the medical attendant of Queen Isabelle of Bavaria each received scarcely more than \$1,100. Salaries were on the increase, however, for the physicians-in-ordinary and the surgeon of the Archduke King of Spain at the end of the fifteenth century were each allowed \$1,400. The Duke of Orleans in the middle of the fifteenth century paid his physician about \$900, but then his grandfather a century before had paid his medical attendant only a little more than \$300.

Most of these physicians had few opportunities of adding to their salaries by attendance on members of the nobility besides their official patrons. There seems to have been some objection to physicians devoting themselves to others, as if it did not quite become the physician of a ruling prince to wait also on his subjects. These royal physicians, however, often had opportunities to rise in a political way that compensated them for their comparatively meager salaries. In daily relations with the ruler they were often asked for advice in other matters besides those relating to medicine, and so became royal counselors. The physician of Louis XI, Jacques Coictier, became president of the chamber of finance and eventually a millionaire. He was able to give Charles VIII two million and a half of francs (\$500,000) to enable him to escape from his enemies. John de L'Hopital, the physician of the Constable of Bourbon, became the auditor of finance in Auvergne and left a fortune to his son, who afterward became the famous chancellor.

The nearer we come to modern times the more do the remunerations accorded to physicians increase in value. During the seventeenth and the beginning of the eighteenth century the various physicians of Louis XIV received as much as 100,000 francs (\$20,000), and at least one of them, the famous Aquino, was the recipient for a time of 170,000 francs a year, considerably more than \$30,000. Not only did the salaries physicians received increase in value, but the estimation in which they were held also became higher. During the preceding centuries they became members of the court in lower places of power, but their professional dignity was not the subject of much respect. The famous Vicq-d'Azyr, however, the physician of Louis XV, not only received a large salary, but was looked on as a distinguished scientist and associated on a footing of equality with the encyclopedists.

By this time another important change had come over the public attitude toward the profession. The better classes generally had not cared before this for the attendance of a physician who also waited on the poor. Now they began to seek especially those whose experience among the poor in the hospitals fitted them better for the successful practice of medicine.

With this the modern era begins and the physicians' remuneration continues to go up. At the present moment there are in Paris, according to the writer of the article referred to, at least a half score of surgeons who make more than \$100,000 a year. While physicians are not as a rule paid so well as surgeons, there are at least as many medical specialists who receive more than one-half this amount annually. There are about forty leaders in medicine who make between \$20,000 and \$30,000 a year,; that is as much as the chief physicians of the Great Monarch two centuries ago, eight times as much as the royal physicians four centuries ago, and from twenty to twenty-five times as much as the queen's physician of five centuries ago. The outlook for medicine as a lucrative profession in France is most promising but for the one fact that the number of physicians has more than trebled during the last half century, while the population of France has only increased one-tenth.

This is the danger of professional degeneration—that the numbers shall become so great as to make the proper maintenance of professional dignity impossible. Here, it may be said, is the problem that many nations are facing at the present moment, our own country included.

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#### MEDICAL EDUCATION AND THE STATE.

Medical education to-day is an entirely different problem from what it was twenty-five years ago. The expenses connected with a thoroughly equipped modern medical college have at least quadrupled during the last quarter of a century. Such schools can not be main-



tained by the fees that medical students are able to pay. Considerable though the income from this source may be, the actual *per capita* cost of a good medical education, everything considered, far exceeds the fees paid in by the student. No one at all familiar with the actual situation will take exception to these general statements. Their truth may be taken for granted.

Medical education here, as well as everywhere else, consequently depends on private endowment and state aid for adequate support. Were it not for this support medical education in this country would be doomed to remain at a shamefully low standard and medical research would suffer unmeasurable harm. The heaviest sufferer would be the public. Munificent though the private endowments to the cause of medical education have been in the past, and hopeful as the outlook is for further aid in the future from this source, the state is not released from all responsibility on this score. Many states in the Union have recognized this fact and medical departments have been organized, in some instances many years ago, in other instances recently, in connection with the state universities. Michigan, Minnesota, Iowa, Virginia, California, Texas and many other states are fully committed to this policy. Wisconsin has just embarked on the interesting scheme of providing on a true university basis for the first two years of medical work, the student to secure his clinical training where he may choose, but with the privilege of returning to the university for his final degree if he sees fit to do so and complies with certain regulations. To the friends of progress in medical education this step is a welcome one because it means the annual appropriation by the state of a considerable sum of money to instruction and research work under especially favorable conditions in the branches fundamental to clinical medicine.

In another state, namely Illinois, which already is committed to the support, at least in some measure, of medical education in connection with its university, an earnest effort is now under way to place the medical work on a firmer footing and wholly in the hands of the university. If the present plans are carried to a successful issue the University of Illinois will come into possession of the commodious and conveniently-located buildings which it now rents of the original College of Physicians and Surgeons in Chicago, the corporate existence of which institution then ceases. To this end the university has asked the legislature of Illinois to appropriate \$386,000. The plan has the approval of the deans of the two large rival schools of high standing in Chicago and of influential medical men throughout the state generally. Its realization is in every way desirable because it will enable a powerful state university, the trustees and president of which have high ideals, to enter into immediate and efficient co-operation with leading schools in raising the standards of medical training and in the promotion of medical research.

Movements like this which look to the support of med-

ical education by public means should be promoted by the intelligent physician within his own special sphere of influence. It is important and necessary that the proper attitude toward medicine should obtain among the various classes of people. For when the people of our state realize the value to the community (and to mankind in general) of an active, progressive medical science in their midst there will be less difficulty in securing proper support of medicine in our state universities and in other ways.

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#### QUALIFICATIONS NECESSARY FOR THE USE OF WRIGHT'S VACCINE THERAPY.

The treatment of various infections, especially chronic, according to Wright's method by means of sterile vaccines prepared from the corresponding microbe, is attracting much attention in the English-speaking medical world. In the hands of experts the method seems to achieve results that promise well for a degree of permanent future usefulness. On account of the exact laboratory method of procedure vaccine therapy for a long time to come must remain in the hands of those that are especially qualified to carry it out. Probably a brief exposition of the difficulties—at present in most cases insuperable—in the way of the general practitioner's himself taking up this treatment, may not be without interest.

It must be borne in mind that Wright bases the treatment on the consideration that in many localized, chronic infections bacterial products may fail to reach the circulating blood in sufficient quantities and at proper intervals to stimulate adequately the machinery of immunization or self-healing and that it is in order to supply the necessary stimuli in proper doses that sterile vaccines prepared from the particular microbe causing the infection in question are injected. Hence it becomes absolutely necessary that an exact etiologic diagnosis be made in all affections that it is proposed to treat with specific vaccine therapy. The use, for instance, of gonococcus vaccine in the treatment of a chronic streptococcus or pneumococcus arthritis would be a fundamental mistake.

In the next place in order that the vaccine may be the one most suited for the individual case it is regarded as highly desirable, and even essential, that the vaccine be prepared from the particular strain causing the infection. This involves the isolation in pure culture of the bacterium in question, the preparation therefrom of sterile, potent vaccine, the proper dose of which is to be determined by special methods. Eventually we may learn that certain stock vaccines may be used with satisfaction, as now is the case in regard to tuberculosis in the vaccine treatment of which Koch's new tuberculin is employed.

Finally, in order to determine the immediate effect of the vaccine and to interspace the injections properly it



is necessary that the way in which the body reacts to the combined effects of the injections and the infection be tested from time to time. This is now done by determination of the opsonic index, a procedure that requires special facilities, some skill and much time. There is good reason to believe that persistent, ill-timed injections of vaccine, without giving the patient time to recover from the primary depression of the antibacterial powers that follow after each injection, may do great harm, and it is in order to avoid this, as well as to obtain direct evidence that the vaccine actually does stimulate the apparatus of immunization, that it is essential at least in the present stage of our knowledge to estimate the opsonic index.

The only infection in which an exception to this might be made would seem to be chronic local tuberculosis, provided the doses of tuberculin are small (1/1000 mg. by weight of bacillary substance) and the intervals between the injections 10 to 12 days. Clinical experience with tuberculin in the hands of careful, critical observers like Trudeau before the days of opsonins indicates that this would be a safe course.

It is evident that for the reasons briefly outlined vaccine therapy for the present must be delegated to specially trained persons with adequate facilities such as may be supplied in connection with laboratories. Already a number of special services of this kind have been established in this country, and it is by the accumulation of a substantial body of facts through painstaking and discriminative observations by competent persons in various places that the more precise field of usefulness of vaccine therapy and the best mode of its practical application within that field eventually will be determined.

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#### CANCER CACHEXIA.

Up to the present no satisfactory explanation of the characteristic cachexia of cancer patients has been furnished. Although occasionally some one has reported the occurrence of "ptomaines" or similar substances in the urine, these observations seem to have been either inaccurate or without significance, and generally both. Repeated examinations of tumor tissues have also failed to demonstrate the presence of any characteristic toxic substances that might account for cancer cachexia. Perhaps the most reliable positive finding is the frequent but by no means constant hemolytic property of extracts of cancer tissue, which might account in part for the anemia common in cancerous patients; but the typical cancer cachexia is something more than merely an anemia.

In spite of this paucity of positive findings, it is easy enough to imagine sources from which cachexia-producing poisons might arise, and the chief marvel is, perhaps, that more positive results have not been obtained. For example, it is quite probable that cancer cells, like all other tissue cells, produce by their metabolism sub-

stances which enter the general circulation; these substances might readily cause systemic disturbances either because of their abnormal nature, or, if of the same nature as the products of normal cells, because they are present in abnormally large amounts. Again, the constant disintegration of the cancer tissue through necrosis and subsequent autolytic softening must lead to the entrance of the products of proteid destruction into the blood. But it has not yet been possible to demonstrate that poisonous substances which might cause such a condition as cancer cachexia do arise in either of these ways.

With the foregoing facts in mind, it is interesting to observe the iconoclastic stand taken by Hansemann in his address delivered at Lisbon<sup>1</sup> on the subject of the functions of tumor cells. He recalls the numerous cases of cancer in which there is no cachexia, or in which the cachexia does not appear until shortly before the death of the patient, although the cancer may have existed for years; e. g., the carcinomas of the face which often exist for ten or more years, as well as many instances of uterus or mammary gland carcinoma. After an analysis of many cases, he has come to the conclusion that cancer, *per se*, does not cause cachexia. The anemia and emaciation, he believes, are due to associated conditions, for he found a pronounced cachexia only when the cancer either involved the digestive tract, or was extensively infected and ulcerated, or else when the function of many organs was disturbed by metastatic growths.

Coupled with the consistently negative findings of all those who have recently sought for evidence of a special poison as a cause of cancer, these observations of Hansemann, based on his exceptionally rich experience in tumor biology, must go far to expel the notion that cancers are of themselves a cause of cachexia. In view of the frequency with which "absence of cachexia" is brought forward in weighing the evidence as to the existence or non-existence of cancer in a doubtful case, the relegation of cancer cachexia to its proper place as a result of late changes in the malignant growth will undoubtedly be a step forward in the "early diagnosis of cancer," toward which, as a sort of therapeutic millennium, we all look.

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#### OSTEOPATHIC LEGISLATION.

The attention of secretaries of state boards of health, presidents and secretaries of state societies, members of the committees on medical legislation, and of all our readers who are interested in this subject, is called to the systematic, organized effort which is being made on the part of osteopaths throughout the United States to secure favorable and uniform legislation in every state.

Bills have been or are being introduced in all the states in which the legislatures are now in session which

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1. Zeitschr. f. Krebsforschung, 1906, iv, 565.



have not already adopted such laws. These bills are practically identical, not only in provisions, but in several instances in actual verbiage. Profiting by the experience of the medical profession in the matter of state licensure, the framers of this bill (for there really is but a single bill) have provided, not only that all persons practicing osteopathy in the state at the time of the passage of the bill shall be exempt from examination, but also that "to all persons authorized to practice osteopathy in any other state or territory shall be issued a certificate to practice osteopathy on the presentation of a certificate of license issued after examination by a legally constituted board of such state or territory, or, any osteopathic physician who has been in the actual practice of osteopathy for five years, who is a graduate of a reputable school of osteopathy, and who may desire to change his residence to this state shall be licensed without examination." This provision has already been adopted in thirteen states.

In a word, a systematic effort is being made to put through the legislature of every state a bill, establishing a separate board of osteopathic examiners, which board is not only empowered but instructed to issue a license to practice osteopathy without examination to any one who may hold a license in any other state. In a few of the bills introduced some slight modifications have been made, but the main provisions are practically the same. The wording of the sections referred to in the bill which passed the West Virginia Legislature is absolutely identical, word for word, with that of the bill now pending in the Oregon Legislature. This remarkable coincidence may be due to thought transference or unconscious assimilation, but most of our readers will explain it by assuming the existence of a guiding hand and of an organized effort to secure, for these manipulators, rights and privileges which the medical profession has never been able to enjoy. We shall have more to say on this subject, but we voice this warning to all who are interested in safeguarding the health of the people and upholding the standard of education required by those who assume to treat the sick.

#### LEGISLATION PROBLEMS.

It is often a wonder to the layman that errors creep into laws in spite of the study given to their phraseology by eminent lawyers. But the slips are no more strange than the medical blunders which physicians sometimes pass over. A "patent medicine" law was passed in Massachusetts in 1906, which provided that there should be stated on the wrapper the amount of alcohol in such medicines, if "in excess of the amount shown to be necessary by the U. S. Pharmacopeia or the National Formulary as a solvent or preservative of the active constituents of the drugs contained therein." This highly illuminating provision might be a "joker" introduced into the bill by farsighted "patent medicine" proprietors, because neither the U. S. Pharmacopeia nor the National Formulary contains any statement of the amount of alcohol necessary to dissolve or to preserve the active principles

of any drug. The "excess," therefore, is an indeterminate quantity. Moreover, in the case of some nostrums whose active constituent is alcohol itself, the problem resolves itself into a *reductio ad absurdum*. Massachusetts legislators are endeavoring now to amend the law so that it will conform to the national Food and Drug Act.

#### DR. CARROLL'S PROMOTION.

As will be noted in another column, James Carroll, of the U. S. Army Medical Department, has been recommended, by special Act of Congress, for promotion to the grade of Major. This, as our readers know, is a recognition of his self-sacrificing labor in connection with the experimental work on yellow fever. While a tardy one, this is an act of justice, and Congress has done only what it should have done long ago. It is proof that republics are not always ungrateful. It is not unusual for some heartburning, discontent and charges of unfairness to be engendered when, on account of important services rendered, an officer has been advanced in rank over others who have served long and faithfully. But in the case of Dr. Carroll's preferment it seems that the entire medical corps of the Army, as well as the officers of the other branches of the service, rejoice at the advancement, recognizing as they do his single-mindedness, modesty and ardor in his chosen line of work.

### Medical News

#### ALABAMA.

**Medical Society Meeting.**—At the annual meeting of the Bullock County Medical Society, held in Union Springs recently, the following officers were elected: President, Dr. James L. Bowman, Union Springs; vice-president, Dr. W. H. Sellers; secretary, Dr. Charles M. Franklin, Union Springs, and treasurer, Dr. Thomas J. Dean, Union Springs.

**Personal.**—Dr. Clement Ritter, Selma, was thrown from his buggy in a runaway accident, February 25, injuring his back and left knee.—Dr. Frank H. Dennis, who has been ill at the Providence Infirmary, Mobile, for a considerable time, has sufficiently recovered to take a trip to Texas.

#### ILLINOIS.

**Communicable Diseases.**—On February 27 Jacksonville had 7 cases of smallpox with 5 foci of infection.—Rockford reports a severe epidemic of influenza.—Scarlet fever at the Girls' Home, Geneva, has apparently taken a new start, 41 cases in all having been reported.

**Clinics in Insane Hospitals.**—The resolution of Speaker Shurtleff against holding clinics in the state insane hospitals was adopted unanimously by the House Committee on Appropriations February 22. This is said to be a purely political measure directed against the governor, and physicians throughout the state express themselves as indignant that the privilege of instruction which is given at other state institutions, by observation of patients, should be withheld at the hospitals for the insane, where most valuable results might be attained.

**Coroner's Report.**—During February the coroner of Cook County investigated 341 deaths, 42 less than the preceding month and 77 less than for the corresponding month of 1906. Of the deaths 156 were due to natural causes and 185 to violence. Falls caused 26 deaths; suicide, 25; railroad accidents, 22; burns and scalds, 18; street-car accidents, 16; homicides, 14; explosions and asphyxiations, each 13; alcoholism, 10; criminal operations, 9; poisoning, 3, and exposure, 2. Of the 25 suicides 9 were due to carbolic acid and 7 to gunshot wounds.

**Osteopathic and Optometry Bills.**—The osteopathic bills, noted in THE JOURNAL of February 9, are still in the committees to which they were referred, viz., House bill No. 66 in



House Committee on Miscellaneous Subjects, and Senate bill No. 21 in the Senate Committee on License and Miscellany. These bills would confer on osteopaths all the privileges of licensed physicians, with the exception that they can not practice major surgery. The following bills have been recently introduced: House bill No. 256, for an act to regulate the practice of optometry—a bill similar in purport to that which was killed in 1905. House bill No. 318, for an act to amend section 1 of State Board of Health act—bill would increase the membership of State Board of Health by two members, "one of whom shall represent the osteopathic school of medicine." House bill No. 319, for an act to amend sections 2 and 3 of the medical practice act—would nullify the provisions of the present medical practice act; would take from the State Board of Health the right to determine the "good standing of medical colleges;" would stipulate the course of instruction in medical colleges, which is to be lengthened if "osteopathic therapeutics" be added to the curriculum; would provide for an examination in medicine and osteopathic therapeutics—the latter only when such subjects are taught in the college; would provide for the licensing, without examination, of graduates of Illinois colleges of medicine or osteopathy; would license to practice, as physicians and surgeons, graduates of osteopathic colleges in Illinois who shall pass an examination in the subjects enumerated in the act. (Two subjects only specifically mentioned in bill, viz., osteopathic therapeutics and comparative medicine), and would permit these osteopaths to "enjoy all the rights and privileges which physicians and surgeons in the state now have." These bills have all been referred to the House Committee on Miscellaneous Subjects. The time limit for the introduction of bills in the House of Representatives expired February 28.

#### Chicago.

**College Changes Name.**—The American College of Medicine and Surgery, Chicago, has changed its name to the Chicago College of Medicine and Surgery.

**February Mortality.**—During February there were 2,973 deaths, equal to an annual death rate of 18.39 per 1,000. Pneumonia led the death causes with 611 deaths, followed by consumption with 322; heart disease, with 214; nephritis, with 182; violence (including suicide), with 175; scarlet fever, with 142; bronchitis, with 119, and acute intestinal diseases, with 109.

**Health Inspection.**—During the week ended March 2, 7,867 school children were examined. Of this number 1,616, or little more than 20 per cent., were found to be suffering from communicable diseases and were excluded from school attendance. Nearly one-third of the exclusions were on account of diphtheria or tonsillitis and nearly one-tenth on account of scarlet fever.

**Personal.**—Dr. and Mrs. John B. Murphy left for a trip to California, March 3.—Dr. Arthur D. Bevan, chairman of the Council on Medical Education, is taking a trip along the Pacific Coast, visiting medical colleges.—Dr. and Mrs. Charles P. Small have engaged passage for Naples, sailing June 8.—Dr. P. J. Hoshie Farrell has recovered from his recent serious illness and has resumed practice.

**Deaths of the Week.**—During the week ended March 2, 786 deaths were reported, 19 more than for the previous week and 223 more than for the corresponding week of 1906. The respective annual death rates being 19.45, 17.49 and 14.32 per 1,000. Of the deaths 144 were due to pneumonia; 91 to consumption; 80 to violence (including suicide), and 50 each to Bright's disease and heart disease. Scarlet fever caused 23 deaths; diphtheria, 5; whooping-cough, 7; measles, 12; influenza, 5, and typhoid fever, 9.

#### KENTUCKY.

**Personal.**—Dr. W. M. Doores, Crab Orchard, is reported to be critically ill.—Dr. Edward L. Carpenter, Louisville, who has been critically ill with intestinal hemorrhage, is reported convalescent.

**Milk Commission.**—The milk commission of Jefferson County Medical Society, at the last meeting of the society, was empowered to take such steps as might be thought necessary to protect its rights in the certification of milk and to prevent the independent certification of milk not up to the proper requirements.

**Attending Physician Must Sign Certificate.**—The health office has decided to stop the practice of death returns being returned to the department signed by other than attending physicians. Undertakers have been accustomed to ask permission to sign certificates to avoid the trouble of taking them to be filled in

and signed by the attending physicians, and as a result much confusion has resulted. One certificate was returned recently signed "ncammonia," the physician's name was misspelled, and no initials were given. "Tubulocosis" was another return recently made.

**Dairy Industry.**—A most important meeting has just been held at Shelbyville by the farmers of Shelby and adjoining counties at which addresses were made by experts to the dairymen of the Shelby County Dairy Association. An agreement was entered into whereby a committee of three, representing the Dairy Association, the State Pure Food Commission and the State Board of Health will visit each dairy in the county and formulate such rules and regulations as to the production of milk as are thought best, and make such recommendations as to barns, herds, etc., as are found to be necessary, and these will be lived up to by the members of the association. It is also agreed that an agreed bill will be presented to the next legislature looking to the suppression of tuberculosis in cattle in Kentucky, recompensing the farmer for stock killed that react to the tuberculin test.

#### LOUISIANA.

**Hospital News.**—The Touro Infirmary, which has been remodeled at a cost of \$300,000, was formally opened for inspection February 10, and two days later was ready to receive patients.—The Eye, Ear, Nose and Throat Hospital, New Orleans, has received a donation of \$1,000 from the estate of Mrs. Christine Maitre.

**Personal.**—Dr. Joseph Conn, New Orleans, has resigned as physician for the out-door poor at Touro Infirmary, and Dr. Jules Lazard has been appointed in his stead.—Dr. Charles P. Gleoke, Gretna, has been elected coroner of Jefferson Parish, vice Dr. Stephen D. Gustine, Kenner, deceased.—Dr. C. Milo Brady, New Orleans, has returned from a tour of medical inspection on the Honduras coast.—Dr. Luther Longine, Minden, was thrown from a street car in Shreveport, February 12, fracturing two ribs and, in addition, sustaining severe contusions.—Dr. J. W. Reed, New Orleans, sailed from San Francisco, March 8, for Seoul, Corea, to enter the mission field as a medical missionary.

**State Medical College.**—It is reported that ground will be broken within a very short time for the building for the Medical Department of the Louisiana State University at New Orleans, for which \$100,000 is said to be available. The board of supervisors decided on the location of the institution January 26, Shreveport being the only other competing city. It is reported that the new institution will be located near Charity Hospital, and that the following will be members of the faculty: Dr. James M. Batchelor, dean and professor of surgery; Dr. William Kohlmann, professor of gynecology; Dr. Milton A. Schlenker, professor of obstetrics; Dr. A. Dana, professor of anatomy; Dr. D. A. Stafford, professor of therapeutics; Dr. Waldemar T. Richards, associate professor of surgery; Dr. A. DeGrange, professor of physiology; Dr. W. Roussel, professor of dermatology; Dr. Charles N. Chavigny, associate professor of gynecology, and Dr. Amedee B. Granger, professor of x-ray and electro-therapeutics.

**Society Elections.**—At the annual meeting of the Bienville Parish Medical Society, held at Gibbsland, Dr. Shelton I. Colvin, Mount Lebanon, was elected president; Dr. Thaddens H. Pennington, Arcadia, vice-president, and Dr. Archibald L. Nelson, secretary-treasurer.—The Ascension Parish Medical Society has elected the following officers: President, Dr. William M. McGailliard; vice-president, Dr. Tuite H. Hanson, and secretary-treasurer, Dr. Paul T. Thibodaux, all of Donaldsonville.—The Tangipahoa Parish Medical Society held its annual meeting at Amite City, and elected the following officers: President, Dr. H. G. Morris, Kentwood; vice-president, Dr. Glenn J. Smith, Amite City, and secretary-treasurer, Dr. James L. Lenoir, Amite City.—The St. Tammany Parish Medical Society held its annual meeting in Mandeville and elected Dr. Ruffin B. Paine, Mandeville, president; Dr. Numar M. Hébert, Covington, vice-president, and Dr. Louis J. Heintz, Abita Springs, secretary-treasurer.—The Rapides Parish Medical Society, at its annual election held in Alexandria February 23, elected Dr. Richard O. Simmons, president; Drs. F. V. Gremillion and Richard F. Harrell, vice-presidents, and Dr. G. M. G. Stafford, secretary, all of Alexandria.

#### MICHIGAN.

**Birthday of Medical Department.**—The University of Michigan Medical Department, Ann Arbor, celebrated its fifty-seventh anniversary, February 22. Commemorative exercises were held



in Barbour gymnasium, at which the address of the evening was delivered by Dr. George Dock on "The Medical Library."

**Irregular Practitioners Found Guilty.**—A recorder's county jury in Detroit, on February 24, is reported to have returned a verdict of guilty in the case of Mrs. Ida Biebler, charged with the illegal practice of medicine. A week before Mrs. Eliza Landau is said to have been found guilty of a similar offense. Sentence was deferred.

**To Restrict Distribution of Medicine Samples.**—The City Council of Saginaw recently enacted an ordinance requiring that no medical samples shall be distributed unless the distributor has been issued a license. The health office will refuse permits on applications which do not contain an analysis of the medicine to be distributed.

**Communicable Diseases.**—Centerville reports 20 cases of smallpox.—The threatened epidemic of scarlet fever in Holland has been checked by rigid quarantine.—Marshall is suffering from an epidemic of measles. One public school has been closed temporarily.—Measles is reported to be epidemic at Munising and Allegan.—The public schools of Alma have been closed on account of an epidemic of scarlet fever.

**Personal.**—A fire in the house of Dr. Herbert A. Eades, Bay City, January 28, damaged to the extent of \$1,000.—Dr. Benjamin D. King, Muskegon, has sustained a slight stroke of paralysis.—Dr. Albert C. Potter, Detroit, has been appointed surgeon of the Babcock (Mich.) Lumber Company.—Dr. James W. Gauntlett, Traverse City, who a short time ago fell through a sidewalk fracturing his left arm, suffered a severe burn of the thigh, February 22, from carbolic acid.

## NEW YORK.

**Stony Wold Fund Completed.**—It was announced on March 2 that the fund had been completed on which the conditional gifts of \$12,500 each from John D. Rockefeller and Anson R. Flower depended. The institution is now entirely free from the \$75,000 debt with which it was encumbered.

**Convicted of Illegal Practice.**—Dr. Eben A. Wood, Syracuse, who is said to have been convicted several years ago of performing a criminal operation, is reported to have been convicted by a jury in the Onondaga County Court, February 14, of illegal practice of medicine, and remanded for sentence.

**Sohmer Bill Passed.**—Senator Sohmer's bill prohibiting the removal of a patient from one hospital to another in New York City has been passed by the Senate. The bill compels the superintendents of New York city hospitals to admit all patients brought to them, if there is room in the institution and if the patients are not suffering from contagious diseases.

**Protest Against Polluted Ice.**—The Merchants' Association Committee on pollution has taken steps to prevent the harvesting of ice from the Hudson River near the mouths of the Rondout and Catskill creeks. This locality is regarded as particularly dangerous because of an epidemic of typhoid fever which has been prevalent in Catskill all winter, 20 deaths from that disease having been reported from that village during the winter.

**Personal.**—Dr. Frederick J. Barrett, Buffalo, has been appointed examining surgeon for the eye, ear and throat for the Buffalo pension bureau.—Dr. Walter G. Frey, Long Island City, has been appointed deputy coroner of Queens County, vice Dr. Benjamin Strong, who is at present in New Mexico on account of ill health.—Dr. Wilfred Grenfell of Labrador lectured in Buffalo, February 26, 27 and 28, under the auspices of the Grenfell Association of America.—Dr. Frank Van Fleet, 60 East Seventy-seventh Street, New York, has been elected a member of the National Legislative Council of the American Medical Association, to represent the state of New York.—Dr. Chester A. Paull of the Loomis Sanatorium at Liberty, N. Y., has been chosen superintendent and physician-in-chief of the new state tuberculosis sanatorium, which will be opened in May at Wales, Waukesha County, Wis.

**Legal Idea of Insanity.**—Dr. Allan McLane Hamilton, in his lecture at the Academy of Medicine, March 2, on the "Legal Idea of Insanity," summed up his ideas regarding new legislation by making the following recommendations:

1. The Commissioner of Lunacy (to be appointed) should be a registrar and physicians should be compelled to report cases of insanity to him just as they do cases of contagious disease.

2. Though the Commissioner in Lunacy may have power to license private institutions, he should also be empowered to formulate additional requirements which would put some of them on a much higher standard than they occupy at present.

3. Commitments are chiefly to be looked on as re-enforcements by the judge of the persuasion exerted by friends, physician and family

of the patient and should be resorted to only when the latter can not be persuaded to go to the asylum.

4. Everything should be done to make the appeals of committed patients available. There should be severe punishment for the suppression of letters or interference in any way with the alleged lunatic's rights.

5. There should be material reform in the attitude of the law regarding capacity and criminal responsibility, insane acts in themselves, in every relation they may have, receiving more weight than heretofore.

6. There should be a departure from conventions in old and arbitrary definitions.

7. Special insane acts should be studied with reference to the crime itself in a way they have not been up to this time.

8. The attitude of the courts should be much more charitable to the medical witness than it is to-day, the intelligent medical man being put in possession of all the facts in the case and not being obliged to answer restricted questions which place him in a false position and which are deficient in the presentation of the facts.

9. In all matters involving the determination of capacity or responsibility the medical man should be required to prepare a brief which should form the basis of his cross-examination, and this, if necessary, must be supported by extraneous evidence which has received the sanction of the court as to heredity, previous history and facts communicated by others.

## New York City.

**Hospital to be Enlarged.**—Plans have been filed for the enlargement of the Misericordia Hospital. A five- and six-story extension is to be added with a frontage of 126 feet and a depth of 54 feet, at a cost of \$125,000.

**Personal.**—Dr. Earl W. Phillips of Bellevue Hospital is in the Willard Parker Hospital with diphtheria.—Dr. Alfred Stevens was recently injured in a street railway collision.—Dr. Henry Herman has been elected adjunct professor of pediatrics in the New York Polyclinic.

**Harvey Lecture.**—The tenth lecture in the Harvey Society course, at the New York Academy of Medicine, March 9, at 8:30 p. m., by Dr. Friedrich Müller, professor of medicine at the University of Munich, Germany, is on "Neuroses of the Heart." This is the last lecture of the present year's series.

**Winter Work of St. John's Guild.**—The experiment of this society in extending its work on behalf of convalescent children to the winter season has been successful. Only part of the hospital was equipped for winter work, but the accommodations thus provided have all been taken and there is a waiting-list.

**For Hospitals.**—More than \$2,000 was realized from the sale of boxes and seats for a benefit at the Academy of Music, for the enlargement of the Jewish Hospital for Deformities and Joint Diseases.—At a benefit recently given at the Metropolitan Opera House, \$5,300 was raised for the Italian Benevolent Society, which is to be used for an Italian Hospital.

**Mortuary Statistics for 1906.**—The total number of deaths during the year, of children two years and younger, was 6,689, and the total number of deaths of children under five years of age, 25,777. Deaths from typhoid fever of all ages was numbered 639; from scarlet fever, 491; from diphtheria and croup, 1,898; tuberculosis of the lungs, 8,955; tubercular meningitis, 765; other forms of tuberculosis, 474; smallpox, 6; measles, 1,145. The report shows that the death rate from all causes in the city was 18.35 per 1,000.

**Hospital Tipping System.**—The Kings County grand jury for February has adopted resolutions calling on the March jury to investigate conditions in the Brooklyn Hospital, where it is alleged that there is an elaborate system of tipping among the orderlies which causes great suffering to patients unable to pay. Dr. Hanneman, the superintendent of the hospital, said that it is the custom in nearly every hospital for patients to give fees to the orderlies, but denied that there was any organized system of graft or that any patient had suffered from neglect.

**Health Report.**—There were reported to the sanitary bureau for the week ended February 23, 360 cases of tuberculosis, with 220 deaths; 277 cases of diphtheria, with 46 deaths; 298 cases of scarlet fever, with 13 deaths; 259 cases of measles, with 10 deaths; 66 cases of whooping cough, with 5 deaths; 45 cases of typhoid fever, with 12 deaths; 13 cases of cerebrospinal meningitis, with 12 deaths; 76 cases of varicella and 1 of smallpox, making in all 1,395 cases, with 319 deaths.—During the week there were 1,671 deaths, as against 1,656 deaths for the corresponding week of last year. Of these deaths, 456 were of children under five years of age. There were 1,395 cases of contagion reported, as against 1,349 for the same week of last year. The increase is due chiefly to scarlet fever.

**Provision Made for Two Milk Stations.**—The milk committee of the New York Association for Improving the Condition of the Poor has almost completed plans for the establishment of two large stations for the pasteurization of milk and the



sterilization of nursing bottles and nipples. There will be a number of auxiliary branches from which milk will be distributed to those who wish it. Twenty doctors will be employed for consultation and 100 nurses will have charge of the various distributing stations, and will be on call for special service at any time. The committee does not intend to compete with the Strauss stations, but to supplement that work. It is believed that about 20,000 children will be reached in this way. At stated intervals the doctors will deliver public lectures on hygiene in the home, and the nurses will go among the consumers to give advice and assistance to the mothers. The health department, pending the increase of the number of milk inspectors, has instituted a system of following up inspection, by a series of letters, to assure the dealer or dairyman that he has not been forgotten by the department.

**Still Agitating the Milk Question.**—Eight states supply milk to New York City, and it is stated that the Health Department will endeavor to get the coöperation of the proper authorities in each as regards the safeguarding of the supply. While the department is not ready to give its plans in detail, it is understood that it will come out strongly for better inspection and that \$250,000 will be asked for this purpose. A conference of officials representing the leading interests of this country regarding tuberculosis in cows is one of the possibilities of the near future. The milk committee of the Society for the Improvement of the Condition of the Poor has decided to oppose the Pasteurization of the entire milk supply. At a meeting of the New York Milk Committee special emphasis was laid on the importance of Pasteurizing the milk for infants, and it was urged that depots for this purpose be established before June. A committee was appointed to seek the coöperation of the State Board of Health and of the Department of Agriculture in relation to the destruction of tuberculous cattle, and to incite greater activity in local health boards in reference to reporting cases of communicable diseases in persons on farms or who handle milk.

#### PENNSYLVANIA.

**Dixon Again Confirmed.**—The nomination of Dr. Samuel G. Dixon, Ardmore, to be state commissioner of health, was sent to the senate by Governor Stuart and confirmed, to take effect March 1. Dr. Dixon was originally appointed to this office, the salary of which is \$10,000 a year, by Governor Pennypacker, soon after the creation of the Department of Health by the legislature of 1905.

**Hospital Vacancies.**—Two vacancies will occur July 1 in Hamot Hospital, Erie. The hospital has 80 beds and more than 1,000 patients were admitted last year. The term of service is one year, six months as medical and six months as surgical interne. Appointments are made without examination. Further information may be had from Dr. Charles G. Strickland, secretary of the medical board, Erie.

**Against Vivisection.**—Representative Townsend of Philadelphia has introduced a bill in the legislature providing that it shall be unlawful for any person to vivisect or experiment on any living creature whatever, it matters not whether or not the experimentation shall be done in scientific research. The penalty is to be a fine of from \$100 to \$500 and imprisonment for from one to six months, either or both.

#### Philadelphia.

**Betterment of Water Supply.**—Major Gillette, chief of the bureau of filtration, has recently inspected the filtration plants at Belmont and at Torresdale. At Belmont particular attention was paid to the location of the preliminary filters, for which a contract was recently awarded. These preliminary filters will increase the yield from the Belmont beds from 30,000,000 to 60,000,000 gallons. It is said that by April 1 the northeastern section of the city will receive filtered water.

**Bequests.**—By the will of Benjamin F. Butler, an estate valued at \$15,000, is divided between the Presbyterian Orphanage and the Presbyterian Hospital. According to the will of William Miller, \$100 is left to St. Timothy's Memorial Hospital. By the will of the late Emily D. Wagner \$5,000 is bequeathed to St. Timothy's Hospital, Roxborough.

**Donation Day.**—The Philadelphia Lying-in Charity and Nurse School held its donation day March 2. The hospital was open all day for inspection by visitors. Donations of money, food, clothing and medical supplies were received. During the past year the hospital has cared for more than 1,200 destitute women.

**Do Not Support Hospitals.**—The senate appropriations committee has completed its investigation of the Philadelphia hospitals. Members of the committee condemn the indifference

of the city to their support, and special criticism was made of the failure of large industrial establishments to give financial support to the hospitals to which their injured employes are taken.

**Alumni Information Wanted.**—A committee of the alumni of all departments of the University of Pennsylvania is preparing a catalogue of all graduates and non-graduate matriculates of the university. Special information is wanted of graduates of the class of 1809 of the medical school. The information should be sent to the editor of the alumni catalogue committee, University of Pennsylvania.

#### GENERAL.

**American Physio-Therapeutic Association.**—This newly organized medical body, starting with a membership of over 100, will give its attention to all drugless (physical, mechanical, psychic) therapeutic and diagnostic methods. The officers are as follows: President, Dr. H. H. Roberts, Lexington, Ky.; secretary, Dr. Otto Juettner, Cincinnati; treasurer, Dr. George H. Brant, Richmond, Ind.

**Carroll's Merited Promotion.**—A special act of Congress, February 27, authorized the President to appoint Lieutenant and Assistant Surgeon James Carroll, U. S. Army, a surgeon with the rank of major. The President at once approved this bill and sent in Major Carroll's nomination to the Senate, and it was confirmed promptly, so that Dr. Carroll is now a major in the Medical Department of the Army. James Carroll was born in England June 5, 1854. At the age of 15 he migrated to Canada and later came to this country, where he first enlisted in the Army Jan. 9, 1874. He was promoted corporal May 1, 1874, and sergeant Jan. 1, 1875. He served continuously in the line of the Army until appointed hospital steward Sept. 15, 1883. While still a soldier, he began the study of medicine at the University of New York City, during the session of 1886-1887. After the break of a year he resumed his medical studies in Baltimore at the University of Maryland, in 1889-1891, and received his degree from that institution. During the winters of 1891-1892 and 1892-1893 he undertook graduate work in pathology and bacteriology at the Johns Hopkins Hospital. His first association with Dr. Walter Reed was in 1893, when he was assigned to duty at the Army Medical School in Washington, and they continued to be more or less connected during the next six years. His service was continuous as hospital steward until he was appointed contract surgeon May 22, 1898, and assigned to duty in the laboratory of the Surgeon-General's Office. Detailed as a member of the Army board for the study of infectious diseases in the Island of Cuba, in association with Major Walter Reed and Acting Assistant Surgeons Aristides Agramonte and Jesse W. Lazear, in the course of their experiments, he voluntarily submitted to the bite of an infected mosquito Aug. 27, 1900, and was taken sick with yellow fever Aug. 31, 1900, suffering a severe attack. His was the first case of experimental yellow fever. He was confined strictly to bed until September 13, and convalescence being slow, he left Cuba Oct. 9, 1900, on sick leave, returning for duty Nov. 11, 1900. He took part in all the experimental work of the board, made nearly all the experimental inoculations, and had charge of the infected mosquitoes until March 4, 1901, one month after the departure of Major Reed. At this time he had been recommended for appointment to a volunteer majority by General Leonard Wood and Surgeon-General Sternberg, but Secretary Root decided that no more appointments would be made. After returning from Cuba his time was devoted to the study of mosquitoes that had been infected and preserved for the purpose. In August he again proceeded to Cuba, under orders, alone, for the purpose of performing additional experimental work, in which he produced six more experimental cases of yellow fever, all of which ended in recovery. In 1903 he showed by experimental demonstration that the supposed protozoön parasites reported to have been found in yellow-fever infected mosquitoes were ordinary yeast cells. He was assigned by General Sternberg in 1897 to the work of studying the supposed cause of yellow fever, in association with Major Reed, and in this work it was shown that the supposed cause of yellow fever described by Professor Sanarelli was closely related to the hog-cholera bacillus. In 1898 he was sent to Camp Alger to study the blood of the fever patients, and he was the first to show and reported to General Sternberg that the prevailing illness among the troops was typhoid fever and not malarial fever. He was then ordered to Camp Cuba Libre, Jacksonville, Fla., for similar work, and his results were included in the report of the typhoid-fever board. He was subsequently ordered to Camp



George H. Thomas, Chickamauga Park, to obtain samples of the waters in use and to examine them bacteriologically. His service as contract surgeon continued until Oct. 27, 1902, when he was appointed first lieutenant and assistant surgeon in the Medical Department, the age limit having been waived to permit him to appear for examination. He was then assigned to duty as assistant curator of the Army Medical Museum, and as professor of bacteriology and clinical microscopy at the Army Medical School, having previously served as assistant during every session of the school. He was appointed curator of the Army Medical Museum by an order of the Surgeon-General, dated July 3, 1903. He has performed the above duties continuously since his appointment and completed thirty-three years' continuous service in the Army on Jan. 21, 1907. He assisted Major Reed in the department of bacteriology and pathology of the Columbian (now George Washington) University from the session of 1895-96 until the death of Major Reed, whom he has now succeeded as professor of those subjects, which he teaches to evening classes.

#### CANADA.

**To Make Tuberculosis a Reportable Disease.**—A large delegation, representing the fraternal organizations doing business in Canada, waited on the Ontario government recently, asking that consumption be made a notifiable disease in the province.

**Toronto's Water Supply.**—Dr. J. A. Amyot, provincial bacteriologist of Ontario, recommends for Toronto a filtering basin on Scarborough Heights, six miles east of the city, at a cost of \$1,000,000. He opposes a trunk sewer, which would probably cost \$6,000,000 and would not then insure pure water for the city.

**Student Deaths.**—Mr. J. A. Macdonald, Peterboro, Ont., a first-year student in medicine at Toronto University, died in Toronto, February 28, of typhoid fever.—Mr. Smith Henderson, son of Dr. Henderson of Ottawa, and a senior student in medicine at McGill University, died in Montreal of appendicitis, aged 22.

**Registration Case in Alberta.**—The case of Lafferty, the registrar of the College of Physicians and Surgeons of Alberta, versus Lincoln, a physician who was convicted of practicing in Alberta without a license, will be appealed from the Supreme Court to the full court, as the question of the constitutionality of the Alberta medical act has been raised.

**"Patent-Medicine" Legislation.**—A bill respecting proprietary medicines has been introduced in the Dominion House of Commons by Minister Templeman from British Columbia. It provides for the sending of samples from time to time to the special department for analysis, for an affidavit of contents and for the elimination of poisonous drugs from mixtures. Under its provisions a license will be issued to all manufacturers who comply with the provisions of the act.

**Annual Report of the Inspector of Hospitals of Ontario.**—This report states that in Ontario there are 61 hospitals, 37 refuges and 30 orphanages, 3 homes for incurables, 2 convalescent homes, 2 Magdalene asylums and 25 county houses of refuge receiving governmental aid. The total number of patients under treatment in these hospitals during 1906 was 41,950; and the total expenditure in connection therewith was \$1,228,289. The Ontario governmental grant toward these was \$110,000.

**Annual Report of the Toronto General Hospital.**—This report for the year ended Sept. 30, 1906, shows that on Oct. 1, 1905, there were 315 patients in the institution, and on Sept. 30, 1906, there were 279. The total number admitted during the year was 3,583 and the number of births was 197. The average length of stay of each patient was 27.19 days. The cost *per capita per diem* for maintenance was \$1.33. In the main theater in the hospital 905 operations were performed; in the pavilion, 239; in the eye and ear and nose and throat departments, 162.

**Personal.**—Dr. T. G. Roddick, dean of the Medical Faculty of McGill University, Montreal, will relinquish that office next year, after being connected with McGill for forty years.—Dr. Howard T. Barnes has been appointed professor of physics in McGill University.—Drs. Bell and Watts of the Ontario Board of Health are inspecting the lumber and mining camps in northern Ontario.—Dr. Wilfred T. Grenfell delivered a lecture in Toronto, March 8 on "The Fisherfolk of Labrador."—Dr. B. J. McConnell, Morden, Man., will run for the Manitoba legislature in the coming elections, in the interest of the liberal party.—President Eliot of Harvard University has been the guest of the American university men in Montreal at their an-

nual banquet. The subject of his address was "The University—Its Aims, Aspirations and Work."

**To Form Toronto Academy of Medicine.**—It is almost settled that the Ontario Medical Library Association, the Toronto Clinical Society, the Toronto Medical Society and the Toronto Pathological Society will merge into the Academy of Medicine, Toronto. The academy will be managed by a council of 12, and the first council will be composed of the officials of the Ontario Library Association and the presidents and secretaries of the other three societies. These will choose their own officers, while succeeding councils will be composed of nineteen members. The academy has a handsome residence of 15 rooms in Queen's Park, and a library and auditorium to cost \$50,000 will be added. Dr. J. F. W. Ross is president of the Ontario Medical Library Association; Dr. H. B. Anderson, of the Toronto Clinical Society; Dr. R. D. Rudolf, of the Toronto Medical Society, and Dr. J. A. Amyot, of the Toronto Pathological Society.

**Hospital News.**—The Grace Dart Home for Destitute Incurables has just been opened in Montreal.—At the recent annual meeting of the Board of Governors of Notre Dame Hospital, Montreal, it was announced that \$500,000 is still required for the new hospital. Dr. L. de L. Harwood read the annual medical report, which stated that during the past year 3,255 patients were treated, 1,864 being men and 1,391 women. The percentage of deaths was 7.89.—In St. Paul's Hospital, for contagious diseases, Montreal, 200 cases of diphtheria, 67 scarlatina, 196 measles and 17 doubtful cases were treated last year. The death rate was 4.5.—The Western Hospital, Grace Hospital and St. Michael's Hospital, Toronto, are seeking a joint grant of \$200,000 from Toronto City Council.—During the year 1906, 3,444 patients were treated in the Royal Victoria Hospital, Montreal, an increase of 351 over 1905. There were 1,970 Protestants, 1,148 Roman Catholics, 279 Hebrews and 47 other faiths. The free patients numbered 1,989, the public ward patients 1,021, and private ward patients 434. In the out-patient departments the total number of patients treated was 4,229. The income for the year was \$160,436.09, while the ordinary expenditure was \$130,353.30, the balance being applied to indebtedness incurred by new buildings. Resolutions of appreciation and regret were adopted at the annual meeting just held, on the death of Dr. James Stewart, the senior physician. The appointments of Drs. W. F. Hamilton and Charles F. Martin as physicians were confirmed by the management. Dr. Francis J. Shepherd was appointed consulting surgeon to the hospital.

#### FOREIGN.

**Women Medical Students at the German Universities.**—Seven German universities admit women on the same terms as men, and at present they have a total register of 116 women in the medical departments. This is an increase of 56 over the preceding year.

**Sixth International Tuberculosis Conference.**—The route of infection in tuberculosis is to be the principal theme discussed at the next international conference on the subject of tuberculosis, which is to convene at Vienna, September 19-21. Active preparations have been under way for some time to render the discussions exceptionally profitable.

**Compulsory Day of Rest in France.**—Recent legislation in France has made rest on one day of the week compulsory for employes. It is left to the proprietor of the establishment to plan the day of rest so that each of his employes can have one day free out of every seven. The chief of the public hospital and organized charities service, the *Assistance publique*, has asked for increased appropriations, as he will have to add several hundred more persons to his staff of attendants, nurses, etc., in order to provide for the day of rest in the week.

**German Congress for Internal Medicine.**—The twenty-fourth congress for internal medicine will be held at Wiesbaden, April 15-18, 1907, with von Leyden in the chair. The only subject appointed for discussion is "Neuralgias and Their Treatment," but communications have already been announced from Jaksch of Prague, on "Chronic Manganese Toxicoses;" Treupel on "Percussion of the Heart;" Hirsch and Spalteholz on the "Coronary Circulation," and Müller and Jochmann on a new method to determine the proteolytic action of ferments. This method is proving a valuable means to differentiate tuberculous processes by the ferments in the pus.

**Increase in Fees in Europe.**—The increased cost of living is causing physicians at many points to raise fees. The medical societies have established minimal rates in Vienna, Greater Berlin, Leipsic, and elsewhere. In Leipsic the medical society decided to enforce the increased rates for all accounts left over



from 1906. The medical assistants in the hospitals in Dresden and Berlin also presented a petition to the authorities asking for increased remuneration. This was granted them in Dresden, but denied them in Berlin. We learn from our exchanges that all the petitioners and all the volunteer physicians in the Berlin hospitals at once joined the *Leipziger Verband*.

**The Next International Congress of Gynecology.**—As will be remembered, the Fifth International Gynecologic Congress was to have been held at St. Petersburg last year, but was postponed. The Russian gynecologists who had the matter in charge have now surrendered their powers to the permanent general secretary of the International Gynecologic Association, which was founded in 1893, with its central office in Brussels. The organization of the next congress is, therefore, left entirely in the hands of Dr. Jacobs, the general secretary, and he is now taking steps to organize it in due form. He has at his disposal the funds accruing from membership dues, etc., which are always given to the committee organizing the congress at the time.

**Medical Information Bureau at Berlin.**—The Kaiserin Friedrich-Haus at Berlin, which is the center for official postgraduate instruction throughout the German empire, has had installed an information bureau for the convenience of local and visiting physicians. Particulars can there be learned in regard to courses, hospitals, medical collections, special operations, lectures and the like. The visiting physician can there learn whatever he needs to obtain the greatest benefit from his stay in Berlin. The official title of the information bureau is the *Auskunftei, Kaiserin Friedrich-Haus, Luisenplatz 2-4, Berlin NW, 6, Germany*. No charge is made for the services. *THE JOURNAL* has several times referred to the similar scientific information bureau at Paris, in charge of Dr. R. Blondel, à la Sorbonne, Paris, the first of the kind organized, which has been in successful operation for several years.

**Annual Meeting of the German "Leipziger Verband."**—This organization to promote the economic interests of the profession has continued a progressively successful course since its foundation only a few years ago. The number of cases in which it has had to interfere to protect physicians in conflict with the sickness insurance societies has constantly declined, being only 92 during 1906. Its efforts were crowned with success in the overwhelming majority of cases, although it still publishes in our exchanges a long list of towns where physicians are warned not to accept the contract positions offered without conferring with the *Leipziger Verband*. A number of the towns on the list have been there from the very first organization of the association, old embittered feelings probably interfering with the settlement of the trouble. As a rule, now, when a conflict threatens all trouble is averted by the prompt intermediation of the *Verband*. It has also secured equitable and uniform rates and conditions for ship doctors. Another phase of its activity has been its free employment and exchange bureau by which physicians have been more evenly distributed over the country. The *Verband* has also inaugurated series of postgraduate lectures on exclusively economic and ethical questions, which have been highly appreciated.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Feb. 23, 1907.

#### Reduction of Infant Mortality Without Municipal Milk Depots.

At a meeting of the Incorporated Society of Medical Officers of Health of Great Britain held on February 8, it was generally agreed that municipal milk depots are subsidiary means of reducing infantile mortality. In the industrial towns of the north of England, one of the principal causes of infantile mortality is the working of married women, and it was stated that so long as a woman can earn more money than her husband this is likely to continue. Bad business, drunkenness among the lower classes, ignorance of the first principles of health and adherence to tradition are other potent factors. To ensure that every child not breast-fed should have a supply of clean unadulterated milk would, said one speaker, go a long way toward lowering the death rate among infants from diarrhea.

#### Antivaccination Legislation.

It is expected that the accession of a liberal government will be followed by enactment of legislation favorable to the spread of smallpox. Compulsory vaccination was abolished in 1898, but people who objected to having their children vaccinated were compelled to go before a magistrate and satisfy him that they had conscientious objection to it. The anti-

vaccinationists nearly all belong to the liberal party, and at the last elections succeeded in getting pledges from a number of members of parliament to support some alteration of the law in their favor. In the address in answer to the King's speech, Sir William Collins—an ophthalmologist and one of the few prominent members of the medical profession opposed to scientific prophylaxis—urged the substitution of isolation and disinfection. In replying, the government undertook to substitute for the present system a new one by which it would be unnecessary for a "conscientious objector" (sic) to go before a magistrate and allowing such individuals to secure exemption by making a statutory declaration. This satisfied the antivaccinationists.

#### The Pollution of the Thames.

Dr. Herbert Williams, health officer of the port of London, has made a comprehensive examination of the water of the Thames. Though an enormous amount of sewage is discharged into the river, amounting to 200,000,000 gallons daily at Barking and Crossness (only one of several sources of pollution), the general condition of the water in the Thames estuary, he finds, is not in a state of serious pollution. The shellfish layings within the jurisdiction of the port sanitary authority are few and comparatively unimportant. Samples of water taken one mile below the sewer outfalls of Southend and Sheerness respectively show no evidence of gross pollution. This is mainly due to the large dilution with sea water. However, several outbreaks of typhoid fever due to shellfish taken from the estuary of the Thames have been reported in *THE JOURNAL* from time to time.

#### Amalgamation of London Medical Societies.

The amalgamation of the medical societies of London has at last been effected, under the name of the "Royal Society of Medicine." The names "Royal Academy of Medicine" and "Imperial Academy of Medicine" were rejected.

#### Infant Mortality in London During 1906.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births in London last year, was equal to 130 per 1,000, against 130, 144 and 129 in the three preceding years.

#### Mortality in London During 1906.

During 1906, 71,155 deaths of persons belonging to London were registered, equal to a rate of 15.1 per 1,000, against 15.2, 16.1 and 15.1 per 1,000 in the three preceding years, the average rate for the ten years—1896-1905—being 17.3 per 1,000. In 1906 there were 4,424 fatal cases of diarrhea, more than 1,000 in excess of the average number. The aggregate mortality from the principal infectious diseases was very slightly below the average for the four preceding years.

#### Epidemic of Cerebrospinal Meningitis in Great Britain.

Cerebrospinal meningitis shows no signs of abating in certain parts of Great Britain. Twelve cases and 6 deaths have been reported in England; in Scotland, 313 cases, 185 deaths; in Ireland, 122 cases, 66 deaths. The British Local Government Board has issued a circular warning all local sanitary authorities to be on the alert to detect the presence of the disease or to satisfy themselves as to its absence.

#### DUBLIN LETTER.

(From an Occasional Correspondent.)

DUBLIN, Feb. 20, 1907.

#### The University Question.

The past few months have been some of the most exciting within our memory for Irish medical men. Changes, political, social and educational, are in the air, and in many of them our profession is closely concerned. Two commissions—one royal and one vice-regal—have recently reported on matters of much interest. Of these, by far the more important is the question of university education in Ireland. For many years the Roman Catholics of Ireland have been discontented with the provision made for them in the matter of university education. They claimed that of the two universities in the country, one—that of Dublin, identical in constitution with Trinity College—is prevailingly Protestant in character, while the other, the Royal University, being a mere examining body, is insufficient to supply a thorough higher education. With a view of settling the question, and also of inquiring into the domestic affairs of Trinity College, the government last June appointed a royal commission, consisting of nine members. These gentlemen examined an enormous number of witnesses and documents, and reported a month ago with commendable promptitude. They are unanimous in recommending certain



reforms in Trinity College, which would render it more efficient, while at the same time they are unanimous in recording a high opinion of the position and reputation of Trinity College. On the point, however, of providing university education for Roman Catholics, there was little agreement. Four commissioners suggested the establishment of a new college suitable for Roman Catholics affiliated with Trinity College in a reconstituted University of Dublin. One, while agreeing with this plan in theory, regarded it as impracticable at present. Three suggested a new college with no relation to Trinity College, but as an integral part of a reconstituted Royal University. The remaining commissioner regarded the demand for a new college as unreasonable.

Before the public had time to digest this strange report, and before the evidence on which it was based had reached them, on the very eve of his departure for the United States, Mr. Bryce, as his last official act in Ireland, announced the intentions of the government. The Royal University was to be abolished, Dublin University was to be reconstituted and to have as its constituent colleges Trinity College, the Queen's Colleges in Belfast and Cork, and a new college in Dublin. The Queen's College in Galway was to be an affiliated college, but not represented on the governing body.

#### Cerebrospinal Meningitis.

A few cases of cerebrospinal meningitis have occurred in Dublin, more than half of them being fatal. If lack of sanitary administration has anything to do with the spread of the disease, then Dublin may expect a severe outbreak. For the past few months, even in the marked absence of any epizootic disease, the death rate of Dublin has been among the three or four highest in Europe. In Belfast there have been within a few weeks over eighty cases, of which more than half have ended fatally. This disease is therefore of exceedingly virulent type.

#### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Feb. 15, 1907.

#### The New Clinics.

The new clinics, which are destined to offer modern equipment for the scientific treatment of diseases, are almost completed. At first only the two gynecologic clinics will be opened. They are built on the pavilion system. Each clinic is erected in the shape of a T, and comprises the ward, operating theaters (one large one, one small one for each clinic), the outpatient department, the lecture hall, a chemical and experimental laboratory and a number of rooms for students. The medical curriculum in force since 1905 requires every student of gynecology to be attached to the clinic for at least two terms of 14 days each, and to assist in the work under the supervision of the assistants. The clinics are three-story buildings, with elevators, low-pressure steam heating, and every equipment for the comfort of the patients. Two medical clinics are contemplated instead of the three existing at present. The third clinic was erected for Professor von Schrötter *ad personam*. As he now retires on account of reaching the age limit (70 years) his clinic will be discontinued. Von Noorden, an authority on the diseases of metabolism, lays special stress on chemistry at the bedside, and a special feature of his clinic will be the dietetic kitchen. This kitchen will provide the necessary diet for patients who require specially prepared food (diabetics, epileptics, arteriosclerotics). In the wards only such patients will be treated as can be utilized for clinical instruction. The others (the so-called uninteresting cases) will be treated in another hospital, which is also in course of erection, and which will contain 1,600 beds, as many as the new clinical hospital. The expense of the new buildings and their equipment will be obtained partly by the sale of the grounds on which the present general hospital stands, and which are valued at \$2,000,000.

#### Results of the Antimalarial Campaign in Austria.

The southern part of Austria from the time of the Romans has been a veritable breeding place for the anopheles, and malaria has been rife. Vigorous action has been taken during the last three years for the extermination of mosquitoes. The methods employed were burning of underbrush and draining of extensive swamps and marshes near the seacoast in Istria and Dalmatia. Hot steam was used to destroy the mosquitoes in places where fire could not be used—in fishing huts and boats. Fifty thousand dollars was devoted to this purpose by the centralized organization so that it was possible to do methodical work, and the naval authorities of the port of Pola assisted by material advice and experience, so that the results obtained are highly satisfactory.

## Book Notices

A HISTORY OF CHEMISTRY. From Earliest Times to the Present Day. Being also an introduction to the Study of the Science. By E. von Meyer, Ph.D., Professor of Chemistry in the Technical High School, Dresden, Translated with the Author's Sanction by G. McGowan, Ph.D. Third English Edition, etc. Cloth. Pp. 691. Price, \$4.25 net. New York: The MacMillan Company, 1906.

The best index of the general standing of this work is the fact that we have before us the third English edition. The first was issued in 1891, the second in 1898, and now comes the third. In each case the English edition has followed closely the original German, and all the English translations have been made by George McGowan. The reception by the chemical world of this history of chemistry has consequently been so friendly as to indicate at once that Professor von Meyer's work bids fair to be a classic in its field. Any special words of commendation on the part of the reviewer are consequently wholly superfluous. With a view of indicating more especially to physicians the general scope of the book a brief, general statement of its contents and the manner in which they are presented may be attempted.

The avowed purpose of the work is to describe within reasonable compass the development of chemical knowledge and especially the general doctrines of chemistry from their earliest beginnings to the present time. The growth of particular branches of the science and of industrial chemistry is also detailed more or less minutely. The essential biographical facts concerning the pioneers and leaders in chemical investigation and teaching are given in connection with brief, but interesting characterizations of their personalities, while the part taken by each in the promotion of chemical knowledge and theory is made the subject of discriminating discussion in the proper place. For the purpose of clear, connected presentation the history of chemistry is divided into several distinct periods and the events within each period considered in natural (principally chronologic) sequence. The earliest period and the longest is the Alchemistic which extends practically from the inception of chemical knowledge to the first half of the sixteenth century. This period was dominated by the fixed belief or dogma that one so-called element could be transformed into another and throughout this period the historian finds but little else to record than the continual striving to transmute the base metals into the noble, to create gold and silver. Thus Suida in the eleventh century defines chemistry as the artificial production of gold and silver. Practically contemporaneously with the Reformation, chemistry began a new development mainly through the efforts of Paracelsus and his followers who reduced health and disease to chemical processes pure and simple and maintained that chemical means only were able to restore health. Paracelsus boldly announced that the object of chemistry is not to make gold but to prepare medicines. This is the period of Iatro—or medical chemistry; it is marked by the mutual interaction of medicine and chemistry and the author emphasizes the fact that while mutual enrichment resulted and new paths were opened to both medicine and chemistry the latter in reality profited the more because it became transferred into the hands of men with scientific culture. The great part that Paracelsus took in this new development is more clear and the fact is again emphasized that the recent studies of Paracelsus tend to enhance the appreciation of the real service that he rendered.

The history of chemistry as an independent branch of natural science, following the paths of exact research without immediate regard to practical ends, begins in the middle of the seventeenth century. Robert Boyle was the pioneer. He proclaimed the object of chemistry to be the acquisition of knowledge of the composition of substances. The latter part of the seventeenth and the whole of the eighteenth century were signalized by continuous investigation of the problems of combustion, and inasmuch as these investigations were guided by the conception that the hypothetical fire stuff, phlogiston, was the universal principle of combustibility, this period is set apart as the Phlogistic Period. With the fall of the phlogistic theory, largely through the work of Lavoisier, begins the present chemical era, the guiding star of



which has been and still is the atomic theory, hence the present is the Period of the Chemical Atomic Theory. The dependence of chemistry on pharmacy and medicine—at one time pharmacy was the only road to the study of pure chemistry—ceased, and chemistry became an indispensable aid to practically the whole range of natural science. The history of the birth and development of the atomic theory and of organic chemistry is traced in an interesting manner and with considerable minuteness. In the latter half of the work is given the special history of the various branches of modern chemistry, outgrowths of an ever increasing specialization.

To physicians this work recommends itself strongly for various reasons. First of all is the great value of genuine historical study for the understanding of general chemistry, the increasing and fundamental importance of which to medicine is evident to all. And then the historical relations between medicine and chemistry seem to make the history of chemistry attractive on medico-historical grounds as well. Many of the brightest pages in the history of chemistry are written by physicians: Paracelsus, Van Helmont, Stahl, Black, Berzelius—"the brilliant model for ages to come"—and others. Finally von Meyer's work recommends itself because of its style and form; taking it all in all, it is a book of rare educational value.

**PHYSICAL CHEMISTRY in the Service of Medicine.** Seven addresses. By W. Pauli. Authorized translation by M. H. Fischer. First edition. Cloth. Pp. 156. Price, \$1.25 net. New York: John Wiley & Sons, 1907.

It is a pleasure to observe that publishers find encouragement to put books of this character on the market with ever increasing frequency, for it indicates a healthy growth in the number of physicians who are endeavoring to keep abreast of the progress of the sciences fundamental to medicine. Fischer has translated a collection of seven lectures by Pauli, each of which represents a general summary of the relation of recent studies in physical chemistry to various aspects of biology and medicine. They make no pretense to a systematic consideration of physical chemistry, or even of the relation of physical chemistry to the problems selected for discussion, but rather select certain features which are of interest because of the definite progress recently made or because of special application to medical problems. Consequently the reader needs at least an elementary knowledge of the principles of physical chemistry in order to follow the author intelligently, although most of the elementary principles are brought out at one place or another in the book. One is impressed with the idea that Pauli's lectures have their greatest value as supplementary reading to such a work as Cohen's "Physical Chemistry for Physicians," which the same translator rendered into English a few years ago. This smaller, more recent book generalizes the principles elucidated by Cohen, and brings the subject of the relation of physical chemistry to medicine well up to date. The physician will find particularly interesting and suggestive material in the lectures on the therapeutic studies on ions, and on the relation between physico-chemical properties and medicinal effects. The translator has succeeded unusually well in transforming the shades of meaning, so delicately carried in the German original, into idiomatic English; the work being free from the abnormal construction so commonly seen in translations from the German.

**SAUNDERS' POCKET MEDICAL FORMULARY**, with an Appendix, Containing Posological Table; Formulas and Doses for Hypodermic Medication; Poisons and their Antidotes; etc. By W. M. Powell, M.D. Eighth edition, thoroughly revised, enlarged and adapted to the eighth revision (1905) of the U. S. Pharmacopeia. Flexible Morocco. Pp. 299. Price, \$1.75 net. Philadelphia: W. B. Saunders Company, 1906.

This new edition of a standard work introduces in its prescriptions the more important of the recently discovered drugs. The revision in accordance with the new Pharmacopeia, the blank interleaves for additional formulæ, the variety of emergency information, the convenient pocket-book form, and the numerous prescriptions signed with the names of prominent practitioners will gain new friends for this valued *vade mecum*.

**PARAFFIN IN SURGERY.** A Critical and Clinical Study. By W. H. Luckett, B.S., M.D., Attending Surgeon, Harlem Hospital, and Frank I. Horn, M.D., Assistant Surgeon Mt. Sinai Hospital Dispensary, New York City. With thirty-eight illustrations. Cloth. Pp. 118. Price, \$2.00. New York: Surgery Publishing Company, 1907.

The indications and contraindications for the use of paraffin in surgery are discussed in detail. The literature on the subject has been drawn on and supplemented by the clinical and experimental experiences of the authors. The application of paraffin injections in the treatment of hernia and their value for cosmetic purposes in saddle-nose deformity are shown by means of illustrated case reports.

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## Correspondence

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### A Migratory Shingle Nail.

OGDEN, UTAH, Feb. 25, 1907.

*To the Editor:*—I have followed with interest the recent symposium in *THE JOURNAL* relating to the migrating needle, and now that about every one who cares to has told his story, I venture to obtrude with one that is authentic. A few years ago I was attending a convalescing patient for whom I ordered chicken broth. During the preparation of the chicken it was discovered that the liver, normal in every other way, was transfixed by a common nail some two or three inches long, usually called a shingle nail. It was not a modern wire nail, but one of the old-fashioned cut affairs. The nail was situated about the anatomical center of the liver and protruded equally on each side of that organ. The indications seemed to be that the nail had been in place a long time. The nail was of a bright iron color, as if it had just been made, perfectly fitted the clean-cut mortise and was surrounded, even with the surface of the liver, by a rectangular collar, which was hyaloid in character, bluishly translucent and very hard. It was indeed a curiosity, and after it was shown for some time to the local fraternity and others, I sent it to the Smithsonian Institution, where it still remains.

A. S. CONDON, M.D.

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### "Alcohol in Official Preparations."

ST. LOUIS, Feb. 24, 1907.

*To the Editor:*—A letter in *THE JOURNAL*, February 9, page 535, by Dr. George Homan, on the above subject, interests me. The statements regarding the dangers from the use of alcohol in medicinal preparations when not necessary, are very much to the point. Adding his views to the many others recently expressed, it seems that the time has really come to curtail the employment of alcohol as far as practicable.

Speaking pharmaceutically, I would call the prescriber's attention to the fact that the U. S. Pharmacopeia and the National Formulary as now constituted offer the choice of so many non-alcoholic liquid medicines that it is scarcely ever necessary to have to resort to those containing even small quantities of alcohol. Those containing objectionable amounts could be ignored and would never be missed.

The entire therapeutics of the Pharmacopeia and the National Formulary must be dictated by the medical profession, and I trust that many more medical writers and practitioners will take sufficient interest in the matter, so that future pharmacopeias and formularies, when issued, will be recognized as their standards in practice.

A vehicle similar to aromatic elixir but containing no alcohol can be had by physicians for the asking: Anise, cinnamon and fennel waters are now official; if needed, coriander, lemon and orange waters can be added. Any and all of these mix clear with simple, orange or any other syrup or with glycerin. Pharmaceutically, it is an easy matter to make similar amendments all down the line. All we pharmacists want to know is: What does the physician require?

I would advocate standard elixirs, syrups and the other elegant pharmaceuticals of the National Formulary and U. S.



Pharmacopœia in all cases where such preparations are desirable. I would also advocate freshly prepared and extemporaneously prescribed emulsions of all kinds—these requiring no salicylic acid to preserve them.

FRANCIS HEMM.

#### Government Examination of Thermometers.

ASHEVILLE, N. C. Feb. 25, 1907.

*To the Editor:*—Some time ago I wrote of the unreliability of clinical thermometers sold in this country under the maker's certificate. I have recently investigated this matter further, and as in the diagnosis of certain diseases the accuracy of thermometers even to a few tenths of a degree is of importance, it seems to me that the matter should be brought before the profession. I have always used the thermometer of a well-known English maker, who for years supplied Kew certificates with his thermometers, but latterly took up the American custom of certifying his thermometers by his own standard thermometers. Becoming suspicious of the surprising perfection of the certificates given, I found on having them subjected to the government test at Washington, where all thermometers having more than 3/10 of a degree of error are rejected, that a large number were in this way turned down. So much for the past. To show now the excellent effect of a complaint from the medical public when an instrument of precision is poorly made and incorrectly certified, I had my druggist send on twelve dozen of the same maker's thermometers. Of these twelve dozen only three thermometers exceeded the limits of allowable error for certification by the Government Bureau of Standards, and of those certified a large majority gave a certificate much nearer perfection than those certified a year or more ago. If the profession throughout the country who are deeply interested in accurate thermometers would be careful to insist, through their druggists, on having their thermometers certified by the government at Washington, the grade of thermometers now kept in stores would soon be very greatly improved. We would thus increase the accuracy of our work.

CHARLES L. MINOR, M.D.

### Marriages

HERMAN C. FRICK, M.D., to Miss Minnie Lauenstein, both of Evansville, Ind., February 20.

A. MERRELL MILLER, M.D., to Miss Jeannett Penwell, both of Danville, Ill., recently.

OLNEY GALEN PLACE, M.D., to Mrs. Ida Moensch, both of Boulder, Colo., February 16.

EDWARD E. HOPKINS, M.D., Rochester, N. Y., to Miss Hazel Davis of Buffalo, at Honeoye Falls, N. Y., February 11.

DORA I. DORN, M.D., San Francisco, and D. S. Walton of San José, Cal., at Oakland, January 26.

WILLIAM EDGAR DARNALL, M.D., Atlantic City, N. J., to Miss Emma Elizabeth Nesbitt, of Richmond, Vt., February 27.

WALTER C. ALVAREZ, M.D., San Francisco, to Miss Harriet Smyth, of Berkeley, Cal., February 22.

### Deaths

Acland Oronhyatekha, M.D. Toronto University Medical Faculty; a full-blooded Mohawk Indian chief; probably the most notable man of his race, died in Savannah, Ga., March 3. Oronhyatekha was born in poverty on the Six Nation Reservation, near Brantford, Ont. His early education was at a missionary school for Indian youths. He then went to Wellesley Academy, Wilbraham, Mass., and thence to Kenyon College, where he remained for two years. He then matriculated at Toronto University. While he was studying at the university the Prince of Wales made his visit to Canada, and Oronhyatekha was deputized by the chiefs of the Six Nations to deliver the "Address to the Queen." The young chief made such an impression on the prince that he was invited to continue his studies at Oxford, and there was placed under the

tutelage of Sir Henry Acland, regius professor of medicine, whose surname Oronhyatekha adopted as his Christian name. He completed his medical education at Toronto University and practiced for a while in that city. He soon developed high qualities of executive ability and business acumen, shown especially in the line of fraternal society work. He was a member of the Independent Order of Good Templars, and soon attained the highest office in its gift, which he retained for several years. He also took charge of the Independent Order of Foresters at a time when it was at a low ebb, and by his talent soon built up the organization so that it is now on a most prosperous basis. He was elected president of the National Fraternal Congress which assembled in Chicago in 1902. He also received the highest degree in masonry. The Anthropological Building at the World's Fair contained a life-size portrait of Oronhyatekha, who was described as the "greatest living Indian." Wise investments had made Dr. Oronhyatekha very wealthy and he lived in a country place at Desoronto, near Toronto, formerly the capital of the Six Nations. He had suffered from heart disease for several years, and had gone to Savannah for his health, and died in the Hotel De Soto, March 3, aged 65.

Malek A. Southworth, M.D. Censors of New York, 1846; College of Physicians and Surgeons in the City of New York, 1880; a member of the American Medical Association; formerly consulting surgeon to St. Luke's Hospital, Utica, N. Y., and resident physician at the Mississippi Quarantine Station, New Orleans; resident fellow of the New York Academy of Medicine and original fellow of the New York Medical Association; formerly president of the Santa Clara County (Cal.) Medical Society, for many years county health officer and president of the board of pensioners of Santa Clara County; who served with great distinction and honor in the Federal service during the Civil War; for twenty years a resident of San José, Cal., died at Wright's Station, Cal., February 16, from senile debility, aged 80.

Lyman W. Bliss, M.D. Geneva (N. Y.) Medical College, 1876; a member of the state and county medical societies, and one of the oldest and most respected physicians of Saginaw, Mich.; surgeon of the Tenth New York Volunteer Cavalry during the Civil War; president of the Michigan State Medical Society in 1891, and for three years mayor of Saginaw; who had gone to Texas for his health, died suddenly in San Antonio, February 19, from heart disease, aged 70. The Saginaw County Medical Society held a special meeting, February 22, at which tribute was paid to the memory of Dr. Bliss, and fitting resolutions were drafted.

John S. Love, M.D. Jefferson Medical College, 1856; a member of the American Medical Association for many years; founder of the Linn County (Iowa) Medical Society, and one of the earliest members of the Iowa State Medical Society; for fifty years an esteemed and respected practitioner of Springville, Iowa, died at his home in that place, February 22, after an illness of three weeks, aged 75.

George W. Archer, M.D. Jefferson Medical College, Philadelphia, grandson of Dr. John Archer, the first medical graduate in America; surgeon of Stonewall Jackson's brigade in the Confederate service during the Civil War, died at his home near Emmorton, Hartford County, Md., February 16, from senile debility, after a long illness, aged 83.

Robert Provan, M.D. Medical School of Harvard University, Boston, 1860; a member of the state and county medical societies; for many years prominently connected with the British and Canadian charitable societies of the city; a member of the Common Council of Boston in 1885 and 1886; died at his home in Brookline, February 23.

J. W. Beall, M. D. Memphis Hospital Medical College; Medical Department Baptist Southwestern University, Memphis, Tenn., 1899; a member of the American Medical Association, and division surgeon for the Cotton Belt Railroad; an ardent temperance advocate; was shot and killed by a saloonkeeper in Malden, Mo., February 18, aged 32.

Francis Louis Roge, M.D. Baltimore Medical College; professor of chemistry, French, Greek and Latin in St. Joseph's College, Irvington, near Baltimore, and formerly associated in the work of the Pasteur Institute, New York City, died at his home in Baltimore, February 21, from pneumonia, after an illness of less than a week, aged 45.

C. A. Elliott, M.D. Kentucky School of Medicine, Louisville, 1852; for many years a practitioner of Ballard County and later of McCracken County, Ky.; a member of the McCracken County Medical Association; died at the home of his daughter in Woodville, Ky., February 22, from senile debility, after an illness of several years, aged 79.



**Thomas P. McDonald, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1891; a member of the Medical Society of the State of California; of the Nevada State Medical Society and the Washoe County Medical Society, died at his home in Reno, February 1, from pneumonia, aged 45.

**Ezra K. Frierwood, M.D.** Rush Medical College, Chicago, 1869; a member of the American Medical Association; a veteran of the Civil War and a practitioner of Cass, Howard and Miami counties, Ind., for 38 years, died at his home in Greentown, after an operation on the liver, February 18.

**Curtis A. Burwell, M.D.** University of the South, Medical Department, Sewanee, Tenn., 1901; a member of the American Medical Association, and a promising young physician of Salem, Va., died at his home in that city from pneumonia, February 16, after an illness of seven days, aged 30.

**Harold Abbott Wood, M.D.** Tufts College Medical School, Boston, Mass., 1906; formerly interne of the Children's Hospital, Boston, and later an interne at St. Joseph's Hospital, Providence, R. I., died in that institution from pneumonia, February 6, after an illness of one week, aged 26.

**Sherwood B. Ives, M.D.** College of Physicians and Surgeons in the City of New York, 1896; formerly assistant surgeon at the Presbyterian Hospital, New York City, died as the result of an accidental gunshot wound, self-inflicted, at the Morley Ranch, near Datil, N. M., February 16, aged 37.

**Robert B. Bedell, M.D.** Medical College of the State of South Carolina, 1854; a member of the state and county medical societies, and a prominent citizen of Lee County, Ala., died at his home near Farmville, February 13, after an illness of three weeks, from pneumonia, aged 72.

**Robert Henry Davis, M.D.** New York University Medical College, 1856; Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1888; sheriff of Haldimand County, Ont., died at his home in Cayuga, February 12, aged 79.

**William Russell Elder, M.D.** Berkshire Medical College, Pittsfield, Mass., 1847; one of the oldest practitioners of Terre Haute, Ind., and a veteran of the Civil War, died February 21, at his home in Terre Haute, from senile debility, after an illness of five months, aged 82.

**Herbert B. Williams, M.D.** University College of Medicine, Richmond, Va., 1903; a member of the state and county medical societies; of Gladys, Va., died at St. Andrew's Home, Lynchburg, Va., from pneumonia, February 20, after an illness of several weeks, aged 29.

**Franklin Robert Williams, M.D.** University of Louisville (Ky.) Medical Department, 1892; a member of the American Medical Association; of Kingsbury, Texas, died in San Antonio, Texas, from exhaustion, March 21, 1906, after an illness of five days, aged 45.

**Samuel A. McDougall, M.D.** Albany (N. Y.) Medical College, 1857; one of the founders of the Massachusetts Dental Society and a member of the state and county medical societies, died at the home of his daughter in Jamaica Plain, February 8, aged 76.

**Thaddeus T. Weatherly, M.D.** New York University Medical College, 1861; surgeon of the Sixth Alabama Infantry in the Confederate service during the Civil War, died at his home in Bennettsville, S. C., February 13, after an illness of several months, aged 70.

**John William Barker, M.D.** Medical Institution of Yale College, New Haven, Conn., 1860; medical examiner in Woodbridge, Conn., for several years, died at his home in Woodbridge, February 16, from pleurisy, after an illness of one week, aged 72.

**James Clarke Thomas, M.D.** College of Physicians and Surgeons in the City of New York, 1868; of New York City, died in the Good Samaritan Hospital, Los Angeles, Cal., February 20, from pneumonia, after an illness of one week, aged 63.

**John C. Howe, M.D.** Laval University, Medical Department, Quebec, 1886; government immigration medical inspector at Quebec, and one of the best known practitioners of that city, died at his home, February 2, suddenly, from heart disease, aged 47.

**Joseph J. O'Shea, M.D.** Bellevue Hospital Medical College, New York City, 1896; a medical inspector of public schools, of Paterson, N. J., died at his home in that city, February 20, from tuberculosis, after an illness of three months, aged 33.

**John Samuel Wilson, M.D.** Medical College of Georgia, Augusta, 1846; a surgeon in the Confederate Army during the

Civil War; died at St. Joseph's Infirmary, Atlanta, Ga., February 11, from arteriosclerosis, after a long illness, aged 78.

**William Neely, M. D.** Jefferson Medical College, Philadelphia, 1847; for many years a practitioner of Stark County, Ohio; died at his home in Wichita, Kan., February 15, from senile debility, after an illness of several weeks, aged 87.

**David E. Matteson, M.D.** Western Reserve University, Medical Department, Cleveland, 1873; a member of the state and county medical societies, died at his home in Marion, Ind., February 26, from pneumonia, after a short illness, aged 56.

**Joseph W. Mann, M.D.** Cincinnati College of Medicine and Surgery, 1896; of Cincinnati; for the last eight years assistant physician of Longview Hospital; died in Christ's Hospital, Cincinnati, February 23, after a brief illness, aged 42.

**Frank W. Talley, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1887; for ten years gynecologist at St. Agnes' Hospital, Philadelphia, died from nephritis, at his home in Philadelphia, February 16, aged 41.

**Paul C. Yates, M.D.** St. Louis (Mo.) Medical College, 1861; a member of the state and county medical societies; a surgeon in the Confederate service during the Civil War, died at his home in Neosho, Mo., February 18, aged 70.

**Frank J. Moses, M.D.** Regents of the University of New York State; formerly surgeon in the Confederate service; for fifteen years a practitioner of New York City, died at the home of his sister in Washington, D. C., January 19.

**Alvin R. Alley, M.D.** Medical College of the State of South Carolina, Charleston, 1869; a Confederate veteran, died at his home in Atlanta, Ga., February 21, from cerebral hemorrhage, after a short illness, aged 63.

**William J. Owsley, M.D.** University of Louisville, Medical Department, 1875; at one time township trustee, died at his home in Thorntown, Ind., from malignant disease, after an illness of several months, aged 55.

**George Herbert Nichols, M.D.** Homeopathic Medical College and Hospital, New York City, 1886; of Williamsburg, N. Y., died February 17, at Stamford, Conn., from appendicitis, after an illness of eleven weeks, aged 43.

**Robert F. Wayland, M.D.** University of Virginia, Medical Department, Charlottesville, 1847; for more than fifty years a resident of New Franklin, Mo., died at a hospital in St. Louis, February 8, aged 84.

**Patterson Leonard McKinnie, M.D.** Rush Medical College, Chicago, 1872; a retired practitioner of Evanston, Ill.; surgeon during the Civil War, died at Riverside, Cal., March 3, from heart disease, aged 62.

**Olcott C. Orendorff, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1862; died at his home in Middlefield, N. Y., February 12, three weeks after a surgical operation, aged 76.

**Mark R. Cassady, M.D.** Medical College of Georgia, Augusta, 1858; of Thomasville, Ga., died at Bronson, Fla., where he had gone to spend the winter, February 17, from pneumonia, aged 77.

**Jacob Greenawalt, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1870; died at his home in Pittsburgh, February 19, after an illness of five days, aged 76.

**Joseph A. Loeb, M.D.** Yale University, Medical Department, New Haven, 1903; died at his home in Stamford, Conn., February 24, from typhoid fever, after a short illness, aged 29.

**C. P. Kennedy, M.D.** Tennessee Medical College, Knoxville, 1902; of Wildersville, Tenn., died at the home of his parents in Knoxville, Tenn., recently, from tuberculosis, aged 30.

**Calvin D. Vilas, M.D.** University of Vermont, College of Medicine, Burlington, 1846; died at his home in Lake City, Minn., February 18, after an illness of several years, aged 84.

**Emerson S. Northup, M.D.** New York Homeopathic Medical College and Hospital, New York City, 1879; a veteran of the Civil War, died at his home in Los Angeles, recently.

**John Robert Berry, M.D.** University of Maryland School of Medicine, Baltimore, 1893; died at his home in Baltimore, February 7, after an illness of two months, aged 37.

**William S. B. Poole, M.D.** Western Reserve University, Medical Department, Cleveland, died at his home in Ruffsdale, Pa., recently from dropsy, after a long illness, aged 52.

**H. Russell Burner, M.D.** Eclectic College of Pennsylvania, Philadelphia, 1870; died at his home in Los Angeles, Cal., February 13, from cardiac embolism, aged 67.

**William E. Fifield, M.D.** Cooper Medical College, San Francisco, 1876; died at his home in Tacoma, Wash., February 23, after an illness of a year and a half, aged 80.



Benjamin R. Bevier, M.D. College of Physicians and Surgeons in the City of New York, 1849; died at his home in Napanoeh, Ulster County, N. Y., February 22, aged 75.

Louis L. Laronge, M.D. Homeopathic Hospital College, Cleveland, 1893; died at his home in Cleveland, February 25, from dropsy, after a lingering illness.

William Patterson Biles, M.D. Eclectic Medical Institute, Cincinnati, 1879; died at his home in Carlyle, Ill., February 18, aged 56.

William Merchant, M.D. Lewiston, 1882, died at his home in Otisville, Mich., February 18, from cerebral hemorrhage, aged 55.

Stephen D. Meserve, M.D. Miami Medical College, Cincinnati, 1857; died at his home in Robinson, Ill., January 27, aged 80.

William H. Hodgson, M.D. Royal College of Physicians, London, 1866; died in Mattoon, Ill., February 18, aged 73.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### DIFFERENTIATION OF TUBERCULAR ARTHRITIS AND RHEUMATIC ARTHRITIS.

—, Feb. 18, 1907.

To the Editor:—Among the questions recently asked by the Board of Examiners of Delaware (THE JOURNAL, Jan. 26, 1907, p. 365), the following was given under practice of medicine: Differentiate tubercular arthritis and rheumatic arthritis. This subject has been a stumbling block to me for a long time, and any information that will aid me in making a differential diagnosis will be appreciated.

W. F. T.

ANSWER.—Although there is considerable evidence pointing to the specific nature of rheumatism, this evidence is not yet accepted by all observers as conclusive. Nevertheless, while the investigators are determining the existence or non-existence of a particular microbe or microbes which give rise to the clinical symptom-complex or syndrome of articular rheumatism, the existence of such a syndrome may from a clinical view-point, be accepted. This clinical syndrome thus provisionally accepted possesses two features which may be considered characteristic. These are: First, the involvement of many joints (polyarticular), the joints involved being affected either simultaneously or consecutively, and second, the facility or rapidity with which all symptoms may disappear from a joint apparently extensively involved. In just so much as the case fails to possess these characteristic features do the chances of it being rheumatism diminish, so that when we have to deal with a persistent arthritis of but one joint (monarticular) this fact alone is presumptive evidence that the case is not one of rheumatism. As there is no possibility of confusing articular rheumatism possessing the above-mentioned features with tubercular arthritis, the question can only be considered to refer to arthritis of the monarticular type. An arthritis may be produced by an infection with a variety of micro organisms so that the real diagnosis consists not in determining the presence of the joint inflammation, which is usually seen at a glance, but in determining the particular kind of infection which is present in the joint. The appearances of the joint are not always characteristic, hence the particular kind of infection must often be surmised from the antecedent or concomitant circumstances of the case or demonstrated directly by bacteriologic methods. Thus the typhoid bacillus may produce an arthritis in connection with or following typhoid fever; the streptococci in scarlatina; Pfeiffer's bacillus in influenza; the gonococcus in connection with a recent gonorrheal infection; the pneumococcus in pneumonia or a general pneumococcal infection; the staphylococci in tonsillitis or furunculosis, etc.; the *Spirochæta pallida* in syphilis; the tubercle bacillus in tuberculosis, etc., etc. These infections are almost always of the monarticular variety and may assume an acute or a chronic course. The import of this apparent digression from the main issue of the question is to point out that, excepting those cases due to trauma and the so-called arthropathies, practically all cases of arthritis that have been carefully investigated have been found to be due to some of the well-known varieties of infection, and it has not yet been demonstrated that there is a particular form of monarticular arthritis due to a specific organism which is entitled to the term "rheumatic arthritis," although the term is unfortunately but too often applied to almost any form of joint inflammation. The real question becomes, therefore, how to distinguish tubercular arthritis? It occurs usually in young subjects and affects most frequently one of the large joints; knee, hip,

elbow, ankle. It is slow in its onset and runs a chronic course. As in the large majority of the cases the trouble is primarily osteal, the early symptoms are rather juxta-articular than articular; an indefinite pain; a slight limp; beginning limitation of motion of the joint. When the joint proper becomes involved the symptoms are more pronounced; the pain is increased; there are spasmodic contractions of the muscles, particularly at night; the joint becomes fixed; the synovial folds are palpably thickened; the whole joint is enlarged, which enlargement becomes more apparent owing to the rapid atrophy of the neighboring muscles, etc. When the synovial membrane becomes markedly thickened by reason of the tubercular granulations, it has a characteristic pseudo-fluctuating feel. If the case progress from bad to worse, tubercular abscesses form which eventually open, leaving discharging sinuses. The general health always declines from the prolonged suffering and constant slow absorption of toxins so that the whole case presents a picture which can scarcely be mistaken for any other condition.

### THE RUSSO "REACTION."

CINCINNATI, OHIO., Feb. 23, 1907.

To the Editor:—In THE JOURNAL, February 16, page 626, it is stated, quoting Cousin, Costa and Gandy, that the Russo "reaction" is due to the admixture of the blue with the yellow urine. As to the value of the Russo "reaction" in the early diagnosis of typhoid I am as yet unwilling to give an opinion. I do not believe, however, that the reaction is due to the mere color mixing. In the last two years I have had my classes in urinalysis experiment with the reaction in no less than a hundred cases, both normal and febrile, in which latter we would have to deal with urine more or less highly concentrated. In each instance several control tests were made. The blue was used in 1/10 per cent. solution, four drops of which were added to about 15 c.c. (3 drams) of urine. In only one non-typhoid case did the typical emerald green appear, although highly concentrated urine from other diseases was used. On the other hand some of the typhoid samples were so highly concentrated that instead of being yellow they were of a decided reddish cast and red and blue mixed will not produce emerald green or any other kind of green. In one instance some typhoid urine was mixed with a number of other samples (previously negative), and the typical emerald green appeared. I have made this test so frequently with a typhoid urine and other urines of very nearly the same concentration (measured by the specific gravity), and color simultaneously, that merely color mixing does not satisfactorily explain the phenomenon to me.

WILLIAM H. SMITH, M.D.

## The Public Service

### Army Changes.

Mé morandum of changes of stations and duties of medical officers, U. S. Army, week ending March 2, 1907:

Morris, S. J., asst.-surgeon, granted four days' leave of absence about February 26.

Wakeman, Wm. J., surgeon, sick leave of absence further extended one month.

Shepard, J. L., asst.-surgeon, advanced from grade of first lieutenant to that of captain, from February 21.

Steer, S. L., asst.-surgeon, granted three months and fifteen days' leave of absence.

Ashford, B. K., asst.-surgeon, detailed member of examining board, to determine the results of preliminary examination of applicants and for final examination of applicants for final examination of candidates for admission to the Medical Corps of the Army, vice Capt. Harry L. Gilchrist, asst.-surgeon, hereby relieved.

McCallum, Francis M., contract surgeon, left Fort D. A. Russell, Wyo., on leave of absence for one month.

Porter, Elias H., contract surgeon, left Fort Logan H. Roots, Ark., for duty at Fort Clark, Texas.

Sievers, Robert E., contract surgeon, relieved from duty at Fort William Henry Harrison, Mont., and ordered to accompany the 25th Infantry to the Philippine Islands for duty.

Hayes, Melville A., contract surgeon, relieved from duty in the Department of the Columbia, and ordered to Washington, D. C., for annulment of contract.

Long, Charles J., dental surgeon, left Fort Assinniboine, Mont., and arrived at Fort William Henry Harrison, Mont., for duty.

Whinnery, Jean C., dental surgeon, returned from Fort Liscomb, Alaska, to Fort Wright, Wash., for duty.

Brooks, John D., contract surgeon, order for Fort Sam Houston, Texas, revoked.

Hughes, Leonard S., contract surgeon, returned to San Francisco from leave of absence, and ordered to duty at Depot of Recruits and Casuals, Angel Island, Cal.

Holmes, Thomas G., contract surgeon, relieved from duty at Fort Meade, S. D., and ordered to Fort Sill, Okla., for duty.

Branch, Frederick D., contract surgeon, order for Fort Preble, Maine, revoked; will proceed home, East Springfield, N. Y., for annulment of contract.

Miller, William G., contract surgeon, relieved from treatment at the Army General Hospital, Washington Barracks, D. C., and ordered to his home, New Castle, Pa., for annulment of contract.

Allen, Ira A., contract surgeon, returned to duty at Fort Dade, Fla., from leave of absence.

Greenwell, Samuel A., contract surgeon, relieved from duty at Fort Barrancas, Fla., and ordered to his home, Cleburne, Texas, for annulment of contract.



Gregory, Verdo B., contract surgeon, relieved from duty at Fort Adams, R. I., and ordered to proceed to his home, Jaunesville, Wis., for annulment of contract.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 2, 1907:

Lumsden, G. P., medical inspector, ordered to the Naval Recruiting Station, Indianapolis.

Surgeon H. C. Curl, detached from special duty in the Bureau of Medicine and Surgery, Navy Department, and ordered home to wait orders.

Odell, H. E., surgeon, commissioned surgeon from Sept. 6, 1906.

Michels, R. H., P. A. surgeon, commissioned P. A. surgeon from Oct. 8, 1906.

Bogert, E. S., Jr., surgeon, detached from the *West Virginia* and ordered home.

Marsteller, E. H., surgeon, detached from the *Franklin* and granted sick leave for three months.

Reeves, I. S. K., P. A. surgeon, discharged from treatment at the Naval Medical School Hospital, Washington, D. C., and ordered to the *Franklin*.

Hamar, A., pharmacist, discharged from treatment at the Army General Hospital, Fort Bayard, N. M., and ordered home to wait orders.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 27, 1907:

Sprague, E. K., P. A. surgeon, granted leave of absence for two days.

Bogges, J. S., P. A. surgeon, relieved from duty at Stapleton, N. Y., and directed to report to the chief medical officer, Ellis Island, N. Y., for temporary duty, after which to proceed to St. John, N. B., for exclusive duty in connection with the examination of aliens.

Creel, R. H., asst.-surgeon, granted leave of absence for one month.

Miller, W. W., asst.-surgeon, granted leave of absence for twelve days from February 19 on account of sickness.

Bullard, J. T., acting asst.-surgeon, granted leave of absence for 30 days from Feb. 21, 1907.

Goldsborough, B. W., acting asst.-surgeon, granted extension of leave of absence for 14 days from February 18.

McConnell, E. F., acting assist.-surgeon, granted leave of absence for 30 days from February 25.

Morris, G. A., pharmacist, department letter of Jan. 31, granting leave of absence for 15 days amended to read for 11 days only.

#### RESIGNATION.

Mr. A. M. Thomas, resigned as pharmacist of the third class, effective February 23.

Woods, C. H., pharmacist, removed from the service, effective February 28.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended March 1, 1907:

#### SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 2-9, 2 cases.  
Georgia: Augusta, Feb. 12-19, 6 cases.  
Illinois: Castleton, Jan. 12, 2 cases; Chicago, Feb. 16-23, 2 cases; Galesburg, Feb. 9-16, 11 cases; Jacksonville, 11-15, 3 cases.  
Indiana: Elkhart, Feb. 9-16, 3 cases; Indianapolis, Feb. 10-17, 8 cases; Lafayette, Jan. 27-Feb. 4, 2 cases, Feb. 4-18, 1 case; South Bend, Feb. 9-16, 2 cases; Vincennes, Feb. 9-16, 1 case.  
Iowa: Mahaska County, Oskaloosa included, May 28-Feb. 22, 141 cases.

Kansas: Kansas City, Feb. 9-16, 3 cases (imported).  
Louisiana: New Orleans, Feb. 9-16, 10 cases (5 imported).  
Mississippi: Natchez, Feb. 9-16, 3 cases.  
Missouri: St. Joseph, Feb. 9-16, 30 cases; St. Louis, 1 case.  
New York: New York, Feb. 9-16, 2 cases.  
Ohio: Cincinnati, Feb. 16-22, 2 cases.  
Washington: Spokane, Feb. 9-16, 12 cases.  
Wisconsin: La Crosse, Feb. 9-16, 2 cases; Milwaukee, Jan. 26-Feb. 2, 4 cases; Feb. 9-16, 4 cases, 1 death.

#### SMALLPOX—FOREIGN.

Africa: Lorenzo Marquez, Dec. 1-31, 1 death.  
Brazil: Pernambuco, Jan. 2-15, 68 deaths.  
Canada: New Brunswick, Feb. 21, present; Nova Scotia: Glasgow, Feb. 9-16, 17 cases; Truro, present.  
Chile: Coquimbo, Jan. 12, present; Iquique, Jan. 12, present.  
France: Paris, Jan. 26-Feb. 2, 5 cases.  
Great Britain: Bristol, Jan. 26-Feb. 2, 1 case.  
India: Calcutta, Jan. 5-19, 41 deaths; Rangoon, Jan. 5-12, 2 deaths.  
Mexico: Vera Cruz, Feb. 2-9, 1 case.  
Netherlands: Rotterdam, Feb. 2-9, 1 death.  
Russia: Moscow, Jan. 26-Feb. 2, 1 case; Odessa, Jan. 19-Feb. 2, 48 cases, 6 deaths; St. Petersburg, Feb. 12-26, 3 cases, 1 death.  
Spain: Barcelona, Jan. 21-31, 6 deaths.  
Turkey in Asia: Beirut, Jan. 26-Feb. 2, present.

#### YELLOW FEVER.

Mexico: Veracruz, Feb. 26, 1 case.  
Venezuela: La Guayra, Jan. 9, 2 cases.  
West Indies: Trinidad, Port of Spain, Feb. 4-5, 1 case, 1 death.

#### CHOLERA—INSULAR.

Philippine Islands: Provinces, Jan. 5-12, 2 cases, 2 deaths.

#### CHOLERA—FOREIGN.

Ceylon: Colombo, Jan. 15-22, 4 cases, 4 deaths.  
India: Calcutta, Feb. 2-19, 526 deaths; Rangoon, Jan. 2-12, 15 deaths.

#### PLAGUE—INSULAR.

Hawaii: Honolulu, Jan. 29, 1 death (on *S. S. America Maru*).

#### PLAGUE—FOREIGN.

Australia: Brisbane, Dec. 15-22, 1 case, 1 death.  
Chile: Antofagasta, Jan. 12, 6 cases, 4 deaths.  
India: Gueural, Jan. 5-12, 12,945 cases, 10,343 deaths; Bombay, Jan. 15-22, 43 deaths; Calcutta, Jan. 5-19, 26 deaths; Rangoon, Jan. 5-12, 17 deaths.  
Japan: Matsuyama, Jan. 14, present; Osaka, present.  
Peru: Callao, Jan. 19, 1 case; Catacaos, Jan. 8, 2 cases; Chiclayo, 7 cases; Lambayeque, 1 case; Paita, 1 case; San Pedro, 7 cases; Trujillo, Jan. 8, 6 cases.

## Association News

### NEW MEMBERS.

List of new members of the American Medical Association for February, 1907:

#### ALABAMA.

Black, W. F., Sayreton.  
Moore, J. A., Birmingham.  
Shipp, M. G., Albertville.  
Speir, P. V., Furman.  
Tippin, P. H. M., Brewton.  
Vance, J. G., Warrior.

#### ARIZONA.

Hawley, C. F., Bisbee.

#### ARKANSAS.

Bathurst, W. R., Little Rock.  
Ogden, M. D., Little Rock.  
Pate, C. N., Ft. Smith.  
Steveus, C. C., Blytheville.

#### CALIFORNIA.

Brown, Rexwald, Santa Barbara.  
Crawford, W. T., Fowler.  
Doane, F. L., Red Bluff.  
Keith, W. E., San José.  
Koepeke, F. H., Watsonville.  
Rowell, H. N., Berkeley.  
Snyder, G. S., San Francisco.  
Sumner, Percy, San Quentin.  
Walsh, F. D., Loyalton.

#### COLORADO.

Manns, Rudolph, Denver.  
Schenck, D. S., La Jara.  
Scholz, S. B., Jr., Denver.  
Todd, J. C., Denver.

#### CONNECTICUT.

Adam, J. G., Canaan.  
Blank, E. F., Bridgeport.  
Taylor, Maude W., Hartford.

#### DISTRICT OF COLUMBIA.

McPherson, D. M., Washington.

#### FLORIDA.

Neal, T. A., Sanford.

#### GEORGIA.

Bullard, W. M., Monticello.  
Cole, J. F., Carrollton.  
Dallas, D. Q., Pavo.  
Paulk, G. A., Alapaha.  
Hamilton, C., Rome.  
Hardman, W. B., Commerce.  
Wilson, Samuel, Yatesville.  
Woods, J. E., McDonough.

#### ILLINOIS.

Bain, W. G., Champaign.  
Cherry, T. E., Cowden.  
Cleaud, J. S., Swanwick.  
Cook, Mary L., Chicago.  
Cunliffe, R. A., Chicago.  
Dauforth, W. C., Chicago.  
Gordon, L. E., Chicago.  
Johnson, W. W., Evanston.  
Kuhn, Le R. P., Fairbury.  
Lockwood, C. R., Atwood.  
McClelland, S. E., Decatur.  
McNair, O. H. P., Batavia.  
Moore, G. H., Joy.  
Needham, F. S., Chicago.  
O'Shea, David, Chicago.  
Otradovec, Joseph, Chicago.  
Poos, G. H., Trenton.  
Reuss, A. Le R., Belleville.  
Weber, G. H., Peoria.

#### INDIANA.

Austin, M. A., Anderson.  
Bailey, H. T., Littles.  
Helstand, H. J., Indianapolis.  
Kennedy, C. M., Camden.  
Scott, J. W. C., Columbia City.

Weiss, H. G., Rockport.

#### INDIAN TERRITORY.

Coryell, Martin, Chickasha.  
Keileam, R. T., Sallisaw.

#### IOWA.

Anderson, E. K., St. Charles.  
Bowser, W. F., Buffalo.  
Conkling, W. S., Des Moines.  
Cresap, R. N., Bonaparte.  
Hobby, E. E., Iowa City.  
Lacey, T. B., Jr., Council Bluffs.  
McLaughlin, W. H., Webster.  
Nordgren, Esaias, McCallsburg.  
Sickler, Daniel, Ogden.  
Tubbs, R. B., Council Bluffs.

#### KANSAS.

Bennett, R. M., Mound Valley.  
Chapin, Charles, Frountuac.  
Dickinson, Amelia A., Pittsburg.  
Evans, E. A., Coway Springs.  
Fairbanks, W. F., Kansas City.  
McKnight, G. C., Hiawatha.  
Millard, S. T., Carbondale.  
Newton, L. A., Chicopee.  
Revell, A. T., Scammon.  
Smith, H. H., Highland.

#### KENTUCKY.

Alexander, J. M., Fulton.  
Dabney, A. S., Golden Pond.  
Ferguson, C. N., Nebo.  
Finley, A. F., Hlsley.  
Higdon, L. S., Peonia.  
Honaker, Harry P., Liletown.  
Pedicard, Frank L., Foster.  
Shaw, C. W., Alexandria.  
Stites, F. M., Hopkinsville.  
Usher, H. V., Oscar.  
Wolfe, J. G., Frances.

#### LOUISIANA.

Dorrestein, C. A. M., New Orleans.  
Durel, W. J., Covington.

#### MAINE.

Clough, G. H., Dexter.  
Leach, C. H., Lincolnville.  
Pritham, F. J., Greenville.

#### MARYLAND.

Bordley, James, Jr., Baltimore.  
Chaney, Thomas M., Chaney.  
Rich, H. L., Port Deposit.

#### MASSACHUSETTS.

Clark, J. D., Auburndale.  
Davis, E. L., Springfield.  
MacKerrow, H. G., Worcester.  
Patterson, Alice M., Peabody.  
Pike, W. C., Boston.  
Smith, J. H., Boston.  
Thompson, G. H., North Adams.

#### MICHIGAN.

Beisman, Joseph, Detroit.  
Bradshaw, B. C., Mayville.  
Kennedy, R. L., Howell.  
Ostrander, Herman, Kalamazoo.

#### MINNESOTA.

Bong, J. H., Jasper.  
Merrill, J. E., Amboy.  
Reid, William, Deerwood.  
Richardson, W. E., Slayton.

#### MISSISSIPPI.

Cooper, S. E., Water Valley.  
Stringer, J. J., Oak Vale.



## MISSOURI.

Bennett, E. C., Bolckow.  
Bradshaw, J. T., Montrose.  
Chamberlain, O. M. C., Rockport.  
Dunham, S. A., Kansas City.  
Eaton, J. A., Belgrade.  
Epperson, H. E., Browning.  
Fries, W. A., St. Louis.  
Goodrich, E. E., Crane.  
Gordon, F. N., St. Louis.  
Greenwood, G. H., Fredericktown.  
Haden, J. W., Plevna.  
Jefferies, C. O., Savannah.  
John, Gomer, Wilcox.  
Johnson, H. C., Meadville.  
Large, S. D., Hopkins.  
Larrabee, J. A., Barnard.  
Lester, R. B., Desloge.  
Martin, H. L., Kansas City.  
Nash, W. H., St. Louis.  
Northcutt, J. R., Knox City.  
Patterson, W. R., Tipton.  
Perkins, G. B., Elvins.  
Safford, W. G., Tarkio.  
Sargent, D. A., Hopkins.  
Senseneby, E. T., St. Louis.  
Shelton, C. W., Mt. Vernon.  
Simmons, B. B., Oregon.  
Skinner, E. H., Kansas City.  
Smith, R. M., Kansas City.  
Talbot, C. W., Nevada.  
Tipton, P. L., Caruthersville.  
Wood, W. S., Oregon.

## MONTANA.

Flinn, F. M., Libby.  
Patterson, E. B., Philipsburg.

## NEBRASKA.

Edmiston, A. W., Omaha.  
Young, W. R., Ansley.

## NEVADA.

Sanford, Louise, Reno.  
NEW JERSEY.  
Gordon, A. L., Burlington.

## NEW YORK.

Atwood, C. E., New York City.  
Austin, S. E., Auburn.  
Baird, A. W., New York City.  
Blank, M. I., New York City.  
Brinsmade, D. B., New York City.  
Bullowa, J. G. M., New York City.  
Campbell, G. B., New York City.  
Carmer, M. E., Lyons.  
Clarke, H. E., Glens Falls.  
Denton, M. P., New York City.  
Frink, C. A., New York City.  
Gignoux, J. E., New York City.  
Hamlen, G. D., New York City.  
Haubold, H. A., New York City.  
Hedden, A. W., Syracuse.  
Hurlbut, L. R., Lockport.  
Keator, H. M., New York City.  
Livermore, I. W., Gowanda.  
Lockwood, G. R., New York City.  
May, W. R., New York City.  
McGrane, M. A., Troy.  
McWilliams, C. A., New York City.  
Mitchell, Sidney, Jr., Saranac.  
Murray, Janet, Schenectady.  
Pisko, Edward, New York City.  
Racoosin, Wm., Centerville.  
Roseboom, J. L., Rochester.  
Safford, J. E., Stamford.  
Satterlee, R. H., Buffalo.  
Scott, G. D., New York City.  
Searing, B. H., New York City.  
Schroeder, Wm. Jr., New York City.  
Slocum, F. W., Camillus.  
Smith, A. H., Camden.  
Smith, G. W., Utica.  
Spingarn, Alexander, Brooklyn.  
Steinach, Wm., New York City.  
Strang, W. W., New York City.  
Taylor, D. M., Edwards.  
Thurber, S. W., New York City.  
Valentine, J. J., New York City.  
Waugh, D. W., Brooklyn.  
Westlake, A. J., Elmira.  
Whitwell, J. F., Buffalo.  
Wilber, H. C., Pine Plains.

## NORTH CAROLINA.

Foust, I. H., Salisbury.  
McKay, J. F., Lillington.  
Moore, B. S., Charlotte.  
Newell, H. A., Louisburg.  
Stanton, D. A., High Point.

## NORTH DAKOTA.

MacLachlan, T. M., Bismarck.  
Pryse, T. S., Dawson.  
Stewart, M. A., Omamee.

## OHIO.

Baer, Mary, Canal Dover.  
Blackburn, Ella, New Vienna.

Blackford, R. A., Martins Ferry.  
Bixell, P. D., Pandora.  
Carnedy, M. H., Painesville.  
Dewey, H. R., Bellevue.  
Hussey, M. F., Sidney.  
Lange, Sidney, Cincinnati.  
Lott, F. S., Columbus.  
McAllister, J. L., Black Fork.  
Mitchell, J. A., Newark.  
Souder, R. L., Ada.  
Vos, Arthur, Cincinnati.  
Wells, C. H., Summit Station.

## PENNSYLVANIA.

Astley, G. M., Philadelphia.  
Brister, Samuel, Philadelphia.  
Brown, H. McV., Philadelphia.  
Burns, E. W., Honesdale.  
Cashman, E. W., York Springs.  
Davis, P. J., Scranton.  
Faught, F. A., Philadelphia.  
Grander, F. L., Forest City.  
Griffith, M. E., Monessen.  
Heilman, R. M., Leechburg.  
Krall, J. T., Philadelphia.  
Ingram, C. H., Pittsburg.  
Kane, C. A., Pittsburg.  
Lamon, G. T., New Kensington.  
Price, J. J., Olyphant.  
Stephens, T. D., Penn Run.  
Vastine, J. M., Catawissa.  
Washburn, Clayton, Susquehanna.

## RHODE ISLAND.

Ferguson, J. B., Providence.

## SOUTH CAROLINA.

Green, C. I., Orangeburg.  
Stroud, E. C., Marietta.

## SOUTH DAKOTA.

Sandmann, G. A., Parkston.  
Seapy, J. A., Geddes.  
Swett, C. H., Presho.

## TENNESSEE.

Heffernan, J. L., Jellico.  
Summers, W. P., Fayetteville.

## TEXAS.

Beckmann, A., Oldenburg.  
Blythe, W. H., Mount Pleasant.  
Bush, J. A., Winnsboro.  
Combs, R. L., Kerrville.  
Dorset, D. H., Thurber.  
Ehlinger, Otto, La Grange.  
Gillette, W. R., Cuero.  
Gowen, J. D., Queen City.  
Gregory, C. L., Terrell.  
Johnson, R. A., Flatonia.  
Lowry, W. E., Laredo.  
Lipscomb, C. D., Quitman.  
Mitchell, R. E., Campbell.  
Morgan, E. H., Granburg.  
Murray, E. C., Houston.  
Perry, G. F., Hamilton.  
Sauvignat, E. H., Laredo.  
Thornton, Henry, Pittsburg.  
Wilder, J. H., Hooks.  
Wisdom, W. E., Jefferson.  
Wood, Martha A., Galveston.  
Zoesper, J. S., Ammansville.

## UTAH.

Richards, R. T., Salt Lake City.  
Rothwell, W. H., Murray.

## VERMONT.

Townsend, W. W., Rutland.

## VIRGINIA.

Carter, H. P., McKenney.  
Godwin, I. R., Fincastle.  
Greiner, A. B., Rural Retreat.  
Haislip, G. W., Lorton Valley.  
Henderson, T. B., Wakefield.  
Sloan, J. W., Richmond.

## WASHINGTON.

Palamountain, W. B., Colfax.

## WEST VIRGINIA.

Booher, W. T., Bethany.  
Cherry, H. J., Coketon.  
Harris, L. N., Mill Creek.  
Lantz, Percival, Alaska.  
Slater, C. N., Clarksburg.

## WISCONSIN.

Bassett, V. H., Wauwatosa.  
Blanchard, A. C., Linden.  
Brown, E. B., Horicon.  
Kahn, Joseph, Milwaukee.  
Lindores, J. D., Stevens Point.  
McKee, F. W., Richland Center.  
Scholz, G. M. F., Milwaukee.  
Watterson, W. H., Fox Lake.

## WYOMING.

Chambers, Oliver, Rock Springs.

## HAWAII.

O'Neill, M. J., Eleele, Kauai.

**Medical Economics**

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

**METHODS AND RESULTS OF ORGANIZATION WORK IN KENTUCKY.**

J. N. McCORMACK, M.D.

Chairman of the Committee on Organization of the American Medical Association.

BOWLING GREEN, KY.

As is generally known, I have been working outside of my own state almost constantly for the past five years. When the opportunity came for me to make an itinerary here, the importance and possibilities were fully realized by all in authority in the State Association, and every one lent a willing hand,

## PRELIMINARY WORK.

Dr. Bullitt, state secretary and editor, took up the matter systematically in the *Kentucky State Medical Journal*, explained all our plans and purposes, and showed how and why it was a work of much practical importance in the daily life of every physician and citizen. He urged every county society to discuss the matter freely, and to indicate to its councilor where each meeting could be held to the greatest advantage.

When the profession had been thus fully advised, a meeting of the council and all other officials of the State Medical Association was called to work out the details, and especially to solve the difficult problem of inducing the laity to come out to hear a doctor talk. I attended this meeting and gave to these earnest men, each of them my personal friend and co-worker in many legislative and other contests, the benefit of my experience in other states, and explained fully what was expected of them and of their county societies, if the best results were to be secured. After full discussion it was decided to confine the appointments to counties where the profession was already so well organized as to give promise of good audiences of both the profession and public, without regard to the size of the town or city. It was also decided, in order that I might speak in as many counties as possible, and because I had already met the societies more than once in almost every county, that afternoon and evening meetings should be held daily, at easily accessible points, and that all of these should be for the laity. All these things understood, and the places of the meetings in each district decided, the order and dates of the appointments were courteously left for me to arrange with the aid of a well-informed railway passenger agent. The itinerary was published in the next issue of the *State Journal*, marked copies of which were sent to every physician of the state whether a member or not, with ringing editorials urging each of them to arrange to attend one or more of the meetings with their leading lay friends and patrons. As will be seen, the itinerary covers all except the southwestern and northeastern districts, which are to be visited at a later date.

About two weeks before the meeting in his county or district, each physician, whether or not a member, or even eligible, received a personal letter from Dr. Bullitt, enclosing the itinerary, urging him to attend and to bring his wife and his influential patrons. A few days later, he received a similar letter from his councilor, couched in different terms, followed, later on, by one from the secretary of his county society, all with the same end in view. All these letters were prepared in Dr. Bullitt's office, and sent with addressed and stamped envelopes to the respective officials named, and needing only their signatures before mailing. I have licensed every physician in Kentucky, of every school or system, and know most of them personally. About two days before the meeting in his district or county, each of them received a personal letter from me, telling him why and how he ought to try to make the meeting a success. I told him that I expected in my talk to explain fully what should be the relations between the doctors and the people, and, in a plain, practical heart-to-heart way, would show that every true interest of theirs and ours were inseparable; and that I would show that the poverty so prevalent in the profession is far more important and dangerous to



them than to us, illustrating this by example after example, from the experience of a long and busy life. I told him that I could only hope to make the meetings helpful to him if he and his patrons, good men and women, were present, but that, if he would get them there, I promised in advance to make it worth more than a month's practice to him, and that this would be one of the least of the benefits. It was easy to reach the profession in this way because both the state association office and that of the State Board of Health, which work hand in hand in everything, have a constantly revised card-index register, so that practically none would be overlooked. The aid of the newspapers was also enlisted in every county. This was the easier because the press has co-operated in all the public health work here to an extent probably not true in any other state.

All this cost time, effort and considerable money, but the council considered it an excellent investment; the result proved that they were wise in doing so. They considered it as just as it was wise. The American Medical Association generously proposed to meet all the direct expenses of a work undertaken solely for the instruction and uplifting of the profession and people of Kentucky. It was known that I had never taken an application for membership in that Association, or a subscription for THE JOURNAL, and never intended to do so. It was expected, on the other hand, that the membership in the county and state societies would be largely increased, and it was felt that no labor or expense should be spared to make the meetings successful. Now for the outcome.

THE MEETINGS.

Of the forty-four meetings arranged for, all but two were well attended, and the profession in these two counties broke down after the appointments were made. Physicians came with their families and patrons, often from far-off country districts and adjoining counties, and some of them attended two or more meetings. Lawyers, teachers, ministers, editors, farmers, bankers, merchants, city and county officials, with their wives and daughters, made up the audiences, and took an active and intelligent part in the discussion which always followed my talk. It was interesting to learn from the discussions, as well as privately, that no laymen of the thoughtful classes, those whose attendance was especially important, was ever present except on personal invitation from his physician, or a written one from the county society. Many said

they had read the newspaper notices, and that these had done good in reminding them of the hour, but all of them said they would have looked on it as a medical meeting, a dry, technical lecture, and a good thing to keep away from, but for the personal explanations of, and cards from, their medical friends. The circuit courts were in session at seven of the appointments and it was feared at first that, on this account, lawyers and court officials would be kept away. In each instance, after consulting the bar, the judge adjourned his court when the hour arrived, after announcing the meeting, and urging its importance. Always the judge either presided at the meeting or took an active part in the discussion. A most gracious and gratifying instance of this kind occurred at Richmond, where the appointment was for the afternoon. A great will case was being tried and attorneys were present from distant parts of our own and other states. Before noon Judge Benton, a great jurist, announced my meeting in his court-room at 2 o'clock, and that court would adjourn at that hour, and urged that all be present to hear matters discussed of the most practical importance to every citizen and family. The result was one of the largest and most appreciative audiences I have ever addressed. Nor was this all. I was to speak in Judge Benton's home city in the evening. He took the train over with me, gave his time to getting his legal and other friends out to the meeting, and took an active part in the discussion there.

THE FOUNDATION FOR THIS WORK.

The professional and public sentiment which made possible the conditions indicated in the foregoing account had resulted from the systematic, patient, persistent efforts of a few devoted men in every county for years, often in the face of difficulties and discouragements which seemed insurmountable. Eighteen years ago the medical law was so defective as to be only an annoyance and expense to reputable men, with practically no restrictions for the vicious classes, as is now the case in most states, and Kentucky was a paradise for quacks. The cities were full of fake medical institutes of every kind, wonder-working cure-alls were announced under alluring headlines and pictures to make monthly visits to most county seats, "for one day only," and nostrum vendors, with music and clog dancers, ridiculed and maligned the profession and fleeced the people; and these were looked on as things only to be endured, as they still are in many states. Under the leadership of a few men in each county, as has been said, the profession

was gradually awakened to a realization of its moral and political power, and it was decided that these conditions were intolerable. The physicians got in touch with the leaders of the dominant party in each county, especially with the lawyers and editors, and explained that their work was unselfish; that they only sought to protect the people from ignorant and dishonest pretenders, and to protect the profession from the odium brought on it by these classes. They worked with, and not in antagonism to, these leaders, in the primaries, so that members of the profession of both political parties could act as a unit, and always quietly, not only as becoming to a body of scientific men, but also because the most effective work could be done in this way. Thus in a few years it came about that the 4,100 medical men of Kentucky had more political power than any 25,000 other people in the state, largely because those of every school or system were so united, because it had been proved that they had no selfish ends or ambitions to serve, and quite as much so, probably, because they tactfully worked with and not against the political leaders, used no brass bands or other ostentatious methods beforehand, and indulged in no idle boasts or threats afterward. Doctors, especially country doctors, if they can be aroused to the fact of its possession, and of the importance of its proper exercise, have more moral and political power in the community, and better opportunities

Appointments	Date	Hour of Speaking	Arrive	Route	Leave	Distance
Bowling Green ..	April 30	7:30 P. M.	.....	.....	.....	.....
Glasgow .....	May 1	10:00 A. M.	7:40 A. M.	L. & N.	3:20 P. M.	25
Franklin .....	2	10:00 A. M.	7:01 A. M.	L. & N.	2:25 P. M.	50
Russellville .....	3	2:00 P. M.	7:35 A. M.	L. & N.	7:10 P. M.	45
Elkton .....	4	2:00 P. M.	8:50 A. M.	L. & N.	5:15 P. M.	32
Guthrie .....	4	7:30 P. M.	5:55 P. M.	L. & N.	9:43 P. M.	11
Owensboro .....	5	2:00 P. M.	9:00 A. M.	L. H. & St. L.	8:40 P. M.	40
Morganfield .....	7	2:00 P. M.	9:45 A. M.	I. C.	5:14 P. M.	23
Henderson .....	7	7:30 P. M.	6:05 P. M.	I. C.	8:30 A. M.	88
Princeton .....	8	2:00 P. M.	12:15 P. M.	I. C.	4:55 P. M.	47
Paducah .....	8	7:30 P. M.	6:10 P. M.	I. C.	7:45 A. M.	41
Murray .....	9	10:00 A. M.	8:59 A. M.	N. C. & St. L.	11:58 A. M.	19
Benton .....	9	2:00 P. M.	12:30 P. M.	N. C. & St. L.	7:32 P. M.	80
Madisonville .....	10	1:00 P. M.	11:35 A. M.	L. & N.	3:55 P. M.	80
Hopkinsville .....	10	7:30 P. M.	5:18 P. M.	L. & N.	6:10 A. M.	36
Elizabethtown .....	11	2:00 P. M.	11:35 A. M.	L. & N.	7:00 P. M.	144
Hodgenville .....	12	10:00 A. M.	7:30 P. M.	I. C.	7:00 P. M.	11
Bardstown .....	14	2:00 P. M.	11:00 A. M.	L. & N.	6:08 P. M.	56
Springfield .....	15	10:00 A. M.	7:05 P. M.	L. & N.	12:00 M.	20
Lebanon .....	15	2:00 P. M.	1:00 P. M.	Drive.	10:14 P. M.	10
Stanford .....	16	10:00 A. M.	3:50 A. M.	L. & N.	4:15 P. M.	122
Lancaster .....	16	7:30 P. M.	5:13 P. M.	L. & N.	9:15 A. M.	62
Richmond .....	17	2:00 P. M.	2:00 P. M.	L. & N.	4:10 A. M.	110
Winchester .....	17	7:30 P. M.	5:00 P. M.	L. & N.	7:10 A. M.	16
Mt. Sterling .....	18	2:00 P. M.	9:43 A. M.	L. & N.	4:10 P. M.	75
Lexington .....	18	7:30 P. M.	5:10 P. M.	C. & O.	7:05 A. M.	34
Cynthiana .....	19	10:00 A. M.	8:24 A. M.	L. & N.	5:02 P. M.	14
Paris .....	19	7:30 P. M.	1:45 P. M.	L. & N.	5:45 P. M.	—
Georgetown .....	21	2:00 P. M.	9:00 A. M.	Interurban.	4:00 P. M.	31
Versailles .....	21	7:30 P. M.	5:00 P. M.	.....	9:25 A. M.	24
Somerset .....	22	1:00 P. M.	12:50 P. M.	Q. & C.	3:08 P. M.	109
Danville .....	22	7:30 P. M.	4:20 P. M.	Q. & C.	5:30 A. M.	44
Harrodsburg .....	23	2:00 P. M.	5:50 A. M.	Southern Ry.	5:55 P. M.	18
Lawrenceburg .....	23	7:30 P. M.	5:55 P. M.	Southern Ry.	6:35 A. M.	25
Shelbyville .....	24	2:00 P. M.	8:45 A. M.	Southern Ry.	4:15 P. M.	15
Taylorsville .....	24	7:30 P. M.	7:15 A. M.	Southern Ry.	6:10 P. M.	30
Owenton .....	25	1:00 P. M.	6:59 P. M.	L. & N.	6:05 A. M.	17
New Castle .....	26	1:00 P. M.	10:00 A. M.	L. & N.	4:00 P. M.	72



for bringing it to bear, than all the other learned professions combined, and legislators, judges and other officials, ignorant or dishonest enough, usually the former, to pander to quackery, or to oppose the enactment or enforcement of beneficent measures for the protection to the best interests of the people, soon found themselves retired to private life, where they could think it all over, by an influence with the voters only the more powerful because it was intangible. Still more important, honest, capable officials found that they were supported by the same quiet, confident power, and that an intelligent, fearless discharge of duty made a re-election or promotion easier and less expensive.

Soon the outcome of all this was a new medical law which required every physician in the state to re-register, and which left all the quacks outside of the breastworks; a carefully selected and fearless medical referee in each county, supervised the work and endorsed only reputable applicants, each of whom, as a part of his application, made oath that he had never been an itinerant or advertising doctor, and would never become such, if a certificate were granted him. It was not a stronger or better law than most other states have, but it could be better enforced because it was supported by public sentiment, especially by the legal profession and press, and still more by a medical profession which knew by long training exactly what it was after and how to get it. The quack concerns, the Copelands, K. & K.'s, and others great and small, made a long and desperate legal fight to hold their ground. The board and its individual members were plastered over with fake damage suits, but no inch was ever yielded, no time, concession or exception was even considered, and as soon as the laws could be construed by the courts of last resort, these quacks were driven from our border, and for fifteen years no itinerant or advertising doctor has been permitted to practice longer than was necessary to secure evidence for his indictment and conviction. Of course, this law and the oath referred to do not apply to ethical professional cards.

#### POLITICAL AND ETHICAL WORK.

This was a semi-political work, and long antedated the reorganization of the profession on the Association plan. This movement was most timely for Kentucky especially, as it gave system, permanency and a solid foundation in the county societies, to a reform which it would have been difficult to maintain otherwise. The State Board of Health, which is also the State Board of Medical Examiners, has always considered itself in effect only the executive committee of the medical societies represented in its membership; it has been strictly a non-partisan organization and, at the same time, paradoxical as it may seem, it is in the closest possible touch with both political parties. In order to make this desirable status a certainty for all time, the law was so amended as to provide, when a vacancy occurs, that the society to which the place belongs should send in three names to the governor, from which list the nomination shall be made. As the three medical members who, with the county judge, and usually the county attorney, compose the county boards of health, and the medical referees, are appointed by the state board, as professional appointments of all kinds are restricted to members of their society, and as most of the influential representatives of all the schools are members of their societies, the practical result has been not only a solid but an active profession back of both the medical and health laws, and of all legislation agreed on. At present the work of the State Board of Health, the State Board of Medical Examiners, the State Medical Association, the *State Journal*, and the surgeon-general are all conducted in the same office. This is a great convenience; it co-ordinates the efforts and makes them more effective, but is being done at a personal sacrifice which may make its continuance impossible for a great length of time. Even before this arrangement was made the policies and work of these bodies were always considered inseparable, and will be so continued under any circumstances.

The osteopathic question gave our profession much serious concern. Under the construction of the courts, the law made no provision for dealing with the matter and the osteopaths had obtained a strong and noisy following in the state before

any plan of action could be laid out. The solution reached was not ideal, but it has given entire satisfaction to all concerned. They have a representative on the board, an educated, capable man who insists that the adherents of his system shall come to the highest standards and be held to the most rigid observance of the law. They take the same examination that all other applicants do, an absolutely secret and impartial one, and each of them takes an oath not to attempt to perform operations with the knife, or to administer drugs internally, and the same oath that all others do, not to advertise. Gaining wisdom from our experience in this matter, and knowing of the neuropaths, vitopaths, naturo-practics and similar cults and sects, our law now contains ample provisions for the examination of the adherents of any other system of healing now in existence or which may hereafter be discovered.

As in other states, the question of regulating and raising the standard of medical education, and especially of the entrance requirements of students, has had the serious consideration of the board, the schools and the state association for several years. Recognizing that the responsibility for the old system lay at the door of the entire profession, rather than the schools, as many superficial observers have been led to believe, that many of our best friends, in the best of faith, had invested almost their all of both money and reputation in these institutions, and that the reforms needed must come by evolution and consolidation, and not radically, every possible interest has united. In this work, honest differences of opinion have arisen, as was natural between men of strong character and convictions, who had important interests to guard. The schools often thought that the board was going too fast, and the board was equally sure that the schools were not moving fast enough. It was always found that these differences could be easily adjusted by means of frequent, frank conferences, and that misunderstandings sprang up only when these were omitted. For two years a certificate from the state examiner, elected by the board, has been required for students entering any college in or outside of the state, as a condition of recognition for such college, a rigid but fair examination is required for those without diplomas from recognized high schools or colleges, the economic course recommended by the Council on Medical Education has been made equally obligatory on all schools in or outside of the state, and it is believed that the grade of the examination for license has been equal to that of any other state. Partly as a result of this conservative, helpful policy, probably, four of the schools have recently united into two, giving us three instead of five, and in every way the outlook is encouraging. The same course has been pursued in dealing with the other schools or systems of practice. The representatives of these schools have always been most efficient and cordial co-workers on the board for the highest standards and for every true interest of the entire profession, and, although there has been the most perfect frankness about everything, no sectarian question has ever arisen for discussion.

#### WORK DIFFICULT AND INCOMPLETE.

If any one should get the impression from what has been said that it has been easy to do any or all of these things, and, with this idea, try to do it in his own state, he would make a great and most unfortunate mistake. If he should get the impression that present conditions in Kentucky are satisfactory and the organization is completed, or half, or a quarter done, he would be still farther from the mark. Each advance, each step forward, has required the united, patient, thoughtful labors of the leaders of the profession in every county, and none know so well as do these devoted men that the work is in its infancy, that we are just getting in a position to meet the responsibilities and reap the benefits of real organization for both the profession and people in a few localities. Postgraduate schools, modest, but practical and effective, have been started in fourteen counties, and others are in contemplation, and joint meetings with the other vocations are being inaugurated. In other counties, with the highest class of men composing the profession, except as to legislation and such matters as the insurance question, which was practically settled in a fortnight, the leaders even have not awakened



to the importance and possibilities of organization, or to what it might be made to mean to them individually. On investigation it nearly always develops that the causes for this are personal, usually between the local men, sometimes because others have attended and gained a prominence in the state work while they remained at home. Exceptionally a few of the leaders, enough to mar the work in their own county, usually the very best of fellows personally and professionally, with only personal and local interests to consider or serve, failing to grasp the broader and more difficult problems confronting those charged with official responsibility for the time being, or not appreciating what has already been accomplished for them, their profession and the state by the very men and policies they condemn, on some suggestion of theirs being refused, with or without good reason, take offense where none was intended, nurse their grievance until it becomes real, and blindly do incalculable mischief, fortunately confined to their own locality and friends, with the same good intentions and cheerfulness as if they were going forward instead of backward.

The only way to meet such difficulties, and all others which confront the profession, most of them from lack of training of students in regard to all these practical matters during the college course, is by practical, persistent, tactful work, never failing good temper, and even-handed justice to every interest on the part of those charged with the responsibility of doing it, and the constant demand that medical schools shall give a practical course in business, ethics and organization, essentials in the every-day life work of the physicians, to future students, or else close their doors. Leading in all this in Kentucky is a devoted, self-sacrificing board of councilors and state society officers excelled by no other state, and back of them, because of what has already been accomplished, is a profession probably more united and enthusiastic on the whole than can be found in any other state. With the headway already gained, under such a leadership, and with such a following everything desirable seems possible unless a slip is made somewhere. Of all things most importance is attached to the fact that the state association, the county societies, the state and county boards of health and every other professional interest, are so dove-tailed and interwoven that all work constantly together for the common good.

#### A County Society's Work in a Rural District.

Dr. Julius Noer, Secretary of Dane County (Wis.) Medical Society, writes:

"The Dane County Medical Society meets on the second Tuesday of each month in the Carnegie Library at Madison. The membership now includes practically every licensed physician in the county. Not more than two papers can be read at any one meeting. Papers are limited to 20 minutes. This gives ample time for discussion. A commendable fraternal spirit prevails, and the usefulness of the society, both practically and scientifically, is unquestioned. Among the practical things accomplished are: The adoption of a fee bill of minimum charges for the entire county; the adoption of resolutions condemning contract or lodge practice; resolutions prohibiting the demanding or accepting of commissions for referring patients to surgeons or specialists. Insurance examination fees have been fixed at \$5.00. The work of our county society shows very clearly that the county organization can be made a very useful body, not only scientifically and clinically, but also as a social center and as an organization for dealing with questions of a purely business nature."

Dane County is a rural community without large cities, but this does not seem to interfere with the work of the society.

#### To Censor Newspaper Reports.

Resolutions, introduced by Dr. Henry W. Dewey, were adopted at the meeting of the Pierce County (Wash.) Medical Society, held February 19, regarding the publication in the lay press of the description of operations, new treatments, reports of papers read at society meetings, medical interviews, etc., except such facts as will benefit the public, and then not in connection with the names of physicians. The secretary was instructed to preserve, in a scrap-book, the articles or items appearing in the newspapers of Tacoma relating to physicians of the city, and to give out to newspapers only censored reports of meetings.

County societies in Montana are working for the adoption of two bills which have been introduced into the state legislature. The first provides for the establishment of a system of registration of births and deaths, while the second is an amendment to the present law creating the State Board of Health. The registration law is similar to the law on this subject now in force in Pennsylvania.

## Society Proceedings

### COMING MEETINGS.

Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.  
American Association of Anatomists, Madison, Wis., March 27-29.  
Med. Assn. of District of Columbia, Washington, April 2.  
Tennessee State Medical Assn., Nashville, April 9.  
Mississippi State Medical Association, Gulfport, April 10.  
South Carolina Medical Association, Bennettsville, April 10.  
Medical Assn. of State of Alabama, Mobile, April 16.  
Florida Medical Association, Tampa, April 17.  
Medical Association of Georgia, Savannah, April 17.

### CHICAGO MEDICAL SOCIETY.

*Regular Meeting, held Feb. 20, 1907.*

DR. C. P. CALDWELL in the Chair.

#### SYMPOSIUM ON INFLUENZA.

##### Cardiac, Pulmonary and Gastrointestinal Complications.

DR. JOSEPH L. MILLER said that influenza, probably of all infectious diseases, is one most frequently associated with some cardiac complication. In the epidemic of 1889 and 1890 a large number of cases of cardiac trouble developed in elderly people who were subject to attacks of influenza. The cardiac troubles which frequently arose were those which involved the myocardium. Besides a bradycardia, he mentioned dilatation of the heart, palpitation, and attacks of angina pectoris. The attacks of angina pectoris which not infrequently follow or occur during attacks of influenza are probably due to changes in the coronary vessels and are analogous to those found in diphtheria and scarlet fever.

In young people the prognosis in the cardiac complications of influenza is usually good, as in myocarditis following diphtheria or other acute infections. Recovery is the rule. In elderly people, however, where the heart muscle is undergoing changes as the result of age, or in people who had a previous valvular lesion, an attack of influenza often leads to permanent trouble, and many date their cardiac incompetency from the time of the attack of influenza.

The cough of influenza often occurs in intense paroxysms, almost like whooping-cough, and may persist many weeks even after marked pulmonary signs have disappeared. In the bronchitis of influenza there is a tendency to involvement of the lobes instead of the lungs. Often there is an absence of the diffuse involvement which is found in ordinary bronchitis. The sputum from patients with influenzal bronchitis is fairly typical; it is large in amount, and made up largely of globules of pus about the size of a pinhead.

The croupous pneumonia of influenza is rarely ushered in with a chill; it is more local; it may begin in two or three lobes at the same time, which is unusual in ordinary croupous pneumonia. It does not tend to involve a whole lobe at once, but there occur several foci in the lobe about which infiltration occurs. These foci become larger until they coalesce, and then an entire lobe is consolidated. The sputum is purulent. Over the involved lobe there is much less marked dulness; there is less marked bronchial breathing; less marked bronchophony than in ordinary croupous pneumonia. Consolidation is not as complete. There is much more cyanosis and dyspnea than in ordinary croupous pneumonia, due largely to the associated bronchitis. It is unusual for an influenzal pneumonia to end by crisis. In the majority of cases it ends by lysis extending over two or three weeks from the beginning of the trouble. It is not infrequent to have temperature disappear by lysis, and still there may be marked evidences of infiltration remaining. These cases clear up less rapidly than those of ordinary croupous pneumonia.



Occasionally pleurisy develops (without any evidence of infiltration of the lung) apparently on a bronchitis, and may take on a very rapid and fatal form. The pleurisy may be bilateral, and the patient dies within a few days from rapid filling up of the thorax with sero-purulent fluid.

The presence of a moderate number of influenza bacilli does not establish the diagnosis of influenza. Other factors must be considered.

In speaking of the disturbances of the gastrointestinal tract reference was made to the relation of appendicitis to influenza. The reasons for belief in this relation are, first, the marked increase in the number of cases of appendicitis recognized at the time the epidemic of influenza first appeared. Second, the frequency with which appendicitis occurs in people who suffer from influenza. As to statistics bearing on this subject, Dr. Miller finds in the St. Petersburg General Hospital, taking the month of November during the year 1889, when influenza was epidemic, that there were 917 cases of influenza and 10 cases of appendicitis. In 1890 there were 98 cases of influenza and 12 cases of appendicitis; in 1893 there were 189 cases of influenza and 26 cases of appendicitis; in 1901 there were 323 cases of influenza and 33 cases of appendicitis. In other words, while the number of cases of influenza has been much less than in 1889, the number of cases of appendicitis has been multiplied more than threefold. The statistics of other hospitals were quoted to show the increase in the number of cases of appendicitis following influenza.

Prophylaxis at the present time has been practically unavailing, and treatment must be symptomatic rather than specific.

#### Complications of the Nervous System, with Treatment.

DR. WILLIAM G. STEARNS said it is certain that more organic and functional disturbances of the nervous system are produced by influenza than by any other acute infectious disease. The reason for this is found in Pfeiffer's bacillus and its mode of invasion, together with the unexplained selective action which the bacillus and its toxin have for nerve tissue. Because of the general debilitating effect on the entire organism, together with its selective and enfeebling action on the nervous system, the functional nervous and mental disorders are most numerous.

Of the prodromal period, the symptoms referable to the nervous system are, first and most constant, pain occurring as headache, backache and myalgia. In extreme cases the pain is excruciating and is occasionally accompanied by such great mental depression as to become overwhelming. The patient lies still, is stupid and unresponsive. This condition may pass into one of coma. The excessive pain may produce the opposite reaction, the patient becoming restless, constantly agitated, making many wild demonstrative and often purposeless movements, and is usually more or less delirious, but rarely becomes maniacal. These symptoms of profound mental and nervous toxemia greatly improve and finally disappear as the temperature rises.

The nervous complications during the course of the disease are either inflammatory or degenerative, or both, that is, due either to the direct invasion of the bacillus or its toxin, or both.

Encephalitis is of two types, the simple inflammatory or hemorrhagic, and the purulent. Simple encephalitis is a rare complication, and due to the direct influence of the bacteria which are more or less disseminated throughout the encephalon, and to the effect of the toxins. The purulent form may be either primary or secondary by extension. A common complication is the result of an invasion of the cerebrospinal membranes occurring usually at the height of the disease. As to pseudomeningitis, symptoms typical of meningitis warrant that diagnosis. A few days later these symptoms disappear, and only those of influenza remain. Myelitis, always acute, may present the symptom group of Landry's paralysis, a compression transverse myelitis, or spastic spinal paralysis. In the last case influenza appears to have selected and injured only the pyramidal tracts.

The nervous complications of convalescence are, aside from the occasional development of abscesses, chiefly toxic, and

consist of loss of function or disordered function, or both. The symptoms are distributed in a haphazard manner, having no characteristic grouping. The degenerative changes are chiefly neuritis, and almost every nerve in the body has been affected. There is a tendency, however, to select the cranial nerve.

Of the functional neuroses, neurasthenia, hysteria and epilepsy are the most prominent. Of the psychoses, those of the toxic group are most prominent, and appear in the prodromal stage, disappearing with the rise in temperature or during the febrile stage. During convalescence the exhaustion psychoses occasionally develop.

As to treatment, inasmuch as the primary effect of the influenza toxin on the nervous system is always irritative, opium and bromids are found to be of the greatest use. Calomel and soda, if given with opium, aid the diuretic and hepatic stimulation. Where the wet pack is properly used, its effect is most beneficial.

#### Treatment of Acute Mastoiditis Due to Influenza.

DR. WILLIAM LINCOLN BALLENGER presented the following conclusions: 1. The reaction of inflammation consists of an increased hyperemia, increased cell nutrition (increased resistance), and an increased migration of leucocytes. 2. The reaction of inflammation is an increased physiologic activity for the purpose of eliminating certain noxious irritants, notably bacteria and their toxins from the tissues. 3. In acute inflammations the reaction of inflammation is usually inadequate to accomplish the destruction of the bacteria and their toxins within a short time. 4. The reaction being inadequate, it should be promoted, and experience has shown such promotion to be effective. 5. In acute otitis medial incision of the ear drum promotes the reaction of inflammation in the quickest and surest way, and thus often prevents destructive processes of this important organ. Incision also provides for adequate drainage, and thus favors the elimination of the bacteria and raises the resistance of the tissues. 6. In acute mastoiditis, leeching, in addition to incision of the ear drum if spontaneous perforation has not already occurred, is the best available means of promoting the reaction of inflammation. Heat followed by a dash of cold water is another effective means of promoting the reaction of inflammation.

He also presented the following mastoid axioms: 1. Tenderness over the mastoid antrum means mastoiditis; that is, apply leeches or heat at once. 2. The way to treat acute inflammation is to increase it; that is, augment Nature's effort to destroy the bacteria and toxins. 3. Leeches to-day may rob the grave. 4. Leeches to-morrow may feed the grave. 5. Do not attempt to kill the germs or you may kill the patient. Promote Nature's processes, and they will do the rest.

#### Complications Resulting from Infection of Nasal Accessory Sinuses.

DR. H. MANNING FISH emphasized the fact that an accessory sinus disease can give rise to stasis in a more or less remote region. He has found in the literature some eighteen fatal cases of influenza due to an empyema, with cerebral involvement. In a few of the cases the presence of an accessory sinus disease was diagnosed before death; in the majority of them it was not suspected during life, but only determined at autopsy. In eight cases the cerebral abscess was found to be in the anterior encephalon, on the side corresponding to the accessory sinus disease, showing this location of a brain abscess to be pathognomonic of sinusitis.

Most of the acute cases can be relieved by simple intranasal treatment, even the purulent cases with fever, intense pain, etc. In probing the fronto-nasal canal or the openings of some of the other cavities, one should use no force, as trauma causes an increased swelling of the parts and hemorrhage, with the formation of clots, which may still further close up the openings and aggravate the symptoms. When sinus disease is suspected, the different cavities should be examined, as the finding of an empyema on opening one cavity has led to the neglect of another, which later on caused a fatal termination.

The cerebral and ocular symptoms which either accompany or follow influenza should suggest a sinus disease. Certain symptoms, as vertigo, cephalalgia, optic neuritis and other ocu-



lar lesions that are often attributed to limited meningitis or to brain tumor, may be due to a sinus disease. A recurrent inflammatory condition in the eye that is aggravated by a cold, or is worse in the winter months, suggests a chronic sinusitis. In all cases with cerebral symptoms the accessory sinuses should be examined as well as the ear. Sinus disease should not be excluded on account of a negative nasal finding, or by the absence of pain, either spontaneous or on pressure.

#### DISCUSSION.

DR. THEODORE TIEKEN said that patients with tuberculosis do not bear influenzal infections well. The fatalities among tubercular patients are greatly increased by the presence of influenza bacilli. Hubermann has never been able to find the bacillus of influenza in the circulating blood, although he has made over 400 examinations. In influenza the pharyngeal margins are deeply injected, and the upper portion of the uvula is very anemic. He has never seen pharyngeal paralysis as a complication of influenza, but he has noticed irritable bladder in many cases. Microscopic examination disclosed a catarrhal cystitis. He mentioned a young girl suffering from influenza who urinates every ten or fifteen minutes.

DR. ADOLPH GEHRMANN called attention to the wide distribution of the bacillus influenza. It is relatively easy to find it on mucous surfaces and in pus that has recently formed. Apparently this bacillus dies when the pus remains for any length of time, and we have probably the effect of the influenza bacillus through its toxin from disintegration. He has found it on every mucous membrane in the body.

DR. ALMERIN W. BAER deprecated the frequent use of coal-tar preparations in influenza, because nothing is more debilitating. Physicians should recommend the discontinuance of the coal-tar preparations because of their injurious effects.

### MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*One Hundred and First Annual Meeting, held in Albany, Jan. 28-30, 1907.*

*(Concluded from page 823.)*

#### Technic of Ablation of the Breast.

DR. PARKER SYMS, New York, stated that modern methods of removing cancer of the breast are far in advance of the older ones, and that although much more extensive and radical they are done in a way that causes less shock and risk to the patient. Permanent cures are far more frequent than under the old régime and the death rate from operations is very low. Doctor Syms prefers the method of Dr. Willy Meyer to all others, as it is anatomic, never atypical, and if done properly it is bloodless. The blood vessels are all cut out at their trunks and not at their small branches. A half dozen to a dozen artery clamps suffice. It takes from one hour to an hour and a quarter to complete the operation. The lymphatics and veins are removed from above downward and not in the direction of their current, and the carcinoma is not cut into. There should be no shock and the patient may be out of bed in forty-eight hours. This operation does not impair motion and the functions of the arm and the blood circulation of the arm are seldom impaired.

#### Surgical Treatment of Goiter.

DR. MARTIN B. TINKER, Ithaca, said that the slow development of alarming symptoms of goiter as well as its infrequency in this country has made all concerned ready to temporize with this affection. The operation may be done under local anesthesia. A visible scar can be avoided by transverse incision. Placing the incision between the branches of distribution of the superficial cervical and supraclavicular nerves makes local anesthesia simple. To avoid injuring the nerve supply, it is well to divide the sternothyroid and thyroid group of muscles high up. The personal experience of the author has been highly satisfactory as to results and he has had no deaths. Operation should be urged as soon as it becomes evident that palliative measures are not effective.

#### Clinical Observations in Intestinal Obstruction.

DR. JOSEPH C. BLOODGOOD, Baltimore, said that intestinal ob-

struction was by no means a common disease, there being only 106 cases on record in Dr. Halsted's clinic, and in a large clinic in Germany only 70 cases were recorded in 20 years. The general practitioner usually sees these cases first, and he should be impressed with the necessity of operating within 48 hours. The mortality of operations done 48 hours after the onset is about 70 per cent., while the mortality for operations done within 24 hours is 30 per cent. It is sometimes difficult to recognize the beginning of intestinal obstruction within so short a time. Any patient who has pain enough to require the use of morphin, if the pain is not in the region of the kidney or bladder and not followed in a few hours by watery stools, might be presenting a beginning obstruction. He divided these cases into two groups: Strangulation in which the lumen is not only obstructed but the circulation interfered with, and obduration, in which the lumen is blocked but there is no interference with the circulation. In the first the symptoms are more acute and immediate operation is demanded. Whenever the patient suffers acutely from abdominal pain, initial vomiting and shock, he advised against the use of morphin, recommending enemata and washing out of the stomach.

#### Etiology of Mechanical (Surgical) Constipation.

DR. SAMUEL G. GANT, New York, said that in considering the etiologic factors of constipation the mechanical causes are often overlooked and the trouble attributed to the better known causes. In this class of cases no matter how much time is spent in trying to educate the patient and improve his general condition, it is impossible to secure the desired result until the obstruction is removed. To accomplish this it is usually necessary to resort to some operative measure. The following are the most frequent mechanical causes of constipation: Congenital deformities, which occur oftener in the rectum and at the anus than elsewhere in the gut; extra-intestinal pressure, from tumors, cysts, inflammatory disease, etc., outside the bowel and which cause constipation by compression; strictures; malignant and non-malignant neoplasms; foreign bodies, either swallowed or formed within the gut; fecal impaction. The author has treated 45 such cases. The masses removed varied in weight from four ounces to 12 pounds.

#### New Operation for the Radical Cure of Femoral Hernia.

DR. A. V. MOSCHCOWITZ, New York, makes an incision in the inguinal region, and converts the femoral into a direct inguinal hernia. The sac is then ligated or sutured in the usual manner, and so high up as to obviate the formation of a peritoneal dimple. The internal femoral ring is closed by suturing Poupart's ligament to Cooper's ligament and to the periosteum of the pubic bone. The subsequent steps are those of the Bassini operation for inguinal hernia. The advantages of this operation are that it can be performed with ease and facility and it is particularly adapted to cases of strangulation. Since May, 1905, the author has operated on 20 cases, all of which have been kept under continuous observation, and thus far there has not been a recurrence.

#### Other Papers Read.

The following papers were also read: "Etiology of Cancer in the Light of Recent Laboratory Advances," by Dr. H. R. Gaylord, Buffalo; "Experimental Research in Connection with the Transplantation of Carcinoma in Mice," by Dr. G. H. A. Clowes, Buffalo (See THE JOURNAL, Jan. 5, 1907, p 15); "Chloroma with Special Reference to the Ocular Symptoms," by Drs. S. C. Merrill and A. J. Bedell, Albany; "The New York State Medical Library," by Dr. A. Vander Veer, Albany; "State Aid for Medical Libraries," by Dr. S. Baker, Utica; "Sahli's Desmoid Reaction," by Dr. H. C. Carey, Troy; "Abortive Treatment of Pneumonia," by G. L. Curtis, New York; "The Visions of Mary Czajka," by Dr. F. E. Fronczac, Buffalo; "Clinical Features and Operative Treatment of Thyroid Affections," by Dr. G. E. Beilby, Albany; "Importance of Routine Examination of Urine for Indican," by Dr. J. D. Olin, Watertown; "Casuistry of Foreign Bodies in the Uterus," by Dr. B. S. Talmey, New York; and "Treatment of Ventral Hernia," by Dr. T. B. Spence, Brooklyn.



Therapeutics

Scarlet Fever.

(Concluded from page 830.)

COMPLICATIONS.

*Scarlatinal Nephritis.*—The treatment of this complication must be first directed toward its prevention, chiefly by the persistent use of large drafts of water, liquid diet (milk to be preferred), carefully administered hydrotherapy, and protection against cold during the whole course of the disease. Heubner of Berlin, in "Modern Clinical Medicine," advises desisting from active treatment so long as the amount of urine does not fall below 500 or 600 c.c.. Milk diet is to be continued, varying with buttermilk. The food requirements of the body are to be completely supplied. Besides milk, lukewarm drinks may be given (lemonade, tea) or some alkaline mineral water, but if at all possible there should be no other food substance so long as a sufficient quantity of milk can be taken. In those cases in which milk can not be administered, which are not frequent, the food should consist mainly of vegetables, wheat bread with butter, dried or fresh vegetables, fruit soups, cereals, fruits. Many of these substances may be prepared with milk and will be taken by those who reject pure milk. Small quantities of milk may be taken frequently instead of large quantities at one time.

As soon as the secretion of urine falls below 400 c.c., active measures are necessary. Heubner believes that during the acute stage every measure should be taken to prevent irritation of the kidney. He avoids even mild drug diuretics and depends on foods and drinks. The skin should be kept active by means of sweating. The best method consists in placing the patient in a warm bath, 95 F., gradually increasing the temperature to 100.5 F., for from 10 to 15 minutes, and following this by dry or moist packs. In cases in which fever is present the sheets may be dipped in cool water so that heat may be withdrawn at the same time and the bath made cooler. The patient is allowed to remain one-half hour in the pack after profuse perspiration has appeared in the face. Then the covers are gradually removed, the skin is dried with warm cloths, and the patient is placed in the bed, which has been previously warmed. This process is only to be carried out once or twice daily. If sweating is not produced even after a hot drink then small doses of pilocarpin internally appear to be but slightly if at all dangerous. The following may be given at the onset of the pack

R. Pilocarpinæ hydrochloratis.....gr. ¾ |04  
Aque dest. ....3xxv 100|

M. Sig.: Two teaspoonfuls may be given to a child from 6 to 10 years of age.

This author states that blood-letting is especially desirable in cases with symptoms of intoxication, headache, vomiting, etc. One or two leeches are applied to the renal region. The leech itself withdraws about 10 grams of blood, and if with two leeches, therefore, a similar quantity (from 15 to 20 grams) flows from each wound, this is of advantage. Soon afterward, in favorable cases, the secretion of urine rises again, and headache and nausea disappear. Occasionally venesection may be made and 100, 150, or, in older children, 200 grams of blood may be withdrawn. This may be followed by a subcutaneous injection of a normal salt solution, 100 to 150 grams.

Cotton recommends the use of the following drugs, especially in patients with weak pulse, combined as follows

R. Potassii acetatis  
Potassii citratis. āā.....gr. xvi 6|  
Infusi digitalis q. s. ad.....3i 90|

M. Sig.: A teaspoonful every four hours to a child from 5 to 10 years old. Follow each dose with half a tumblerful of water.

*Scarlatinal Rheumatism.*—Heubner states that the less severe cases may be treated by rest and keeping the affected joints warm. In the more severe cases he has had the best results by the use of the salicylates with no deleterious effects on the kidneys. Of the preparations of salicylic acid he has found the following to be the mildest and most pleasant:

R. Aspirin (acetyl-salicylic acid).....3i 4|

Divide in eight powders and direct one powder to be taken at 2, 4 and 6 o'clock in the afternoon.

*Scarlatinal Typhoid.*—This complication should be treated in the same manner as a mild attack of enteric fever. The drug which Heubner thinks especially efficacious for this complication is quinin.

Hyperacidity of the Stomach.

Bardet, in *Bull. Gen. de Therapeutique*, calls attention to the effects of increased hydrochloric acid secretion in the stomach, and to the rational treatment of this condition by alkalies to the point of saturation. The following powders are effective for this purpose; they are of two kinds, one to be taken at once after a meal, the other several hours later, as occasion may arise:

R. Sodii bicarbonatis  
Magnesii oxidi, āā.....3i 4|  
Calcii carbonatis præcipitati  
Sacchari lactis, āā.....3i 6|

M. Ft. chartæ No. x. Sig.: Take one powder immediately after each meal, with a little water. The dose may be increased or diminished, according to the case.

R. Magnesii oxidi .....gr. xxv 1|60  
Calcii carbonatis præcipitati  
Bismuthi subnitratis, āā.....gr. xii 80  
Sodii bicarbonatis.....gr. xv 1|  
Sacchari lactis .....3ss 2|  
Codeinæ .....gr. ss 03

M. Ft. charta No. i. Sig.: Take in a little water at the time of the attack of pain.

Fresh Air.

W. Gilman Thompson, in the *Medical Record*, discusses the fresh-air problem in hospitals. Air may be fresh and not necessarily cold, and becomes a very important part of the treatment in a large variety of diseases. Fresh air is not a specific for any one disease, but increases the resisting power of the individual. Thompson gives the following conclusions for the betterment of ventilation in this cold and changeable climate:

1. Ward heating and ward ventilation should be capable of independent adjustment at all times.

2. The night temperature of the ward should be at least 5° F. below the noon temperature, which latter should not be above 68 F. or 70 F.

3. The ward windows should be furnished with transoms and one or two movable separate panes, to admit of easy regulation and ventilation.

4. No window should be so heavy that it can not be handled readily by the nurse.

5. The ward should be in communication with balconies or porches, on which the patients' beds can be moved through windows of the casement type. Such balconies need not interfere with the adequate lighting and ventilating of the ward, as proved at Bellevue and other hospitals in which they have been used.

6. The building of very large wards should be discouraged and a greater number of small adjacent rooms should be provided to admit of the scientific adjustment of the ventilation and temperature to suit the requirements of different patients.

7. The windows of the ward, even on the coldest day, should be opened at least twice daily, in the early morning and late afternoon, for a few minutes, to change thoroughly all the air in the room. During this time any patient may be covered temporarily with extra bed-clothing if there be fear of exposure from draft. The same procedure should be carried out immediately after visiting hours.

8. Day rooms should be provided for convalescents where they can obtain change of air and scene, and leave more fresh air for the bedridden patients in the wards.

9. The ward should have at least one accessible heater, where patients sitting up temporarily may gather and warm their feet if they desire.

10. It is entirely unnecessary to have all the ward windows precisely alike, except from some fanciful esthetic standpoint. Thus certain windows of the casement type should spring from the floor and open on to balconies. Obviously heaters of the ordinary height can not stand in front of these windows.



Windows should be grouped with more reference to sunlight exposure, ordinary wind exposure, etc., than is usually done.

11. House staff and nurses should not only be taught ventilation theoretically, but made to put it into practice in the wards, and should be made to regard fresh air as of equal importance with fresh food.

Where these simple common-sense principles are in daily practice it is possible to use fresh air as a definite therapeutic measure and to secure most gratifying results. Finally, Thompson emphasizes the fact that air temperature and ventilation are not synonymous terms.

#### Reaction of Digitalis Infusion.

J. Löwy (*Wien. klin. Wochschr.*) after investigating the influence of acids on the activity of digitalis infusion, concludes as follows:

1. A digitalis infusion is in all cases weakened by hydrochloric acid of the concentration of the acid in the gastric juice. The presence of pepsin is without significance. The same action is exerted on a solution of hellebore of a concentration of 0.25 per cent., but a strophanthin solution is uninjured by a high percentage of hydrochloric acid.

2. Even allowing a digitalis infusion to stand at room temperature for twenty-four hours is sufficient to reduce its active strength to one-half.

3. This latter effect is due to the action of organic acid present in the infusion and can be prevented in most cases by neutralization.

It is desirable, therefore, to reject ready-made infusions of digitalis, and it would be preferable for the physician to secure a freshly made infusion.

## Medicolegal

### Practice of Medicine by "Doctor" Applying Nerve Food—Not Question for Experts—May Ask as to Ingredients—Charter No Defense.

The Supreme Court of Rhode Island says in the case of State vs. Heffernan that the words "practice of medicine," as used in Chapter 165 of the general laws of that state of 1896, must be construed to relate to the practice of medicine as ordinarily and popularly understood. If the acts shown by the evidence amounted to the practice of medicine, as meant by the statute, the defendant was not protected by his claim of ignorance of any or all of the learning which is necessary for the safe and successful treatment of disease, or by his disclaimer or assumption of any kind or number of titles. A person who testifies that he is not a medical doctor, and states that he never attended a medical school or took any course of studies in medicine, but claims to be a doctor of dermatology and physical education by virtue of an Institute of Dermatology and Physical Education, formed by himself and others under the law relating to incorporation, and who also adds the title "nerve specialist," by some authority not disclosed, is still amenable to the law and capable of practicing medicine in violation of the provisions of the statute.

One witness in the case, who went to the defendant with her nephew, William Buckley, said that the defendant examined him: "And I don't know what you would call it, something to test your lungs with, with a strap around him, and he said he was very badly with consumption, and I don't really remember whether he did anything to him that day or not, but he gave him some medicine to bring home, and he told me that it would cost me \$100 to get him cured, and he said he would cure him in three months, have him so that he would be able to work in three months' time, and he charged me \$4 for the first four bottles of medicine I got." She said William Buckley went to the office three times; that the defendant stripped him every time, and one time he put some stuff in his ear, and gave him some stuff to put in his mouth, and rubbed him around the chest and ears with this medicine; that he gave him medicine to take home to drink; that he did not go to the house, but said he would if it was necessary; that she went to the office five times; that she got 16 bottles of nerve food in all and paid the defendant \$16. That the defendant told her

the rule that when he made any special treatment in the office it was \$1 extra.

Another witness, Margaret Ryan, testified that she had a skin disease; that the defendant salved her body with this food; that after the treatment he said he could cure her and that he didn't see how he could afford to do it at less than \$5 for the massaging and the food; that she went to the office until she had received 25 treatments, for which she paid him \$5 a treatment, amounting in all to \$125. She then stopped going to his office. She said: "The last treatment I took at his office he had to use something in my ears. The next day I was in a critical condition. I was not able to go to his house so I was obliged to send for him to come to see me at my home. He came there and brought some medicine and treated me there, my head and shoulders, and I was not able to go to his office any more. He made three visits there."

A police officer testified that he went to the defendant's office and asked him if he was Dr. Heffernan, and he said he was; that he asked him if he had any nerve food and he said he had; that he showed him three different bottles and asked what was the matter with him; that he told him he had catarrh; that he then took him into a side room, had him strip off to the waist, examined him on the lungs and chest, took his chest expansion, showed him three bottles, Nos. 1, 2, and 3, and said if he would take No. 3 bottle and rub it on his forehead, back of his neck, and nose, it would kill the catarrh; that he asked the price and the defendant said it was \$1, and he paid him \$1.

The defendant testified, among other things, that he was a doctor of dermatology and physical education; denied that he had ever practiced medicine or held himself out as a medical doctor, and said that he had never applied to the board of health for a certificate. When asked if he had any authority for the practice of dermatology and physical education, he said: "I have a certificate from the state in the form of a charter." He then introduced a certificate of the Secretary of State that certain persons, of whom the defendant was one, "have filed in the office of the Secretary of State, according to law, their agreement to form a corporation under the name of Heffernan Institute of Dermatology and Physical Education, of the United States of America, for the purpose of promoting, teaching, and practicing the science of dermatology and physical education according to the principles developed and taught by Thomas J. Heffernan, the inventor of nerve food, aiding and caring for sick and infirm people, especially those afflicted with consumption and similar loathsome nervous diseases, encouraging temperance, and such other habits as tend to the physical health, long life, and happiness of mankind, in accordance with law, and have also filed the certificate of the general treasurer that they have paid into the general treasury of the state the fee required by law." He testified that he had been engaged in life insurance about eleven years, as agent in part, and president; that prior to that he had been in the market and grocery business; that he had no medical education, never attended any medical school, or took any course of studies in medicine; that he discovered the nerve food about five years ago; that it was composed of herbs and fruit entirely; that the nerve food also contained neuzoid, which was made from grasses imported from Japan and other places; that he discovered the use of neuzoid in connection with the other ingredients. The defendant further testified: "Q. You notice in your handwriting, '25 treatments at \$5, \$125.' You yourself have used the word 'treatments,' and it is written in there in your own handwriting; why did you use that word? Ans. That means the amount of food that was used on her. Q. You mean that the word 'treatment' was the proper word used when you meant so many ounces of nerve food? Ans. Yes. . . . Q. In connection with your profession you do use the title 'Doctor,' do you not? Ans. I do. . . . Q. What significance does that word 'Doctor' have? Ans. Nothing more than teacher. Q. You used the word in your direct examination as 'general practitioner,' general practitioner of what? Ans. Dermatology and physical education." As to the treatment of Mrs. Ryan, he testified that he sold her the "food" and rubbed it on her head and body, and on one occasion put some in her ear; that he used at one time 8 ounces, and other times 16 ounces at a treatment; that the "food" was worth 75 cents an ounce.



As to William Buekley, he testified: "I had him remove his clothing on the upper part of his body, including his shirt. I took some nerve food and applied it to his body, showed him how he might use it at his house. I gave him a lesson in breathing. He was unable to take any air into his lungs. His chest was entirely neutral. I explained to him how to breathe, and I assisted him to take some pus from his nose, got him so that, the second time he called to the office, he was able to expand his chest from nothing to three inches. He was a great deal improved in his health at the time he left off treatment."

The court is of the opinion that the acts of the defendant shown in the evidence amounted to the practice of medicine in violation of Chapter 165 of the general laws of 1896, as amended by Chapter 926, of the public laws of 1900-1901.

A physician was asked the cross-questions: Do you consider the selling of nerve food to constitute the practice of medicine? If a person should buy a bottle of this nerve food and employ some one to rub it on the body, would you consider that to be the practice of medicine? Objections to these questions were sustained, and the court holds the ruling correct. It says that the opinion of the witness as to what constituted the practice of medicine was clearly immaterial.

The cross-question was also asked the defendant: "What is the ingredient of this nerve food outside this one particular ingredient?" The defendant's counsel objected, on the grounds: (1) That, while the state had the right to prove the ingredients by its witnesses, if it could, it had not the right to find out from the defendant. (2) That the state had not the right to inquire into the composition of the nerve food, because it was the private property of the defendant. The trial court said: "The first ground is not tenable, in my opinion, because, if the defendant takes the stand, he is compelled to testify in regard to any proper question. It is his privilege not to take the stand if he sees fit to avail himself of it, but, if he does take the stand, he must answer in regard to any pertinent inquiry. The second point is that this is private property, and in my opinion that is a consideration which is secondary to the public consideration of the right to know what he has been giving. The mere fact that he claimed a secret process does not, in my opinion, relieve him from the duty of answering a proper question, in cross-examination, as to what he has administered, and I sustain the question of the Attorney General and note your objection thereto." The Supreme Court holds that the ruling of the trial court was correct.

The trial court was requested to charge as follows: "Defendant is authorized by charter to promote, teach, and practice dermatology and physical education, and to aid and care for sick and infirm people, especially those affected with consumption and similar nervous diseases. He can not be convicted of practicing medicine illegally if he did nothing beyond what he was given the right to do under said charter. A person who uses neither drugs, medicine nor surgery can not be said to engage in the practice of medicine." This request, the Supreme Court says, was properly refused. The charter gave the defendant personally no authority to do anything, and what the corporation was authorized to do was, by the very terms of the certificate, to be done "in accordance with law."

The defendant, in order to lawfully practice medicine in Rhode Island, the Supreme Court further says, would be obliged to obtain a certificate from the state board of health. That portion of the request reading, "A person who uses neither drugs, medicine nor surgery, can not be said to engage in the practice of medicine," was properly refused, as it was not applicable to the evidence in the case, and assumed that the nerve food was not medicine. It had been shown that the defendant used nerve food of varying strength, that he claimed that the nerve food was used to supply the capillary nerves of the entire body, and that it was very good for all ailments. The definition of medicine, in *State vs. Mylod*, 20 R. I. 643, would certainly include a remedial substance having the qualities claimed by the defendant for nerve food. If the defendant prescribed or administered something which he claimed was good for the alleviation of pain, or the cure of disease, it would not avail him to show, by way of defense, that what he so administered did not have the remedial qualities which he had claimed

for it. The statute was intended to protect the public from pretense and sham, as well as from ignorance.

#### Expert Evidence and Duty to Reduce Damages.

The Supreme Court of Washington says that in the personal injury case of *Rowe vs. Whateom County Railway & Light Co.* and others, the principal issue at the trial was whether the plaintiff had curvature of the spine as a result of other injuries received. Prior to the trial, the court appointed three physicians to make a physical examination of the plaintiff, at the request of the defendants, who afterward called them as witnesses.

Error was assigned to a ruling sustaining objections to the following questions propounded to one of the physicians appointed by the court, in the course of his cross-examination: "Q. You have been paid by the defendant street railway company for making this examination? Q. How much does the street railway company pay you for testifying in these cases, Doctor, over and above the regular lawful fees provided by law?" But the Supreme Court holds that no error was committed here. It says that while the witness was appointed by the court, he became a witness at the instance of the defendants, and they were obligated to pay, not only his fees as a witness, but reasonable compensation for making the physical examination of the plaintiff. The fact that the witness had been paid for his services at the time of the trial was immaterial and irrelevant. The second question propounded did not present the question which the plaintiff sought to raise in this court. The question assumed that the witness had testified for the defendant company in other cases, and inquired what he was paid for so doing. That question was irrelevant and immaterial in this trial, and whether it would have been competent to inquire what the witness was paid in the case on trial this court would not decide, as no such question was presented in the record before it.

The next error assigned was in a ruling sustaining objections to the following questions propounded to a medical witness called by the plaintiff in rebuttal: "Q. I will ask you to state to the jury whether or not that is a proper test to be applied to this plaintiff in this case, taking into consideration his physical condition and all the other questions that have been suggested concerning his confinement to the house, the fact that he has only been on his feet a portion of the time? Q. I will ask you to tell the jury whether or not the test just made, on laying the plaintiff on his abdomen on the table, in the manner in which it has just been done, was a fair test in this case on the question of curvature that is under consideration before this jury? Q. I will ask you to tell the jury in this case whether or not the laying of the plaintiff on the table on his abdomen and face, pushing the left shoulder down, pulling the right shoulder up, for the purpose of changing the position of the spine, if possible, by getting the shoulders as nearly square as it was possible to have them placed in that position, whether that is a fair test on the question of curvature as presented to the jury in this case?" The reason assigned by the trial court for its ruling sustaining objections to these questions was that the question whether the tests applied by the witnesses for the defendant were fair or proper was for the jury. In this the trial court, the Supreme Court holds, erred. It says that the witness was asked his opinion on a matter involving scientific and technical knowledge, not within the experience of the ordinary witness or jury, and should have been permitted to answer. Certainly the ordinary juror is not qualified to determine whether any given test will disclose the presence or absence of curvature of the spine without the aid of expert or opinion evidence. Nor was there any merit in the claim that the testimony was not proper in rebuttal. While the witness had already testified that the plaintiff had curvature of the spine, stating fully the reasons for his conclusion, yet he was asked nothing concerning the test afterward applied by the defendant's witnesses, and the plaintiff could not be and was not required to anticipate the tests that might be resorted to.

The jury was instructed: "In arriving at the amount of his damages, you are to say, not only what they are, but whether the means used by the plaintiff to reduce the damages were such as an ordinarily prudent man would use. You can



not say that he should or should not have obtained any particular kind of treatment. As to that, he must alone be the judge. But when he has determined what treatment to take, it will be for you to say if in making that determination he used the means that a reasonably prudent man would take to cure himself of his injury, or to reduce the extent thereof under the same circumstances. If you find that he did not, and you can say that some other treatment would have brought about a cure or reduced the amount of his damages, and that that treatment was one that a reasonably prudent man would have adopted, then you must say that he has not used the care which a reasonably prudent man would use to reduce the damages, and you must take that into consideration in arriving at your verdict, and you fix the standard as to what a reasonably prudent man would do under such circumstances." This instruction, the Supreme Court says, did not, as contended by counsel, hold the plaintiff responsible for the results of his physician's treatment. It simply exacted of him that degree of care which a reasonably prudent man would exercise under the same circumstances, and such this court believes to be the duty imposed by law.

#### Services of Nurse During Childbirth Necessary.

The Appellate Term of the Supreme Court of New York says that the case of *Schneider vs. Rosenbaum* was brought by the plaintiff to recover for services as a nurse to the defendant's wife during childbirth. The wife engaged the nurse at \$10 a week. During all this time an action for separation was pending between the defendant and his wife; the wife being the plaintiff. It also appeared that the defendant was paying his wife \$5 a week, and he contended that he was not liable for the services of a nurse because he and his wife were living apart. But the court holds that the services rendered were clearly necessities for which the husband might be held liable, notwithstanding their living apart.

#### Physical Examination and Privilege Waiving.

The First Appellate Division of the Supreme Court of New York says that in the case of *Geis vs. Geis*, the plaintiff sought a decree annulling his marriage with the defendant on the ground of her physical incapacity to enter into the marriage state. After the defendant had interposed an answer in which she denied the allegation, the plaintiff moved for an order requiring her to submit to a physical examination. On the hearing of that motion the defendant showed that she had already submitted to such an examination by three physicians who attended her and who were competent to testify, and she insisted that she should not again be submitted to the indignity of a further examination, as abundant evidence upon the subject of her condition could be given by those physicians. The motion was denied on condition that the defendant should stipulate to waive the provision of section 834 of the New York Code of Civil Procedure, and consent that such physicians, or any of them, by whom she had been theretofore examined, might testify as to her physical condition. Accordingly such a stipulation was signed by the defendant and acknowledged by her.

The provision of section 834 of the Code prohibits a physician from disclosing information acquired in attending a patient in a professional capacity and necessary to enable him to act in that capacity. But by section 836 of the Code it is provided that a patient may waive this right of secrecy by making such waiver in open court on the trial of the action or proceeding. It is also provided that a paper executed by a party prior to the trial regarding such waiver shall be insufficient for such a waiver, but that the attorneys for the respective parties may, prior to the trial, stipulate as to such waiver, and the same shall be sufficient therefor. The attorneys did not stipulate in this case. Consequently, the court does not deem the waiver sufficient. It says that it sees no reason why another physical examination should be required in this case, but the order should be modified so that there could be no question at the trial as to the sufficiency of the waiver. Therefore, in addition to the stipulation appearing in the record, the order should require that the attorneys for the defendant should sign the stipulation in accordance with the provisions of section 836 of the Code referred to.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

February 23.

- 1 \*Brachial Neuralgia and Arm Pains. C. L. Dana, New York.
- 2 \*Treatment of Acute Diffuse Peritonitis. R. Douglas, Nashville, Tenn.
- 3 \*Koch's Emulsion of Bacilli in the Diagnosis of Incipient Thoracic Tuberculosis. W. Meyer, West Hoboken, N. J.
- 4 \*Observations on an Ideal Local Anesthesia for Submucous Resection. E. E. Miller, New York.
- 5 \*Treatment of La Grippe. P. J. McCourt.

1. **Brachial Neuralgia.**—According to Dana, brachial neuralgia is by no means a rare disease. Among 197 cases of neuralgia, occurring in his practice, there were 41 cases of brachial neuralgia. This affection is seen more frequently in women, particularly women of the leisure classes. Dana suggests that this may be due in part to non-use of the arms, and he advances the theory that the arms of these modern women are becoming quasi-vestigial, like the appendix, the jejunum and the last molar tooth. There is often a predisposing neurotic or rheumatic taint and sometimes autotoxemia. Exhaustion from occupation or trauma is also a cause. Pain in the arm and shoulder usually is the only subjective symptom. Dana has not found the treatment of this condition of any avail without rest. This is secured by a sling and, if necessary, by splints. In a good proportion of cases some relief was obtained by use of the salicylates, but they must be given in large doses. Neither massage nor hot baths should be given at first.

2. **Treatment of Acute Diffuse Peritonitis.**—Douglas concludes that peritonitis is not always the same disease; that many factors, chiefly bacteriologic, determine its onset, course and ultimate termination, and that, therefore, there is no one treatment for peritonitis; no method applicable alike to all cases. He disapproves of irrigation because it disseminates infection and removes the phagocytic cells. He employs gauze to coffer-dam the field of operation, and much of the fluid in the abdominal cavity will be absorbed by this gauze packing. Such fluid as comes within easy reach should be taken up with gauze pads, but the forcible thrusting of gauze sponges between intestinal coils is condemned. Plaques of fibrin on the intestines, he states, should be left undisturbed. When quantities of foreign matter are disseminated throughout the peritoneal cavity Douglas employs irrigation; otherwise not. When evisceration is necessary he thinks enterostomy and emptying of the intestines through a Paul tube is the proper thing. He says that drainage of the general peritoneal cavity is physiologically impossible, and that the discharge from the drain is largely due to the irritation of its presence. Douglas does not believe in the Ochsner treatment nor in the Fowler position.

3. **Tuberculin in Diagnosis of Tuberculosis.**—Meyer cites the histories of 28 cases of incipient tuberculosis to show the value of the bacillary emulsion for diagnostic purposes. He considers it a most valuable means of determining an early tuberculosis which could not be discovered positively without that means.

4. **Local Anesthesia for Submucous Resection.**—Miller uses a mixture made by placing from 20 to 25 grains of cocaine crystals in a shallow dish and dropping in sufficient adrenalin chlorid solution, 1-100, to dissolve the crystals. The solution is applied with a cotton applicator. The anesthesia lasts about three-quarters of an hour.

5. **Treatment of Influenza.**—Arsenic, in alcoholic solution, 1-800, given in 5-minim doses, morning and evening, is said by McCourt, to be a most efficient prophylactic against influenza. From 3 to 5 minims of the tincture of the fresh root of gelsemium, in 6 ounces of water, given in dram doses, every one to three hours, is considered by McCourt practically a specific for almost every step, stage and variety of influenza when free from serious early complications.



## New York Medical Journal.

February 23.

- 6 \*Intestinal Perforation in Typhoid. J. A. Blake, New York.
- 7 \*Subinvolution as a Primary Etiologic Factor in Gynecologic Affections. J. H. Burtenshaw, New York.
- 8 \*Trypsin Treatment of Cancer. J. W. Luther, Philadelphia.
- 9 Differential Diagnosis of Dilatations and Deep Diverticula of the Esophagus. S. Kelen, Karlsbad.
- 10 \*Gonorrheal Epididymitis. A. A. Uhle and W. H. Mackinney, Philadelphia.
- 11 Common Disabilities of the Foot. J. P. Fiske, New York.
- 12 \*Fallacy of So-Called Rapid Diagnosis of Rabies. N. G. Keirle, Baltimore.
- 13 \*Use of Live Steam in Local Treatment of Infection. F. Griffith, New York.

6. Intestinal Perforation in Typhoid.—Blake says that the physician who makes a correct diagnosis of perforation and calls in the surgeon should receive a greater measure of credit than the latter, even if the operation is successful. Results show that at least one-fourth of the patients suffering from intestinal perforation can be saved by operation. His experience has been that all the patients who are not operated on die, so that the surgical treatment of this perforation is productive of very good results. The percentage of recoveries would be even greater if a diagnosis of perforation were made soon after its occurrence.

7. Subinvolution as a Cause of Gynecologic Affections.—Burtenshaw claims that fully 50 per cent. of female affections are directly or indirectly due to subinvolution of the generative organs, and that a very large majority of these may be prevented by proper treatment during the puerperium. Burtenshaw does not encourage the use of the obstetric binder after the end of two or three days. He never makes use of a pad beneath the binder, nor does he insist on the patient lying flat on her back, but encourages her to assume the most comfortable position possible. She is allowed to sit up in bed, propped up by pillows, on the third or fourth day, but is not allowed to put foot to the floor until the expiration of at least two weeks. Her breasts are emptied at regular intervals, by the child or by the breast pump. Lacerations of the pelvic floor or perineum should be repaired within 24 hours. He advocates the administration of ergot early and often—in 15-minim doses, thrice daily, after meals, for a period of at least six weeks. Hot water vaginal douches, twice daily, body massage, static electricity and strict observance of personal hygiene are also of importance.

8. Trypsin Treatment of Cancer.—Luther recalls that of the cases thus far reported as having been treated with trypsin only five patients have been pronounced cured, and that in not one of them has the microscope corroborated the clinical diagnosis. It is evident, however, that the treatment produces a shrinkage of the growth, improvement in the general nutrition, diminution or cessation of pain, and diminution in the discharge, with a decrease of fetor, except in those cases in which sloughing occurs. Luther says that if this treatment is perfected it will be by the finding of methods of obtaining purer and more concentrated solutions of the ferments so that they can be administered in reasonable amounts.

10. Gonorrheal Epididymitis.—A study of 264 cases of epididymitis made by Mackinney shows that this complication occurred in 16 per cent. of patients suffering with gonorrhea. In treatment the best results are obtained by the application of a saturated solution of magnesium sulphate, in conjunction with elevation of the scrotum. After the acute symptoms are relieved an ointment composed of equal parts of the ointments of belladonna and mercury, together with the same quantity of ichthyol ointment, 10 per cent., and lanolin, should be employed to hasten the absorption of the exudate.

12. Rapid Diagnosis of Rabies.—Keirle summarizes his paper as follows:

1. The presence of ganglionic changes, described by von Gehuchten and Nelis, or the presence of the structure termed Negri bodies, is not pathognomonic of rabies (hydrophobia), since these are often found when rabies does not exist.

2. The absence of one or both of these appearances does not prove that rabies is absent, since they may be present when rabies is absent and absent when rabies is present; therefore they are not infallible indications of rabies (hydrophobia).

3. In the exigency of treatment, the results of preliminary

examinations should not be waited for. When the circumstances are suspicious, when the animal has been killed or has escaped, when a person has reason to think that he has been in contact with the virus of rabies (hydrophobia), he should, as soon as he can, consult his physician, and, preferably through him, should at once communicate with some reputable institution treating this disease preventively, and abide by the advice given.

13. Live Steam in Treatment of Infection.—It seems practical to Griffith to employ live steam projected into the abdominal cavity through a median incision as a means of combating general septic peritonitis, the indication of shock as well as sepsis being met by this means. In the treatment of local infections Griffith's plan of action is to apply a light, fluffed gauze dressing held in place by use of as few as possible turns of a roller bandage. If drainage openings are to be preserved a loose twist of rubber tissue is employed. Elevation of the part affected by slinging or otherwise is always insisted on as being of as much importance as anything which can be done for the patient. Frequent applications of heat by immersion of the bandaged part into the hot water as often as ten or twenty times a day in serious cases, and allowing it to remain submerged for from half a minute to five minutes at a time. The patient always reports that he is able gradually to increase the temperature and the time of the immersions. Rapid evaporation takes place after each dip, so that if examined five or ten minutes after one of the treatments the parts will be found quite dry.

## Boston Medical and Surgical Journal.

February 21.

- 14 Relationship of the Physician to the Public Need. C. J. Blake, Boston.
- 15 \*Decrease of Infectious Diseases. J. H. McCullom, Boston.
- 16 Medical Inspection in Schools. R. W. Lovett, Boston.
- 17 \*Case Simulating Cirrhosis of Liver Due to Carcinoma of Kidney and Vena Cava. C. F. Witherington, Boston.
- 18 \*Pyelitis Complicating Pregnancy. J. B. Swift, Boston.
- 19 \*Pyelitis in Pregnancy and the Puerperium. F. S. Newell, Boston.
- 20 \*Case of Pyelitis During Pregnancy. C. H. Hare, Boston.

15. Decrease in Infectious Diseases.—McCullom attempts to show what has been done in the past few years toward the diminution in the frequency of the three principal infectious diseases, namely, diphtheria, smallpox and scarlet fever. The author emphasizes the great importance of isolation, careful medical inspection of the children in the schools, and the establishment of isolation hospitals. He says that in order to accomplish much in the suppression of infectious diseases there should be cordial cooperation of physicians, health officers and the public, and that the health officer should be specially trained for his duties. Special instruction should be given in medical colleges for health officers.

17. Carcinoma of Kidney and Vena Cava.—Witherington reports the case of a man, 56 years of age, who complained of considerable digestive disturbance, nausea, vomiting, constipation, dyspnea, ascites and edema of the legs. In view of the absence clinically of evidence of sufficient disease, either of heart or kidneys, to account for the great edema, and because of the presence of portal obstruction, a large liver, dilated veins and strongly alcoholic history, a diagnosis of cirrhosis of the liver was made. At the postmortem there was found a carcinomatous growth of the right kidney with carcinomatous occlusion of the inferior vena cava, the right renal vein and the proximal portion of the left renal vein. The original site of the carcinoma seemed to be the right kidney.

18. Pyelitis Complicating Pregnancy.—Swift has seen three cases of pyelitis complicating pregnancy, one of which he reports in full. He has found 40 cases reported in the literature. In his collection of 41 cases, there were 15 primiparæ, 14 multiparæ, not mentioned 11. The right side was affected 37 times and the left 4. Twenty-eight patients went to full term. Spontaneous premature labor occurred four times, premature labor was induced once and in nine cases, the pus having disappeared from the urine, the patients passed from observation. Nephrotomy was done once antepartum, four times postpartum. The colon bacillus is reported 17 times, no bacterial examination being recorded in the rest.



19. *Id.*—Newell cites the histories of five cases, in all of which the right kidney was involved primarily and both kidneys in two cases.

20. *Id.*—Hare reports one case of pyelitis occurring during pregnancy. The patient was carried through the pregnancy successfully, and had a normal and easy labor and a normal convalescence.

**St. Louis Medical Review.**

*February 16.*

21. Premeditation in Inebriety. T. D. Crothers, Hartford, Conn.

22. \*Ethyl-Chloride-Ether Sequence. W. E. Leighton, St. Louis.

23. \*Chloroform Anesthesia. M. B. Clopton, St. Louis.

24. \*Complications Following Anesthetics. E. L. Apperson, St. Louis.

22. **Ethyl-Chlorid-Ether Anesthesia.**—This combination of anesthetics is considered an ideal one by Leighton for effecting general anesthesia.

23. **Chloroform Anesthesia.**—Clopton says that while chloroform is definitely indicated in some cases, he prefers ether because the patient runs less risk, and there is little more, if any, discomfort when ether is given by the open-drop method.

24. **Complications Following Anesthesia.**—Apperson reviews what is known of the complications following the use of anesthetics, and discusses the methods usually employed to prevent their occurrence.

**The Journal of Medical Research, Boston.**

*December.*

25. Methods for Testing the Indol Reaction. E. N. Tobey, Boston.

26. The Cholera-Red Reaction and the Indol Reaction. *Id.*

27. The Uricolytic Enzyme in Animal Organs. A. E. Austin, Boston, Mass.

28. \*Non-virulent Diphtheria Bacilli from an Infected Middle Ear. E. N. Tobey, Boston, Mass.

29. Influence of Subcutaneous Injection of Liver Extract on the Hepatic Catabolism of Uric Acid. L. B. Stookey, Los Angeles.

30. \*Modification of Bacillus Dysenteriae After Cultivation in Agglutinating Serum. H. T. Marshall and J. H. M. Knox, Jr. Baltimore.

31. \*Chemistry of Atheroma and Calcification (Aorta). L. K. Baldauf, Albany.

32. \*Distribution of Treponema Pallidum, Schaudinn (Spirochaeta Pallida), in the Tissues in Congenital Syphilis. O. T. Schultz, Cleveland, Ohio.

33. \*Effect of Amyl Nitrite Inhalations on the Blood Pressure in Man. A. W. Hewlett, San Francisco.

34. \*Parathyroid Glandules in Paralysis Agitans. R. L. Thompson, St. Louis.

35. \*Resistance of the Red Blood Corpuscles of the Horse to Salt Solutions of Different Tonicities Before and After Repeated Withdrawals of Blood. T. Smith and H. R. Brown, Boston.

36. Hemorrhagic Hepatitis in Antitoxin Horses. P. A. Lewis, Boston.

37. \*Diphtheria-Toxin Paralysis in the Guinea-pig. P. A. Lewis, Boston.

38. \*Lesions Caused by Trichina Spiralis in Man. C. Frothingham, Jr., Ann Arbor, Mich.

39. Hemoflagellates of an African Fish (Clarias Angolensis). J. E. Dutton, J. L. Todd and E. N. Tobey, Boston.

40. Notes on *B. coli* in Drinking Water. D. Rivas, Philadelphia.

28. **Testing Indol Reaction.**—Tobey describes bacilli isolated from an infected ear, with the morphologic characteristics of diphtheria bacilli, but non-virulent to guinea-pigs and without any effect on mannite.

30. **Modification of Dysentery Bacilli.**—Marshall and Knox show that dysentery bacilli cultivated in specific and normal serum become inagglutinable and lose the power to unite with agglutinin. The exact mechanism of this apparent acquired immunity to agglutination is discussed without reaching any final conclusions.

31. **Chemistry of Atheroma and Calcification.**—Baldauf's results corroborate those of Wells, namely, that in pathologic calcification the inorganic salts are deposited in approximately the same proportion as in normal ossification. The formation of calcium soaps, which Klotz claims plays an important part in calcification, was not demonstrated. Baldauf suggests that the large amount of lecithin in early calcification and the fall in lecithin as the calcium content rises may be explained on the score that the phosphate radical is derived from decomposition of lecithin.

32. **Treponema Pallidum in Congenital Syphilis.**—Schultz corroborates recent observations on the distribution of *Treponema pallidum* in the tissues in congenital syphilis. He declares that the microbe is to a marked degree an intracellular parasite, glandular epithelium being especially invaded. The connective tissue formation is regarded as due partly to de-

struction of parenchymatous cells, partly to stimulation of connective tissue cells. The microbes multiply chiefly in the perivascular lymphatics and in the tissues, but not in the larger blood vessels. In this way is explained syphilitic periarteritis.

33. **Effect of Amyl Nitrite on Blood Pressure.**—Hewlett shows that the typical action of amyl nitrite is not that usually given to it, namely, dilatation of the peripheral arteries and fall of pressure, but rather an increased total output of blood from the heart so that there is a more rapid flow through the dilated vessels.

34. **Parathyroids in Paralysis Agitans.**—There was no alteration demonstrable by morphologic methods in the parathyroids in nine cases of paralysis agitans studied by Thompson, and hence there is no anatomic basis for the hypothesis that paralysis agitans is a chronic progressive hypoparathyroidism.

35. **Resistance of Red Corpuscles to Salt Solution.**—Two facts are prominent in the observations of Smith and Brown, namely, individual variation in resistance and a marked stability in this variation. Hence statements in regard to lowered resistance and the like of human corpuscles do not mean anything definite until individual and racial variations in health have been worked out. In the horse normal variation may be quite as great as any assignable to disease. Consequently statistical observations among human beings in temperate as well as tropical climates are very desirable.

37. **Diphtheria Toxin Paralysis.**—Lewis found that amyloid change in the liver and less frequently in the spleen is caused, in a majority of the horses, by the routine treatment with diphtheria toxin and repeated bleeding extending over three years. These horses are very subject to hemorrhage into the liver and rupture with hemorrhage into peritoneal cavity. Of direct practical bearing is the observation that if horses are not bled more than five liters per 1,000 pounds each three and one half to four weeks they may be kept for a long time as antitoxin producers.

38. **Trichina Spiralis Lesions in Man.**—Frothingham found trichina embryos in the sinuses of the mesenteric lymph nodes and in the liver capillaries, thus showing that they enter by the lymph stream and are distributed by the blood. He also found embryos in hemorrhagic areas in the lungs and local destruction of tissue in the liver, pancreas, brain and heart due to embryos breaking through the vessels.

**Maryland Medical Journal, Baltimore.**

*February.*

41. \*House Disinfection and Reinfection. W. R. Stokes and W. P. Stubbs, Baltimore.

41. **House Disinfection and Reinfection.**—Stokes and Stubbs show the results obtained by use of formaldehyd gas in room disinfection after communicable diseases and demonstrate the effect of this gas on test cultures. The reinfection of houses following disinfection is also considered. Although disinfection alone is not depended on to prevent the spread of communicable diseases, the authors believe that in combination with other means it is useful in limiting their spread. They collected statistics from 5,546 cases of diphtheria and scarlet fever. In 2,807 cases of diphtheria in Baltimore, followed by formaldehyd disinfection after the throats of all members of the household were declared free from diphtheria bacilli, there occurred during the same year 65 reinfections, or 2.35 per cent. In 2,739 cases of scarlet fever, followed by formaldehyd disinfections (not less than 21 days after official report of the case to the Baltimore city health department), there were 69 reinfections or 2.55 per cent. In 1,769 of the above diphtheria disinfections there were 40 reinfections where they obtained the result of the control cultures. Three of these were positive, showing the disinfection for some reason (construction of room, etc.), was technically defective. Thirty-one were negative, showing a thorough disinfection, and six were either missing, sent back empty or were broken in transit. In 1,721 of the scarlet fever disinfections there were 47 reinfections, of which they obtained the result of the control cultures. Seven were positive, 32 were negative and 8 were missing or empty. In 1,850 of the diphtheria cases from which the authors have



been able to gather this information there occurred 47 reinfections (2.54 per cent.).

**Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.**  
*February 1.*

- 42 \*Significance of Delirium in Typhoid. H. A. Tomlinson, St. Peter, Minn.
- 43 Glenard's Disease. G. D. Head, Minneapolis.
- 44 Fourth of July Casualties and What Can Be Done in Minneapolis Toward Their Suppression. F. C. Todd, Minneapolis.
- 45 \*Accidental Perforation of the Uterus During Surgical Manipulation. H. B. Sweetser, Minneapolis.

42. **Delirium in Typhoid.**—According to Tomlinson delirium in typhoid is primarily the evidence of instability in the higher functions of the brain, and the character of the delirium will be dependent on the degree of this instability. Its persistence is not necessarily the result of the formation of toxins but rather is due to the fact that these irritant substances are not eliminated. This accumulation of toxins is principally due to insufficient renal function. Therefore, Tomlinson says, the delirium is not only significant of the involvement of the nervous system, but is also by its activity and persistence, an indication of the gravity of the prognosis.

45. **Accidental Perforation of Uterus.**—Sweetser reports two cases. One patient was curetted under chloroform anesthesia after a supposed miscarriage. A dilator was inserted and opened, an Emmett curette forceps was then passed into the uterus, its jaws separated, closed and withdrawn. In the bite of the forceps was found a bulky membranous mass which was at once recognized as bowel. The tear in the uterus was situated in the posterior wall of the cervix. Sweetser emphasizes the following points:

1. The uterus has not always a firm, thick wall, capable of withstanding rough treatment.
2. Perforation of its wall is by no means infrequent.
3. Its position and size should be determined in every case before manipulations are undertaken within its cavity.
4. Rigid asepsis should be maintained in all cases.
5. Any force in the introduction of instruments used in manipulation is absolutely inadmissible.
6. If perforations occur, any intrauterine manipulations should at once be suspended.
7. The subsequent treatment will depend on the amount of damage done.
8. Irrigation is dangerous.

**California State Journal of Medicine.**  
*January.*

- 46 \*A Combination of Syphilis and Epithelioma of the Tongue. D. H. Montgomery and H. M. Sherman, San Francisco.
- 47 \*Diagnosis of Some Lung Conditions Requiring Surgical Intervention. G. H. Evans, San Francisco.
- 48 The Social Evil and Its Cost and Control. G. H. Aiken, Fresno.

46. **Syphilis and Epithelioma of Tongue.**—The interesting points in Montgomery's case are the combination of two important diseases such as syphilis and epithelioma in the same lesion, and the elicitation of an interesting history of unsuspected syphilis. The syphilis evidently had been contracted during the patient's first pregnancy, although it could not be ascertained how the infection occurred. Both the patient and her husband denied all knowledge in the case. All the children of the patient showed numerous evidences of hereditary syphilis.

47. **Lung Surgery.**—In connection with the discussion of the surgical treatment of abscess of the lung, Evans reports a case of abscess following pneumonia occurring in a man, 45 years of age. An operation was done and the patient made an uneventful recovery.

**West Virginia Medical Journal, Wheeling.**  
*February.*

- 49 Dishonesty in Foods and Drugs. R. J. Reed, Wheeling.
- 50 Pneumonia. F. B. Murphy.
- 51 Gallstones, Etiology, Diagnosis and Treatment. S. M. Mason, Clarksburg.
- 52 Prejudice. C. H. Maxwell, Morgantown.
- 53 Stricture of Male Urethra—Suggestions as to Surgical Treatment. H. B. Stout, Parkersburg.
- 54 Rupture of the Intestine. W. W. Golden, Elkins.
- 55 \*Ethics of the Medical Specialist. T. W. Moore, Huntington.
- 56 Typhoid Fever at Davis Memorial Hospital. T. J. McBee, Elkins.

55. **Ethics of Medical Specialists.**—Moore believes that with the excellent training that is now given in medical colleges the general practitioner will be more successful in differentiating serious from trivial cases, and that with the confidence born of knowledge he will act when emergencies arise with the result that only diseases requiring special appliances or extraordinary skill for their treatment will be referred to a specialist. This will deter men from taking up specialties who have not had the preliminary training as well as the superior opportunities necessary to enter these chosen fields.

**Chicago Medical Recorder.**  
*February 15.*

- 57 \*Method of Graduated Removal of Inferior Nasal Turbinal. H. Gradle, Chicago.
- 58 \*Hemorrhoids: Their Treatment Under General and Local Anesthesia. J. R. Pennington, Chicago.
- 59 The Doctor in Practical Sociology. W. D. Byrne, Chicago.
- 60 Drug Habits. W. F. Waugh, Chicago.
- 61 Gymnastics in Treatment of Spinal Curvature. C. Westman, Chicago.
- 62 Various Modes of Locomotion for the Physiclan. J. M. Dal, Chicago.

57. **Removal of Inferior Nasal Turbinal.**—Gradle describes a motor-driven trephine working within a guard for sharp spines on the nasal septum, and for resection of the inferior turbinal. The essential part of the apparatus is the guard, a brass tube 8.5 cm. long with an internal diameter of 7 mm. Twenty-five mm. beyond the front end of the tube one-half of its circumference is cut off, leaving thus a semi-cylindrical shell. The use of this apparatus is described in detail.

58. **Hemorrhoids.**—Pennington presents a general review of the treatment of hemorrhoids, discussing particularly the technique of the anesthesia to be employed for operative intervention. He states that local anesthesia conduces to a much more rapid recovery than does general anesthesia, although it can not be employed in every instance.

**Ohio State Medical Journal, Columbus.**  
*February 15.*

- 63 \*Difficult Diagnosis of Bright's Disease. J. Eichberg, Cincinnati.
- 64 Medical Inspection of Public Schools as a Factor in Prevention of Disease. S. O. Barkhurst, Steubenville.
- 65 The School Girl from a Hygienic Standpoint. J. Fraunfelder, Canton.
- 66 \*Where We Skid. P. L. Myers, Toledo.
- 67 Stricture of the Urethra. T. G. Youmans, Columbus.
- 68 Diagnostic Value of Pain. H. R. Geyer, Zanesville.
- 69 Examination of the Eyes of 1048 East Cleveland School Children. L. K. Baker, Cleveland.

63. **Diagnosis of Bright's Disease.**—Eichberg reviews the difficulties ordinarily encountered in attempting to diagnose disease of the kidneys and urges the importance of thorough, systematic and careful clinical study in every case.

66. **Where We Skid.**—Myers' paper is a rather facetious dissertation on the general subject of cleanliness and the shortcomings of the profession in materia medica and etiology.

**Journal of the Kansas Medical Society, Lawrence.**  
*February.*

- 70 \*Acute Exfoliative Dermatitis. H. H. Bogle, Pittsburg, Kan.
- 71 Skin Grafting. H. H. Heylman, Hutchinson, Kan.
- 72 Superstition in Medicine. T. C. Hinkle, Emporia.
- 73 \*Maxwell Method of Treating Intracapsular Fractures of the Femur. O. D. Walker, Salina.
- 74 The Roentgen Ray and Its Uses. M. H. Bacon, Kansas City.
- 75 Cholecystitis. J. T. Axtell, Newton.
- 76 Hypopyon Keratitis. A. C. Graves, Pittsburg.
- 77 \*Gangrene of the Skin. E. Smith, Lawrence.
- 78 \*New Method for Treating Retroflexion. F. A. Harper, Pittsburg.

70. **Acute Exfoliative Dermatitis.**—Bogle reports a case of this kind occurring in an infant nearly two months old. Treatment proved unavailing. The baby died at the age of four months.

73. **Intracapsular Fracture of Femur.**—Walker says that for efficiency in the treatment of intracapsular fractures the Maxwell method stands alone as the most rational and most successful yet offered to the profession. The treatment was first described by Dr. Maxwell about 35 years ago.

77. **Gangrene of Skin.**—Smith reports the case of a little girl, aged 19 months, who was suddenly taken ill with vomiting, diarrhea, tenesmus, fever and convulsions. On the following day a small blister was found on the right natis. This spread rapidly until it covered the right buttock, extending to the left. There appeared four blisters on the back and one



on the thumb of the right hand. These blisters increased in size considerably, became dark red in color, livid in the center. The patient died on the third day.

**78. Retroflexion of Uterus.**—To reduce a posterior displacement of the uterus Harper puts the patient in the knee-chest position and introduces in the anterior fornix a tightly rolled piece of absorbent cotton of requisite size, tied at each end with a cord, which he calls a cotton pessary. To reduce an anterior displacement the patient assumes the dorsal position and the cotton pessary is placed in the posterior fornix and used as a fulcrum to straighten out the flexion. One hand in the rectum and the other over the abdomen or in the vagina and a special uterine reposer assist in restoring the position of the organ.

**Journal of the Michigan State Medical Society, Detroit.**  
*February.*

- 79 \*Puerperal Insanity. H. Ostrander, Kalamazoo.  
80 \*Cesarean Section. History of Successful Case. C. H. Rodi, Calumet.  
81 \*Therapeutic Value of Rectal Tampons. J. A. MacMillan, Detroit.  
82 \*Gastrointestinal Conditions in Pernicious Anemia. H. A. Freund, Ann Arbor.  
83 \*Significance of the Term "Itch" in Some of the More Common Pruriginous Affections of the Skin. A. P. Biddle, Detroit.  
84 Traumatic Lesions of the Eye with Special Reference to their Effect on the Cornea. H. R. Conklin, Tecumseh.

**79. Puerperal Insanity.**—At the Michigan Asylum for the Insane the number of cases of puerperal insanity admitted during a period of ten years ending November, 1906, was 63, or 3.9 per cent. of all the admissions. Ostrander analyzes 30 cases, of which 9 were gestational and 21 postpartum. All the patients were married; four were under 20 years of age; 16 between 20 and 30; 9 between 20 and 30, and one was 40 years of age. Of the puerperal cases the symptoms began immediately after confinement in 6; in one week in 4; in two weeks in 4; in three weeks in 1; in four weeks in 1; in five weeks in 1, and in six weeks in 4. The onset was sudden in 10 cases, gradual in 17 cases, and unknown in 3 cases. Fourteen patients had insane and neurotic relatives; only 9 had negative family and personal histories. Four were cases of delirium due to septicemia; 4 were cases of confusion and depression due to toxemia; 10 were manic depressive cases of the depressed type; 8 were manic depressive cases of the manic type, and 4 were cases of dementia præcox. Recovery occurred in 16 cases (4 of these patients have had subsequent attacks not associated with puerperium); 2 were improved; 10 remained unimproved, and 2 patients died. The recoveries occurred at varying periods, from five weeks to fifteen months.

**80. Cesarean Section.**—Rodi reports a case of Cesarean section done during the eighth month of pregnancy on a woman whose conjugate diameter was  $1\frac{3}{4}$  inches. Both mother and child lived.

**81. Value of Rectal Tampons.**—MacMillan considers the rectal tampon a very useful agent to stimulate intestinal peristalsis and to improve the muscular tone of the bowel. He has used rectal tampons in a large number of cases of chronic constipation with most gratifying result. The tampon is placed above the rectal valves and is allowed to remain in this position for three or four hours. The tampons are composed of cotton, lamb's wool or gauze. They are inserted through a proctoscope.

**82. Gastrointestinal Conditions in Pernicious Anemia.**—The causes of pernicious anemia as they are understood to-day are touched on briefly by Freund. He says that of 53 patients, 54 per cent. complained of loss of appetite; 38 per cent. of bad taste in the mouth, due largely to poor teeth; 46 per cent. of nausea and vomiting; 54 per cent. of epigastric distress; 24 per cent. of diarrhea, and 10 per cent. of constipation. Freund insists that a careful gastric analysis and an examination of the intestinal contents be made in all these cases as a means of instituting appropriate treatment.

**83. Itch.**—Biddle divides this affection into the following groups: 1. Verminous parasitic diseases. 2. Vegetable parasitic diseases. 3. Bacterial parasitic diseases. 4. Secondary bacterial infections. 5. Pruriginous papular dermatoses. 6. Pruriginous sensory neuroses.

**Cleveland Medical Journal.**

*February.*

- 85 Histology of the Thyroid in Simple and Toxic Exophthalmic Goiter. D. Marine, Cleveland.  
86 Some Causes of Hematuria. W. E. Lower.  
87 Effects of Hot, Humid Atmospheres on the Animal Body. J. J. R. Macleod and J. D. Knox.  
88 Experimental Glycosuria. J. J. R. Macleod and C. E. Briggs.

**Journal of the Missouri State Medical Association, St. Louis.**  
*February.*

- 89 Treatment of Gastric Ulcer. F. E. Murphy, Kansas City, Mo.  
90 Abdominal Injuries. H. C. Dalton, St. Louis.  
91 Collection of Human Embryos in the Anatomic Laboratory of the University of Missouri. C. M. Jackson, Columbia.  
92 Non-lithogenous Obstruction of Biliary Ducts. A. H. Cordier, Kansas City, Mo.  
93 The Physician and the Association as Seen by the Country Doctor. J. B. Norman, California, Mo.

**The Canada Lancet, Toronto.**

*February.*

- 94 Psychoses and Neuroses of Urethral Origin. N. E. Aronstam, Detroit, Mich.  
95 Medical Thoughts, Facts, Fads and Fancies. J. S. Sprague, Stirling, Ont.  
96 Case of Acute Phlegmonous Gastritis. J. J. Mackenzie, Toronto.  
97 Intestinal Obstruction. A. A. Macdonald, Toronto.  
98 Carbonate of Creasote in the Treatment of Pneumonia and Bronchopneumonias of Childhood. A. Fletcher, Toronto.

**Wisconsin Medical Journal, Milwaukee.**

*January.*

- 99 Pathologic Basis for a Rational Curative Treatment of Malignant Disease of the Breast. J. L. Yates, Milwaukee.  
100 \*Diagnosis and Treatment of Injuries to the Eye. G. E. Seaman, Milwaukee.  
101 \*Tuberculosis Sanatoria and Treatment. C. A. Harper, Madison.  
102 Symptoms and Diagnosis of Aortic Aneurism. L. F. Jermalu, Milwaukee.

100 and 102.—See abstracts in THE JOURNAL, July 14, 1906, page 144.

**Journal of the Arkansas Medical Society.**

*January 15.*

- 103 Use of Formaldehyd Solution in Cure of Epithelioma. L. Kirby, Harrison.  
104 Interesting Cases in Minor Operations. E. K. Williams, Arkadelphia.

**Western Medical Review, Lincoln.**

*January.*

- 105 Practical Points on Radiotherapy. A. Schalek, Omaha, Neb.  
106 The Truth About the Sharp Curette. W. O. Henry, Omaha.  
107 Secondary Inflammation Following Appendicitis. C. C. Allison, Omaha.  
108 Nervous Eructations and Pneumatosis. A. O. Peterson, Omaha.  
109 Importance of Early Diagnosis in Cancer of the Rectum and Sigmoid. R. D. Mason, Omaha.

**Central States Monitor, Indianapolis.**

*February.*

- 110 Various Gross Pathologic Conditions of the Urethra Revealed by the Urethroscope. N. E. Aronstam, Detroit.  
111 Eyestrain. S. C. Norris, Anderson, Ind.  
112 Case of Abscess of the Prostate. G. Liuk, Indianapolis.  
113 Open-Air Treatment of Pneumonia. W. T. S. Dodds, Indianapolis.  
114 Foreign Bodies in the Bronchi. W. Schell, Terre Haute, Ind.

**Iowa Medical Journal, Des Moines.**

*February 15.*

- 115 Chairman's Address, Section of Mental and Nervous Diseases. Iowa State Medical Society. J. M. Barstow, Council Bluffs.  
116 Dementia Paralytica. R. Moon, Clarinda.  
117 \*Manual Training for Medical Students and Instruction in the Principles of Psychotherapy. G. H. Hill, Des Moines.  
118 Cough: Its Varieties and Their Treatment. G. F. Butler, Chicago.  
119 A Few Points on Gallstones. L. W. Littig, Iowa City.  
120 Medical Education and Some Needed Legislation. E. Hornbrook, Cherokee.

117.—See abstract in THE JOURNAL, July 28, 1906, page 306.

**FOREIGN.**

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

**British Medical Journal.**

*February 9.*

- 1 \*Toronto Hospital for Advanced and Far-advanced Cases of Tuberculosis. W. H. Broadbent.  
2 \*Retrospect of a Thousand Consecutive Cases of Abdominal Surgery. J. Swain.  
3 \*Claim of the Surgeon to Conduct the After-treatment of Operation Cases. C. A. Morton.  
4 \*Dissemination of Intra-abdominal Malignant Disease by Means of the Lymphatics and Thoracic Duct. W. M. Stevens.  
5 \*Temperature in Malignant Disease of the Liver and Bile Passages. J. W. Russell.  
6 \*A Pair of Forceps in the Abdominal Cavity for Ten and a Half Years. J. E. F. Stewart.



1. **Tuberculosis.**—Broadbent describes the Toronto Hospital for Advanced Cases of Tuberculosis, which was built at the instigation of the Association for the Prevention of Consumption.

2. **Abdominal Surgery.**—The 1,000 cases reported by Swain include 101 operations on the ovaries and tubes, 75 on the uterus and broad ligaments, 127 for hernia, 229 for appendicitis, 49 for diseases of the liver, gall bladder and bile ducts, 65 on the kidney, 126 for diseases of the stomach and intestines (excluding hernia and appendicitis), 29 on the urinary bladder and prostate, and 24 for tuberculous peritonitis and peritoneal adhesions. Some of the comments made by Swain are particularly interesting. For instance, he invariably puts a double ligature on all structures in the abdomen and pelvis that have been ligatured before being cut away, the second ligature being applied after the division of the tissues. He does not advise the removal of all myofibromatous tumors of the uterus, as he thinks more lives will be saved by a judicious selection of cases for operation. In young women Swain chooses myomectomy, provided that the general condition of the patient is fairly satisfactory, that the tumor does not extend much above the umbilicus, and that there are no important complications, such as severe inflammatory disease of the tubes and ovaries or advanced anemia. In cases in which myomectomy is undesirable, he prefers the operation of retroperitoneal hysteromyomectomy. When the myofibroma is associated with malignant disease he removes the uterus and tumor. For cases of cancer of the uterus that are diagnosed early he believes that colpo-hysterectomy is the best operation, although in some cases abdominal hysterectomy must be resorted to.

Swain is not convinced of the desirability of performing cholecystectomy as a routine measure in the operative treatment of cholelithiasis. He thinks that recurrence of the gallstones after operation is rare. He has not seen a case. He has not performed cholecystectomy except for carcinoma of the gall bladder, permanent blocking of the cystic duct, and in an atrophic gall bladder which could not easily be dealt with in any other way.

Speaking of nephropexy, he says that when belts fail operative measures are indicated in healthy adults in whom a freely mobile kidney is associated with symptoms of gastric crises or of torsion of the renal vessels. He claims that of those cases of movable kidney that do give rise to symptoms distinctly referable to the renal mobility, probably at least two-thirds are better treated by some form of belt than by operative fixation. For the radical cure of hernia Swain prefers a modification of Kocher's method for the ordinary run of cases, Bassini's method being reserved for large hernias of old standing with a widely dilated external ring. In the performance of intestinal resection Swain prefers the use of a simple suture to that of mechanical appliances; Halsted's quilt suture is his choice. In stomach surgery he always performs the posterior operation of gastrojejunostomy. When the duodenum can be freed, Kocher's lateral gastroduodenostomy is the routine measure. Frank's method of gastrostomy is the one usually adopted by Swain when that operation is indicated.

3. **After Treatment of Operation Cases.**—Morton claims that the operating surgeon should be allowed to conduct his own after treatment whenever possible. He also discusses an important detail of the after treatment of abdominal operations—the position of the patient, and one complication which may be very serious—flatulent distension. He says that in all cases in which drainage of any quantity of fluid from the abdomen is desired the patient should be kept in the half-sitting position, the position that is sometimes spoken of as Fowler's position. He thinks it very important that the patient should not turn himself or raise his shoulders until the time he is allowed out of bed, because the latter movement, at any rate, is just the one to interfere with healing or to stretch a weak scar.

4. **Dissemination of Intra-abdominal Malignant Disease.**—The objects of Stevens' paper may be summarized as follows:

1. To point out that the lymphatic glands above and under

cover of the left clavicle are much more frequently involved in intra-abdominal malignant disease than is generally recognized, and that this may be demonstrated in some cases (when the glands are not palpable) by percussion over the clavicle or in the infraclavicular region. In other words, the glandular enlargement which can be clinically demonstrated is not necessarily only "supraclavicular."

2. To show that the thoracic duct—and to a very much lesser degree the right lymphatic duct—plays a most important part in the dissemination of intra-abdominal malignant disease, either by acting as a carrier of infective material or by being itself directly involved.

3. To attempt to demonstrate that the secondary infection of different parts in cases of malignant abdominal disease can be explained on anatomic grounds.

5. **Temperature in Malignant Disease of Liver.**—Russell claims that nearly two-thirds of the 52 cases of malignant disease of the liver and bile ducts studied by him showed some degree of pyrexia, at any rate, in the later stages. Fourteen cases of uncomplicated malignant disease of the liver showed no abnormality of temperature beyond a tendency to drop below the normal level. Twenty-five similar cases showed some degree of pyrexia. Of 13 cases in which the growth arose from some part of the bile passages, only three presented a normal temperature chart. The termination of the case does not appear to bear any relation to the temperature.

6. **Forceps in Abdominal Cavity.**—In the case reported by Stewart the forceps were lying in the pelvis, the handles being directed forward and upward. Though the patient's health had been wretched during the 10½ years, and a large part of this time was spent in bed, she occasionally felt well enough to participate in dances. Her chief symptoms during these years were sudden acute pain, constipation alternating with diarrhea, and pains in the lower limbs. At the operation the forceps were found inside the lumen of the bowel.

The Lancet, London.

February 9.

7 Diagnosis and Localization of Cerebral Tumors. C. E. Beevor.

8 \*Portal Cirrhosis of the Liver. D. Duckworth.

9 \*Affections of the Lachrymal Apparatus. S. Stephenson.

10 \*Sarcoma of the Scapula in a Child Aged Four Years. L. B. Rawling.

11 \*Fibroids of the Uterine Cervix. J. R. Morison.

12 \*Appendicitis in Typhoid Fever. C. Leedham-Green.

13 \*Sanitary Condition in Relation to Infantile Mortality. T. Divine.

14 Role of the Blood Plasma in Disease. H. Campbell.

8. **Portal Cirrhosis of Liver.**—Duckworth reviews briefly the clinical history of this affection. He states that surgical intervention is indicated only in the early stage of ascites, and only then if the general state of the patient is satisfactory, and when treatment by potassium iodid and one or two tapings have failed to benefit the condition.

9. **Affections of Lachrymal Apparatus.**—In this very complete discussion Stephenson considers the anatomy, physiology and diseases, including their treatment, of the lachrymal gland and its duct.

10. **Sarcoma of Scapula.**—The case reported by Rawling was one of primary sarcoma of the body of the scapula. The general condition of the child was not very favorable and the tumor was so extensive and was growing so rapidly that operative intervention was out of the question. Rawling reviews 23 recorded cases of sarcoma of bone occurring in children under 9 years of age; adding to these 36 other cases grouped by other writers, Rawling found that 40 of the patients died at an early age (some of these cases were inoperable), while 19 recovered from the operation. One patient is known to be well several years after the operation. The ultimate result in the other 18 cases could not be determined. It is evident, therefore, that surgical procedures are generally useless unless the diagnosis is made early and the patient is operated on at once, the tumor being removed freely and widely.

11. **Fibroids of Uterine Cervix.**—The operation of splitting the uterus in difficult cases of pyosalpinx, suggested to Morison that by splitting the uterus down its center on and into a tumor removal of the growth might then be possible. The idea was carried out in one case and much to Morison's surprise, when the tumor capsule was divided, the tumor turned



out easily and almost bloodlessly. The halves of the split uterus were readily removed, and the operation was completed as an ordinary supravaginal hysterectomy, the cervix being left behind as a stump. Since then Morison has performed a similar operation between 20 and 30 times without any mortality.

The abdomen is opened in the Trendelenburg posture, the intestines are packed off with sterile gauze wrung out of hot normal saline solution, and the uterus and tumor are exposed by a retractor at the lower angle of the wound. The fundus of the uterus is caught on each side by volsellum forceps and drawn upward and forward into view. The round ligaments are clamped by forceps on either side and divided between two pairs, one above and one below. The peritoneum covering the lower part of the uterus and tumor is cut through transversely between the round ligaments and sponged downward. The uterus is next split from its fundus down the middle line well into the tumor. The edges of the tumor made distinct by retraction of the divided capsule are caught in volsellum forceps and the tumor is enucleated by the finger. After enucleation the cavity quickly contracts, reducing the parts left to manageable dimensions. The bed of the tumor is cut transversely from the middle line outward, first on one side and then on the other, and the body and upper portion of the cervix are turned out and up, exposing the uterine vessels, which are clamped, divided and tied. The remainder of the broad ligament is divided outward and upward till the infundibulo-pelvic ligament containing the ovarian vessels is reached. These are clamped, divided and tied. The uterus and its appendages are then removed. The anterior and posterior lips of the stump of the cervix left are sutured and the cervical stump is fixed to the round ligaments on each side. Finally, the peritoneal flap in front is made to cover and protect the whole by three or four interrupted catgut sutures.

**12. Appendicitis in Typhoid.**—Green reports three cases to show how difficult may be the task of deciding whether a patient is suffering from typhoid or appendicitis.

**13. Sanitation and Infantile Mortality.**—Divine claims that insanitation is a factor of considerable moment in infantile mortality.

*The Practitioner, London.*  
*February.*

- 15 \*Treatment of Some Forms of Gout. A. P. Luff.  
16 \*Posterior Tarsal Resection of Foot by Method of Mikulicz and Wladimiroff. A. Young.  
17 \*Valvular Disease of the Heart. R. Crawford.  
18 Postpartum Hemorrhage. E. S. Bishop.  
19 Interpretation of Sphygmograph Tracings and of Tracings Produced by Compressing Brachial Artery. T. Lewis.  
20 Intracranial Abscess: When and When Not to Operate. J. Wyllie.  
21 Possibility of Two West African Diseases, "Akutama" and "Vonulo," Being Malarial Paroxysmal Neuroses. F. C. Wellmau.

**15. Treatment of Gout.**—Luff deals with the treatment of gout in some of its more frequently occurring forms. Hydrotherapy, balneotherapy, light therapy, etc., is not discussed. For relieving the local pain he recommends the following:

R. Sodii carbonatis .....	3iii	12
Linimenti belladonnæ .....		
Tincturæ opii, āā .....	3ii	60
Aquæ ad .....	3viii	240

A small portion of the lotion should be mixed with an equal quantity of hot water, and then poured on cotton wool previously arranged around the joint. The pack should be changed every four hours. In connection with the acute paroxysm, no attempt at local depletion, such as the application of leeches to the inflamed joint, blistering or incisions, should on any account be made, owing to the great liability of thereby extending the inflammatory condition, and so producing subsequent ankylosis or deformity.

For the internal treatment a pill containing the following ingredients is given three or four times a day, immediately after eating:

R. Colehicina .....	gr. 1/60	001
Ext. nucis vomicæ .....	gr. 1/4	015
Ext. hyoseyami .....	gr. 1/2	03
Ext. gentianæ .....	gr. i	06

[The United States Pharmacopeia gives the dose of colehicina as 1/128 grain.—Ed.]

In addition to colchicum in small doses, Luff recommends from 5 to 10 grains of guaiacum in cachets two or three times a day, in the treatment of subacute and chronic gout. For the local treatment of gouty joints Luff advises elevation of the limb, application of a light flannel bandage and the use of hot and cold douches alternately, the Scotch douche and massage. For the removal of edema he employs galvanism and massage.

In cases of gouty hepatic inadequacy he has found the following mixture, taken 15 minutes before meals, most beneficial:

R. Sodii bicarbonatis .....	gr. xii	7
Tinct. nucis vomicæ .....	m. x	65
Tinct. gentian comp. ....	3ss	2
Spiritus chloroformi .....	m. xii	7
Aquæ menthæ pip. ad .....	3i	30

**16. Posterior Tarsal Resection of Foot.**—Young reports one case of advanced tuberculous disease of the right tarsal bones in which posterior tarsal resection of the foot by the method of Mikulicz and Wladimiroff was done successfully. A specially devised boot was fitted to the foot so well that for one not cognizant of the actual state of affairs it was practically impossible to detect any limp or defect in the gait.

**17. Valvular Disease of the Heart.**—Crawford reports 7 cases of tricuspid stenosis in all of which there was some affection of the mitral orifice with passive congestion of the lungs, of greater or less degree. A thorough postmortem was done in each case.

*Journal of Tropical Medicine and Hygiene, London.*  
*February 1.*

- 22 Study of the Evidence as to Source of Infection Which Caused the Cases of Tetanus at Mulkowal, Punjab, India, During Inoculation Against Plague in October, 1902.

*Indian Medical Gazette, Calcutta.*  
*January.*

- 23 William Hamilton and the Embassy to Delhi. D. G. Crawford.  
24 Epidemic of Malignant Jaundice in Bombay. E. F. G. Tucker.  
25 Experimental Investigations as to Potency of Various Disinfectants Against Rat Fleas. W. C. Hossack.  
26 A Year's Experience of Malaria at the Outdoor Department of the Medical College Hospital, Calcutta. J. W. D. Megaw.  
27 Leishman-Donovan Infection in a Gurkha. T. A. Granger.  
28 Hepatic Abscess and Points in Diagnosis of Multiple Hepatic Abscess. G. G. Giffard.  
29 A Possible Case of Malta Fever. A. G. Newell.  
30 Operations for Extirpation of the Spleen. O. St. J. Moses.  
31 Case of Extrauterine Pregnancy. A. M. Leake.

*Dublin Journal of Medical Science.*  
*February 1.*

- 32 Chyliform Ascitic Fluid. T. G. Moorhead.  
33 Surgical Aspects of Bronchiectasis, Particularly in Children and Young Adults. C. G. Cumston.

*Bulletin de l'Académie de Médecine, Paris.*

- 36 (LXXI, No. 5, pp. 161-178.) \*Early Diagnosis of Tuberculosis of the Bronchial Glands in Children. (Diagnostic précoce de la tub. des ganglions bronch.) M. A. D'Espine.  
37 Successful Hygienic Treatment of Tuberculosis in 100 Children Kept Constantly in the Open Air at the Rouen Public Hospital. (Resultats du traitement hygienique à l'hôpital.) Brunon.

**36. Early Diagnosis of Incipient Thoracic Tuberculosis in Children.**—D'Espine's further experience has confirmed his previous assertions in regard to the frequency of the primary localization in the bronchial glands of tuberculosis affecting the thorax, and also the reliability of his method of diagnosing this primary tuberculous affection of the bronchial glands, before involvement of the lung, by auscultation of the voice. In 1904 he published a report of 119 cases of the kind, and his statements as to the unsuspected frequency of this primary localization of tuberculosis have been corroborated by the recent announcements of Vallée and Calmette in regard to the intestinal origin of tuberculous affections in the thorax. Auscultation as the patient pronounces the words "three hundred and thirty-three" (the words are more resonant in the French—"trois cent trente-trois"), or auscultation as the child cries will reveal a tone superadded to the voice which he calls "whispering" (chuchotement) in the first stage and "bronchophony" in the more advanced stage. In the normal child the organ tone of the trachea stops abruptly at the spinous process of the seventh cervical vertebra, where the lung commences, but with a pathologic process in the bronchial glands the bronchial tone is heard further over the region corresponding to the principal location of the glands. The bronchial organ tone is ac-



centuated by the chain of tumefied glands surrounding the air passage and sometimes continuing back nearly to the spine. The stethoscope is useful to define the extent of the ronchophony, which may extend to the first four dorsal vertebrae or merely to one of them, or to the seventh cervical, but direct auscultation with the ear gives more definite results. If the child is told to pronounce some words in a low tone, an acoustic phenomenon is noted in case of a bronchial adenopathy similar to what Baccelli calls "aphonious pectoriloquism." This D'Espine calls "whispering" (chuchotement). Pronounced dulness on percussion of the spinous processes of the first dorsal or seventh cervical vertebra does not appear until the process in the bronchial glands is in an advanced stage. Interscapular dulness is likewise a sign of far advanced lesions, in the child, as also the bronchial souffle. The finding of this souffle associated with the normal superficial vesicular murmur indicates that the trouble is in the glands, not in the lungs. He cites a number of instructive examples, among them the case of a healthy child of healthy parents, who, after spending the summer on a farm, exhibited slight fever for a time with marked bronchophony. Anemia developed and the child succumbed in eight months to a tuberculous meningitis. Autopsy disclosed tuberculosis of the mesenteric and bronchial glands and pericardium, but no lesions in the peritoneum or lungs. It was found that the cow on the farm whose milk had been taken freely by the child was in an advanced stage of tuberculosis. The father of the child was a physician and professor in the university (Geneva), and he inaugurated a campaign against tuberculosis in cattle which led to drastic regulations in regard to tuberculin testing of cattle. D'Espine adds that he has found the bronchophony almost constantly in the cases of surgical tuberculosis which he has encountered, as also in tuberculous meningitis. Bronchophony has never failed him, while the most reliable other measure in this incipient, latent stage—radioscopy—sometimes fails, as in a case recently published by Mouriquand in which extensive glandular lesions gave no sign of their existence under Roentgen inspection.

#### Berliner klinische Wochenschrift.

- 38 (XLIV, No. 1, pp. 1-28.) \*Postural Albuminuria. (Orthotische Albuminurie.) O. Heubner.
- 39 \*Abdominal Contusions. (Bauchkontusionen.) O. Hildebrand.
- 40 Diagnostic Significance of Specific Fixation of the Complement. (Komplementfixation.) A. Wassermann.
- 41 \*Unusual Disturbances with Exophthalmic Goiter. (Seltene Störungen bei der Basedowschen Krankheit.) M. Mosse.
- 42 \*How Long Should Patients Be Kept in Bed After Laparotomies? (Wann soll man Coeliotomierte aufstehen lassen?) C. Hartog.
- 43 Tuberculous Septicemia. (Tub. Septikämie.) A. Marmorek.
- 44 Modern Obstetric Operations. (Moderne geburtshilfliche Op.) H. von Bardeleben.
- 45 (No. 2, pp. 29-64.) \*Action on Rabbit Aorta of Intravenous Injections of Suprarenin. (Intravenöse Suprarenalinjektionen.) C. Kaiserling.
- 46 \*Inoculation Tuberculosis in Guinea-pigs. (Verlauf der Impftub. bei Meerschweinchen.) H. Beitzke.
- 47 \*Latent Tubercle Bacilli (Latente Tub.-Bac.) Lydia Rabinowitsch.
- 48 Experimentally Induced Meteorism. (Exp. erzeugten Meteorismus.) A. Bickel.
- 49 Concentration of the Secretion of the Stomach Fundus is Not Dependent on the Concentration of the Solutions Introduced Into the Stomach. (Reflektorisch abgeschiedener Magensekret, etc.) O. Schloss.
- 50 \*Study of Pancreas in Man. (Einfluss der Zusammensetzung der Nahrung auf die Saftmenge und die Fermentkonzentration.) J. Wohlgenuth.
- 51 Study of Cactus Alkaloids. (Zur Kenntnis des Pellotins.) L. Pincussohn.
- 52 Lipolysis, Agglutination and Hemolysis. (Lipolyse, etc.) C. Neuberg and E. Rosenberg.

38. Postural Albuminuria.—It has long been a disputed question whether the albuminuria which vanishes when the patient reclines is physiologic or functional, or the result of actual disease of the kidney. Heubner brings an important contribution to the subject with the postmortem findings in the case of a child in whom this orthostatic albuminuria had been observed during life and who succumbed to an intercurrent brain tumor. He states that the kidneys were sound macroscopically with the exception of congestion in the organs, without extravasation or hemorrhage. There was also an extremely slight tendency to fat infiltration at a few points, and a minute focus of degeneration, 1 x .5 mm. on the surface. He attributes these slight changes to the long death agony

in the case. They were too trivial to be considered, he thinks, in connection with the orthostatic albuminuria which had been observed for a year and a half. A small tuberculous lesion was found at one apex, which confirms the view held by some observers that the postural albuminuria is a "pretuberculous" phenomenon.

39. Abdominal Contusions.—Hildebrand discusses the present status of treatment of contusion of the abdomen, reviewing 48 severe cases from his experience. In 31 cases the operation was performed early; 22 of these patients recovered, and 9 died; all the 6 patients with a tardy operation recovered also. Modern surgery can combat incipient peritonitis, but in the later stages it is difficult to handle. The vital energies can be sustained by administering solutions in extensive hemorrhage. If the vital energies have already ebbed too low, then the surgeon is powerless. The diagnosis and decision as to operation can be made only by a specialist of wide experience, consequently it is of the utmost importance, Hildebrand asserts, that the patient after contusion of the abdomen should be brought to the specialist without delay. In one case the intraperitoneal part of the full bladder had ruptured and a loop of small intestine had fallen into the bladder. He sutured the bladder and transplanted the attachment of the peritoneum to the bladder, suturing it at a point lower down than normal, and thus making the seat of the wound extraperitoneal. There is no danger of peritonitis from rupture of the bladder, he adds, if the rupture is entirely extraperitoneal.

41. Unusual Disturbances with Exophthalmic Goiter.—In one case, Mosse states, the disease had been much improved by treatment, but Graefe's sign persisted on the right side and ptosis of the lid on the other. In the second case the thyroid gland was not enlarged, but the other symptoms of exophthalmic goiter were pronounced. The cardiac arrhythmia was unusually prominent. In 2 other cases Mosse observed glycosuria in connection with exophthalmic goiter.

42. When Can a Patient Get Up After a Laparotomy?—Hartog states that at Landau's clinic, where he is assistant, the patients are allowed to get up much earlier than used to be the rule. They are asked the second day if they wish to get up, and if they reply affirmatively they are allowed to do so. The only exception is in case of plastic operations and hernias. In constitutional affections, such as diabetes, great importance is placed on having the patients leave the bed early. The general rule is that each patient is given a saline enema at body temperature, commencing from 6 to 24 hours after the operation, and repeated every three to four hours, introducing under very slight pressure, and very slowly, about 250 gm. of a 0.9 per cent. salt solution, that is, from half to three-quarters of a tablespoonful of salt in a glass of water. If no flatus has passed by the end of the second day, a pint of cold water is injected, followed later, if necessary, by a glass or a pint of soapy water. Forty-eight hours after the operation one or two tablespoonfuls of castor oil are given in bouillon or brandy or in the foam of beer. The exceptions to these rules are the patients after vaginal operations with forceps and after laparotomies with drainage, in which case the castor oil is not given until after 72 hours. Stimulating the peristalsis by this means relieves the patients of flatulence, and no inconveniences have ever been observed during the five years in which it has been done. Ileus has never presented in any patient thus treated, and no painful adhesions, while these are liable to form if the bowels are left too quiet. The day after the operation the position of the patient is changed, to allow the patient to lie on the side, the upper part of the trunk is raised, and the legs are drawn up. In case of an uneventful primary healing, without drainage, they are allowed to get up by the middle or the end of the first week. The advantages of getting up thus early are obvious, especially the avoidance of thrombosis and embolism and of pulmonary complications.

45. Influence of Suprarenal Preparations on Rabbit Aorta.—All the articles in No. 2 of the *Berliner klinische Wochenschrift* issue from the Pathologic Institute at Berlin, of which J. Orth is director, the occasion being a tribute on his sixtieth birthday. He is Virchow's successor in the institute and also editor of *Virchow's Archiv*. Kaiserling's experiments on rabbits



were not confirmatory of those of others in regard to the effect on the aorta of injection of suprarenal preparations. He has found similar lesions in the rabbit aorta without injection of these preparations, and remarks that we know so little in regard to the influence of adrenalin on the arteries that it is absurd to attempt to draw any conclusions in regard to the functions of the suprarenals.

**46. Inoculation Tuberculosis in the Rabbit.**—Beitzke has been studying the course of tuberculosis in 150 guinea-pigs inoculated in the abdomen with scraps from human tuberculous lesions. He found that the tubercle bacilli were generally disseminated by way of the lymph, through the thoracic duct and the blood, thus finding their way to the lungs and bronchial glands or settling primarily in the latter.

**47. Latent Tubercle Bacilli.**—Rabinowitsch relates experiences with inoculation of rabbits with scraps of bronchial and mediastinal glands from children or adults clinically free from tuberculous processes. The glands had been the seat of tuberculous inflammation and had degenerated until they were completely calcified and had evidently been in this condition for a long time, as parts were hard as stone. Microscopic examination was negative, but inoculation of animals revealed that the glands contained tubercle bacilli still retaining their virulence, notwithstanding their long latency.

**50. Functions of the Pancreas and Influence of the Character of the Food.**—Wohlgemuth reports the findings in the case of a young man left with a fistula into the pancreas after rupture of the organ in a bicycle accident. Experiments with various kinds of food to determine which kind induced the least secretion of pancreatic juice, and thus had a tendency to promote the healing of the wound, showed that the production of the pancreatic juice could be readily controlled by care in selection of articles of food. Fats and albumin checked the production of the pancreatic juice, while the carbohydrates induced a copious secretion. The secretion could be further reduced in amount by frequent administration of moderate doses of sodium bicarbonate, especially during the meals. It was also found possible to substitute the loss of pancreatic juice through the fistula by administration of a pancreas preparation by the mouth several times a day. When the patient ate fat in the form of cream and milk the pancreatic juice ceased to flow from the fistula. After eating meat, it flowed again a little, but on a carbohydrate diet an actual stream poured out of the fistula.

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- 53 (XXX, No. 48, pp. 1321-1344.) \*Technic and Indications for Pubiotomy. (Pubiotomie.) W. Zangemeister.  
54 \*Experiences with Pubiotomy. (Pubiotomie.) K. Reifferscheid. (Hebotomie.) H. B. Semmelink.  
55 (Nos. 49-50, pp. 1345-1392.) \*Prevention of Puerperal Mastitis. (Mastitis.) A. Döderlein.  
56 \*Determination of Ergot in the Stools. (Mutterkorn in den Fäces.) J. Strasburger.  
57 The Cranial End of Müller's Duct. (Eine Fortsetzung der Fimbria ovarica als Kanal im Hilus ovarii.) J. Kocks.  
58 (Nos. 51-52, pp. 1393-1440.) \*Origin and Treatment of Inversion of the Uterus. (Inversio uteri.) K. Holzapfel.  
59 \*Infusion of Oxygen in Treatment of Asphyxia in the New-Born. (Sauerstoffinfusionen asphyktischer Neugeborener.) Offergeld.  
60 Origin of Arterio-mesenteric Occlusion of Duodenum. (Arterio-mesenterialverschlusses des Duodenums.) H. Albrecht.  
61 (XXXI, No. 1, pp. 1-32.) \*Passage into the Bladder of a Gauze Sponge Left in Abdomen After a Laparotomy. (Gazetupfer in die Blase.) W. Stoeckel.  
62 \*Looping of Umbilical Cord and Its Supposed Disadvantages After Emergence of Face. (Nabelschnurumschlingung.) E. Holzbach.  
63 Decapsulation of Kidney with Puerperal Eclampsia. (Nieren-dekapsulation.) O. Polano.  
64 (No. 2, pp. 33-64.) \*Technic of Scopolamin-Morphin Anesthesia in Obstetrics. (Skop.-Morph. Dämmerschlaf.) C. J. Gauss.  
65 Repeated Pubiotomy on Same Patient. (Wiederholte Pubiotomie.) Preller.  
66 Mono-amniotic Twlms with Interlooped and Knotted Umbilical Cords. (Monoamniot. Zwillinge.) W. Piltz.

**53. Technic and Indications for Pubiotomy.**—Zangemeister advises inserting the needle from below, and expectant treatment after the bone has been sawed. Spontaneous delivery then frequently occurs. He describes two cases in which the saw was introduced and left in place while version was done, after which the child was readily delivered, although the bone had not been sawed. In some of the published cases in which

the pubiotomy was done first, the success may have been erroneously attributed to the sawing of the bone when, in reality, delivery might have proceeded smoothly without it.

**54. Further Experiences with Pubiotomy.**—Reifferscheid reviews his experiences with 22 cases in which pubiotomy was done at the Bonn clinic. One of the patients succumbed to pulmonary embolism, and in 2 others the bladder was seriously injured. Laceration of the perineum was observed in another case, and thrombosis of the femoral vein occurred during the puerperium in another, while one patient had slight exudation at the wound. Slight fever during the puerperium was observed in 13 cases. Forceps were required in 8, version in 9, extraction in 3, and in 2 instances delivery occurred spontaneously. In 4 cases the saw was introduced, but no sawing was done until the signs showed that it was imperatively needed. All the children left the clinic alive. The greatest danger is injury of the bladder, which is pressed forward and over the edge of the symphysis by the enlarged uterus. The much curved Bumm needle is safest, as it curves close around the upper edge of the symphysis. It will not be possible always to avoid injury to the bladder with the subcutaneous Bumm technic, as the bladder may be fastened to the symphysis. In both Reifferscheid's cases of injury there had been previous febrile childbirths. It might be safer, therefore, he says, to make a small incision at the upper edge of the symphysis and detach the periosteum from its posterior surface. Even then, injury of the bladder is possible against the sharp, cut edges of the bone as the child is delivered and the bone spreads. The statistics of pubiotomy to date are 12 deaths in 202 cases, a much higher mortality than with artificial premature delivery (5.94 with pubiotomy and 1.4 per cent. with artificial delivery), but the prospects for the child are much better with pubiotomy. Semmelink relates a case of injury of the bladder while he was introducing a Seeligmann needle preliminary to drawing through the wire saw.

**55. Prevention of Puerperal Mastitis.**—Döderlein has found a solution of rubber and benzin with 1 per cent. formalin useful as a protecting coat for the skin. The benzin evaporates, leaving a thin impervious coating fitting tight over the skin, while the formalin has direct bactericidal action. He first cleanses the parts with iodine-benzin, then paints them with tincture of iodine and then applies the rubber mixture. This preparation before laparotomies and vaginal operations has been found successful in eliminating all tendency to wound infections. Applied to the nipple it protects it against cracks and fissures, and thus tends to ward off mastitis. The outlets for the milk are closed by the rubber, but the pellicle is so delicate that it breaks at these points as the child sucks. After nursing, the breast can be washed in water or alcohol as usual, for the rubber pellicle does not dissolve except with benzin, ether or chloroform. The mixture is applied every two or three days, and in an experience with 200 patients there has been no tendency to mastitis in any instance.

**56. Ergot in the Feces.**—Strasburger was able to detect particles of ergot in the feces after its administration by the mouth to several different persons and to dogs. The microscopic findings were positive even after a single dose of 1 gm. He regards this as possibly important in certain cases from a medicolegal standpoint or to determine ergot poisoning in bread. The findings were positive only during from 24 to 36 hours after administration of the ergot.

**58. Inversion of the Uterus.**—Holzapfel describes a case of total inversion of the uterus after childbirth. He ascribes the inversion to atony, which assumption is supported also by the unusually large proportion of inversions after still-births. If the atony is neglected, serious results are liable to follow. He thinks that greater attention should be paid to supervising the final stage of delivery, leaving the child unattended until the birth is complete.

**59. Treatment of Asphyxiated New-Born Infants with Infusion of Oxygen.**—Offergeld has tried infusion of oxygen through the umbilical vein in 12 cases of asphyxiated new-born infants. Only 3 of the children were revived, and his opinion of the oxygen infusions is decidedly unfavorable. He



is even inclined to regard them as responsible for extinguishing the last spark of life. He regards Schultze's swinging as not entirely free from danger, and is more favorably impressed with Ahlfeld's method of prolonged warm baths combined with artificial respiration. He states that it is sometimes astounding to witness the revival of the child after persevering continuance with this method for an hour or more.

**61. Removal from Bladder of Gauze Left After Laparotomy.**—Stoeckel reports a case of fistula in the abdominal wall after an ovariectomy with suture of the bladder. The cystoscope showed that a gauze sponge left in the abdomen over the bladder wound had perforated into the bladder. It was drawn out with forceps and the subsequent hemorrhage was easily controlled. He remarks that such mishaps are liable to occur with the most careful surgeons and those who have caustic criticism for anything of the kind are generally those whose operative experience is not very extensive.

**62. Loop of Umbilical Cord Around Neck.**—Holzbach presents arguments to show that after the face is once delivered there is no further danger for the child from a loop of the umbilical cord around its neck, while there is likely to be grave danger for the mother if attempts are made to remove the loop from the child's neck. The traction may detach the placenta or injure the vessels in the cord or do other damage.

**64. Scopolamin-Morphin Anesthesia in Obstetrics.**—Gauss describes the technic and results of scopolamin-morphin anesthesia as applied in 1,000 cases at Krönig's clinic at Freiburg. The drugs are given in gradually increasing amounts until the patient dozes without knowledge or memory of what is going on, but also without the profound sleep of general anesthesia. The labor pains must occur with a certain frequency and intensity before the anesthetics are administered. For this reason, primary weak labor pains are regarded as one of the few contraindications to the application of the technic. At first 1/200 gr. (0.0003 gm.) of scopolamin and 1/4 gr. (0.01 gm.) of morphin are injected, and later a second dose of scopolamin, without morphin. The total is generally about 1/150 gr. (0.00075 gm.) scopolamin, and 1/4 gr. (0.01 gm.) morphin, but sometimes a little more may be required. The patient's power of perception is the test as to dosage, and this is determined by briefly showing her some object at half-hour intervals and asking her if she had seen it when shown it before. If she says yes, this shows that she was conscious when she was first shown it. This test is repeated with new objects each time, the aim being to keep the patient in the "twilight sleep," that is, so drowsy that the powers of perception and memory are lost while she is still conscious to a certain extent.

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- 67 (LXXXIII, Nos. 1-2, pp. 1-211.) Appendicitis and Icterus. (App. und Ikterus.) P. Relchel.
- 68 \*Pathology and Treatment of Abscess in the Spleen. (Milzabszess.) L. Kirchmayr.
- 69 Hindrances to Reduction in Preglenoid Dislocation of the Shoulder, with Special Regard to Subcoracoid Luxation. (Schultergelenkluxation.) T. Bach.
- 70 \*Pathology and Treatment of Congenital Displacement of the Kidney. (Nierendystopie.) M. Strater.
- 71 \*Subcutaneous Extirpation of Enlarged Veins in the Legs. (Subkut. Exstirpation ektatischer Venen.) A. Narath.
- 72 Plexiform Neuroma. (Rankenneurom.) M. Strauss.
- 73 Pathology of the Patella. (Kniescheibe.) Creite.
- 74 Experimental Research on Etiology of Fat Tissue Necrosis and Changes in the Liver in Injury of the Pancreas. (Fettgewebsnekrose und Leberveränderungen bei Schädigung des Pankreasgewebes.) E. Payr and A. Martina.
- 75 Six Cases of Syringomyelia. (Syringomyelie.) O. Luders.
- 76 (Nos. 3-4, pp. 213-400.) \*Clinical and Histologic Study of Transplantation of Skin, Especially Sowing with Epithelium. (Hautverpflanzung und Epithelaussaat.) K. Noesske.
- 77 \*Absorption by the Peritoneum and Means to Influence it in Peritonitis. (Bauchfellresorption.) P. Glimm.
- 78 \*Suture of the Heart for Stab Wound. (Herznaht.) E. Tschernlachowski.
- 79 Myxo-fibrosarcoma of Bursa in the Heel. (Myx. der Bursa achillea post.) A. Martina.
- 80 \*Operative Treatment of Inguinal Hernia in Children. (Inguinalhernien bei Kindern.) Bühlmann.
- 81 Treatment of Gangrenous Inguinal and Femoral Hernias. (Lelsten- und Schenkelbrüche.) H. Barlocher.
- 82 Total Dislocation of Half of Pelvis. (Lux. einer Beckenhälfte.) Creite.
- 83 \*Ureter Catheters Impermeable to Roentgen Rays. (Röntgens Schatten gebende Ureterenkatheter.) R. Göbell.

**68. Abscess in the Spleen.**—The diagnosis in Kirchmayr's case was based on the sudden rise in temperature, the peculiar

cup shape of the area of dullness at the lower margin of the left pleura, and the fact that the patient was recovering from a mild attack of typhoid fever. Pure cultures of the typhoid bacilli were cultivated from the pus. The pleural cavity was opened after resection of 10 cm. of the tenth and eleventh left ribs, and the costal pleura was sutured to the diaphragmatic pleura, thus bringing the tumor outside of the thorax. The wound was then closed with gauze. Four days later the protruding part of the diaphragm was opened through the same incision, allowing the escape of pus and a piece of spleen tissue 3x5 cm. The surface of the spleen was adherent to the peritoneal surface of the diaphragm. The patient was dismissed cured about eight weeks after the first operation.

**70. Treatment of Congenital Dislocation of the Kidney.**—Strater warns against hasty measures in operating for displaced kidney as ligation of vessels, or heedless drawing forth of the tumor, whose nature is still unsuspected, may do irreparable damage to a perfectly sound kidney, whose only fault is to be out of its normal place. Seven cases are on record in which the tumor was extirpated and then found to be the sound kidney or was injured so much in exposing it that it had to be removed. Warnings against such procedures are not out of place, as study of the literature shows. In 2 of the cases the extirpated kidney was the only one existing. When the misplaced kidney causes no symptoms it should be left alone, as a rule. Even when symptoms are present, careful research should be made for some other cause. In several instances removal of diseased uterine adnexa put an end to all the symptoms without interference with the misplaced kidney. In case of symptoms attributable to the displacement, especially obstinate constipation, even a slight change of position for the kidney may remove the pressure from the bowel. An attempt should always be made to move the kidney and to fasten it at some more convenient point, reserving nephrectomy as the last resort. In beginning pregnancy, if there is a prospect that the displaced kidney will interfere with delivery, Strater advises nephropexy even if the displaced kidney is causing no symptoms. In advanced pregnancy, if the displaced kidney interferes with delivery, an operation to enlarge the pelvis is indicated rather than the removal of a sound kidney. In case the kidney is degenerated, it may be reduced in size by puncture or extirpated, but a healthy kidney, he reaffirms, is by no means an organ that can be casually removed.

**71. Subcutaneous Removal of Varicose Veins on the Leg.**—Narath states that for years he has operated on varicose veins by mobilizing them through a series of very small incisions at intervals. It is thus possible to mobilize long stretches of the vein and to resect them in one piece through a row of button-hole incisions. He describes his technic as performed on a large number of patients.

**76. Sowing with Epithelium in Transplantation of Skin.**—Noesske reports experiences with von Mangoldt's method of sowing raw surfaces with tiny particles of epidermis obtained by scraping the skin, thus obtaining a formless mass of blood and tissue. The edge of the razor is held perpendicularly, the skin below being stretched tight with the other hand. The first scraping of the surface is discarded; the fine punctate bleeding as the tops of the papillae are cut off shows that the proper layer has been reached, the one with the most vitality. The mixture of blood and epithelial cells resulting from the scraping is then transferred directly to the surface to be covered and is spread out evenly over it, after which the technic is the same as for Thiersch flaps. He gives clinical and histologic studies of the results, affirming that the method is much simpler and more convenient and that much less substance is required to cover extensive surfaces than with other technics. This sowing with epithelium has special advantages, he declares, for lining cavities in the long bones after operations for osteomyelitis and the like. The cosmetic results are better than with the Thiersch flaps, but a longer time is required for the healing. This disadvantage is compensated by the fact that the simple operation can be repeated at any time if the islands of cells that have taken root do not enlarge rapidly enough. The new covering is delicate and the method is thus best adapted for surfaces not exposed to friction. As



the new-formed skin does not contain sebaceous glands, it is liable to crack and ulcerate under long-continued irritation, the same as the Thiersch flaps, but in its own domain it gives extremely satisfactory results. He cites as an example the rapid healing over of a defect left after removal of an extensive mammary cancer. He applied Thiersch flaps around the edges, but the central portion of the large defect was covered with the epithelium. Two years later the central portion looks smooth and comparatively white, while the Thiersch flaps healed unevenly, with wrinkles and brownish pigmentation. He has found that spraying with ethyl chlorid seems to hasten the proliferation of the transplanted epithelial cells.

**77. Absorption by the Peritoneum.**—Glimm writes from Loeffler's Hygienic Institute to relate the result of research which demonstrates that bacterial infection of the abdominal cavity promotes absorption by the peritoneum. If the absorption of the bacteria can be checked, the course of the peritonitis is favorably influenced. He has found that injection of oil checks the absorption of bacteria in case of peritonitis due to the colon bacillus, and thus influences the peritonitis favorably. The concordant results of experiments on 56 dogs and rabbits encourages him to attempt injection of about 130 c.c. of 1 per cent. camphorated oil in cases of peritonitis in the clinic when the outlook is absolutely bad, after the failure of all other measures. He also thinks that the injection of oil might be successfully tried in cases of encapsulated abscesses that show no tendency to heal under appropriate treatment. He asserts that no harm can possibly result, while the benefit might be great. He warns against prophylactic injections, as the tolerance of the normal human peritoneum for oil has not been determined as yet.

**78. Suture of the Heart.**—Tscherniachowski adds another to the 89 cases of suture of the heart he has found on record, and summarizes the details of each. The pleura was involved in all but 7 cases. The mortality was 44 per cent. in the 25 cases in which the pleura was sutured, while it was 55.55 per cent. in the 27 cases in which the pleural wound was merely tamponed. The mortality was twice as great in the 42 cases in which the pericardium was sutured at once, as in the 23 cases that were drained (59.42 per cent. and 34.78 per cent.). The total mortality of the 74 stab wound cases was 43.24 per cent., and of the 9 bullet wound cases 55.55 per cent. The symptoms are frequently misleading, the severest wounds sometimes causing slight symptoms, and vice versa.

**80. Operative Treatment of Inguinal Hernia in Children.**—Bühlmann reviews the literature on the subject and describes the experiences at Tavel's clinic at Berne, with summaries of the cases. Operation was undertaken in 198 instances. His conclusions are absolutely unfavorable in regard to trusses for children, as they afford no guarantee of permanent cure. Operative treatment is indicated, he says, whenever a hernia is noticed in a child, regardless of age. The earlier it is done the easier the technic, from the absence of adhesions. Direct hernia is extremely rare in infants. Tavel's technic does not require more than ten or fifteen minutes, and the child is freed at once from the discomfort of years of truss wearing. The principle is the same as in the Broca and Stiles technic; recurrence has never been observed. The hernial sac is resected and the stump pushed back into the abdominal cavity, and the inferior and superior pillars are sutured together in front of the seminal cord with three interrupted sutures with No. 3 silk. The vessels are ligated with No. 2 silk, which is also used to suture the skin, with a straight needle. The anatomic conditions in children are studied and illustrated.

**83. Ureter Catheter Impermeable to the Roentgen Rays.**—Göbell refers to the advantages of using a catheter for the ureter that casts a shadow under the Roentgen rays in case radioscopy becomes necessary. This is easily accomplished by coloring with vermilion or cinnabar the lacquer used in making the catheter. He has his catheters thus made with every alternate centimeter black or red, which aids in cystoscopy.

#### Hospitalstidende, Copenhagen.

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- 84 (XLIX, No. 46, pp. 1229-1252.) Case of Congenital Total Color Blindness and Theoretical Study of Visual Perception. (Total Farveblind.) H. Rønne.

- 85 (Nos. 47-48, Pp. 1253-1300.) \*Diagnosis of Apoplexy. (Apoplexiens Diagnostik.) A. Friedenreich.  
86 Case of Progressive Muscular Atrophy with Autopsy. (Dystrophia muscul. progr.) K. Malling.  
87 (Nos. 49-51, Pp. 1301-1372.) Vision and Its Physiochemical Basis. (Om. Synet og dets fysisk-kemiske Grundlag.) A. Meisling.  
88 \*Spermatocystitis with Gonorrheal Epididymitis. (Gonorréens hos Manden.) A. Brønnum.  
89 (No. 52, Pp. 1373-1396.) \*Transmission of Human Tuberculosis to Cattle. (Overførelse af Mennesketuberkulose til Kvæget.)  
90 (L, Nos. 1-2, Pp. 1-48.) Multiple Endotheliomata of the Scalp. (Multiple Endotelomer i Hovedets Hud.) P. Haslund.  
91 Varying Density of the Islands of Langerhans and Study of Their Formation. (Undersøgelser over Bugspytkirtlen.) K. A. Heiberg.

**85. Differentiation of Apoplexy.**—Friedenreich has been studying the points which differentiate hemorrhage in the brain from softening on a basis of arteriosclerosis. Since 1900 about 422 patients with apoplexy have been treated at the public hospital and 256 succumbed. Of this number 201 came to autopsy, and in 5 both cerebral hemorrhage and softening were found. This leaves 197 cases for research on the differentiating points, as softening of the brain was observed in about a third and cerebral hemorrhage in the others. After critically sifting and reviewing the various symptoms observed and comparing them with the postmortem findings, he summarizes the signs that indicate cerebral hemorrhage as follows: Severe onset, especially with profound coma, and inability to move the limbs in the total and extensive cerebral paralysis which frequently is rapidly fatal; blood-stained cerebrospinal fluid on lumbar puncture; age under 55 (especially under 50); low temperature at first, if no other cause for the subnormal temperature can be discovered; possibly a mild epileptic seizure as the initial symptom; retinal hemorrhage and rigidity of the paralyzed limbs, especially of the arms. Further useful signs, although of comparatively less importance, are hypertrophy of the heart without a valvular defect; albuminuria or nephritis, and normal or hyperemic papilla, and the vessels in the retina well filled or gorged. There are no pathognomonic signs for acute softening, but the absence of initial loss of consciousness, with the serious paralysis and with the rarer partial, dissociated paralysis suggest softening rather than cerebral hemorrhage. Further useful signs are the incompleteness of the paralysis, pale papillæ and undistended retinal vessels. Sometimes the paralysis comes on gradually and there may be restlessness and vagueness. A valvular defect also points to softening, and likewise the determination of a prodrome or previous attack, or senile epilepsy. Low blood pressure, if no other cause for it can be assigned, also points to softening, also clear cerebrospinal fluid. In the cases reported the hemorrhage was differentiated during life in 89 out of 108, and softening in 40 out of 63, the diagnosis being correct, therefore, in an average of 3 in every 4 cases. During the later series the data collected and recorded in this article enabled still more frequent accurate differentiation.

**88. Involvement of Seminal Vesicles with Gonorrheal Epididymitis.**—Brønnum relates that he was able to express the pathologic secretion from the seminal vesicles after urination, expression of the prostate, renewed urination and rinsing out of the urethra with a solution of boric acid. The bladder is then filled with the boric acid solution, the catheter withdrawn and the seminal vesicle on the side of the epididymitis is manipulated with the fingers. The contents of the bladder are then withdrawn and centrifugated and the sediment examined for leucocytes and gonococci. He had positive findings in this respect in 16 out of 20 cases of gonorrheal epididymitis at the Frederiksberg Hospital, that is, in 80 per cent. In the other cases leucocytes were found without gonococci, and in only one case were the findings negative. The seminal vesicle was swollen in 15 of the cases. He noted enlargement of the seminal vesicle in a number of other cases, not included in these statistics, which are restricted to those cases in which the above technic or expression was applied. He calls it the "complete expression method" (fuldstændig Expressionsmetode), and advises its application in every case of gonorrheal epididymitis, although not at every examination. It is not necessary to use it except for the vesicle on the affected side. He stains the centrifugated sediment with methylene blue for examina-



tion under the microscope, and uses the Gram technic in dubious cases. The careful preliminary expression of the prostate and cleansing of the urethra eliminate, he thinks, the danger of error from admixture of secretion from other points. He is careful to restrict the palpation to the single seminal vesicle involved.

**89. Transmission of Tuberculosis from Cattle.**—Jensen and Fibiger's third report on their extensive researches in this line describes 2 cases of fatal primary intestinal tuberculosis in the digestive tract with incipient miliary tuberculosis of the lungs and liver. The patients were children who had been fed with milk from different dairies, including one having tuberculous cattle. The development of a tuberculous udder affection in one of the cows corresponded with the date of the development of the tuberculous affection in the child later, in one case. Bacilli from both cases displayed great virulence in inoculation of calves and rabbits. They add that it is difficult to imagine more convincing testimony as to the danger from raw milk than these cases present. Similar testimony in the literature is collected and analyzed, with the result that Jensen preaches that the theory as to the rarity of primary tuberculosis of the intestines will have to be abandoned as the evidence on hand of the contrary is so convincing. He asserts that tuberculous infection of the digestive tract has a far greater share in the prevalence of tuberculosis than has hitherto been imagined, and especially infection from cattle. Whether adults are less susceptible than children to infection from tuberculous cattle is still an undecided question which he is now investigating, along with the importance of the changes induced in tubercle bacilli by passage through man and through cattle.

#### Hygiea, Stockholm.

Last indexed XLVII, page 1143.

- 92 (LXVIII, No. 8, Pp. 705-832.) Elimination of Mercury Through the Urine. (Kviksilfrets afsöndrande genom urinen.) E. Welander.
- 93 Clinical Cure in Case of Pseudo-leukemia under Roentgen Rays. (Röntgen-ljuset inverkan på blodet.) E. Wikner.
- 94 (No. 9, Pp. 833-960.) The Birth Rate in Modern Times and the Prospects for the Future. (Nativiteten i nutiden och dess framtidsutsikter.) P. Fahlbeck.
- 95 \*Primary Tuberculosis of the Kidneys, with Especial Regard to Diagnosis and Symptoms. (Primär njurtuberkulosen.) G. Ekehorn. Concluded in No. 10.
- 96 Marmorek's Antituberculosis Serum. (Marmorek's serum mot tub. sjukdomar.) F. E. v. Sydow.
- 97 (No. 10, Pp. 961-1088.) \*Case of Volvulus of Small Intestine with Meckel's Diverticulum and Study of "Subacute Ileus" and Gastrostomy for Paralysis of Small Intestine. (Tunn-tarmsvölvulus och tunntarmsparalysi.) K. G. Lennander.
- 98 Which Cases of Pulmonary Tuberculosis Are Adapted for Treatment in a Public Sanatorium? (Folksanatorievård.) J. Tillman.
- 99 Gonorrhea in Prostitutes. (Gon. hos prostituerade.) F. Sandman.
- 100 (No. 11, Pp. 1089-1216.) \*Epidemic of Acute Paralysis Following Anterior Poliomyelitis in Sweden, 1905. (Om den s. k. akuta barnförlamningen.) H. Lundgren.
- 101 School and Transmissible Diseases. (Skolan och de smittsamma sjukdomarna.) G. Steenhoff.
- 102 Experiences with Cataract Operations. (Om starroperationer.) V. L. Lundberg.
- 103 Sterilization of Catgut by Boiling in Alcohol. (Sterilisering af katgut genom kokning i absolut alkohol.) P. Clarholm.
- 104 Diagnostic Importance of Abdominal Reflexes in Atypical Multiple Sclerosis. (Atypisk multipel skleros.) E. Rodhe.

**95. Tuberculosis of the Kidneys.**—Ekehorn gives the details of 41 cases of primary tuberculous affections of the kidneys. He announces as a rule that it is not sufficient to catheterize the ureter alone if the findings show that the kidney above is diseased. On the other hand, it is unnecessary to catheterize the other ureter if the urine is found free from pus and tubercle bacilli, with manifest signs of a tuberculous process in the other kidney. Catheterization of the ureters is indispensable in many cases, as even exploratory incision may give misleading findings and a single cystoscopic examination without catheterization of the ureter may give deceptive findings. Functional tests of the urine, such as cryoscopy, he states, are of subordinate importance.

**97. Paralysis and Volvulus of Small Intestine.**—Among the lessons learned from the case of volvulus of the small intestine described, and from a recent case of acute dilatation of the stomach and other similar experiences, Lennander mentions especially that when the stomach or small intestine becomes stretched beyond a certain point it can not contract until it is partly emptied. The extreme stretching prevents muscular

contraction. The extremely distended, but not paralyzed, intestine appears to be paralyzed when it is inspected, but if an opening is made into it and some of its contents removed, the muscle is then able to contract and it will empty itself spontaneously through the fistula. The really paralyzed intestine does not contract, and, to enable it to recover, the enterostomy must be made proximal to the paralyzed portion. In case the paralysis involves the upper part of the duodenum the fistula will have to be made in the pyloric part of the stomach. He makes it a rule to do this gastrostomy without delay when, after he has emptied the small intestine and jejunum, the jejunum shows no signs of contracting. He also does gastrostomy in cases in which there are no indications for it at the laparotomy, and yet the abdomen continues to increase in size, the pulse rate grows more rapid or remains fast, and lavage of the stomach, repeated two or three times, gives findings indicative of retention of fluids with a disagreeable odor. These, he reiterates, are ample indications for performing gastrostomy without further delay. Since treatment on these principles has been introduced in his clinic the outcome in such cases has been immeasurably better.

**100. Epidemic of Acute Anterior Poliomyelitis Occurring in Sweden During 1905.**—Lundgren traces the clinical picture of the disease as observed in 147 cases in the Växjö district. There were 403 cases in the entire epidemic which commenced in April and reached its highest point in August and September; no case has been known since the beginning of 1906. The incubation seemed to be about 8 or 10 days, and a prodromal period followed lasting from 1 to 3 days, with headache, vomiting, stiffness in the back of the neck, pains in the back, fever, and somnolence in the smaller children, with convulsions in some cases. The symptoms subsided after a few days, leaving a certain weakness in the arms or legs and a staggering gait in some cases. In the majority, however, as the initial symptoms subsided, a gradual paralysis was observed, with paresis of the bladder, and in one case, disturbances in sight and in another of hearing, with loss of speech in a number. The mortality was about 10 per cent. Permanent paralysis was left in about 25 per cent. of the cases.

### Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

**TEXT-BOOK OF PSYCHIATRY.** A Physiological Study of Insanity for Practitioners and Students. By Dr. E. Mendel, A. O. Professor in the University of Berlin. Authorized Translation Edited and Enlarged by William C. Krauss, M.D., Buffalo, N. Y., Neurologist to Buffalo General Hospital. Cloth. Pp. 311. Price, \$2.00 net. Philadelphia: F. A. Davis Company, 1907.

**PARAFFIN IN SURGERY.** A Critical and Clinical Study. By W. H. Luckett, B.S., M.D., Attending Surgeon, Harlem Hospital, and Frank I. Horn, M.D., Assistant Surgeon Mt. Sinai Hospital Dispensary, New York City. With thirty-eight illustrations. Cloth. Pp. 118. Price, \$2.00. New York: Surgery Publishing Company, 1907.

**THIRTY-SEVENTH ANNUAL REPORT** of the Board of Managers and Superintendent of the New York State School for the Blind, Batavia, N. Y. For the Year 1904-1905. Transmitted to the Legislature, March 1, 1906. Paper. Pp. 121. Albany: Brandow Printing Company.

**A POCKET FORMULARY.** By E. Quin Thornton, M.D., Assistant Professor of Materia Medica in Jefferson Medical College, Philadelphia. Eighth Edition, Revised. Leather. Pp. 287. Price, \$1.50 net. Philadelphia and New York: Lea Bros. & Co., 1907.

**MANUAL OF CLINICAL CHEMISTRY.** By A. E. Austin, A.B., M.D., Professor of Medical Chemistry and Toxicology in the Medical Department of Tufts College, Boston. Cloth. Pp. 278. Price, \$1.75. Boston: D. C. Heath & Co., 1907.

**PLASTER OF PARIS AND HOW TO USE IT.** Martin W. Ware, M.D., Instructor of Surgery in the New York Post-graduate School. Cloth. Pp. 88. Price, \$1.00. New York: Surgery Publishing Company, 1906.

**ANNUAL REPORT** of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States, for the Fiscal Year 1906. Cloth. Pp. 255. Washington: Government Printing Office, 1907.

**DIAGNOSIS AND TREATMENT OF INTUSSUSCEPTION.** By Charles P. B. Clubbe, Hon. Surgeon to the Royal Prince Alfred Hospital. Cloth. Pp. 92. Edinburgh and London: Y. J. Pentland, 1907.

**THIRTY-SIXTH ANNUAL REPORT** of the Central State Hospital of Virginia, Petersburg, for the Fiscal Year Ending September 30, 1906. Paper. Pp. 86. Richmond: Davis Bottom, 1906.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVIII.

CHICAGO, ILLINOIS, MARCH 16, 1907.

No. 11.

## Original Articles

### THE ORGANIZED MEDICAL PROFESSION AND SOME OF ITS ENEMIES.\*

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#### THE BASIS OF AN ORGANIZED PROFESSION.

The medical profession becomes organized, medical associations are formed, principally for these two purposes: to increase and diffuse medical knowledge and to elevate and maintain the ethical standards of the profession. Other important purposes may be served by our professional organizations. The guidance of the community in relation to matters of public health and hygiene is often, and properly, matter for consideration in medical societies; and special societies may be formed among the medical profession devoted to such particular purposes, as for the eradication of tuberculosis or trachoma. Again, medical societies sometimes act to protect the interests of the individual members of the profession; as by union for defense against suits for malpractice, or the relief of physicians who have been specially unfortunate, or their families. But this work, too, is taken up after the profession has been organized. Such objects do not primarily bring about professional organization.

1. *Maintenance of an Ethical Standard.*—The vital purpose that brings about organization, that sustains and perfects it, is the determination to make the profession more efficient and valuable to the community, by the improvement and diffusion of knowledge among its members, and the maintenance of an ethical standard. A little consideration should show why this is so. The profession exists to render a certain service to the community. In so far as it fulfils this service it is worthy of perpetuation and support. If it should fail to render valuable service it ought to go out of existence and ultimately would do so. Its value to the community, like the value of any other profession, depends on the fidelity with which its members serve the interests of their clients. Between a man and his medical adviser the relation is this: the patient agrees, explicitly or implicitly, to pay the physician his fee; the physician agrees to employ all his knowledge and skill for the benefit of the patient. There can be no matching of knowledge of the market, as between salesman and buyer. There can be no use of conscious power, on the one hand, to drive an extortionate bargain with dire need, on the other. To apply the rules of conduct recognized as proper in ordinary commercial transactions to the relation of physician and patient is to destroy that relation. Hence, the peculiar need of professional organization to define, maintain and enforce a standard of professional ethics.

2. *Diffusion of Medical Knowledge.*—Then medical organizations attempt to improve, extend and diffuse professional knowledge. It is the possession of certain knowledge and technical skill that justifies the recognition of a man or woman as entitled to membership in the medical profession. Without the possession of such knowledge and skill, no well-informed person would for an instant regard him or her as a physician or surgeon. Let us consider for an instant how this mass of professional knowledge and technical acquirement has come into existence. It has been wholly through the communication of the new fact or method discovered by one member of the profession to his fellows. Take all the original discoveries attributable to any one member of the medical profession, the most able, the most indefatigable, the most favorably situated, through the longest working life. How utterly insignificant would these be as a basis for the practice of medicine; as compared with what each of us has learned from his predecessors and contemporaries in the profession. Without the diffusion of medical knowledge no medical profession would or could exist.

Consider how our appreciation of any medical truth is arrived at. Take the history of tuberculin. Announced to the laity by one of the most acute observers of the age, after years of study and careful laboratory experiments, Koch's discovery, for a time, seemed to serve only to raise false hopes, to increase suffering, to destroy life, to bring contempt on scientific medicine. But announced to the profession, placed in the hands of a host of interested workers, there have already emerged certain facts that have made tuberculin a real benefit; and give promise, through the general sifting and trying process to which the whole profession subjects the observations that are brought before it, of benefits to match our earlier hopes. With an organized medical profession we possess an authoritative tribunal capable in the end of fixing the value of each proposed measure that is frankly brought before it.

#### ENEMIES OF THE PROFESSION AND THE GROUNDS OF WARFARE.

Our organized profession rests on these two things: recognition of the supremacy of the interests of the patient and absolute frankness and honesty in statements of scientific fact. The enemies of the organized medical profession, its essential enemies, those whose opposition to it is radical and vital, are those who would place other interests on a par with those of our patients; or who would practice or permit secrecy or untruth to be mixed inextricably with established scientific facts. Between the medical profession and all interests or individuals who place themselves in the attitude of opposition to our vital principles, there must always be warfare; a struggle that can not end until secrecy and dishonesty as to therapeutics, until willingness to sacrifice the interests of the

\* Read before the Medical Society of the City and County of Denver, Oct. 2, 1906.



patient to other interests are swept away; or the medical profession itself is annihilated.

Let us not underestimate the importance, the severity or the duration of this warfare. On the one side the medical profession springs from the needs and the best impulses of humanity. On the other side the opposition to it draws its vitality from selfishness, deeply rooted and universal as the life of our race. The struggle commenced before we were born; it will go on when we are dead. Our duty is to see that we understand the present phase of it, as well as we can, and give what little influence we have to the support of the right.

#### PROPRIETARY MEDICINES, ETHICAL AND UNETHICAL.

The present phase of the subject deals with the question of proprietary medicines. "Patent medicines" is the popular term for the class, but those to which the term "patent" strictly applies raise a relatively unimportant side issue. The "patent" medicine may represent interests to some extent opposed to those of our patients, but a patent is only granted for a limited time and based on definite published statements. If such statements are not true, their falsity can readily be demonstrated.

In this country, at least, the important issue is with regard to preparations sold under a registered trade-mark. We can have preparations sold under a copyrighted trade-mark that are strictly ethical. But such preparations must conform to the following requirements: their composition, or exact method of manufacture, and their physiologic and therapeutic action, must be generally known. They must be sold under their ordinary pharmaceutical names which any person is privileged to use, so that all may understand what the medicine purports to be. The trade-mark or copyrighted portion of the name must only indicate the responsible maker, thus becoming a guarantee of purity and quality.

Squibb's ether is a type of such a preparation. Ether is a drug, the composition, physiologic action, uses and dangers of which are well known. False claims for such a drug would be promptly challenged and could not seriously mislead any one who took care to inform himself on the subject. If the manufacturers of a particular brand of ether can produce one of greater purity, more free from irritants, they deserve the reward of superior skill; while the profession and the public can profit by the guarantee of a reliable name. The same may be true of a particular brand of diphtheria antitoxin, if proven to be more perfectly aseptic or more efficient than that produced by a rival manufacturer.

But a name can be copyrighted without any definite statements as to the chemical composition or method of preparation of the substance it represents. When what is claimed to be a new chemical compound is put forth, with claims of therapeutic value, based not on the general experience of the profession, but on the alleged results attained by some anonymous or unknown experimenter, generally in the pay of the proprietors of the copyright, the act violates the fundamental principles of organized medicine. It is an act of aggressive warfare on the part of an enemy of medical science, and as such must be regarded and met by every loyal member of our profession.

Even though the composition of a new preparation be frankly stated, the copyrighting of the name by which it will be commonly known should be regarded with suspicion. The physician who prescribes a substance by its copyrighted name places himself at the mercy of the

proprietors of that name. He must have full faith in their honesty and intention to put forth a valuable drug, the use of which shall be wholly subject to the discretion of physicians; but the copyrighted name is an asset that may pass, as it often has done, to the hands of those who may vary the composition of the preparation, or the manner of placing it before the public. Even aside from secrecy or misleading statements, when the physician prescribes acetanilid under the name antikamnia, amonol or phenalgin, what possible benefit is the use of such name to the patient, who pays from 100 to 500 per cent. more for the drug, or to the general public, or to any one except the proprietors of these copyrighted names, and those with whom they divide their profits?

#### IGNORANCE AND TREASON IN THE PROFESSION.

In the past, even in high places, ignorance and indifference to this matter have been so common, the evil has grown so gradually to its present gigantic proportions, that individual members of our profession can not be greatly blamed for some mistakes in this direction. But now that the issue has been raised by the American Medical Association; now that even the better lay magazines and newspapers have awakened to the enormity of the crime against the public of secret proprietary medicines, all members of our profession and all medical organizations are called on to take a positive stand with reference to this subject. There is need to arouse the professional conscience and also to inform the professional intelligence with regard to this subject.

The warning of Samuel Hopkins Adams<sup>1</sup> in his address before the Medical and Chirurgical Faculty of Maryland is too true:

You have not, as a profession, an intelligent idea of the forces which you are fighting. . . . You are fighting a very keen and powerful enemy in the "patent medicine" man, or rather you are just beginning to fight him, for you have let him take the aggressive thus far. There is little about your profession that he does not know. When he misrepresents you he does it shrewdly. There is little about his profession that you do know.

In the present confused situation the danger is not from open avowed enemies, but from ignorance and treason in our own ranks. For ignorance there will soon be little excuse. The facts that have been published by THE JOURNAL of the American Medical Association and some of the journals of our state medical societies are within the reach of all who have a proper interest in the subject. For treason we may have to resort to sharper remedies than have yet seemed necessary. Let us remember that the Constitution of the United States defines treason as consisting "in levying war against them, or in adhering to their enemies, giving them aid and comfort." No narrower definition could possibly be sufficient.

Let us clear up this issue as much as we can. Our enemies are the vendors of unethical proprietary medicines, secret or put forward with extravagant claims. These men are engaged in getting out of the public all the money they can without coming in serious collision with the criminal law. They have no professional traditions; they have no special code of morality; they are engaged in a business in which the general morality taught in churches and schools is disregarded. They have no interest in the establishment of scientific truth. The proprietary medicine maker would not be satisfied with a true estimate of the action of the preparation he

1. Maryland Med. Jour., February, 1906.



puts before the public were it ten times more powerful and generally useful than any medicine yet known. The most nearly decent proprietor of such a preparation is spending a large part of his time and thought in exaggerating the virtues of his drug and minimizing its evil effects. His aim is to build up an impression, manufactured out of hope and based on credulity, which will cause people to buy his wares.

#### HOW THE PHYSICIAN IS MADE A CATSPAWE.

In accomplishing this aim he seeks the assistance of the medical profession, he studies the psychology of the medical man and employs such agencies as will best accomplish the object. He sows free samples broadcast, calculating that one prescription from one physician will pay all the expenses of sampling ten. He pays impecunious or renegade members of the profession for what purport to be scientific articles, making favorable mention of his drug. But especially he buys the advertising pages of the medical journals, with the good-will of the editorial management thrown in, to keep his blatant unsupported claims and skilfully worded suggestions forever before the eyes of our profession.

Thus are a multiplicity of worthless preparations, of false statements, and of distortions of facts brought to hinder the progress of scientific medicine even in the mind of the physician, and weaken his power to combat disease. Thus do our enemies damage the healing art and steal the confidence the community reposes in the physician and use it as an important aid in the creation of the false impression, through which they hope to amass fortunes—the very livery of heaven to serve the devil.

The time has come when the treason in our own ranks, which makes it possible and easy to use the reputation of medical men and medical journals against our profession and the interests of our patients, should be recognized and characterized in its true light. The proprietary medicine manufacturers fight the medical profession in every state in the Union, with lobbyists in the hall of every legislature, and with clauses like these inserted in their contracts with the newspapers:

1. It is agreed in case any law or laws are enacted, either state or national, harmful to the interests of the ——— Manufacturing Company, that this contract may be canceled by them from date of such enactment, and the insertions paid for *pro rata* with the contract price.

2. It is agreed that the ——— Manufacturing Company may cancel this contract *pro rata* in case advertisements are published in this paper in which their products are offered, with a view to substitution or other harmful motive; also, in case any matter otherwise detrimental to the ——— Manufacturing Company's interests is permitted to appear in the reading columns or elsewhere in this paper.

On the other hand, these same manufacturers subsidize some of the largest so-called "independent" medical journals of the country to induce the more poorly trained, ignorant, lazy or careless portion of the medical profession to prescribe these nostrums; while the more venal lend their names and talents to give such use of these nostrums an air of respectability.

Charity may well be exercised toward the shortcomings of individual physicians; but there is no excuse for medical organizations in any way favoring or condoning the efforts made to confuse medical fact with falsehood and bring about the disintegration of an organized profession. Of course, the effort is persistently made to befog the issue. There has been a great deal of hypocritical rejoicing in certain medical journals over the declaration of the American Medical Association at the

Boston meeting that it was not opposed to "independent medical journals." No one ever honestly supposed that it was. The declaration simply met the false issue raised by those who give "aid and comfort" to the enemies of the profession, when there was evidence of a disposition to oppose the treason which manages so-called "independent medical journals" in the interests of nostrum makers.

There is need on all occasions and on all sides for clear thinking and plain speaking in regard to this matter. Let it be understood that it is treason to the traditions and ideals of our profession, treason to scientific medicine and to medical organization, to give aid and comfort to our enemies by prescribing, recommending, associating one's name with, or advertising any proprietary remedy, which is secret in composition or method of manufacture, or for which extravagant, misleading or untruthful claims are made.

#### THE PLACE OF PATHOLOGY IN THE UNIVERSITY.\*

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It is a well-known historical fact that the origin of the natural sciences and in particular that of the biologic sciences is closely connected with the study of medicine. Physics, chemistry, zoology and botany were not only first cultivated mainly by physicians and students of medicine, but their special problems were also in the beginning largely the outgrowths of questions that plagued the minds of those who practiced the art of healing. As time went on these sciences did not remain exclusively attached to medicine and the medical schools, but became associated with other branches of learning. The history of education shows that universities, throughout their development, have been almost continuously enriched with new subjects for study and scientific investigation derived from the activity of medical thought and practice. Singularly enough, the universities, and more strangely still, the first born of the natural sciences, have not always shown themselves hospitable to the biologic studies that have been developed more recently in medical surroundings. Zoology and botany hold conspicuous and time honored places as branches of study worthy of the attention of the general university student, while an unmistakable, although it must be confessed feeble protest is being made even to-day in some quarters against the admission of scientific anatomy and even physiology into the same category. In one instance, the classification of the biologic sciences into medical and non-medical has had the effect that the buildings that house comparative anatomy, zoology, botany, and chemistry are separated by a considerable distance and by other barriers from the new and magnificent facilities for studying human anatomy, physiology and pathology. Apart from the essential identity of many of the biologic problems, and putting on one side the question of the lessening of the opportunities for mutual intercourse among workers in related fields, there is here involved the question of the exclusion of the general university student from participation in some of the most stimulating and momentous scientific movements of the day.

Medicine on its side also is the loser by any divorcement from the university. On more than one occasion in the last few years zoölogic and chemical discoveries

\* President's Address, Chicago Pathological Society, Oct. 8, 1906.



and theories have influenced fundamentally the trend of medical research. Who will undertake to say that the origin and growth of cancerous tissue is not essentially an embryologic or cytologic problem, and may not eventually be explained by the zoölogist rather than by the professional pathologist? Any separation of the biologic sciences into medical and non-medical groups is not only artificial, but is open to the danger that either group may develop asymmetrically, imperfectly or abnormally when the restraining or stimulating influence of the neighboring science is withdrawn.

Pathology is one of the biologic sciences that has most recently swum into the ken of many professional educators, and the question will soon arise, if it has not already arisen, as to what justification exists for the introduction of such a subject into a university. At present the universities in the United States that foster a department of pathology or one of bacteriology and hygiene on the same academic footing with a department of Latin or of Sanskrit may almost be counted on the fingers of one hand. Out of forty of the leading colleges and universities only eight, according to statements in recent catalogs, give to their academic students an opportunity for studying bacteriology or pathology.

It may be said in the first place that any one acquainted with the subject matter of pathology understands that since it deals largely with physiologic, anatomic, and chemical data its pursuit must suppose sufficient and correlated facilities for the acquisition of the more fundamental branches. It would be a mistake to assume, however, that pathology is merely a form of the technical application of these sciences. Investigation into the nature and causes of disease carries with it as definite and as independent a body of problems as does the meaning of structure or the interpretation of normal function.

The advanced character of much of the work in pathology as determined by the extent of preliminary training necessary for effective approach, and the special facilities essential for many kinds of pathologic work are likely for some time to come to limit the introduction of pathology into universities and at least to keep it in the category of elective rather than required subjects. This is not the time or the assembly for a full discussion of the respective provinces of required or elective studies, but it is natural that the courses in pathology in their broader aspects should be elective for the non-professional student, although it may well be questioned whether some of the fundamental principles of bacteriology and hygiene are not deserving of consideration side by side with other courses in natural science of no greater educational value and of decidedly less practical significance for the average human life.

Taine says that the first great English utilitarian, Francis Bacon, at the age of 16, expressed dissatisfaction with Aristotle's philosophy, not that he thought meanly of the author, whom, on the contrary, he calls a great genius, but because Aristotle's system seemed to him of no practical utility, incapable of producing works which might promote the well-being of men. However steadfastly it is held that the true university should stand as a bulwark against the ever aggressive forces of materialism and crude self-interest, it is also possible to maintain that the large purpose of promoting the well-being of man is a vital part of its functions. Whatever may be said about the idealistic value of pathology there can be no question as to its importance in its broader utilitarian or humanitarian aspects. As a

subject of scientific research pathology does not need to defend its place in the university. It both strives to extend the boundaries of knowledge and aims to promote individual and general happiness and welfare.

One of the points on which issue is joined is more subtle, or, if you please, more academic than this. Should professional studies which are necessary for the special students of law, divinity, medicine, or engineering, be allowed to count toward a college degree? Are they, in other words, to rank on the same footing as courses adapted for training students to proficiency in Latin, mathematics, or biology? The question of educational values and the relative merits of different branches of knowledge lies in the main outside the scope of this paper. I can not, however, help expressing my disagreement with the advocate of specialism who holds that special aptitude and concentration are the main things to be considered, and that every student should be allowed to work out his own salvation with his own talent in his own way. My observation indicates that few if any students are able to pick their way to advantage through the maze of studies in a modern university. Trivial, even mischievous reasons are allowed to sway the choice of courses and the result is in too many instances a jumble of brilliant misinformation. The principle of election of studies, in itself sound and worthy of extension, has been misapplied and misinterpreted until some have come to believe that the subject studied is of little moment, provided that a student feels or fancies that he feels a desire for it. From this view I cordially dissent. If the history and experience of the human race count for anything Choctaw is not so educationally valuable as Latin, or bookkeeping as plane geometry. A limit should be placed somewhere to the possibilities of election on the part of the college student. Subjects that may well find a place in a university devoted to the advancement of knowledge need not forthwith be made accessible to the whimsical choice of undergraduates. One of the notorious and still growing evils of the situation is the multiplication of what I may call intermediate courses which stand between the fundamental courses and the seminars or conferences intended for the guidance or promotion of research. Many of these courses are simply a concession to the feeling for symmetry and completeness, and their existence among college electives is educationally deplorable. Mr. Charles Francis Adams contends that a college education should be "purely a training of the mental powers—the suppling and development of the intellectual muscles—the proportioning of the faculties." He follows this with a definition of the educated man which in its blending of the older traditions with a very modern spirit is worth quoting. "An educated man is, I take it, one in whom the imaginative faculties, the reasoning faculties, and the observing faculties have all been properly and adequately developed—developed to such a degree that each becomes a usable tool for accomplishing the work in hand to do."

I believe that it should be the work of the colleges to turn out men so trained and equipped, and that to effect this end a much more scientific application of the principle of the election of studies is needed than has yet been made. This carries with it, too, a task which college authorities almost invariably shirk, a study of the individual student, of his needs and deficiencies as well as of his aptitudes and passing inclinations. A smaller number of courses announced and given, an adoption of



the principle of election within groups of studies and more attention to the individual as an individual are, it seems to me, some of the immediate objects to be aimed at in American college and university life.

How, now, in view of these considerations, should we attempt to adjust the demands of professional education to the best interests of the undergraduate student? The question really resolves itself into determining what courses of a professional nature best serve the purposes of a true education, bearing in mind that the end in view is not the amassing of information, but the symmetrical training of the faculties. Only those professional courses that distinctly serve this end should be thrown open for undergraduate selection. From purely technical and informational courses they should be debarred until they enter definitely on their professional career. It may even be questioned whether in strictly professional work the informational course does not play a far larger part than it should. Mr. Adams, in the address above quoted, says: "The reasoning man, devoid of imagination and unable to observe, becomes, whether in religion, in politics, or in philosophy, notoriously a pitfall. On the other hand, the observing man finds himself at fault unless he can imagine and reason. No man, moreover, is fit to be called educated unless in him each group of faculties has been supplied and trained." Every student of science, and especially every student and teacher of medicine may well consider whether, if he accept this view, many courses now recommended to or required of the prospective practitioner, investigator, or teacher could not readily and advantageously be dispensed with.

In a university, therefore, the courses in pathology ought to stand on their own educational merits and be weighed like courses in Hebrew or on the political constitution of the Romans, not so much for their informational content as for their ability to train the powers of the mind. Like other courses in natural sciences the fundamental or elementary courses in pathology and bacteriology possess, in my opinion, a peculiar and unique value not possessed by courses in linguistics, history, or economics. Much is said nowadays concerning the introduction of the scientific method into these subjects; it might even be semi-seriously urged that science is not needed by the student of philology and economics since these branches have become infected with the scientific method. One of my colleagues has recently said: "There is certainly no fundamental distinction between the researches of the historian, the philologist, the social statistician, and those of the biologist, the geologist, or even the physicist and chemist in point of method." With this view I can't agree.

It must not be forgotten that while certain features of the scientific method are applicable to subjects like history and philology, others are not and in the nature of the case never can be. The student of history can rarely if ever depend on his own first-hand observation, but must rely more largely than the student of science on facts recorded by observers of doubtful capacity or even questionable veracity. The original documents, moreover, that constitute the raw material of history, are often so tinged with human passion as to be valueless as records of observed fact. Furthermore, the opportunities for experiment, of which science makes so large a use, are practically altogether wanting. When complex economic phenomena are accurately observed and their nature correctly interpreted, it may be possible to frame plausible generalizations, but the verifica-

tion of these generalizations is another matter. There are different views as to whether the governmental ownership of railways in the United States is practicable or desirable, but none of these theories can be verified in a class-room, nor can we make on a large scale a series of experiments, first in one direction, then in another, while all other conditions remain the same.

I am compelled to believe, therefore, that the scientific method in its entirety and cogency is best exemplified by courses in natural science. The advantages, such as they are, of personal observation and experiment followed by generalization and verification, may be presented by the fundamental courses in pathology and bacteriology, as well as by courses in other natural sciences. In fact, something might be said in advocacy of bacteriologic method as calculated to enforce in a peculiarly direct way the necessity of uniformity of condition in experimental work, but this is not essential to the present argument. Granting that the elementary courses in pathology, therefore, stand on the same level, educationally speaking, as the other branches of natural science, it must be added that in common with the rest of the biologic sciences they demand some preliminary scientific training for their successful approach.

Although I am heartily of the opinion that training of the imagination, the reason, and the power of observation should be the main object of a college course, there is no reason why a steady prosecution of this object should prevent one from gathering flowers by the wayside. It seems possible to attain the end and at the same time to acquire information of a kind most likely to be useful to the average human being. Here lies the opportunity for the group elective system which shall give some play to aptitude and inclination at the same time that every course is made to tell in the direction of mental efficiency and control. The evaluation of the subject matter of a science is perhaps more a question of personal temperament than any yet touched on, and I do not wish here to advance the claim that to any discerning intellect pathology stands supreme among the sciences. I would simply point out first that the known and elementary facts regarding the nature and causes of disease are of importance and usually of interest to the individual, and second, that the diffusion of at least an elementary knowledge of these facts is essential to the well-being of every nation and community.

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#### THE ADJUVANT ACTION OF QUININ HYDROCHLORATE IN INFECTIONS BY THE BACILLUS OF TETANUS.

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Not long since my attention was directed to a case of tetanus of a very rapid and severe type which ended fatally. It appeared to be a case of so-called idiopathic tetanus as no history of trauma of any kind was given. On careful examination it was found that the patient had been threatened with an attack of malaria not long before the attack of tetanus and had been given a hypodermic injection of the hydrochlorate of quinin by the physician in charge. The attack was evidently aborted as no other symptoms resulted until those of tetanus developed. This incident called to mind some very interesting work reported by Prof. M. E. Vincent, which I had tried to corroborate some time before. In



the hope of being more successful in the work of corroboration than I was in the first series of experiments, which were entirely negative, and in the light of the case of tetanus above mentioned, I undertook a second series of experiments. As the question is not without practical interest to the physicians, I report results of two series of careful experiments following in detail the work of Professor Vincent.

Professor Vincent's<sup>1</sup> report calls attention to the many cases of tetanus which have been reported as following the subcutaneous injection of quinin under supposedly aseptic precautions and gives the results of his experiments along these lines. He states that the many cases on record can not be explained on the ground of poor surgical technic, such as the improper cleaning of the skin at the time of the hypodermic injection or to the uncleanness of the syringe or needle, nor to the contamination of the solution of quinin. He states also that quinin injected subcutaneously in experimental animals at the same time or following the injection of the spores of tetanus favors the development of the disease. He thinks that the solutions of quinin show a marked favoring action with the spores of the tetanus bacilli and that the disease can result when hypodermic injections are made aseptically if the spores are present in the body. This action is both local and general, he says, and results whether the quinin is injected at the same point as the spores or at points distant. It also results if the injections of quinin are made synchronous with, or at different times from that of the injection of the tetanus spores. The bacilli develop not only at the point of inoculation but are encountered, Vincent says, in the liver, kidneys, spleen, ovaries and bone marrow.<sup>2</sup> He claims also that when tetanus spores are injected on one side and quinin on the other, the locus of the infection is on the side on which the quinin is injected; the bacilli having passed across the body to this point.

In my experiments I found that virulent tetanus spores preserved their vitality from 10 to 30 days in solutions of the five official salts of quinin, namely, the sulphate, bisulphate, hydrobromate, hydrochlorate and the salicylate.<sup>3</sup> I found the hydrochlorate of quinin slightly more antiseptic than the other salts, but found also that it was not capable of destroying the spores of tetanus. In concentrated solutions, however, it was capable of destroying the bacilli of tetanus.

I then set about to determine the lethal dose of hydrochlorate of quinin for the experimental animals. I found in a series of experiments that the amount varies from 1/3,500 to 1/4,000 the weight of the guinea-pig and from 1/4,500 to 1/5,000 the weight of the rabbit. These figures varied with the age of the animals, young animals being more susceptible than older ones.

In my experimental work I found it difficult to get a good spore-bearing culture of the bacillus of tetanus, but finally secured a virulent spore producer on which I could depend. This culture would kill a normal guinea pig in from two to three days. In the experimental work on the action of quinin I used a toxin-free culture of tetanus spores. After a culture had been incubated for some time and began to form spores in large num-

bers it was heated to 80 C. for three hours to destroy the toxin and used within a short time after heating.

#### THE LOCAL INFLUENCE OF QUININ.

From .1 to .2 cc. of a heated culture of live tetanus spores together with a sterile 5 per cent. solution of the hydrochlorate of quinin corresponding to 1/5,000 of the body weight was injected into the flank of a guinea pig by means of a sterile hypodermic syringe. Control animals of approximately the same age and weight were injected, one with an equal amount of the tetanus culture, the other with an equal amount of the solution of hydrochlorate of quinin. The animals inoculated with the tetanus spores and quinin and those inoculated with the quinin alone showed a noticeable reaction in a few minutes but seemed almost normal in a short time. This reaction, which showed itself as an increase in respiratory movements and paralysis of the inoculated limb, was undoubtedly due to the hydrochlorate of quinin.

In 50 per cent. of the animals inoculated with tetanus spores alone the disease developed in from five to seven days. In these animals the wound had ulcerated and cultures made from the locus of inoculation showed a mixed infection. In the other 50 per cent. the bacteria could not be demonstrated at the point of injection and without doubt the reason for this was that the spores had undergone phagocytosis by the leucocytes or tissue cells or perhaps had passed to other portions of the body and had undergone a similar process. In several cases sterile pus was demonstrated. These were the results of a series of 10 experiments on guinea pigs.

The amount of the solution of hydrochlorate was increased to 1/4,500 of the body weight and still no tetanus developed in those animals inoculated with quinin and tetanus spores provided there was no secondary infection. Two animals which had been inoculated with hydrochlorate of quinin and tetanus spores died of tetanus but a secondary infection was easily demonstrated and the animals did not die in any extraordinary short time. Vincent states that the animals inoculated with quinin and tetanus spores in the majority of his experiments developed symptoms of tetanus in three days and died in 24 to 48 hours after. Some animals, one in five, he says, showed a high susceptibility and died in from 18 to 24 hours after inoculation, with convulsions and violent trembling. The death in these cases was doubtless due almost entirely to the toxic action of the quinin hydrochlorate and not to the tetanus infection. Solutions of quinin contaminated by other alkaloids give more pronounced toxic effects than pure quinin. It is interesting to note that much of the quinin on the market contains other alkaloids.

In experimenting to determine the lethal dose of the quinin I found that the animals usually died in convulsions and that these convulsions simulated those produced by the alkaloid strychnin or by the bacillus of tetanus. Vincent states that in the above-mentioned cases the bacilli were easily demonstrated at the point of inoculation and also in the spleen, liver, kidney, etc. I was not able to demonstrate this point.

I believe that the hydrochlorate of quinin possesses both an antiseptic and weak disinfecting action on the bacilli of tetanus. This is especially true of concentrated solutions of this salt. It is interesting to note that all fermentation and all putrefaction is stopped by the addition of this chlorin salt of quinin. This action is probably due to the acid properties which it possesses. Although chemically neutral it possesses acid properties,

1. "Tetanos et Quinine," *Annales de l'Institut Pasteur*, 1904, xviii, p. 728.

2. The spores have been demonstrated in the fluids of the body in tetanus as it usually occurs by several observers recently. They have never been demonstrated to be capable of multiplying, however, at other points than the locus of the initial lesion.

3. United States Pharmacopoeia, 1900.



as do some of the other salts. This is shown by the way they attach certain metals.

In a little over an hour after injecting hydrochlorate of quinin and tetanus spores into the abdomen of a guinea-pig symptoms simulating those of tetanus were produced. It is interesting to note, however, that those animals injected with hydrochlorate of quinin also showed the same symptoms. The animals injected with tetanus spores alone did not die, the organisms probably having been destroyed by phagocytosis. The tetanic symptoms were evidently not due to tetanus bacilli alone but principally to the toxic action of the quinin.

Taking for granted from previous experiments that hydrochlorate of quinin favors the development of tetanus, Vincent experimented to find out whether tetanus would result after the injection of the spores at one time and the injection of the solution of quinin some time after. He concludes that the tetanic infection can be awakened by such procedure if the quinin is injected as long as eight days after the injection of the spores. I tried the experiment without result as was expected from my previous observations.

In his report Vincent discusses the character of the ulcer which is found at the point of inoculation. He says that it is under the skin, slow to heal and covered by a yellowish-gray excretion. In cases in which a mixed infection occurred after large injections of quinin I found that the ulcers were in the main similar. The characteristic appearance is, perhaps, due in part to the coagulation of the proteids in the tissue by the hydrochlorate of quinin. This power of coagulation is easily demonstrated on normal rabbit or guinea pig serum *in vitro* and such coagulation goes on in the tissues of the body to a limited extent. The leucocytes are claimed by some authors to be paralyzed by the action of the salts of quinin. This point will be mentioned later.

#### THE GENERAL INFLUENCE OF QUININ.

Under this head Vincent discusses the general action of the hydrochlorate of quinin and claims that it causes an infection of tetanus when injected at points distant from the point of injection of the tetanus spores. That is, if a guinea pig is inoculated under the skin of one flank with a cu' of tetanus spores and under the skin of the opposite flank a solution of hydrochlorate of quinin is injected at the same time or a few days later, within 24 hours tetanus occurs followed by rapid death. Furthermore, he states that the focus of the tetanic infection is not at the point where the spores have been injected but that they have passed across the body to the other side and located themselves at the point where the solution of quinin was injected. There is no ulcer, he states, at the point of inoculation of the spores and there are no bacilli, except, perhaps, a few in the broken down tissue. According to Vincent, at the point where the quinin was injected the bacilli can be obtained in pure culture. I found that after the aseptic injection of tetanus spores on one side of the guinea pigs and the aseptic injection of a sterile solution of hydrochlorate of quinin on the other, the spores disappear at the point of inoculation, as Vincent says, but I was not able to demonstrate them at the locus of quinin injection.

Attention is called to the witherings of the extremities in some of Vincent's guinea pigs. This is explained on the basis of the continuous multiplication of the bacilli. It is possible to get this same atrophy in the extremities of guinea pigs by the injection of hydrochlorate of

quinin in large doses when no tetanus spores are present.

Experiments were made to show, if possible, whether injections of hydrochlorate of quinin under skin and tetanus spores by the alimentary tract and *vice versa* would cause an infection. These results were entirely negative.

Next I made observations to determine the action of hydrochlorate of quinin on the leucocytes. I found, like Vincent, that the quinin solution possesses some corrosive action on the leucocytes when applied to them in a fresh condition. A slight paralyzing effect is shown which is, obviously, less marked with dilute solutions. Some of the other salts, particularly the hydrobromate, have a similar effect in concentrated solutions. I was not able to demonstrate a marked hyperleucocytosis in the experimental animals, although there was a slight increase in the number of leucocytes. The action of quinin on the leucocytes, etc., has been investigated by several men, most notably by Binz.

#### SUMMARY AND CONCLUSIONS.

1. Solutions of the official salts of quinin have a feebly antiseptic action on the spores of tetanus, the hydrochlorate being the most antiseptic. Obviously the antiseptic action depends on the concentration of the solution. Saturated solutions do not disinfect.

2. The lethal dose of neutral hydrochlorate of quinin is from 1/3,500 to 1/4,000 the weight of the guinea pig and from 1/4,500 to 1/5,000 the weight of the rabbit. The dose varies with the age of the animal, young animals being more susceptible than older ones.

3. Hydrochlorate of quinin has the power of causing a paralysis which persists for various lengths of time in the experimental animals. This action is due, I think, to its coagulating action on the protoplasm of the peripheral nerves. Atrophy of the extremities results after large doses.

4. In cases of tetanus in experimental animals, which have been injected with hydrochlorate of quinin, the disease resulted only in those cases in which there was a mixed infection. The quinin may have acted indirectly since its corrosive action at the point of inoculation would make secondary infection more liable. It is possible that the quinin may act as an additional irritant to the nervous system in cases of tetanus or may bring about such changes in the protoplasm of the nerve cells and fibers that they are more easily acted on by the tetanus toxin than normally. In these particulars, however, any mild corrosive substance would serve the same purpose.

5. In cases in which tetanus does not result after injections and there is no secondary infection, the spores have evidently undergone phagocytosis by the leucocytes or tissue cells as none of them are ever found.

6. Hydrochlorate of quinin has not the power of favoring an infection of tetanus except in the indirect manner mentioned in paragraph 4. It has not the power of awakening an infection when injected at the same time or at other times than that at which the tetanus spores are injected.

7. Hydrochlorate of quinin produces a slight leucocytosis and slight paralyzing effect on the leucocytes. Should this paralysis be so extensive as to involve the majority of the leucocytes in the body, it is possible that the spores of tetanus might develop unhindered as is the case when lactic acid is injected. If quinin of such strength was injected in sufficient amounts, however, to



act on the majority of the leucocytes the toxic effects of the quinin would be evident at once and death of the animal would probably result.

I think, without doubt, that the majority of cases in which tetanus has resulted after hypodermic injections of quinin can be traced to some fault in the surgical technic or to the contamination of the solution of quinin. Quinin possesses a corrosive action and the necrosis of tissue resulting in some cases would undoubtedly favor an infection by the bacillus of tetanus as well as by other bacteria. As to the statement that the transference of the spores of tetanus takes place from point to point according to where the quinin is injected, I do not think that there is at present sufficient proof. Nor do I think it possible for the healthy live spores of tetanus to be present in the body and to develop a severe and fatal infection on the advent of an injection of hydrochlorate of quinin.

In THE JOURNAL of the American Medical Association, Dec. 9, 1905, I published an inquiry asking if any practitioner had ever seen a case of tetanus resulting from a hypodermic of quinin. A few answers were received from various physicians but no cases reported were exactly in point. In one case there was good evidence of poor surgical technic in the sterilization of the syringe and the skin. In another case tetanus is reported as following the injection of aromatic sulphuric acid and quinin sulphate. No cases were reported in which the hydrochlorate was used and tetanus resulted except the one referred to above as giving evidence of poor technic and in this case there was evidence of several other slight abrasions on the patient which might have served as avenues of infection.

Evidently in this country tetanus does not result after hypodermic injections of quinin, although it is possible it may in other countries.

## CEREBRAL SYPHILIS IN CHILDHOOD.

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(Concluded from page 866.)

CASE 31.—Boy, 9 months. Father syphilitic.<sup>26</sup>

Fever and general convulsions repeated at interval of few days, with blindness between attacks. Great restlessness. In 2 months complete blindness from beginning optic atrophy. Specific treatment was followed in few weeks by returning sight and in 11 months complete cure.

CASE 32.—Girl 12 years. Father syphilitic.<sup>27</sup>

Well to fourth year, then apoplectic attack with right hemiplegia, including face and loss of speech, passing off in eight weeks, leaving some weakness of arm. In sixth year diminution of sight, weakness in legs, ataxia in arms and legs, especially in gait. Seventh to eleventh year learned well at school but finally completely blind. Twelfth year frequent vomiting followed by intense headaches. Attacks of vertigo. Three months later, epileptiform convulsions. Falls, unconscious, tonic spasm of entire body, incontinence of urine, followed by sleep, recurring every one to two weeks. Severe vertigo. Three months later, deaf.

Pupils dilated and fixed. Constant nystagmus. Percussion and passive movement of head painful. Ophthalmoscope showed high degree of optic atrophy. Its neuritic origin still evident on the left. During the next few weeks convulsions continued and right facial paresis occurred, with three

days later deep unconsciousness with varying pupils and slow pulse and ending in tonic rigidity, succeeded by similar attack. Thence great variation in mental state, somnolence, brightness, happiness, irritability, docility, succeeding or alternating with one another. Very frequent convulsions. Following three such in one forenoon, ensued right facial paralysis with eyes turned to right, irregular pulse, fretfulness, all clearing in a few hours, leaving no trace.

Headache, vertigo, vomiting and often pains when head is moved (at such times buries it deep in pillow) continued. One night after going to bed in good spirits she became restless, complained of headache, cried much and about midnight had two severe convulsions from which she did not recover consciousness.

*Postmortem.*—Extreme new growth of gummatous character, more marked at the base, where it had injured all the adjacent parts of the brain and the cerebellum as well as the nerves. Gummatous encephalo-meningitis. Interval hydrocephalus. Gummatous leptomenigitis of cord with marked involvement of vessels and invasion of white substance.

Had this patient been seen only at the time of the paralysis, at the fourth year, her case would have been regarded as an ordinary infantile hemiplegia. By far the most common form of specific cerebral palsy in children is hemiplegia. Many of these cases, as is the case with epilepsy and with mental defects, if not associated with other symptoms and if of fixed character, can not be differentiated from hemiplegia of other origin, except by the personal or the family history, or by the results of treatment. Often, however, the instability of the condition, or its unexpectedly rapid disappearance, and perhaps repeated occurrence, distinguish it from the usual well-known type of unilateral paralysis. Any form of cerebral palsy may, however, occur.

CASE 33.—Child, 5 years. Parents syphilitic.<sup>28</sup>

Mother manifested symptoms three or four months after marriage. Child born three years later, the second child. The first, born at term after mother had been treated with potassium iodid, had a cutaneous ulceration which cleared on administration of potassium iodid. Patient well until fifth year when it fell a distance of less than two feet. Two days later paresis of left leg, and next day, also of left arm and face appeared. After three weeks inunction, four weeks after onset, all signs had disappeared. Three weeks later numerous moist papular excoriations appeared in folds of skin of lower extremities.

CASE 34.—Girl, 4 years. Parents and child syphilitic.<sup>29</sup>

First and second pregnancies aborted. Third, patient. Fourth had specific symptoms in infancy. Patient in fourth week had syphilitic eruption on palms of hands and soles of feet. Frequent subsequent relapses. Following one such, at 2½ years, paralysis of left extremities and face appeared, disappearing completely in a few days. When four years old a left hemiplegia again occurred, this time with loss of consciousness and preceded by some twitching of left arm. Two days later vomiting, convulsions and fever, incontinence of urine and feces. In three weeks loss of speech and inability to understand what was said to her. In four weeks this improved, so that she knew her mother but could not speak. Gradual contractions in arm and to less extent in leg ensued and shaking of head in this direction and that, and needless striking movements of right arm in air became noticeable. Death from diphtheria.

*Postmortem.*—Thickening of the pia-arachnoid, typical syphilitic disease of the basal arteries, numerous foci of softening in the hemisphere, alternating with sclerotic areas, loss of ganglion cells in the brain and degeneration of fibers in the cord.

26. Karth: "Syphilis Cérébrale Héritaire," Rev. mens. des Maladies de l'Enfance, 1888, p. 338.

27. Siemerling: "Zur Lehre von der congenitalen Hirn und Rückenmarkssyphilis," Arch. f. Psychiatrie, 1888-89, p. 102.

28. Marfan: "Hémiplégie chez une enfant hérédo-syphilitique; âgée de cinq mois," Annal. de Dermat. et de Syph., 1887, p. 540.

29. Ziegler and Nauwerck: Beitrag zur hereditären Syphilis des Centralnervensystems, also Beiträge zur allgemeinen Pathologie und pathologischen Anatomie, 1888, III, No. 4, p. 387.



CASE 35.—Girl, 10¾ years. Coryza in fourth week.<sup>30</sup>

Sat up first at three and walked at four years. In third year general convulsions with coma, and again in fourth year. At six years suddenly fell while walking, with loss of power on the right side and thick, indistinct speech. No loss of consciousness or spasm. Three weeks later able to walk again. Slight paralysis on right side. Left pupil larger than right. No ptosis or strabismus. No facial palsy. Incisors notched, mentality low, absence of sight on left, retinochoroiditis. Hearing, good. Death in eleventh year from nephritis.

*Postmortem.*—Leptomeningitis chronica, atrophy of the left hemisphere marked, less of right. Sclerosis of cortex and disappearance of ganglion cells with increase of neuroglia. Disease of the middle meningeal arteries with infiltration by gelatinous nodules.

The following two cases in one family with marked family history are of great interest:

CASES 36 AND 37.—Boys, 9 years, 7 years.<sup>31</sup>

Father syphilitic a year before marriage. First child still-born; second, dead in convulsions at third month; third, patient nine years old; fourth, lived only a day; fifth, patient, seven years old; sixth, seventh and eighth children up to time of history, healthy.

Patient, nine years. Healthy at birth, no signs in infancy, except that from the sixth week up to the sixth year bilateral convulsions occurred. In his eighth year he is said to have had "meningitis," for six months, very ill, severe pains in head, temporary squint, general loss of muscular strength. Gradual recovery of general power but hemiplegia of left side remained. In the ninth year, in the extremities, this remained complete, with rigidity; in face only partial. Traces of old optic neuritis both sides. Upper incisors defective. Right pupil larger than left. Mercury without effect. Intelligence good and reads well.

Patient, 7 years. In infancy jaundice, snuffles and moist sores about mouth and anus, yielding to specific treatment, and ulcers on nates, lasting 12 months. Never walked or talked well. Could learn nothing at school. In seventh year severe head pains began, with vomiting attacks and loss of bladder control, became clumsy in walking, with irregular purposeless movements and frequent falls, with indistinct speech and could only partially feed himself. Ophthalmoscopic examination negative. Increasing vomiting and headache. Death in eleventh year from unknown cause.

A typical instance of recurrent hemiplegia, with transient initial and subsequent more permanent attack is the following reported by Heubner and well illustrates that absence of history is of little or no negative value:

CASE 38.—Boy, 2½ years. No history.<sup>32</sup>

Born with saddle nose. Weak in infancy and had many ulcers. Slow backward development. When 1½ years old had "shock" with sudden hemiplegia, lasting, however, but three days. No further nervous disturbance until two years four months old, when he had severe epileptiform convulsions. After eight days of such convulsions a second right-sided paralysis appeared, of permanent spastic type. A state of pallor, emaciation, anorexia, indifference to surroundings ensued. Glands, including epitrochlears, enlarged. Slight ptosis. Congenital syphilitic retinitis. Paralysis involved face, the right side of palate and larynx.

*Diagnosis, Intra Vitam.*—"Infantile cerebral paralysis" caused by encephalitis of cortex and of probable specific character on basis of fundus examination and the presence of "peripheral unilateral paralysis of the glottis, because this defect, otherwise so rare in childhood, may occur in hereditary syphilis."<sup>33</sup> Death from measles at 2½ years.

*Postmortem.*—Chronic leptomeningitis of cortex with adhesion especially over left hemisphere, areas of softening in cortex, atrophy of convolutions of lateral region of left hemi-

sphere with extensive loss of gray substance. Extreme syphilitic endarteritis of basal arteries and their branches.

In Cases 34, 37 and 43 and in the two following will be seen cases associated with involuntary movements. These may be of athetoid or of choreiform character, or tremor may occur. At the time of occurrence they may or may not be associated with impairment of muscular power. The following very interesting case shows an alternation between the two phenomena:

CASE 39.—Girl, 7 years. Child syphilitic.<sup>34</sup>

She was attacked by a right hemichorea which cleared on specific treatment. Few months later after a fall on forehead, intense pain and paresis of left arm and face and later the leg, which also improved on specific treatment, but was followed by a recurrence of the hemichorea as before on the right and this again disappeared. Death later in coma and convulsions. No postmortem.

This was probably a case of specific arteritis, the phenomena being due to circulatory disturbances and the final death to extensive arterial occlusion or thrombosis.

CASE 40.—Boy, 10 years.<sup>35</sup>

Fourth year, headache, fever and paresis of left side, including lower facial and slightly lessened sensibility in arm only. Left pupil larger than right. Under potassium iodid all vanished except the pupillary condition. In both hands constant spreading and extending of fingers developed, more on right side. Developed well mentally and physically. In his ninth year a double keratitis appeared. In tenth year icterus, stupor, unconsciousness and death all in two weeks.

*Postmortem.*—Extensive chronic leptomeningitis with adhesions to brain. In gray and white matter numberless gray indurated areas, in size from a hemp seed to hazel nut, the largest being in the third right frontal convolution, immediately in front of the Sylvian fissure and another large one just external to the lenticular nucleus. Hepatitis.

Cases of feebleness of mind or idiocy in which the family or personal history, or stigmata in the patients themselves, are so evident of syphilitic infection as to suggest strongly, almost unequivocally, a causal relation between the infection and the intellectual defect, are very numerous. The many cases reported by Judson Bury,<sup>36</sup> Shuttleworth,<sup>37</sup> Beach,<sup>38</sup> Forbes<sup>39</sup> and Fournier<sup>1</sup> (Page 473) may be referred to. No matter how strongly our suspicion of the specific nature of congenital feebleness of intellect may be, we can not declare it with absolute certainty, even when the family infection is extremely evident, for even at postmortem these cases may show only atrophy, sclerosis, or cyst formation, not differing from that produced by other causes.

If, however, the mental enfeeblement ensues after birth and after a certain degree of intellectual development has been reached, the clinical symptoms are often of so pronounced a character and peculiar course as to give evidence of diffuse and multiple lesions in the brain, not to be accounted for by simple non-development or by atrophy following meningeal hemorrhage or merely circumscribed arterial accidents. At this time, in short, the process is active and the changes peculiar to a specific cerebral process are present. Postmortem examina-

34. Alison: "Some Cases of Syphilitic Chorea," Reference in Jahrb. f. Kinderhik., 1877, xii, p. 291.

35. Jacobson: "Et Tilfælde af diffus Periencephalitis oz dissemineret Hjerneskerose hos en 10 Aars Dreng med. Kongenit Syphilis," Hosp.-Tid., 1894, 4. R., ii, 17.

36. Judson Bury: "The Influence of Hereditary Syphilis in the Production of Idiocy or Dementia," Brain, 1883-4, p. 44.

37. Shuttleworth: "Idiocy and Imbecility Due to Inherited Syphilis," Am. Jour. Insanity, 1888, p. 381.

38. Beach: "Cases of Idiocy and Imbecility Due to Inherited Syphilis," Am. Jour. of Insanity, 1888, p. 387.

39. Forbes: "The Influence of Hereditary Syphilis on the Nervous System," St. Bartholomew's Hosp. Rep., 1902, p. 37.

30. Gee: "Inherited Syphilis; Sclerosis of Encephalon," St. Bartholomew's Hosp. Rep., 1880, p. 35.

31. Warner: "Cerebral Syphilis," Brit. Med. Jour., 1888, ii, p. 703.

32. Heubner: "Endarteritis syphilitica bei einem 2½ jährigen Kinde," Charité Annal., 1902, p. 126.

33. Heubner: "Syphilis im Kindesalter," Gerhardt's Handb. d. Kinderhik., 1896, p. 58.



tion of these cases confirms suspicion aroused by the clinical symptoms.

On the other hand, when these children live on to a point where active symptoms have long ceased and complete imbecility has existed for some years, postmortem changes in the brain may resemble those found in cases imbecile from birth. By analogy it may be assumed that many of these latter are brought to their condition by earlier syphilitic disease, possibly *ante partum*, which has ceased or burned itself out, leaving a scarred and defective brain.

Those cases of mental impairment that begin later may have their starting point at any time up to the end of childhood. When the commencement is in a child who has attained a considerable psychical level, the case assumes not infrequently all the clinical characteristics of progressive dementia and general paralysis, and becomes then an instance of dementia præcox. Whatever other factors may be potent in the etiology of this affection in certain instances there can be no question of the direct and evident syphilitic nature of many of these cases.

CASE 41.—Girl, 14 years.<sup>40</sup>

Mother had brown spots all over her body in the eighth month of her first pregnancy, which ended in still-birth; second child, imbecile, died at 4½ years; third, patient; fourth, died in convulsions in sixth week; fifth, had coryza in infancy, 11 years, living. Of remaining five children, three died in infancy.

The patient had coryza and was covered with "spots" in infancy. Then developed well physically and mentally up to her 10th year, when mind began to fail. Began to sit still and take no notice of things and spoke only when spoken to and then only of things that occurred long ago. Thirteenth year, walking difficult, incontinence at times. Irritable and easily frightened. Can only name a few simple objects and does not know how many fingers she has until she counts them. Knee jerks increased. Well marked, disseminated choroiditis.

CASE 42.—Boy, 10 years. Father syphilitic.<sup>40</sup>

In infancy coryza and sores on nates. Grew up strong and learned fairly well and was bright until after his sixth year when he began to have some difficulty with gait, complained of headache and was irritable. Then progressive mental impairment and was sent to asylum shortly before ninth year. Death at 10 years.

*Postmortem*.—Chronic diffuse meningitis.

Warner mentions a boy who showed gradual mental deterioration for three years, thence a stationary condition. His brother had infantile hemiplegia with subsequent athetosis. Specific history.

The following case with a course of 15 years from onset of the first cerebral sign to death is typical of this phase of cerebral syphilis, and may serve as an example of many others which can not be given in detail within the limits of this paper.

CASE 43.—Girl, third to eighteenth year. No family history.<sup>41</sup>

In second month skin eruption and began to emaciate, in seventh month an eruption on back, hands and feet and ulceration about anus. Mother was then discovered to be in secondary stage of syphilis which began in the pregnancy with this girl. Following the use of calomel the child became apparently well, grew and walked at 1½ years. In third year sudden squint, eye turned out and right pupil dilated. Seventh year went to school and made good progress. In good general condition and with only occasional slight inflammation of

eyes, went on to her ninth year when mental advance ceased. Her love of order and cleanliness and her docility ceased. Punishment made her worse.

Eleventh year: Convulsive tremulous movements in the muscles (treated for chorea). These ceased after some months, but she remained at the point attained intellectually in her ninth year. Her temper became more and more irritable but she was able to be confirmed in her 15th year. Menses which began at 12 years ceased in this year. Now, in addition to the progressing mental failure, came attacks of mania with delirium and hallucinations; she heard voices telling her she was going to be whipped. At times refused food, cut her dresses and cried aloud, "I am crazy, I am crazy." Soon after, a state of complete imbecility ensued. Would sit or stand in one place for hours taking no notice of anything about her, answering, if spoken to, by disconnected words, or inarticulate noises. Death in convulsions, chiefly right-sided, and in extreme emaciation, at 18 years.

*Postmortem*.—Exostosis of inner table near foramen magnum. Extreme chronic leptomeningitis. Left lateral ventricle greatly dilated. Ependymitis granular. Right lateral ventricle also dilated.

In this case we see the early premonitory symptoms, which in this instance happened to be cranial nerve disturbance, which, as mentioned in the beginning of this paper, may be among the early warnings of the approaching storm, occurring six years in advance of the apparent onset of intellectual failure. Here, however, probably insidious changes in character or intellect were overlooked by the parents, in the period between the third and the ninth year. We see here also the absolute worthlessness of a negative family history, as far as statements made by parents are concerned. This is illustrated in a number of instances among the cases studied. In a case of Barthelemy's, cited by Fournier<sup>1</sup> (Page 508), specific history was denied until on forced questioning of the mother she admitted deception and stated that she had been infected before marriage and "cured" in a few months. Case 24 illustrates well the necessity of examining the other members of the family in every case with negative history.

If delay in instituting treatment is to be dependent on the awaiting of definite or reliable statements from the parents, the unfortunate consequences to innocent lives may easily be imagined, when we have to do with an affection in which only the earliest therapeutic intervention can be relied on to effect complete restitution. Many of these cases of progressing dementia in children are associated with convulsive phenomena, either as initial or as intercurrent manifestations. They are usually, however, subordinate to the predominating psychical changes.

CASE 44.—Reported by Fournier (page 463).

Boy, 7½ years. Parents, syphilitic; child, syphilitic; was thought cured. Developed well physically and mentally. Suddenly fell unconscious in convulsions, twice repeated in same week. Was claimed to be in good health but close questioning showed that for three weeks had complained of headache at times, vertigo, photophobia and tinnitus, and governess said he had been for several months inattentive, forgetful, working against his will, forgetting what he had learned, at times seemed confused in mind, not answering questions, etc.

The prevailing feature of these cases is cessation of mental advance or advancing mental enfeeblement with alteration in the psychical nature, not infrequently with hallucinations, occasionally with mania, but almost never with delusions of exalted type, at least during the period of childhood, previous to the fifteenth year.

The following instance shows how wide a range of clinical pneumonia is possible in this affection:

40. Warner and Beach: "A Case of Chronic Meningitis, Probably Syphilitic, and Causing Progressive Dementia," Brit. Med. Jour., 1887, 1, p. 935.

41. Mendel: "Ueber hereditärer Syphilis in Ihrer Einwirkung auf die Entwicklung von Geisteskrankheiten," Arch. f. Psychiatrie, 1868-9, p. 308.



CASE 45.—Reported by Fournier<sup>1</sup> (page 473).

Girl, 10 years. Parents and child syphilitic. Father neglected treatment. Mother died of probable cerebral syphilis; had also neglected treatment as soon as primary lesions disappeared. First child, still-birth; second, syphilitic child, dead at six weeks; third, patient. Specific signs in third year, clearing with treatment. Good development physically and mentally up to ninth year, "a bright, intelligent, interesting child of cheerful disposition."

In ninth year nocturnal enuresis appeared. Later severe sudden convulsions with unconsciousness, frothing at mouth and biting tongue at irregular intervals. Slight change of character and mental enfeeblement for next six months, then rapid deterioration, lost all she learned at school. Then embarrassment in speech, bad pronouncing, clipped words. Enfeeblement in vision and hearing. Delay in sensory perception of pain. Inequality of pupils. Vomiting attacks. Diminution of muscular power, indecision and awkwardness, dropping objects. Frequent intermittent contraction of certain muscle groups, especially jaw. Tremor in extremities and twitching of same. Paralysis of sixth pair, squint and diplopia. Incontinence of urine and feces. Progressive course. Treatment, instituted late, without avail. Complete imbecility and paralysis. For some weeks before death life was merely automatic, ending in coma.

*Postmortem.*—Foci of thinning and thickening of skull. Diffuse pachy-meningitis and lepto-meningitis with adhesions. High degree of softening of gray matter, nearly lacking in places, foci of softening in white substance.

Surely in all medicine there can be no more pathetic instance of innocent suffering than this case illustrates.

Three cases of early progressive dementia in one family are reported by Homen.<sup>42</sup> One of these patients had had slight attacks of faintness or vertigo, pallor and turning of eyes about once a month from the age of 3 years, then ceased at 8 years. In twelfth year attacks of headaches, vertigo and pains in arms and legs. General feeling of weakness and gradual mental deterioration, ending in complete dementia and paralysis, bedridden in 3 to 4 years. Pupils were dilated and sluggish. Syphilis was denied by the father. Mother's first pregnancy aborted, the second, fourth and fifth children were the patients, the third, eighth, ninth, tenth and eleventh all died in infancy, the sixth, seventh and twelfth were apparently well. Postmortem showed cerebral disease to be syphilitic arteritis.

These cases show how necessary it is to make a microscopic examination of the arteries of the brain before pronouncing them free from change. Extensive gross changes of the larger arteries of the body were to be seen microscopically, but the lesions of the cerebral vessels were only found, in this instance, by microscopic examination.

This was so in a case of Ashby's<sup>43</sup> in which the large basal arteries appeared normal, but extensive disease in the small vessels supplying the cortex existed. This was also the fact in Case 10 in which vessels that appeared normal were microscopically found to be affected. Heubner<sup>44</sup> also calls attention to this fact.

The ocular phenomena are a prominent feature of cerebral specific disease in children, and are of great diagnostic value because they are so often early phenomena. This is especially true of changes in the pupils, inequality, sluggish reaction or complete fixation, which may be present early in the disease. Choroid-

itis and optic atrophy may occur very early, especially the former. Keratitis is usually somewhat later in its development, but of extreme value in the diagnosis. It may be, in fact, the determining clinical factor in the diagnosis of a symptom-complex previously obscure.

CASE 46.—Girl, 8 years.<sup>45</sup>

Mother had syphilitic stricture of rectum, non-reacting pupils, vertiginous attacks, two miscarriages, two other children died in infancy. Patient born with specific rash. Fifth year, mental retrogression; sixth year, inflammation of eyes; seventh year, widely dilated pupils, rigid to light, left larger than right; in eighth year no reaction to accom. Double optic atrophy. Retinochoroiditis. Progressive dementia.

CASE 47.—Boy, 6 years.<sup>45</sup>

Father syphilitic eight years previous to boy's birth; mother had three miscarriages; two other children died in infancy; patient premature; mental advance ceased in fourth year. For hours sits alone and still, then restless, grasping at everything or repeating all he hears. Double opacity with nearly complete adhesion of iris on right, partial on left where pupil is widened and without light reaction. Retinochoroiditis.

In 25 cases of acute infantile hemiplegia, Haddon found a history of syphilis in the family or signs of the disease in 15 instances, or 52 per cent.

CASE 48.—Child, 9 years.<sup>46</sup>

Ulcer palate, caries of nasal bones, iritis, keratitis. Had been taking mercury six months when epileptic attacks occurred. Six months later notwithstanding continued treatment hemiplegia supervened with subsequent progressive dementia.

CASE 49.—Child, 10 years.<sup>46</sup>

Hemiplegia when one year nine months old. Interstitial keratitis and extensive choroidal atrophy.

CASE 50.—Child, 2 years.<sup>46</sup>

Father under treatment for syphilis before birth of patient. Child had snuffles and rash in early months. Progressive mental deficiency and slowly increasing rigidity in all extremities.

*Postmortem.*—Marked sclerosis of the convolutions.

The frequency with which specific meningitis is limited to, or concentrated at the base makes it probable that cases of "basal meningitis" may be of specific origin more often than hitherto supposed. Holt<sup>47</sup> mentions such an instance. Haddon believes also that it is not so very infrequent.

The not infrequent discovery of hydrocephalus in the postmortem examination of cases in which well-marked syphilitic cerebral disease is found, as in Cases 13, 16, 32 and 43, of those here cited, and in several of the series not mentioned in this paper; the occurrence of well-defined clinical evidence of hydrocephalus in the subjects of cerebral syphilis that do not come to autopsy; the coincidence of hydrocephalus among the brothers or sisters of cerebral syphilitic patients; the presence of specific lesions, or the history of such, in the patient or in the brothers, sisters or parents; all strongly suggest some causal relation between the hydrocephalic condition and the specific taint. Moreover, the very frequent occurrence of several miscarriages, still-births, and early infant mortality, in the families in which hydrocephalic children appear, tends to confirm the evidence that syphilis is not infrequently an important and direct factor in the etiology. Thus, of 45 families, in which 145 pregnancies occurred, 5 per cent. resulted in still-

42. Homen: "Eine eigenthümliche bei drei Geschwistern auftretende typische Krankheit unter der Form einer progressiven Dementia in Verbindung mit ausgedehnten Gefässveränderungen (wohl Lues hereditaria tarda)," Arch. f. Psychiatrie, 1892, p. 191.

43. Ashby: Brit. Med. Jour., 1898, p. 1150.

44. Heubner: "Dieluetische Erkrankungen der Hirnarterien," Leipzig, 1874; and Ziemssen's Encyclopedia, xii, p. 311.

45. Kallischer: "Ueber infantile Tabes and hereditär syphilitische Erkrankungen des Centralnervensystems," Arch. f. Kinderhik., 1897-8, p. 56.

46. Haddon: "Congenital Syphilis as a Cause of Nervous Diseases in Children," Brit. Med. Jour., 1892, ii, p. 1164.

47. Holt: "Diseases of Children," p. 1099.



births, 10 per cent. in miscarriages, 16 per cent. died in early infancy, and 32 per cent. were hydrocephalic.

In a case reported by Mendel<sup>41</sup> of a hydrocephalic child that died at 6 months, out of a family of eleven children not one survived, only one living to the age of a year, dying then of convulsions, the remainder dying within the first three months of their existence in convulsions or with choleraic symptoms. The father had had syphilis. In a case cited by Engelberg<sup>48</sup> of 14 children by a syphilitic father 9 died in infancy, one of hydrocephalus. Bärensprung<sup>49</sup> reports many postmortem examinations of hydrocephalic children of syphilitic parents.

What is it that induces in one case the concentration of the effect of the specific poison on the brain while another individual enjoys complete immunity from any cerebral implication? This is a problem to which no complete solution is at present possible. Interesting, however, in this connection are a number of cases in which the apparent initial phenomena have followed a blow or fall on the head. They are not so common that we may refuse to believe them more than coincidences, occurrences brought into the picture by the common tendency of the parent to attribute everything to an accident. Nevertheless they can not be entirely ignored. It may be that, in the one case, the brain by inherited or by acquired deficiency in vitality or in power of defense, becomes a *locus minoris resistentiæ*; while, in another instance, concussion by its circulatory and nutritive disturbances produces a similar condition. In several cases of the series on which this study is based, blows or falls on the head preceded the onset of the cerebral disease. It was noted also, among others, by Lallemand's<sup>50</sup> case, by Rul Ogez<sup>50</sup> and by Heubner<sup>51</sup> in adults. Physical strain may be perhaps also occasionally a factor.

Virchow also noted the influence of external accidents on the localization of syphilis, and Heubner remarks that "if this is true of the skin, bones, etc., it may be assumed for the nervous system," and quotes Paracelsus to the effect that "syphilis takes, in every man, the character of that disease to which he is inclined by hereditary or other predisposition."

#### DISCUSSION.

DR. W. P. NORTHROP, New York City, said that any one who has lived within the boundaries of a foundling hospital of a metropolitan district for 12 years knows how many such cases there are.

DR. WILLIAM J. BUTLER, Chicago, said that if recent articles on this subject serve to stimulate investigation and the reporting of bona fide cases, he is sure that cerebral syphilis will be found to occupy relatively quite as important a place in the pathology of brain lesions in children as it does in the adult. Its clinical manifestations form a picture that permits of as logical a diagnosis as it does at a later period of life. As Dr. Fairbanks pointed out, it may present itself clinically as an epilepsy, as a meningitis, with all the bizarre accompaniments of the specific basilar meningitis of the adult, as a cerebral palsy, with an onset and course reflecting in a convincing manner its specific etiology, as a progressive dementia with mental impairment, anarthria and focal paresis, and sometimes rigid pupils, as in a case he recently reported, leaving no doubt as to its cause. In the cerebral syphilis of children one usually finds some other evidence of hereditary syphilis, as an atrophic choroiditis, deafness, Hutchinson's teeth, etc., but the absence of these should not in any

instance dissuade one from a diagnosis any more than it would in the adult when we are not accustomed to depend on the statement of the patient nor the absence of external evidence of recent or old syphilitic lesions. And it is exactly in those cases in which the early manifestations were slight or went unobserved that the cerebral changes may develop in children. Its early recognition is of paramount importance from a prognostic standpoint, as the latter will of necessity depend chiefly on the promptness with which treatment is instituted.

#### SOME IMPORTANT CONSIDERATIONS IN THE EXTRACTION OF CATARACT.\*

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Established methods of cataract extraction will be discussed in this paper only sufficiently to draw attention to certain of their important points and to compare them with those which I advocate. Soft or membranous cataracts or such others as some traumatic varieties, which do not require extraction, but needling, removal by capsule punch, or other kind of operation, will not be considered.

When the lens is found to be opaque, judgment should determine, after examination, if it is necessary or wise to operate, and if so by which method. The field of vision should be taken, and this is best done by the use of a candle, or preferably two, whereby the field may be mapped out with tolerable certainty. The tension should always be determined. An examination of the urine sometimes gives suggestive hints as to the cause of the cataract, the presence of retinitis, and probable length of life. Herbert<sup>1</sup> rejects cases in which albuminuria is associated with edema. The general state of health should be inquired into, especially bronchial or asthmatic conditions, whether or not the patient can lie supine for a long time, and the position usually assumed in bed. Some patients can not lie on their backs and provision should be made for others so that they may be supported in bed. It is impossible here to dwell on all the detailed information which should be obtained regarding each patient and the many things that must be taken into consideration in determining the propriety of an operation.

Examination into details increases the confidence of the patient, but care should be exercised not to dwell too much on every little defect and thus promote nervousness and anxiety and make the patient refuse an operation, preferring blindness, or the useless treatment of some promising quack. The ophthalmic surgeon, more than any other, should obtain the hearty confidence of these introspective, nervous, blind, old people who are preparing for an operation on their most delicate organ.

I shall not enter into much discussion of the advisability of operation, but with others, e. g., Brudenell Carter<sup>2</sup> (Bulson<sup>3</sup> very fully considers the advisability of operation), think that old patients, if unable to attend to their ordinary business because of uncomplicated cataract (not associated with any special disease), whether it be mature or not, should be operated on without too long waiting, since these patients, formerly active, often quickly decline and deteriorate in mind and body because of the enforced inactivity. This breakdown is es-

48. Engelberg: "Behrend's Syphilidologie," iii, 1862, p. 37, etc.

49. Bärensprung: "Die hereditäre Syphilis," Berlin, 1864.

50. Heubner: Ziemssen's Encyclopedia, xii, p. 301.

51. Ueber die Hirnerkrankungen der Syphilitischen. Archiv für Heilkunde, xi, 1870, obs. 47.

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Herbert: "Cataract Extraction."

2. Carter: "Lectures on Cataract."

3. Bulson: THE JOURNAL A. M. A., Sept. 23, 1905.



pecially marked in the cardiovascular system which, in turn, affects the kidneys and other organs with end arteries. A little red reflex or the presence of transparent cortex do not deter me from operating, provided that the vision of neither eye is sufficient for the patient's needs, that the cataract is slowly progressive, that the field of projection is good, and that there is no suspicion of serious intraocular disease, e. g., beginning retinal detachment or the various forms of serious choroidoretinitis. Granting that mild iritis is more common and that an operation for secondary cataract is more often required after operating on immature cataracts, is it not even then better to do so than to keep the patient waiting months and sometimes years? The final results should be as good as after the extraction of mature cataract, and vision is restored much sooner, thus aiding the general health. Having determined that an extraction operation is feasible and advisable, the patient should be impressed with the necessity of as strict antiseptic and aseptic precautions as are possible. He should be made to know that his assistance in keeping quiet and in properly turning the eyes is necessary to obtain a good result; in short, he must be ready to do his part. Unless exceptionally intelligent, he may not appreciate the importance of going to a hospital instead of having the operation performed in a private house, and the dangers should be fully explained to him.

If chronic inflammation of the conjunctiva is present, treatment should be instituted to cure the discharge before subjecting the patient to the danger of infection after operation. A test bandage may be placed over the eye for several hours and the discharge, if any be present, examined microscopically. If pus is discharged into the eye sac from the lachrymal sac and the diseased condition can not be cured, or time and circumstances will not permit, the puncta may be obliterated by cauterization or the canaliculus closed by a ligature, just before operating, as recommended by Knapp.<sup>4</sup> If time permits, an operation obliterating the lachrymal sac is often justifiable in these cases. Gifford<sup>5</sup> slits the upper tear points and injects some indifferent solution in cases seen several days before operation.

For one week before the operation I have the patient wash the eye by means of an eye bath three times a day with some sterile solution, such as saturated solution of boric acid in distilled water or normal saline solution. Eye baths or eye cups if kept scrupulously clean, being frequently boiled and always thoroughly washed and dried before using, are very serviceable. Patients are shown how to use the eye bath and are also given the following printed instructions:

"The eye bath about one-third full of the solution, should be gently pressed against the closed eyelids while the head is slightly inclined forward. The head is then slowly thrown backward, the lids are opened and closed repeatedly, and the eye bath moved slightly from side to side, during sufficient time to count to 30 or 40, so that the solution may completely wash out the eye sac. The head is then again inclined forward when the eye bath is removed (the eyelids remaining closed for a few moments), and its contents, which should be used for one eye only, thrown away."

By this means the eye sac is mechanically and thoroughly cleansed with less irritation and with a greater degree of comfort than by any other. The bath is also used on the morning of the operation and about one hour before operating, after which a sterile eye pad is fastened by strips of adhesive plaster over the eye.

The nose should also be sprayed two or three times before operating with a slightly antiseptic solution. Lippincott<sup>6</sup> suggests spraying the nasal cavities with a 1 to 2000 potassium permanganate solution. On the evening of the second day before the operation a large dose of some cathartic should be prescribed, and in certain cases a large enema given in order that the bowels may be locked for one or two days after operation so as to disturb the patient as little as possible. All the hair on the head should be washed the night before the operation, particularly the eye-brows and eye-lashes. In certain cases I express the contents of the glands and ducts on the edge of the lids by gently stripping these margins between the finger on the skin and a smooth glass rod on the conjunctival surface. Sometimes this should be done on several days and in some cases a mild sterile ointment should be applied. Great care is exercised in preparing the field of operation, and I think only unirritating solutions, such as boric acid, normal saline solution, etc., should be used. The skin surfaces about the eye should be thoroughly cleansed, and the surgeon himself or some skilled assistant should then cleanse the conjunctival sac as thoroughly as possible. This may best be done by pressing the solution from pledgets of cotton, sometimes by gently and carefully wiping the conjunctiva of the lids with the moistened cotton, avoiding the slightest injury to the cornea. The hair and scalp should be covered with either a rubber bath cap or towel which has been kept in an antiseptic solution. Other sterile towels, preferably dry, are laid over the neck and chest of the patient extending to the chin, but not above the mouth, as the patient's breath would then be thrown directly into the eyes.

Since micro-organisms (*Streptococcus* and *Staphylococcus pyogenes* and *Pneumococcus*) normally abound in the saliva of both patient and operator, infection from this source should be given consideration. G. Hotta<sup>7</sup> states that infection occurs without fail if the saliva is brought into pocket wounds of the cornea and is likely to occur if there is impeded drainage of the tears from an affection of the lachrymal passages. The patient's and surgeon's mouths may be rinsed out with an antiseptic solution before the commencement of an operation.

Instead of directing the patient's breath toward his eyes by means of a towel placed over the mouth and nose, which should never be done, I have his breath directed away from the eyeball by a small screen made in the following way: A strip of adhesive three or four inches wide and six or seven inches long is covered with gauze on its adhesive side, with the exception of about one-half an inch of its width along one margin, throughout its entire length. By this upper uncovered margin it is fastened across the bridge of the nose and both cheeks an inch or more below the eyes, so that it hangs down over the nose and mouth and directs the patient's breath and saliva away from his eye. It should next be covered with sterile gauze.

If the operator is suffering from coryza, cough or affections of the mouth, or if compelled to speak much and loudly, as when teaching, Hotta<sup>7</sup> believes a veil of gauze is advisable. Axenfeld, Haab, Mayweg, Blaschek, Kuhnt, Flügge, Eversbusch and Hansell<sup>8</sup> also favor mouth veils. Harold Gifford<sup>5</sup> describes a gauze covering for the nose, mouth, beard and hair, which also prevents dandruff from falling directly on the operative field, as being very essential. The scalp

4. Knapp, Norris and Oliver: "System of Diseases of the Eye," vol. iii, p. 896.

5. Gifford: Trans. A. M. A., 1903, p. 150.

6. Lippincott: THE JOURNAL A. M. A., 1900, p. 930.

7. Hotta: Klin. Mon. fuer Aug., 1905, vol. ii, p. 237.

8. Hansell: Annals of Ophth., April, 1905



and hair of every surgeon should always be covered by a gauze cap. I have made a simple spectacle-shaped appliance that lies below the surgeon's spectacles, if he wears any, over the bridge of the nose and on the cheeks, and is supported by strong temples over the ears. A strip of gauze about one yard long may be drawn over this frame so that the ends meet below. The lower ends of these strips for a distance of ten or twelve inches are then split by scissors and the two halves, one on each side, tied or fastened by a safety pin behind the neck so that the gauze hangs over the mouth and passes under the chin around the neck. As many layers of the gauze may be used as are thought to be necessary. With this appliance the surgeon's breath will not pass upward into his own eyes or blur his lenses, but pass out to the side, and all saliva or excretions from the nose will be arrested in the gauze and he can still talk and breathe freely.

The confidence of the patient is increased by careful attention to every detail. A little previous instruction as to his own behavior, how to turn the eyes downward and sometimes also a little outward, is very helpful. In particularly nervous individuals I sometimes introduce the speculum in the eye under cocain anesthesia at my office or some time before operation and explain to them how to hold and how to turn the eye up, down, to the right and left, and thus permit them to become accustomed to it. Herbert<sup>1</sup> of India insists on carefully training the patient. Many a blind patient can easily direct the eyes downward toward his own uplifted hand. Sometimes I hold instruments about the patient's face and touch the eye, pretending that I am operating, until the patient being assured that I am nearly through becomes quiet, then I commence to operate. I have never been detected in this ruse.

I usually sterilize my instruments by boiling them from five to ten minutes, those with cutting edges being wrapped in cotton, and then place them in a sterile solution contained in a shallow tray, the bottom of which is covered with a few layers of sterile gauze to keep the instruments from coming in contact with each other.

In addition to about six instillations of 4 per cent. sterile cocain solution, a minute or two between each instillation, the lids remaining closed to prevent drying of the corneal epithelium, I inject a few minims of a sterile adrenalin and cocain solution with a sterilized, aseptic, all metal, solid-plunger, hypodermic syringe under the limbus conjunctivæ where I intend to enter the Graefe knife in commencing the section, and also in the opposite limbus where the point of the knife is expected to exit from the anterior chamber. This adrenalin and cocain solution is prepared by placing a hypodermic tablet of adrenalin and cocain in fifteen minims of distilled water which is boiled for two or three minutes. This gives a sterile solution of approximately 1 per cent. cocain and 1/4500 adrenalin. This assists me in commencing a large conjunctival flap, which I believe should extend three or four mm. beyond every portion of the corneal flap and not merely from eight to ten mm. at its upper margin as made by others, e. g., Clarke.<sup>9</sup> The adrenalin greatly checks bleeding under the flap, which should be folded back on the cornea at once to prevent the blood from being forced into the anterior chamber. I recently learned for the first time that Koller and H. Gifford<sup>10</sup> had made subconjunctival injections of cocain at the limbus, and that Gifford formerly made large conjunctival flaps. In the same paper he states that he abandoned this hypodermic method of using cocain be-

cause the artificial edema of the flap prevented ready coaptation, and he also advocates a small conjunctival flap. I have always used the adrenalin and cocain together and find that the flap adheres very readily and strongly, not being edematous. It seems that the trifling disadvantages of this large conjunctival flap, viz., hemorrhage, care of folding it on the cornea when it partially obscures the iris, and rarely filtration edema, are far outbalanced by its great advantages, since it speedily becomes agglutinated to the raw surface on the sclera closing the wound externally and sealing it, and thus aids in the accurate coaptation, and smooth and speedy healing of the scleral and corneal wound margins with lessened postoperative astigmatism, and comparative immunity from after infection, incarceration, or iris prolapse.

The knife is first entered into the temporal conjunctival bleb produced by the subconjunctival injection of the cocain and adrenalin solution three or four mm. or more from the sclerocorneal junction. After passing through the bleb the point of the knife is directed toward the center of the eye so as not to get between the lamellæ of the cornea, and when it has opened the anterior chamber some of the cocain enters and renders the anesthesia more profound. The knife is passed across the chamber and through the opposite corneoscleral junction into the other conjunctival bleb. I then make a large section in the corneoscleral junction, including nearly the upper half of the cornea, with a very large completely-bordering conjunctival flap. A small section strips the cortex from the lens, rendering the delivery of the latter difficult, requiring greater force, entangling the iris, and bruising it and the lips of the incision between which latter cortical débris is likely to be retained, thus giving a starting point for infection.

In some patients with shallow anterior chamber, in order not to scalp the iris, it is better to make a smaller section at the corneoscleral junction than the one described, and to enlarge it to the required dimensions by strong blunt-pointed scissors. If there is a deep anterior chamber the conjunctiva may be raised without the use of the hypodermic at the point of exit of the knife, so as to obtain a conjunctival flap by waiting a moment after the knife has passed through the cornea and sclera, or sometimes by slightly turning the knife so as to permit a slight amount of aqueous to flow out under the conjunctiva (Brudenell Carter<sup>2</sup>). The use of the hypodermic is to be preferred to this method, in which too much aqueous might escape, and the iris, falling over the knife, might be scalped and a portion of it sacrificed. It is easy to get a large conjunctival flap when started correctly with the above-mentioned precautions, if the section lies clearly in the corneoscleral junction and not as usual in the cornea. It should be remembered that in front at this junction the sclera slightly overlaps the cornea, and such sections should include not only a little of the cornea internally, but also some of the sclera externally, and must do the latter in order to have a conjunctival flap. This is not identical with the purely scleral section described by Fuchs.<sup>11</sup>

In making the incision it is well to have the patient look downward and a little outward so as to give the point of the knife greater freedom of movement without sticking into the inner ends of the lids. Care should also be taken that no portion of the blade which has once touched the lid margin be allowed to enter the section. The cross-bar of the speculum should be well

9. Clarke: *Ophthalmology*, July, 1905.

10. Gifford: *Am. Jour. Ophth.*, November, 1904.

11. Fuchs: "*Text-book of Ophthalmology*," p. 695.



down against the cheek, as in my adjustable speculum.<sup>12</sup> The speculum described by Beard<sup>13</sup> is also excellent, since it can be bent so as to place the cross-bar on the cheek. Each one has much the same old style of solid lid holders which will not catch the corneal section on removal or permit the contents of the glands in the margins of the lids to be deposited on the section. I think that when the section is made in the junction between cornea and sclera, although there is greater hemorrhage, it is to be preferred to one made in the cornea only, for the following reasons:

1. Since there is a good blood supply at the limbus, healing will be more rapid than in the bloodless cornea.

2. A conjunctival flap with all its advantages may be obtained which can not be done in a purely corneal section.

3. A section within the cornea will usually be smaller and therefore scrape more cortex from the lens and will have its margins more severely wounded than will the larger section in the sclerocorneal junction.

4. The more peripheral location of the wound is an advantage in delivering the lens, as it has to turn less on its axis.

5. Tags of capsule, etc., are not so liable to be incarcerated in a peripheral section, since it is farther from the pupillary area and heals much more promptly with less escape of aqueous, being protected by the conjunctival flap. The danger of prolapse of the iris, which on first thought might seem to be increased, is lessened.

6. The less peripheral the incision the higher is the degree of postoperative astigmatism (Majewski<sup>14</sup>).

After instilling another drop of cocain the conjunctival flap, by means of a spatula, should be carefully folded back on the cornea (the larger the flap the more easily this is done and the better it remains) else it would subsequently be in the way and possibly might be cut off. This folding back of the flap on the cornea should be done as soon as possible after the section is completed, as otherwise blood might be forced into the anterior chamber. If there is some hemorrhage from the conjunctiva a few drops of adrenalin should be instilled and nothing further done for a few moments until all the bleeding has ceased.

After telling the patient to expect a little momentary pain and cautioning him quietly and gently to keep looking downward, both eyes open, without any tension or squeezing and to keep his hands open and not set the jaws, I pass an iris forceps, with small teeth only on the lower back edge and not on the end, into the anterior chamber. The forceps grasps the iris a very little beyond the middle of its anterior surface and never at or near the pupillary margin, as is generally advised in all the literature at my command, when any specific instruction is given. The iris is then withdrawn folded on itself, until the pupillary edge lies just outside the corneoscleral incision. By grasping the iris as described its whole width may be withdrawn from the eye with only one-half the traction and correspondingly less pain and tearing of the iris tissue than if it be grasped at or near its pupillary margin. The iris should be pulled no more than is absolutely necessary, so as to wound this delicate nervous structure the least possible and thus reduce pain, exudation and hemorrhage. For example, it can be readily understood that if the iris is four mm. in width and it be grasped at the pupillary margin, this margin would have to be drawn eight mm. from its orig-

inal position in order to have the whole width of the iris outside the incision. If the iris be grasped at the middle as described the forceps would need to be withdrawn only four mm. and the pupillary margin would be stretched only four mm. from its original position instead of eight mm. as in the other method, one-half as far, only one-half as much traction, and less than one-half as much tearing and injury. By means of a sharp pair of strabismus or other scissors held alongside and parallel to the forceps, the folded iris tissue is cut through with one snip in the vertical meridian from pupillary edge to outer periphery, a true sphincterotomy and iridotomy, but not an iridectomy, since no iris tissue is removed. Properly speaking, sphincterotomy means division of the sphincter only, but I prefer to use it in this wider sense, since the term iridotomy, although more proper, has been already used for a different operation and would be likely to give rise to confusion. I have been performing sphincterotomy for some time, and until the preparation of this paper believed it to be a new method. I recently found that Williams<sup>15</sup> in 1881 and Meyer<sup>16</sup> in 1887 incidentally referred to it, each, however, in only a part of one sentence.

I think the general consensus of opinion, even though contrary to that of many distinguished surgeons, is that a combined operation is usually preferable to simple extraction, especially in complicated cataracts or those with posterior synechiæ or rigid pupils, in that there is less danger of subsequent iris prolapse or incarceration, less tearing of the iris tissue in general, and less retention of cortical matter because of less stripping of the lens by the divided sphincter; and also because less pressure is required to expel the lens through the enlarged pupil.

Preliminary iridectomy or sphincterectomy seems to give excellent results, but it exposes the patient to the dangers of infection through two operations requiring the opening of the eyeball. It does not seem that the facility of removal is increased sufficiently to warrant the extra risk, loss of time, expense and trouble to the patient. Objections urged against the combined operation are that it mutilates the iris and furnishes a focus for infection, that the light entering the larger pupil dazzles the patient and is not so perfectly focused as that passing through a small pupil. I do not wish, however, to thrust myself out on this common battlefield.

Dividing the sphincter and width of the iris before attempting delivery of the lens merits consideration for the following reasons:

1. If they are completely divided less resistance will be offered by the sphincter and iris to prevent the escape of the lens from behind them, so that less pressure will be required to deliver the lens and consequently less tension is placed on the suspensory ligament, and there is less tendency to prolapse of vitreous.

2. Since the iris is cut completely through, the anterior support to the upper margin of the lens opposite the section is greatly reduced, so that the upper margin may be more readily tilted forward and pass out of the eye without so much chance of turning over or other accidents.

3. Because of the large opening through which the lens may pass, there will not be nearly as much stretching or rupturing of the other portions of the pupillary margin and iris tissue, and not as much subsequent exudation, even though there might be more exudate and

12. Stevenson: *Ophthalmic Record*, April, 1904.

13. Beard: *Ophthalmic Record*, January, 1905.

14. Majewski: *Annals d'Oculistique*, vol. cxxvi, 99.

15. Williams: "Diseases of the Eye."

16. Meyer: "Diseases of the Eye."



hemorrhage just after making the incision in the iris. At this time, however, blood or exudate can always be washed out of the eye by the irrigator. The more tears or ruptures in the pupillary margin of the iris, the greater the number of posterior synechiæ which subsequently form between the torn iris and capsule.

4. The margins of the larger opening through which the lens may be passed do not strip the cortical matter from the lens mass and retain it as does an undivided sphincter. The coloboma furnishes a sluice way through which the soft cortical matter may be readily removed (Bulson<sup>3</sup>).

5. Thickened, inelastic, flabby irides unless incised, are much stretched and torn, and are more prone to remain outside the section, or later to prolapse because they are pressed into a funnel shape during the exit of the lens.

6. Free division of the iris establishes easy and continuous passage for the fluid between the anterior and posterior chambers, even to the periphery. When the iris and sphincter are undivided the fluid is said to collect in the posterior chamber, especially behind the peripheral portion of the iris, and if the corneal section should suddenly open because of some sudden pressure of the eye muscles or other cause, e. g., coughing in chronic bronchitis, this pent up fluid is liable to prolapse the unsupported iris in its rush to escape from the eyeball.

7. It is easier to replace the divided iris within the section at the time of operation (a) because of the free connection between the anterior and posterior chambers; (b) the sphincter divided in only one place is stronger than when torn in many; (c) the body of the iris and sphincter is not thickened so much by exudation and hemorrhage; (d) the elasticity of the structure has not been destroyed to the same extent.

8. There can not be as strong a tendency to the development of postoperative glaucoma.

I think that iridotomy or sphincterotomy is preferable to iridectomy or sphincterectomy for the following reasons:

1. The operation is easier and simpler to perform, consisting of one simple straight snip of the scissors held at right angles to the surface of the cornea.

2. The total length of the cut iris is less on account of the long U-shape of the iridectomy incision from which there is greater exudation and hemorrhage. The cut going directly to the periphery is also in a better position within the eye than a mere sphincterectomy.

3. Iridectomies as done before cataract extraction are usually not peripheral, and the peripheral portion of the iris tends to retain the lens, and afterward the fluid, behind it. When the incision extends through the width of the iris the lens and fluid are not retained behind it.

4. The coloboma is much narrower, a mere slit peripherally, than in an iridectomy and being altogether or almost covered by the upper lid, the patient is not subsequently dazzled so much by the light as after an iridectomy which leaves a broader coloboma.

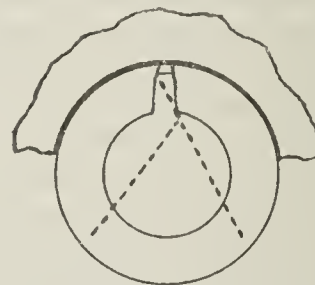
5. The shape and size of the coloboma, particularly the sharp edges at the pupillary margins, are well known, so that when the toilet of the eye is made it can be readily seen when the iris is completely within the eye. It is not always possible to know the exact size and shape of the piece of iris removed in an iridectomy, thus making it a little more difficult to know when the iris is properly straightened out within the eye.

Macnamara<sup>17</sup> in 1882 advocated the excision of a small peripheral piece of iris leaving the sphincter intact. Dr. Taylor of Nottingham removed a sufficiently large peripheral piece of iris to permit the egress of the lens. H. B. Chandler<sup>18</sup> reports 312 cases of cataract extraction with a small peripheral buttonhole in the iris. This latter method is no doubt better than a simple extraction, as the fluid can more readily pass from one chamber to another, and will not be so liable to dam up behind the iris and to cause its prolapse on sudden escape of fluid through the section. Since the buttonhole (if not made too large) will be covered by the upper lid after operation, there will be no apparent deformity of the iris due to the artificial coloboma as after iridectomy or sphincterotomy. I think, however, that sphincterotomy is to be preferred to this small peripheral buttonhole in the iris for the following reasons:

1. Without any personal experience with the latter, I should think it somewhat more difficult to do, even if the iris would need to be withdrawn less, since care would have to be exercised, not to make the opening too large and so have the lens pass through it instead of through the pupil, or such that it would catch and hold the edge of the lens. Some operators make the buttonhole after the expulsion of the lens.

2. There would not be such free communication between the chambers, and correspondingly greater danger of subsequent iris prolapse.

3. The sphincter being intact, this operation is open to most of the objections raised against the simple opera-



This diagram represents position and size of the conjunctival flap, position of section in corneoscleral junction, and narrow coloboma after sphincterotomy, the dotted lines representing the two incisions in the capsule; the angular flaps, which curl up, lie on either side of the short dotted line; the lower flap having the sharper angle curls more out of the way than the other.

tion, e. g., stripping of the cortical substance from the lens, stretching and tearing of the sphincter and adjacent iris, increased hemorrhage, exudation and thickening, greater force required to expel the lens, with consequent greater danger to the suspensory ligament, prolapse of vitreous, etc.

The next step in the operation is to perform a simple but efficient capsulotomy. The varieties of capsulotomy described are legion, but most of them are more or less impracticable because difficult, and some are even impossible to perform. It is more or less difficult to make horizontal incisions in the capsule and considerable dexterity is required to make some of the combinations of incisions described. A few operators, DeWecker, Eugene Smith,<sup>19</sup> remove a portion of the anterior capsule by means of capsule forceps. Knapp<sup>20</sup> states that dislocation of the lens with prolapse of the vitreous and its consequences are not unlikely accidents in removing the anterior capsule. Others follow Pagenstecher's method and remove the lens within the capsule. The

17. Macnamara: "Diseases of the Eye."

18. Chandler: Archives of Ophthalmology, January, 1904.

19. Smith: THE JOURNAL A. M. A., Sept. 26, 1891; also Am. Jour. Ophth., November, 1904.

20. Knapp: Am. Jour. Ophth., September, 1905.



anterior capsule may be so incised without removal that it will not obstruct the pupillary area or have anything to do with secondary cataract in this area, although, as in every method, some cortical matter is retained in the peripheral areas. Secondary cataract in the peripheral area is sometimes useful by partially blocking the entrance of light into the coloboma. Of course the posterior capsule is the one chiefly concerned in the production of secondary cataract in the pupillary area; deposits in the form of "pupillary membranes" sometimes form on the front of this capsule. A good sharp cystotome is necessary so that but two cuts will be needed in making the two incisions. More are unnecessary and will even be harmful, since then small strips of capsule are liable to lie in the corneal section preventing prompt healing, and therefore exposing the eye to greater danger of infection. The cystotome I use has no sharp points to catch anything; it has a blunt end so as not to injure the iris when pushed up under it, and a cutting knife edge that will cut either way and may be easily sharpened. The instrument is passed with its cutting edge backward, across the anterior chamber and for some distance under the distal portion of the iris, toward either side, usually the nasal. One straight cut is then made across the whole lens passing through the pupillary area about 1 mm. from the pupillary edge of the iris and into the coloboma made by the sphincterotomy so that this incision extends as nearly as possible throughout the whole anterior capsule, and not merely in its pupillary portion. If the peripheral portions which are thinnest are not cut, cortical masses are more liable to be retained within the capsule, and greater force is required to remove the lens from its capsule. The cystotome is then again passed under the distal portion of the iris, but on a different side from the one chosen before, and a second cut is made passing more nearly to the center of the pupillary space, and meeting the first incision at the beginning of the coloboma or proximal pupillary margin. This method of doing a capsulotomy is worthy of attention for the following reasons:

1. It is simple and easy to do.
2. There are no strips or tags of capsule that can possibly get into the corneal wound, especially if the incisions are so large and peripheral that the capsule will not be torn by the exit of the lens. Promiscuous and extensive laceration of the capsule is harmful because tags of capsule are sure to lie in the section and retard or prevent healing, causing an uneven irritable scar which may help later to cause iritis, especially as there will also be more posterior synechiæ.
3. The flaps of capsule will tend to roll up out of the pupillary area. The sharper the angle of the flap the farther it will roll out of the way; this has been considered in locating the position of the incisions. The thin sharp flap from below will roll considerably downward out of the way. The lateral flap will roll somewhat to the side and out of the pupillary area and the largest portion on the other side of the first straight incision will also retract slightly out of this area (some might prefer to divide this last portion by another oblique and similar incision). While all the flaps of capsule will retract from the pupillary area, none of them are so situated that they can get into the corneal wound.

After capsulotomy is completed the next step is to expel the lens. This is done in the usual fashion by making pressure toward the center of the eye by a spoon or spatula over the lower limbus, while another spatula very gently depresses the sclera at the corneoscleral

junction. After the lens has passed one-half way through the section the lower spatula should follow it with less pressure on the eyeball. A very little stroking of the cornea may be indulged in to remove some of the larger particles of the cortical substance, but with many operators, I believe, it is usually better to use, with proper precautions, intraocular irrigation in removing blood, exudates, or cortical substance from the interior of the eye, and for this purpose, I prefer to use gently a slightly warm sterile boric acid or normal saline solution in a properly constructed gravity syringe. Great care should be used to prevent the retention of quantities of solutions within the eye sac.

This question of irrigation or lavage has been fully dealt with in many excellent papers by Reik,<sup>21</sup> Beard,<sup>22</sup> Bulson,<sup>3</sup> and Lippincott,<sup>23</sup> and does not need further commendation or elucidation here. I think that after its use, which should not be continued too long, capsular opacities are less frequent or at least less dense, so that secondary operations are not so frequently necessary. By its use, except in some sclerotic cases with no lens débris when it is not required, we can obtain a more nearly perfect technic and secure striking, often brilliant results. The patient is usually much encouraged by the better vision after syringing out the lenticular débris, and is stimulated to do his part toward obtaining a happy result. After the use of the irrigator the iris seems to contract better and sometimes assumes its proper position without any manipulation. McKeown claims that the tendency to subsequent prolapse of the iris is lessened, and this should be expected since retained cortical masses by their swelling tend to increase tension and possibly prevent smooth healing and coaptation of the wound margins. Since there is more complete elimination of débris and speedier closure of the sclerocorneal section, and since if micro-organisms have entered the eyeball, many of them will be washed out, sometimes so diminishing their number as to render them harmless, inflammation and infection are less liable to result. When the anterior chamber remains empty and the cornea shrunken, the corneal dome may be re-established and the lips of the incision brought into correct apposition, aiding rapid healing and restoring corneal curvature. It should sometimes be used to remove blood from the eye during the operation as after sphincterotomy and before capsulotomy is done.

After irrigation the toilet of the eye is completed. If the iris is not in its proper position as shown by a sharply defined coloboma, especially at its pupillary corners, a spatula should be used to place it in a correct position and to reduce the tags of capsule lying in the wound. I have always been able to do this without any difficulty, but it is possible that rarely a case might be found in which an iridectomy might be necessary if the iris could not be properly replaced within the eye. Next after a little mild irrigation of the incision, the conjunctival flap is gently folded back into position by a spatula, and smoothed out. Its surfaces are usually sticky and it readily and strongly adheres, undoubtedly assisting in the accurate coaptation of the lips of the incision which, therefore, heal more quickly and make infection correspondingly less likely. Dr. C. F. Clarke<sup>9</sup> claims that a conjunctival flap diminishes the amount of subsequent astigmatism. Earnest F. Maddox<sup>24</sup> advocates suturing the conjunctival flap. I doubt the pro-

21. Reik: *Annals of Ophth.*, July, 1903.

22. Beard: *Ophthalmic Record*, April, 1905.

23. Lippincott: *Ophthalmology*, January, 1906.

24. Maddox: *Ophthalmoscope*, November, 1904.



priety of prolonging the operation by this procedure, not only because the flap adheres so strongly without suturing, but also because, as Melville Black<sup>25</sup> has pointed out, the eye must be prepared, anesthetized, and a speculum introduced in order to remove the sutures which also beget infection. Kalt proposed a corneal stitch inserted like a Lembert intestinal suture, before operation, the central loop being long and drawn out of the way during the operation, after the completion of which the ends are drawn taut and tied.

Finally, I usually instil one drop of one-half per cent. of eserine sulphate into the eye, as this amount will not irritate and will cause the sphincter to contract slightly and for some time, so that the iris will be less likely to prolapse. Fuchs,<sup>11</sup> Gibbons,<sup>26</sup> Jackson,<sup>27</sup> and many other authorities state that eserine lessens the danger of iris prolapse. Before the pupil dilates again some remnants of cortex or capsule in the pupillary space may become attached to the iris, and when the pupil dilates be drawn from the central pupillary area. A dry, sterile, double eye pad, made by sandwiching a little sterile absorbent cotton between a few layers of sterile gauze, is then lightly fastened usually over both eyes by strips of adhesive, which latter are not so easily disturbed during restlessness as a roller bandage, and which may be cut in removing the pad for the first few days.

In order that no pressure may be made on the eyelid of the eye operated on, the strips are placed over the margins of the eye pad and do not directly overlie this eyeball. For the first day or so they are tightly placed over the pad covering the eye not operated on, making some pressure and thus tending to prevent the opening of the eyelids. A dressing on both eyes sometimes causes mental depression or excitement in old people. For the first few days it is well to cover the eyes for protection with some style of ocular mask or shield, such as Ring's mask, being careful not to make thereby any pressure on the dressing or lids. I have not had any experience with the so-called open method of treating these cases advocated by Fuchs and other distinguished ophthalmologists, especially those abroad, who claim smoother and speedier healing with less frequent hernia of the iris.

Undoubtedly, postoperative astigmatism is influenced by a conjunctival flap, the size and location of the section, the sharpness of the knife, or by anything which influences healing, e. g., prolapse or incarceration of the iris, swelling or cortical debris, presence of capsule tags in the wound, muscular action of the lids and eye muscles, and especially by any pressure made by the lids on the eyeball due to the tension of the lids, and particularly that due to pressure from dressings and bandages. The pressure of the lids can not be diminished unless possibly by antispasmodics, but care can be exercised that little or no pressure is made on them. It can be readily understood, for example, that if the section lies in the upper corneoscleral junction, any pressure on the cornea would make the upper flap of the cornea slide upward, overriding the adjacent sclera. This would make the vertical meridian less curved, not only because the cornea in this meridian has become flattened but also because the upper edge of the cornea has been displaced forward on the sclera.

The cornea being a stiff structure, if it lengthens in one direction it must necessarily shorten in another, and this latter is what takes place in the horizontal

meridian. Also the pressure made on the sclera, which projects forward in the rounding shape of the globe, pushes it backward and brings those anterior portions in the horizontal meridian closer together. Thus the curvature in the horizontal meridian is increased. Pressure on the sclera in the vertical meridian affects the limbus in this meridian exactly as in the horizontal, but the cornea and sclera not being joined together, the sclera merely slips under the cornea and does not pull the corneal margin with it as it does in the horizontal. The flattening in the vertical and increase of curvature in the horizontal meridian, are exactly what takes place after section of the eyeball above, and I think the chief cause is the degree of pressure made by the lids and by different dressings, which latter should be dispensed with at the earliest possible moment consistent with safety. The axis of the correcting cylinder is usually nearly parallel to a line joining the points of puncture and counterpuncture.

#### AFTER TREATMENT.

The patient is gently conveyed (carried) to his bed with as little muscular effort on his part as possible. The eye is inspected at the end of twenty-four hours and redressed with usually a single eye pad. This is done each day as long as necessary; the time varies from two or three days to a week or longer. In making these dressings I use only sterile normal saline or boric acid solutions, and never instill any collyria unless specifically indicated, as atropin in iritis, a mild form of which is nearly always present. After the use of a few drops of cocaine several operators (Bulson<sup>3</sup>) when the wound has been securely closed for five or more days, instill three or four times a day for a period of four days, first a 5 per cent. and later a stronger solution of dionin, claiming that it increases the effect of atropin, assists in the treatment of iritis, and promotes the absorption of exudates in those cases which are at all affected by the drug. I have several times used a 5 per cent. solution of dionin as early as the third day without doing any harm, but am unable to state whether or not it was of any value.

The quiet of the patient for the first day or two is especially important. All physical exertion, coughing, vomiting, and hiccoughing should be guarded against. The patient should be made as comfortable as possible, should be informed about his surroundings and impressed with the necessity of quiet. For one day it is best, if possible, to have the patient lie quietly on his back or on the side opposite the eye operated on, without turning, and to permit movement of the arms and legs only. When necessary, the head may be made comfortable by the nurse, and after the first day the patient may turn in bed, if assisted by the nurse. I advise fluid or soft diet for at least two days, locked bowels for one or two days, and afterward, if necessary to prevent straining at stool, the use of mild laxatives and enemata. To reduce the discomfort following the normal amount of reaction and to diminish the pressure of the lids on the eyeball, I think it is well when not contraindicated for some particular reason and when it has been used previously without evil results, to give a hypodermic injection of morphia sulphate  $\frac{1}{8}$  or  $\frac{1}{4}$  gr. one hour before operating, which may be repeated every 3 or 4 hours if considerable discomfort continues. Dr. Eugene Smith<sup>28</sup> advises morphia hypodermically immediately after the operation because of its sedative and myotic action. The first

25. Black: *Ophthalmic Record*, February, 1905.

26. Gibbons: "The Eye, Its Refraction and Diseases."

27. Jackson: *Philadelphia Med. Jour.*, May 11, 1901.

28. Smith: *Knapp's Archives*, 1894, p. 85; also, *Am. Jour. Ophth.*, November, 1904.



light, if the patient is restless and can not sleep, a dose of some hypnotic may be given at bedtime. After explaining the reasons for it, it is sometimes advisable to tie the patient's hands to the foot of the bed by long strings, strong enough to wake him if any effort is made to reach the face, but not so strong as to frighten him by making him wonder what he would do in an emergency, such as fire. A simple way is to fasten the sleeves of the night gown to the bed clothes by small safety pins.

In conclusion, I wish to direct attention to the necessity of thorough examination and preparation of the patient, to the screens for the patient's and operators' breath and saliva, to the large, completely bordering conjunctival flap which is easily folded on the cornea, the method of obtaining it, the position and size of the sclerocorneal incision, where to grasp the iris when withdrawing it, the sphincterotomy and its advantages, the simple but efficient capsulotomy, the necessity of avoiding pressure on the lids and eyeball by the dressing, and the simple after treatment.

## CATARACT EXTRACTION WITH MODIFIED IRIDOTOMY.\*

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The following operation seems to possess advantages not offered by any other method of cataract extraction. While thus far it has been performed in only a few cases, it has given satisfactory results in all. More extended experience with it may, of course, bring to light unforeseen objections, but this is not anticipated.

### THE OPERATION.

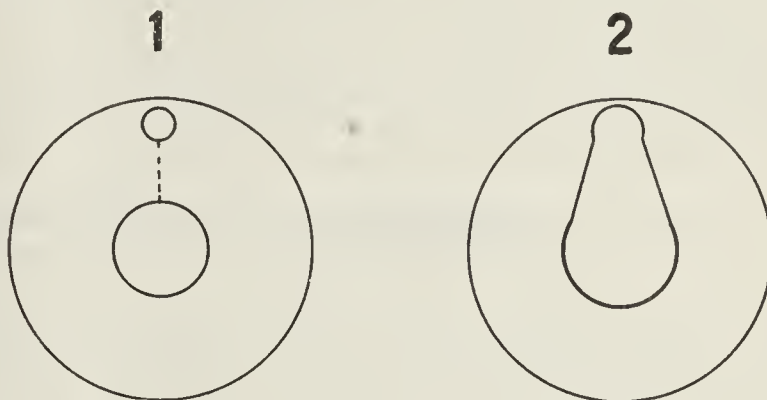
The corneal incision is made in the usual manner, probably best at the limbus. The iris is then grasped with the iris forceps as near its root as possible and a small bit of tissue excised with scissors so as to leave a small hole in it (Fig. 1). The iris will immediately return to the anterior chamber of its own accord. De Wecker's small iris scissors, preferably with blunt pointed blades (Noyes' scissors will probably serve as well), are then introduced through the corneal incision, gently opened, and one blade passed downward through the hole in the iris until it projects below the pupillary margin. The blades are then quickly closed, thus making a clean cut through the iris to the pupil. Owing to the mydriasis produced by the cocain, the edges of the incision will separate, usually at once, as widely as after an ordinary iridectomy (Fig. 2). If, however, the iris is pressed against the cornea by the lens, this may not happen until after the lens has been extracted. The lens capsule may now be opened with the cystotome or capsule forceps and the lens expressed in the usual way, or the latter may be extracted in its capsule. In making the toilette of the wound care should be taken, as after an iridectomy, to free the pillars of the coloboma from the incision. It is probably best to instil atropin immediately after the operation, since this enlarges the coloboma and thus lessens the danger of iris prolapse.

### ITS ADVANTAGES.

This operation offers the advantages of both the simple and combined operations without their disadvan-

tages. The lens is removed with the same ease as in the combined operation, the danger of iris prolapse is minimized, and cortical matter can be expressed with even greater facility than after an iridectomy. Moreover, the modified iridotomy requires no such rough handling of the iris and causes no such pain as iridectomy, while it is superior to the latter in its cosmetic and optical results. The excision of iris tissue is made where it will be most effective in preventing iris prolapse and at the same time do the least damage from an optical standpoint. In the case of iridectomy, a large section of the sphincter muscle is always removed so that the reaction of the pupil to light is necessarily much impaired, whereas in this operation the sphincter muscle is simply incised and the pupillary reactions less interfered with. For this reason, as well as on account of the narrow coloboma finally obtained, the dazzling on exposure to bright light often complained of after iridectomy is after this method notably absent. The optical results are, in fact, practically as good as after the simple extraction or the Chandler buttonhole operation.

Objection may be raised to the introduction of an additional instrument into the eye. It would seem, however, that the danger of infection or traumatic inflammation must be less from the introduction of a sterile instrument into the anterior chamber than from the trauma to which the iris is subjected in ordinary iridectomy.



There are two questions in connection with the operation which probably can be answered only after further experience with it. One is the question as to the best situation for the corneal incision, and the other as to the proper size of the hole in the iris. I have always made the incision at the limbus, because this must unquestionably give the best optical results. An incision here, however, is apt to be attended with considerable bleeding, which, with the conjunctival flap, may obstruct the view and thus render the operation more difficult. In regard to the size of the hole in the iris, I have made it as small as possible, but the danger of iris prolapse would no doubt be still further reduced if it were made comparatively large. In any case it should not, of course, be made so large as to remain uncovered by the upper lid.

**Massage as Adjuvant in Treatment of Stricture of the Urethra.**—A. Settler calls attention to the frequent spastic contraction accompanying urethral stricture, and recommends supplementing surgical measures with inunction of an ointment and massage. In his communication to the *Siglo Medico*, lili, 817, 1906, he states that he uses an ointment to promote absorption composed of 4 gm. potassium iodid and 15 gm. each of lanolin and cold cream. A piece of the ointment about as large as a cherry is massaged into the part corresponding to the stricture, increasing from gentle manipulations at first until so strong that the patient finds them painful. He repeats this daily, and has found it extremely useful as an adjuvant measure with surgical measures, dilatation or the like.

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



## THE USE OF THE SECONDARY CATARACT KNIFE.\*

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Professor of Ophthalmology in the Denver and Gross School of Medicine.  
DENVER.

The use of a knife for enlarging and completing the section in cataract extraction was popular with Mackenzie when he published his "Treatise on the Eye" some fifty years ago. I can not find that the subject has received any attention during recent years except in an article of mine<sup>1</sup> in which I failed to credit Mackenzie with his work because I was unaware of it until Dr. Oscar Wilkinson called my attention to it.

It is not my intention to claim any priority in the use of the secondary knife, notwithstanding my knife differs somewhat from any before in use, as well as does my method of using it.

This knife was made for me by Tiemann and has served me so well that I have found no reason for modifying it in any way. I should now feel that my armamentarium was incomplete without it, hence it is always laid out with my other instruments when preparing to do a cataract extraction. If the section is satisfactory in every way it is not needed, but if the section is not large enough or if the iris falls in front of the knife before the section is completed it is invaluable. I feel sure that I have materially improved my cosmetic results since I have been using it.

Despite all our efforts to the contrary, the iris does sometimes fall in front of the knife. To go right on with the section either results in mutilating the iris or completing the section entirely in the cornea. Those



who prefer a corneal section rarely need the secondary knife. Those who prefer to complete the section at the corneal margin or in the conjunctiva will find this knife will enable them to follow their inclinations in the matter.

If the anterior chamber is evacuated by the patient making a sudden movement before the counterpuncture has been made, the knife is withdrawn and the probe point of the secondary knife introduced through the wound into the anterior chamber to a point at about its summit, when it will be found that the section can be made with ease by cutting, with but little sawing movement, at the same time extending the point of the knife around the anterior chamber at the base of the iris until the section is large enough for the removal of the lens.

If, after puncture and counterpuncture, the iris falls in front of the knife, withdraw the knife, remove the speculum and wait a few moments until a little aqueous has formed in the anterior chamber, then replace the speculum and fixation forceps and introduce the point of the secondary knife into the anterior chamber, working over the iris to the summit of the chamber and thence downward, pushing the iris back of the knife until the point passes through the counterpuncture. It will now be found that the iris is held taut by the knife and that the margin of the pupil is back of the knife, and by making a direct traction cut without sawing movements the section can be completed at the corneal margin or in the conjunctiva without mutilation of the iris.

If it is found on pressure and counter pressure that the section is too small for the escape of the lens without unduly bruising the iris it is a very simple matter to enlarge the angles of the wound with the secondary knife.

In a successful cataract extraction obstacles are promptly met and overcome and the operation is completed in the manner planned. Too small a wound demands that it be enlarged or that an iridectomy be performed. A mutilated iris evidences a partial failure from a cosmetic standpoint surely, and possibly from a visual standpoint as well. Evacuation of the anterior chamber before the counterpuncture is made generally means that the operation should be postponed. I have never yet failed to overcome successfully the obstacles mentioned by the use of the secondary knife. I feel sure that if it is always laid out with the instruments for cataract extraction it will not be long until use is found for it. After once having been used I believe it will become indispensable.

### DISCUSSION

ON PAPERS OF DRs. TODD,\* STEVENSON, VERHOEFF AND BLACK.

DR. M. WEINER, St. Louis, said that he does not believe that the ripening operation has a place now except in exceptional cases. The extraction of the lens in the capsule, he believes is the better operation. Major Smith, of India, by a large number of operations, proved that there is but little more danger in extraction by this method than by opening the capsule and he has reported so far 9,000 cases. In the last 2,600 cases he has employed iridectomy, which in Dr. Weiner's opinion is safer. Dr. Weiner has done eighteen with no absolute failure and only one bad result, which was not the fault of the operation. He advocated extraction of the lens in the capsule for immature contract.

DR. ALBERT E. BULSON, JR., Ft. Wayne, Ind., said that in senile cataract the patient is practically blind and desires useful vision with the least possible risk. Patients in good physical condition have the best chance for a successful operation, but those with constitutional diseases should not be denied cataract extraction, after due warning, as the results in such cases are often up to the average. In uncomplicated cases, if imperfect vision impedes business patients should be operated on, even though the cataract is not ripe, provided that the lens is not in the stage of swelling and that there are no other contraindications. The possibility of postoperative iritis or increased demands for a subsequent discission should not deter one from operating on immature senile cataract. Dr. Bulson said, as results in such cases have been fully as good as after extraction of mature cataract. Dr. Bulson said that the preoperative attention and precautions recommended by Dr. Stevenson are excellent theoretically, but in practice are apt to increase the anxiety of the patient. If the eye is free from discharge and congestion and remains so for from 24 to 36 hours, while the patient is being prepared for operation by laxatives, baths, etc., it is in good condition for operation. As an added precaution the microscopic findings in a smear from the conjunctiva, taken just before the final cleansing, may be considered. In the absence of discharge, Dr. Bulson considers prolonged cleansing with antiseptics superfluous. More attention, he said, should be paid to sterilization of the skin and surrounding parts, particularly the eye lashes. He stated that he believes that Knapp is right in saying: "It is better for the patient to be operated on in the afternoon." Dr. Bulson said that artificial light condensed and thrown into the eye by an assistant gives a steady illumination which is under the control of the operator. The position of the operator and the hand to use is a matter which the operator must decide in a manner which will give the best results.

Two drops of a 4 or 5 per cent. solution of cocaine dropped into the eye every five minutes for three times, is suffi-

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Ophthalmic Record, February, 1904.

\* Dr. Todd's paper is in THE JOURNAL, March 9.



ient, Dr. Bulson said, to produce all the anesthesia required for the corneal section and conjunctival flap. Any more is apt to produce softening of the cornea and collapse after the section has been made. Subconjunctival injections of cocain and adrenalin in his experience have no advantages. One local application of adrenalin is sufficient to check hemorrhage from the conjunctival flap. It has been his custom to place a drop of sterile cocain solution on the iris after corneal section. Except when it can be determined that the lens is sclerosed, or will come out without leaving more or less soft cortical substance, Dr. Bulson prefers a rather large iridectomy, as it facilitates extraction of the lens, makes removal of soft cortical substance by irrigation easier, and has a decided tendency to prevent both prolapse of iris and postoperative glaucoma. The large coloboma, extending to the root of the iris, is usually covered in a large measure by the upper eyelid, and patients seldom complain on account of the cosmetic appearance or dazzling effect by light. Theoretically, the capsulotomy is simple but efficient. Dr. Bulson prefers a capsulotomy in which no flap of capsule will have a tendency to curl toward the visual center, with its possibility of interfering with vision through retention of cortical material within its folds. For the removal of cortical material there is nothing, he said, which equals irrigation, and it should be preferred to stroking or any other manipulations, but the irrigation should be gentle and not too prolonged. An irrigator, whereby fluid flows by gravity only, is the safest, and therefore, the best appliance for use in washing the anterior chamber. For promoting resorption of the soft sticky cortical debris which irrigation fails to remove, dionin, he said, is sometimes useful. It should not be used earlier than the fourth or fifth day for fear of reopening of the wound.

The application of 1 to 5,000 bichlorid vaselin to the eyeball is a final part of the operation is worthy of adoption. It keeps the wound covered with an antiseptic, and lubricates the lid edges so that secretions readily pass out to be absorbed by the dressings. A light dressing that does not press on the eyeball is all that is required after cataract extraction, and a light but stiff pasteboard mask to protect the eyeball. Idiosyncrasy to drugs, such as atropin, should be inquired for, and it is advisable to give alcoholics and smokers a limited allowance of these narcotics to prevent undue nervousness. So far as the eye is concerned, the patient may sit up on the second day. Dr. Bulson extends the time somewhat during which the eye operated on is covered, as he thinks too early exposure of the eye, with the attending attempt on the part of the patient to see, is a prolific source of mild irritative fundus lesions.

DR. ALLEN GREENWOOD, Boston, said that the operation as described by Dr. Verhoeff is an extension of the buttonhole operation devised by Dr. Chandler to prevent iris prolapse, and by its cutting of the bridge of iris tissue between the buttonhole and the pupil practically converts the Chandler operation into a very narrow iridectomy. This adds to the advantage of the buttonhole operation a greater facility of removing the lens and cortical debris. The narrow coloboma produced by this operation must reduce to a minimum the disturbances produced by the excessive light in the eye, often complained of following the ordinary iridectomy and must be of value on his account. The ordinary combined operation is chosen, by men who use both the simple and combined methods, in cases in which there is a large lens, a shallow anterior chamber and a sluggish iris. Given such a case it seems to Dr. Greenwood that the making of a buttonhole, followed by the crowding in of a pair of scissor blades with the necessity of pushing back the lens with the deeper blade would cause fully as much disturbance to the iris and pain to the patient as a small, well performed iridectomy and calls for two operations on the iris, with the danger of injuring Descemet's membrane. In doing the combined operation he tries to make the iridectomy as narrow as possible. It is possible to do this so that the sphincter is barely divided or a thread-like bridge of sphincter is left. It is an open question whether a narrow iridectomy will not answer better, with its single introduction of a pair of iris forceps, than the modified iridotomy, with its introduction of a pair of scissor blades following a buttonhole iridectomy. Dr. Greenwood said he could not agree with Dr. Verhoeff's statement that his procedure offers the ad-

vantages of the simple operation without its disadvantages. Any division of the sphincter of the iris must impair its function and any cutting of the iris must be an added traumatism to the eye. The objection to the simple operation is the danger of iris prolapse, but neither an iridotomy nor an iridectomy will wholly prevent some entanglement of iris tissue in the corneal wound. During the past two years Dr. Greenwood has had no case of iris prolapse when he has done simple extraction, and this he ascribed largely to the use of intraocular irrigation in all cases. The hemorrhage which Dr. Verhoeff complains of from a section at the limbus can be largely prevented by the use of a weak solution of some of the suprarenal gland extracts. Dr. Greenwood said that while Dr. Verhoeff's operation combines some of the advantages of the simple and of the combined operations, it is not true that it has all the advantages and none of the disadvantages; in many cases it would not be applicable. He stated that in the cases requiring an iridectomy he should prefer a narrow iridectomy to the modified iridotomy, except possibly in cases of immature cataract. In the extraction of cataract when the sight of the patient is at stake, Dr. Greenwood feels conservative surgeons will be loth to abandon so successful an operation as the ordinary combined extraction for one which requires the introduction of a pair of scissors within the eyeball of a conscious patient in addition to the usual operative procedures.

DR. CASEY A. WOOD, Chicago, suggested the further use of this probe-pointed knife. He fancies that the falling of the iris over the blade of the knife is not more common than the mistake he has seen made, and once made himself, of turning the blade of the knife down and finding that it would not cut its way up because of the error. There is no reason why this probe-pointed knife should not be introduced through the wound and the incision completed in that way, nor would it be any worse than to attempt to turn a small Graefe knife 180 degrees, as he has seen done, to make a better cut when that same error has been made.

DR. L. WEBSTER FOX, Philadelphia, said that a year ago Dr. Black sent him one of his probe-pointed knives with the request that he give it a fair trial in cases in which he found it applicable. At the time Dr. Black devised this knife for enlarging the wound in simple cataract operations he was not aware that both Wharton Jones in 1847 (page 252) and Mackenzie in 1854 (page 795, fig. 84) not only described, but illustrated in their works on the eye knives used for the same purpose. At that time, however, the narrow bladed von Graefe knife was not in use and the knives devised for enlarging the wound were manipulated in a different manner from that suggested by Dr. Black. Dr. Fox finds these knives most useful in enlarging the wound in glaucoma operations, or in enlarging the wound in secondary cataracts, when necessary. He is not an advocate of the simple operation, except in very well selected cases. The incisions in cataract operations have never been described as carefully as they should be in our text-books. There are many different incisions, commencing with Liebrich in the lower half of the cornea, and ending with von Graefe in the upper part of the eyeball. The proper beginning of an incision, Dr. Fox thinks, is the first step toward its successful termination. A Beer's or Sichel's knife will make an old style flap if made directly parallel with the corneo-scleral margin, starting usually a little above the horizontal plane of the eyeball. By some dexterity of manipulation a flap is made by which the lens is easily delivered. Ophthalmic surgeons in performing any cataract incision must bear in mind the proportions of the dimensions of the lens in relation to the inner circle of the cornea or to the opening wished for. It is necessary, therefore, when using the narrow-bladed knife to have the cutting edge at right angles to the horizontal diameter of the cornea; the blade should be started as if it were passing downward to the center of the pupil toward the point of the nose, or at about an angle of 60 degrees, then rotating the point of the blade upwards, making a counter puncture opposite the point of puncture. When the diameter of the cornea is small, the anterior chamber shallow, the iris pushing forward with possibly an enlarged lens behind, it would be almost impossible to perform the simple operation



without more or less of the iris becoming involved on the cutting edge of the knife—this must be avoided as described by both Wharton Jones and Mackenzie. Dr. Fox prefers the combined operation. When he wishes to perform a simple operation he carefully selects an eye with a deep anterior chamber, large cornea, and prompt reaction of the iris to light. The knife devised by Dr. Black, he said, will be a most useful addition to our armamentarium, for its usefulness is not limited to the field to which Dr. Black assigned it.

DR. OSCAR WILKINSON, Washington, said that Dr. F. Bischoff, London, in 1793, in his book, "A Treatise on the Extraction of Cataract," speaks of a blunt pointed knife in cataract operation. On page 52 he describes how to avoid injuring the iris when it happens to fall in front of the knife as he is making the incision.

DR. WENDELL REBER, Philadelphia, declared that the first thing to be considered is the welfare of the patient and not the brilliancy of the operation. It is our duty to view the majority of cataractous eyes as sick eyes and for this reason Dr. Reber thinks it wise in these cases to do a preliminary iridectomy (not a ripening operation). The objections of course are well known.

As to Major Smith's operation, Dr. Reber determined ten years ago to try this very operation. He did it four times. When it succeeds the results are beautiful beyond words; when it does not, the result is abysmally awful. Three cases were perfect in their results. The other patient is wearing a glass eye and Dr. Reber was so intimidated by this high relative failure that he abandoned the operation. Whether or not we do an iridectomy, he thinks that we will do well to consider the matter of delivering the lens in its capsule. He has devised a 12 mm. watch crystal of the same curve as the cornea which may be put over the cornea when there is vitreous prolapse of a moderate character, permitting one to inspect the cornea and prolapsed iris through it, and to introduce a corneal stitch if it is thought necessary.

DR. S. L. LEDBETTER, Birmingham, Ala., stated that a few years ago a case of eye instruments that had belonged to an old physician who had died a few years before was given to him and in it was a knife that corresponds closely to the one Dr. Black uses. Dr. Ledbetter did not know what the knife was for until he read the article. Since then he has used it twice and it worked very well.

DR. S. LEWIS ZIEGLER, Philadelphia, said that the older operators probably all favor preliminary iridectomy. He has often heard Dr. Harlan say he would want it done on his own eye if he had to have a cataract extraction. Dr. Ziegler thinks it is going out of date. If the capsular incision is done in a free manner there is no danger of retained cortical matter. As to iridectomy, if we are going to do one, the key-hole iridectomy is the best. The iris should be grasped at the margin, drawn out and cut off. It can be cut wide or narrow, according to the amount of iris grasped in the forceps. The edges of the coloboma should be carefully dressed back into position. If the conjunctival flap be small it is very well, but if large there is apt to be a portion that remains unattached after healing. If the aqueous leaks out under this, it resembles chemosis. This may heal slowly and give a high degree of astigmatism. Dr. Ziegler thinks that Dr. Black's knife is useful, although not new. In regard to the iris working over the edge of the knife he thinks that a little manipulative skill can generally make it float back. If the knife be raised directly up, keeping it on the same plane, the iris will slip right off. He has never had occasion to use a supplementary knife. In glaucoma, where pressure throws the aqueous out, the iris is most liable to prolapse over the knife.

DR. A. R. BAKER, Cleveland, said that we all have to learn by experience. Most ophthalmologists have tried the ripening operation and have abandoned it, and he thinks that when it is the general consensus of opinion that one operation is not so good as another there is probably some good reason for it.

DR. C. W. HAWLEY, Chicago, said that he believes that in Chicago he was among the first to attempt cataract ripening. He did the operation according to Beckman's instructions and was pleased with the results. There was one case in which he lost the eye completely from panophthalmitis later, but this was not due to the operation itself. He had selected an

old rheumatic man, and, of course, that is a serious matter. In every other case it was successful. Dr. Hawley took a spatula and rubs it over the entire surface of the lens and in from four to six weeks he removed the cataract. He has now on hand a patient on whom he will perform ripening of one lens. Both eyes are affected and it is necessary to do something to allow the man to continue his work. He would not attempt to extract in the capsule. As to iridotomy in cataract extraction he has tried once or twice a suggestion given to him by Dr. Starkey. Instead of doing an iridectomy he suggested making a partial incision at the pupil and removing a little button of the iris. It takes away the tension of the iris at the pupil and leaves almost the entire iris for protection from light.

DR. W. B. MARPLE, New York, in reference to inserting the knife upside down, stated that he remembers hearing Dr. Knap say that this had occurred to him twice and he had had no difficulty in revolving his knife 180 degrees. On one occasion Dr. Marple did the same thing and had no difficulty in turning the knife and finishing the operation. He would prefer this to inserting a second knife.

DR. E. E. JACK, Boston, said that in the last few months he has done extraction in the capsule nine or ten times. None of the cases have been failures; all have been fairly good, four or five very good. One danger that has not been spoken of is that after the eyes are bandaged there is a great tendency of the iris to prolapse, there being practically nothing to keep the vitreous from bulging against the wound and making it gape. This prolapse occurred in one or two of the cases. One of these cases he said, is worthy of especial mention; that of a man of fifty years of age with congenital cataract, never operated on. A few weeks before Dr. Jack had performed an iridectomy and massaged the anterior capsule without effect. He then tried extraction in capsule, which succeeded only after half an hour of patient work. The result was good.

DR. R. D. GIBSON, Youngstown, Ohio, said that the irrigating fluid employed should be the physiologic saline solution. When we speak of normal salt solution we should remember that it is eight times as strong as the physiologic saline solution. He has found that internes sometimes make mistakes in this respect. Dr. Gibson stated that some time ago he wanted to irrigate the anterior chamber and did not have an irrigator with him and had to use an ordinary medicine dropper. He drew out the point in the flame of an alcohol lamp and rounded it off.

DR. T. J. MCCOY, Los Angeles, in reference to Dr. Stevenson's paper, said that some weeks ago, while doing an extraction, he grasped the iris midway between the limbus and peripheral margin and as he clipped it off he found that he had made a complete hole and had to reintroduce the forceps to get the sphincter. He suggested that it should be grasped much nearer the pupillary margin.

DR. E. E. HOLT, Portland, Me., declared that, after all, the largest element in any operation is the operator himself and he must adopt that method which seems best adapted to himself and to each individual case. In the preparation of the patient, Dr. Holt uses antiseptics about the eyes, nose, and face of the patient for several days before the operation, which he likes to have come off as quickly as possible. He has given bromide of sodium and morphin to patients with great satisfaction. He was led to the use of morphin as part of the preparation of a patient for cataract operations from an observation made about twenty years ago. He had a patient who was addicted to the use of morphin. She was unable to read ordinary type and led an unhappy life. It was to change this condition of things that she had sought advice from several oculists, all of whom discouraged an operation on her eyes. After careful preparation Dr. Holt removed the cataractous lens from one eye without iridectomy. There was no reaction from the operation. Her ability to read again changed the whole aspect of her life. He prefers to have the patient in the bed in which he is to remain after operation, with the head of the bed made up at the foot, so that he can stand behind the patient. He makes definite calculations to place the incision in the cornea so that the axis of the resulting astigmatism of the cornea will be exactly horizontal, as thereby he is sure that he gets better results from the manipulations necessary to remove the lens and



the time of the operation, and also better visual results for the patient. He seldom does an iridectomy, for he believes that the less traumatism inflicted, other things being equal, the better it will be for all concerned. After he has completed the incision in the cornea he aims to open the capsule of the lens by a curved incision near its periphery, following the outline of the margin of the pupil. He then removes the fixation forceps, leaving the eye free. It is of the highest importance for the operator so to place his spatula on the cornea in an eye without iridectomy, that the first movement of the lens will be to tilt it forward, so that it will clear the upper margin of the iris and its upper edge come forward into the anterior chamber of the eye. By so doing, the lens will come out readily and there will be little need of irrigating the eye after the expulsion of the lens. Years ago he used irrigation a good deal, but by studying the causes which necessitated its use and removing them, he seldom finds it necessary to use irrigation after a cataract operation. He also practiced the operation of ripening cataract and preliminary iridectomy, but now seldom does either.

DR. MARK D. STEVENSON, Akron, Ohio, said that the eye sac is cleansed more easily, better, and with less discomfort to the patient, by means of an eye bath and a sterile, unirritating solution than by any other method. Dr. Stevenson prefers to have very simple anesthesia and has not seen any harm result from 4, 5 and 6 installations of 4 per cent. cocain and 1 or 2 of adrenalin chlorid. After making the section and turning the flap back on the cornea, he often places another drop of cocain on the wound before touching the iris. If the corneal dome should sink, irrigate. If the iris is grasped a little beyond the middle of its anterior surface and sufficiently withdrawn so that its pupillary margin lies just outside the wound, there is no danger of making a buttonhole in it which would later have to be connected with the pupil, as in Dr. Verhoeff's operation. The method of seizing and cutting the iris is the simplest possible and requires little time. No iris tissue is removed, so that no care need be exercised as to how much, which must be carefully watched on other operations. It would seem best not to remove any of the sphincter, as it helps to hold the iris tissue from prolapsing, even when divided, especially if eserine is employed. The buttonhole operation requires great care and nicety not to remove too much iris at the base, which is apt to be torn while withdrawing it. In attempting to unite this buttonhole to the pupil, two blades of a pair of scissors would have to be passed on either side of the iris tissue, one blade through the buttonhole and then between the iris and lens on which it lies (into the anterior capsule of which it is liable to pierce, if sharp, and possibly to dislocate the lens) to beyond the pupillary margin, the other blade in the anterior chamber between the iris and cornea, the junction of the blades lying vertically nearly in the corneal section, widely opening it.

DR. F. H. VERHOEFF, Boston, referring to the fact that Dr. Greenwood took exception to his statement that this operation offers the advantages of both the simple and the combined operations without their disadvantages, stated that these terms, however, are purely relative and he thinks his further statements show that he does not claim too much for the operation. If blunt-pointed scissors are used there is little danger of injuring Descemet's membrane. In fact, it is not necessary for the scissors to come in contact with the membrane. As to pain, there is no pain connected with the operation. As to Dr. Greenwood's statement that a small iridectomy would be better, Dr. Verhoeff thinks it might be almost as satisfactory if one could always get an ideal iridectomy, but this is largely a matter of luck. An iridectomy lacks the precision of this operation. He has found the operation useful in extracting the lens in capsule cases of immature cataract.

**Arsenic in Phthisis.**—Dr. George F. Butler (*Chicago Medical Recorder*) states that in certain forms of pulmonary tuberculosis arsenic is superior to any other remedy. It is useful, however, only in conditions characterized by excessive expectoration and a slow degenerative process. It is contraindicated when the cough is harsh and paroxysmal, with scanty expectoration and a tendency to hemorrhage.

## THE PRINCIPLES AND MECHANICS OF ABDOMINAL DRAINAGE.\*

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Two notably scientific papers have been published in this country which have dealt somewhat with this phase of the subject of abdominal drainage. One was published by Dr. John G. Clark<sup>1</sup> and the other by Dr. John L. Yates.<sup>2</sup> Many other papers on the subject have been published, but these cover most of the ground and furnish us with all the fundamental principles so far developed either by original work or reference to the work of others.

Clark demonstrated that fluids and solids may pass through the endothelial layer of the peritoneum, fluids in many places, the solid particles only through the spaces of the diaphragm. He found the diaphragmatic portion of the peritoneum capable of absorbing much gross material. He found, too, by autopsy and on the living patient that the drainage tract, no matter what material was used, always contained organisms of some kind. He also proved that there was frequently fluid

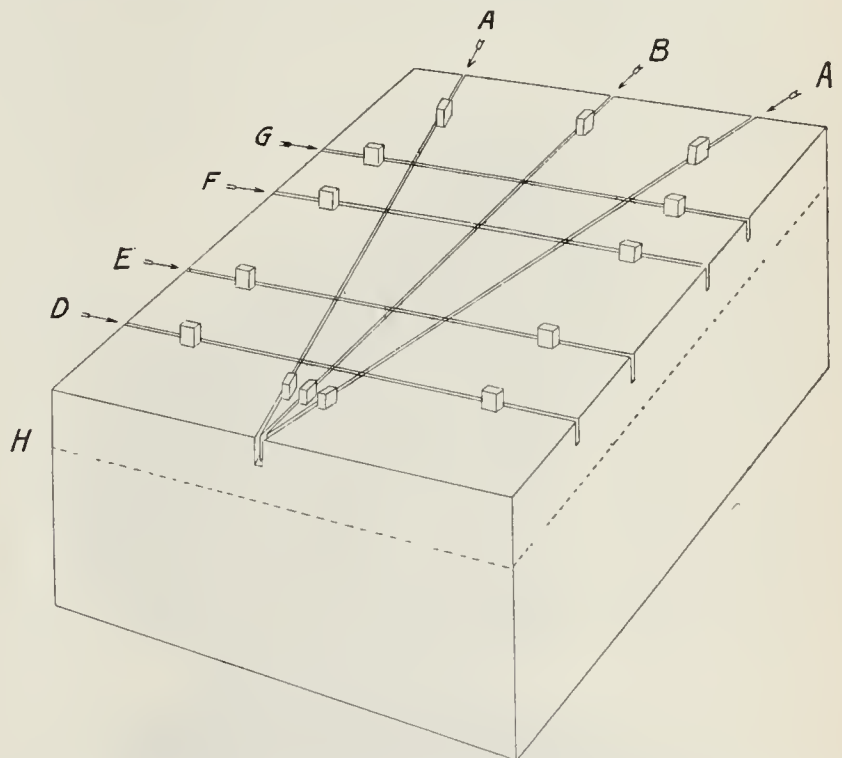


Fig. 1.—Plaster block containing cast of abdomen: A, A, right and left drainage lines; B, median section; G, through upper end of kidney; F, through lower end of kidney; E, through appendix; H, horizontal section.

pent up in the drainage cavity, which was sometimes forced into the general cavity, producing peritonitis, and that in many cases in which drainage was used, a sinus persisted six months and more.

Basing his reasoning on these facts, he condemns external peritoneal drainage in most cases and advocates postural drainage into the lymphatic system by elevating the foot of the bed twenty degrees, thus throwing the fluid against the diaphragm where it may be absorbed by the large open lymphatics.

Yates, in his article on "Local Effects of Peritoneal Drainage" confirms the findings of previous investigators and makes the results more definite by his experiments. The experiments were with all forms of

\* The technical methods of drainage have been purposely omitted.

\* Read before the Western Surgical and Gynecological Society, Salt Lake City, Aug. 31, 1906.

1. Jour. of Obstet. and Dis. of Women and Children, April and May, 1897.

2. Surg., Gyn. and Obst., December, 1905.



drainage, and by using many dogs he was able to definitely determine the time at which drainage from the peritoneal cavity ceases. By placing different forms of drains in the flanks of dogs and then in a certain number of hours filling the abdomen through an opening at the ensiform cartilage with carmine solution, he was able to determine definitely that all forms of drains were closed, so that absolutely no drainage from the peritoneal cavity would take place after six hours.

By quotations from many investigators and experiments of his own he concludes that drainage produces a flow of serum (lasting from a few hours to two days), which in quantity is out of all proportion to the fluid in the cavity to be drained, but in exact proportion to the amount of drainage material inserted, showing that the serum was poured out as a result of the irritation produced by the drains. From the work of other investi-

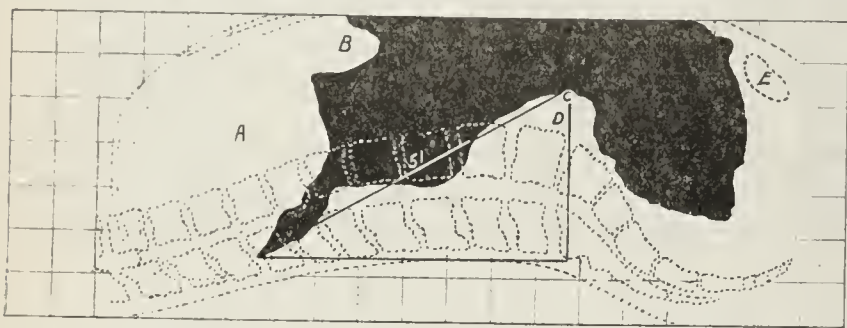


Fig. 2.—Diagonal section through pelvis and right flank at base of appendix (shown by black space): A, liver; B, gall bladder; C, appendix; D, psoas muscle; E, pubic bone.

gators and confirmed by his own experiments, he finds that gauze will not drain pus or blood.

Acting on these facts he also condemns drainage of the peritoneum, as a rule, on the grounds, (1) that it is impossible; (2), that it is depleting; and (3), that pus and blood are not drained.

I believe that the scientific findings of Clark and Yates are correct and fundamental as far as they go, but should be studied in connection with other mechanical principles. The two mechanical principles involved in peritoneal drainage are gravity and capillarity.

The two steps in the process of drainage are, first, bringing the fluid in contact with the drain; second, de-

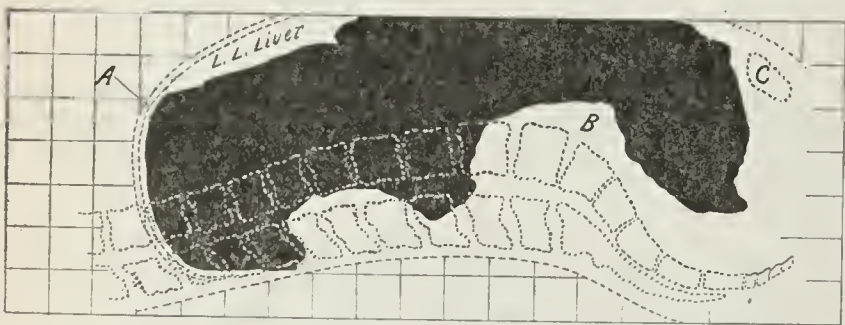


Fig. 3.—Diagonal section through pelvis and left flank (shown by black space): A, diaphragm; B, psoas muscle; C, pubic bone.

livery of the fluid to the surface. Gravity performs the first step in all intraperitoneal drainage and, when postural methods are applicable, may also be made to perform the second. When the point of delivery is higher than the lowest point in the cavity to be drained, capillarity is necessary.

Gravity drainage may be executed by means of a tube or any other agent that will maintain a patulous opening. A tube does not always completely drain owing to the sucking into its opening of intestines and omentum, as shown by Mikulicz. Two or more parallel tubes bound together, work better, for in this way both capillarity and tubular drainage is brought to bear, making it more difficult to block. Capillary drainage is usually

carried out by means of gauze which may or may not be encased in some smooth tube or tissue.

By experiment it is found that ten gauze wicks will drain exactly ten times as fast as one over the edge of a basin or out of a cavity. Therefore drainage will be in exact proportion to the amount of gauze passing through the external wound. In draining water over the edge of a basin the flow ceases when the water reaches the level of the outside end of the gauze, but starts again if a piece of gauze is pinned to the end of the drain and flows with a rapidity proportionate to the length of the external gauze below the level of the fluid in the basin, thus acting on the principle of a siphon. Gauze drainage must therefore be brought in contact with dressings or other absorbent substance if drainage is to be effectual. The same applies when the gauze is encased, in that the end of the gauze must be in contact with dressings.

My findings, both experimentally and clinically, confirm the conclusion of Yates and others that gauze will not drain pus or blood from a basin, nor from a closed abscess cavity. It will, however, drain either pus or blood from the free peritoneal cavity. Even coagulated blood or thick pus is liquefied by the excessive flow of serum (noted by Yates as being useless and depleting) and is delivered to the surface in the form of a thin red non-coagulable fluid in the case of blood, and a yellow fluid in the case of pus, which will frequently saturate

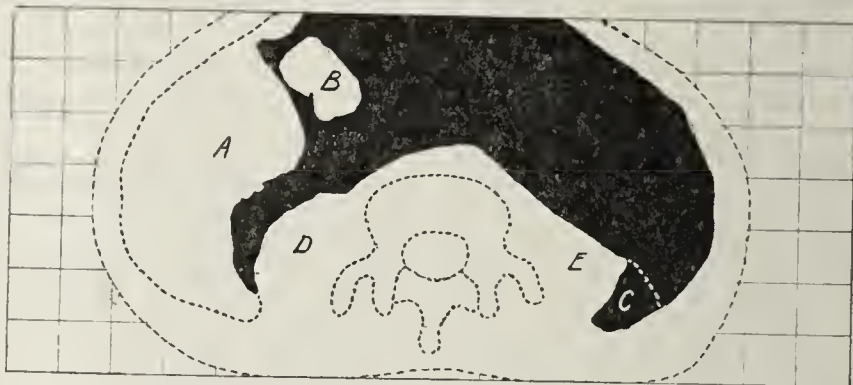


Fig. 4.—Cross section at upper end of kidney (shown by black space): A, liver; B, gall bladder; C, colon; D, right kidney; E, left kidney.

the dressings and all the bedding in a short time, if the drainage is sufficient in quantity and properly placed.

Thus this seemingly useless flow of fluid serves the purpose of a solvent, and at the same time acts as an irrigator from within, out, in a manner impossible by artificial irrigation. Gauze packed in a cavity like the "folds of a fan" as described by Clark, creates a flow of serum in proportion to the amount of gauze in the abdominal cavity, but serum is delivered to the surface only in proportion to the size of the strip passing out through the wound. Hence the large secretion of serum, and later of pus, surrounding the drain (mentioned by Clark), which was not delivered because of the insufficient drainage at the outlet and which later produced a chronic fistula because the internal cavity was larger than its outlet. This is aptly illustrated by the formation of a fistula following the improper opening and subsequent treatment of an ischiorectal abscess.

Gauze forms a splendid frame work in the formation of a protecting wall and an effective drain when in large enough quantities to prevent its being choked by granulations from the sides of the wound. Any attempt to remove gauze prior to the fifth or sixth day is dangerous, as shown by Clark, who reported eight out of one hundred cases in which intestines were drawn out through the wound and others in which walls were



broken down so that infection occurred. Force should never be used in the removal of gauze, as it will almost always be loosened from the sixth to the fourteenth day by natural processes. By this time a definite wall is formed and there is no danger of breaking open the cavity. Much of this difficulty is relieved by covering the gauze with protective tissue or split rubber tubes. One of the most effective and popular drains is in the use of a number of split tubes or cigarette drains side by side, thus producing a double capillary action.

The postural drainage advised by Clark is effective, even to the danger point, as is shown by the enormous number of tube casts thrown off in a septic case following the rupture of an appendiceal abscess into the right flank, indicating an overwhelming of the kidney. The modern tendency is to remove the fluid as far from the diaphragm as is possible in order to avoid the very thing that Clark was trying to accomplish. Fowler therefore recommended the elevation of the head of the bed from eight to fourteen inches to drain the fluids into the pelvis. Kelley recommends elevation of the body to an angle of thirty degrees for the Fowler position. Others have recommended still more elevation of the upper extremities.

I was early struck with the fact that either flank holds more fluid than the pelvis when the subject is lying perfectly level on the back. I experimented with several cadavers containing all the abdominal viscera and found that in order to drain the fluid from the flanks into the

through the pelvis. A corresponding line was made on the left side; a cross line was made to pass through the appendix transversely, and another through the upper poles of the kidney, and still another through the lower poles of the kidney. The box was then filled with plaster, making a block 7x16x18 inches. This was dried, and when it was dry I sawed through each line. As each section was made, a draftsman was present to make an accurate tracing of the cavity, which is shown in the pictures in solid black. The plaster is checked off in spaces of one inch for the purpose of estimating angles. By these pictures it will be seen that with the subject on its back the flanks are more than one inch deeper than the pelvis, and that in order to bring the lowest point in the flank on a level with the psoas muscle, which forms the dividing line between the flank and the pelvis, the upper end must be elevated to an angle of fifty-one degrees, and, in order to drain properly, it would probably have to be raised to an angle of sixty to seventy degrees. To drain the contents of the pelvis into the flanks for the

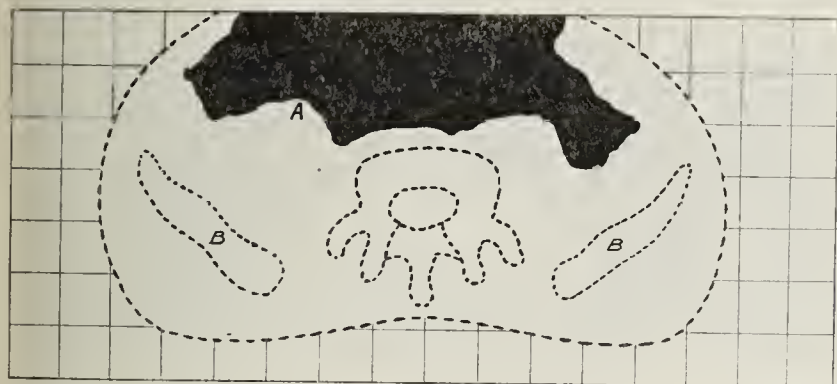


Fig. 5.—Cross section at base of appendix (shown by black space); A, appendix; B, B, ilium.

pelvis, the body must be elevated to an angle of sixty or seventy degrees, instead of thirty, but I was unable to determine accurately the degree necessary for drainage.

I took, therefore, the body of a man who had died of pneumonia, weighing about 140 pounds, height five feet eight inches, and removed the front of the abdominal wall. I then removed the stomach and all the intestines except the cecum and the appendix. The liver, gall bladder, kidneys, ureter and bladder were left and a string was pinned along the course of the ureter so as to make it prominent in the plaster cast. The body was made perfectly level and the cavity was filled with a liquid plaster-of-Paris so that it made a smooth, level surface. Two days later the body was cut off from the cast, the cast dried and painted with iodine to give it color, and covered with several coats of shellac to make a line of cleavage. The flat or abdominal side of the cast was then placed on the bottom of a box so that the highest points of the cast were represented by the deepest points in the flanks and an inch of liquid plaster-of-Paris was poured in around the cast, at which time the stakes shown in Figure 1 were set to mark the lines for sawing, after the cast had dried. On the right side, a line was made which would pass through the deepest points of the flanks, pass through the base of the appendix, and

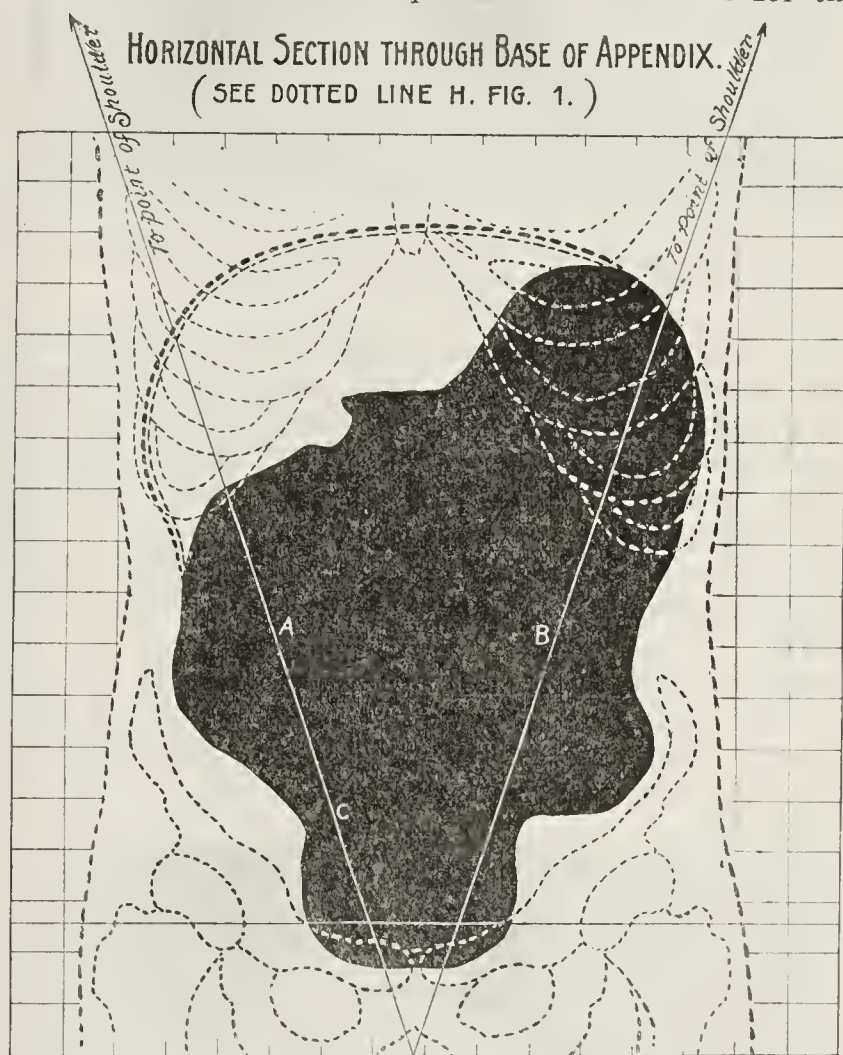


Fig. 6.—Horizontal section through base of appendix (see dotted line H, Fig. 1.) : A, right drainage line; B, left drainage line; C, location of appendix.

production of Clark's postural drainage, the patient's feet would have to be raised very high.

In Figure 6 we see that by turning the patient in a lateral position, almost all the cavities may be drained. For instance, in the case of appendicitis, the entire peritoneal cavity may be drained perfectly by placing one drain in the pelvis and the other in the flank, and having them passed out through ordinary incision for appendicitis the patient is turned on the right side. This is the position which I use in most cases of drainage for appendicitis. If the infection is confined to any one of the cavities, the drainage would then be placed and the position utilized to suit the case in hand—for instance, if one flank alone is involved, the drainage should be placed at the most dependent part of the cavity that is to be drained. In addition to the experimental work done



by many experimenters and investigators and brought out especially by Clark and Yates, proving that drainage is immediately walled off, I wish to add the report of four clinical cases.

In Figure 7 is illustrated a case of appendicitis with diffused peritonitis in which the drain worked successfully locally and was as usual walled off by the intestines, but owing to gravity, some of the infective material flowed into the space between the kidney and the liver and an abscess was formed outside of the wall, entirely distinct. This condition was found post-mortem.

In Figure 8 is seen an appendiceal abscess, filling the entire right flank and side of the abdomen, which was opened and successfully drained; the wall was already intact and was not disturbed. Five days later another



Fig. 7.—A, appendiceal abscess successfully drained; B, separate retro-hepatic abscess found post-mortem; C, appendix.

abscess, entirely distinct and separated by the intestines from the original one, was found, and opened. It was evident that part of the original infection from the ruptured appendix dropped over the divide into the pelvis, while most of it went into the right flank. Nature quickly threw up a wall around the appendix and the upper abscess and thus kept away from the drainage tract the infection that had fallen over the brim of the pelvis.

Figure 9 shows drainage of an acute ruptured appendiceal abscess in which the patient had rolled from side to side prior to the operation. The patient died five days after the operation and a perfect wall had formed

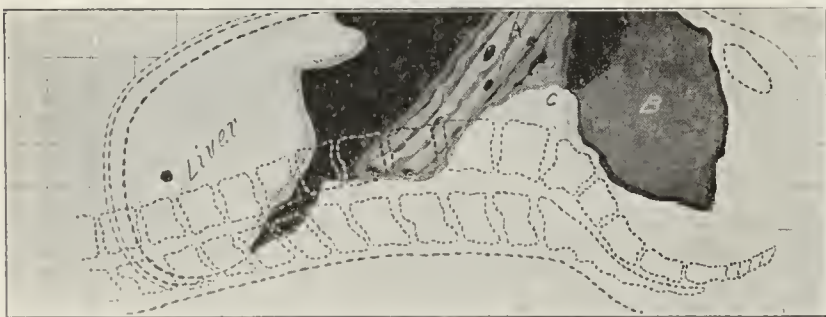


Fig. 8.—A, appendiceal abscess successfully drained; B, separate abscess discovered six days later; C, appendix.

around the drain, the intestines had closed in, solidly, and seemed to be in a healthy condition, but an extensive accumulation had taken place in the left flank. Part of the infective material, after the rupture, had, by the movements of the patient, been gravitated into the left flank; the intestines filled in around the drains, thus shutting off and segregating the second focus of infection.

Figure 10 represents an acute pyosalpinx, with large abscess, tubes removed and cul-de-sac drainage applied, which worked beautifully, leaving a healthy tract. Four weeks later it was necessary to open a large abscess which apparently started from the vesico-uterine space. The intestines and omentum had filled in around the drain.

attaching to the surface and fundus of the uterus, and had segregated a portion of the infection which had fallen over the divide into this space at the time of the operation.

Thus it seems that: *On the insertion of a foreign body into the peritoneal cavity, intestines and omentum attach to it and to each other, forming a complete wall in a few hours. This wall is just as effective in keeping a focus of infection, which has been separated from the drain by gravity, away from the drain, as it is in keeping the field which is being drained from infecting the general peritoneal cavity.*

#### DEDUCTIONS.

1. Fluids are rapidly absorbed by all parts of the peritoneum: crude or granular matter is absorbed only through the lymph spaces at the diaphragm. (Clark.)
2. A drainage tract always contains microorganisms (Clark.)
3. Any form of drain is isolated from the free peritoneal cavity in a few hours. (Yates.)
4. A drain causes a flow of serum, by mechanical irritation, which is profuse in proportion to the amount of drainage material in contact with peritoneum (Yates.)
5. This flow is delivered to the surface only in proportion to the amount of drainage passing out through the wound. (Experiment.)
6. Serum and pus accumulate around drainage only



Fig. 9.—A, successful drainage of right flank; B, post-operative abscess in left flank; C, tip of gall bladder.

when the drainage at the outlet is less in amount than that contained inside or when drainage is too small (Experiment and clinical observation.)

7. Blood and pus in quantity are never found in the neighborhood of a properly applied drain after forty-eight hours. (Clinical observation.)

8. The flow of serum resulting from the irritation of drain in the free peritoneal cavity dissolves blood clots and thick pus, leaving gauze drainage clean and white by the time the flow ceases. (Experiment and clinical observation.)

9. Drainage placed within a walled abscess cavity does not excite a flow of serum, therefore blood and pus are not drained from formed abscess cavities by capillary action. (Experiment and clinical observation.)

10. Small gauze drains are likely to be choked at the exit unless covered by a tube or protective. (Clinical observation.)

11. Extensive gauze drains are not thus affected and act in proportion to the amount coming through the opening, but will only drain when it is in contact with dressing or clothing, or when its outside end is at a lower level than the depth of the cavity to be drained (Experiment and clinical observation.)

12. A tubular drain drains perfectly a walled cavity or will drain the peritoneal cavity under the influence



gravity if it does not become choked, but will not drain up hill, except when the fluid is confined.. (Experiment and clinical observation.)

13. A single tube is much more likely to be choked by intestines and omentum than two or more parallel tubes. (Clinical observation.)

14. There are three cavities or basins of the peritoneum to be drained; the right and left flanks, separated from each other by the spinal column, and the pelvis, separated from the flanks by the psoas muscles. Either flank holds more fluid and is an inch deeper than the pelvis and its bottom is more than four inches below the top of the divide made by the psoas muscle on which the appendix rests. The body must be elevated to an angle of fifty-one degrees to bring the bottom of the flank on a level with the divide, and to an angle of sixty or seventy degrees to properly drain by the Fowler position. The entire abdominal cavity can be drained by a lateral position.

*A line drawn from the center of the surface of the perineum to the tip of the shoulder will pass through the deepest part of the pelvis and flank. I have called these lines the right and left drainage lines (Fig. 6).*

There are no independent cavities or basins between these lines. As it is a well-known clinical fact that drainage should always be in contact with the parietal peritoneum on at least one side, I make it a general rule that drainage should never be placed between these drainage lines except just above the pubic bones. The

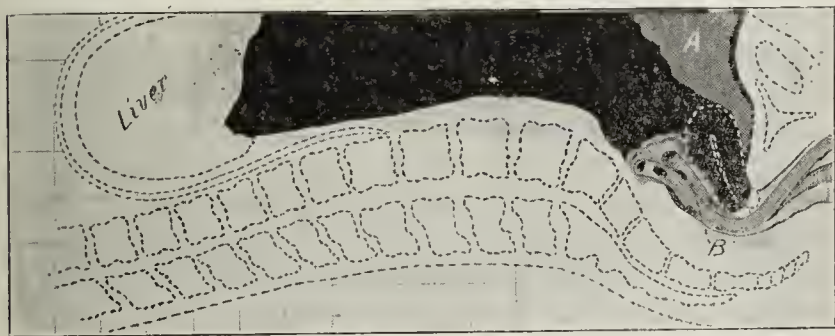


Fig. 10.—A, abscess developing in vesico-uterine space; after successful cul-de-sac drainage (B).

deepest points of the flanks are best drained external to these lines (cadaver and plaster cast).

#### CONCLUSIONS.

1. Gravity is the most important principle in peritoneal drainage, therefore drainage must reach the most dependent point of the cavity to be drained. The patient must be placed in the position that would naturally cause the fluids in the peritoneal cavity to gravitate to the drain, always bearing in mind the anatomy of the three anatomical cavities or basins.

2. Gauze or capillary drainage is the most widely applicable and useful of all drains if used in sufficient quantity to preclude its being choked by debris and provided the drain is as large in circumference at its exit as it is at any point within the cavity, and provided it is in contact with abundance of dressings on the outside.

3. Gauze drainage is a very dangerous agent if all the foregoing principles are not kept in mind in its application.

4. If a surgeon remembers that his drain ceases to be effective in a few hours, he places it with the idea of removing septic fluid in the shortest time possible according to the principles of drainage, and usually gets results.

5. If he is deluded by the belief that his drainage will

continue to work for days and that fluid will run up hill to get to the drain, he will usually place his drain accordingly, and is consequently disappointed in drainage.

6. If a surgeon habitually removes gauze drainage before it is loosened by the natural process, a large per cent. of his cases will have secondary sepsis, post operative obstruction, or post operative hernia.

7. Drainage (except a small precautionary cigarette or tubular drain) can rarely be safely removed until the fifth or sixth day—many times are best left till the end of 2 or 3 weeks.

8. Capillary drainage is inefficient for draining defined abscess cavities.

9. Tubular drainage is appropriate for defined abscess cavities, but is an uncertain drain in the free peritoneal cavity except when aided by gravity.

#### PROBLEMS AND DUTIES IN RELATION TO MALARIA.

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While doing such missionary work as I have been able on the subject of fevers, I have frequently heard the argument that with the eradication of malaria the medical profession in the country districts would be, like Othello, without an occupation. I do not charge any member of the profession with such narrowness and fallacious logic; I think rather, that we have been slow in taking hold of the prophylaxis of malaria chiefly because it involved unsolved problems and not because we thought it would injure our business.

The business of practicing medicine depends for its success on the prosperity of the community and no sickly community can be expected to prosper. Medical orators are wont to tell us that we belong to the only profession whose disciples labor to their own undoing in promoting public health work, but here are the facts: Some of the patients who come to our hospitals tell us the country doctors treat all diseases with huge doses of calomel and quinin and that they, the patients, do not intend to remain in such a country any longer if they have to be in a state of chronic salivation to exist. Planters and plantation managers say they expect to remain only until they have made a "stake" and will then leave for a large city.

The fact is that to-day no region should be uninhabitable on account of malaria and, indeed, much of the so-called malaria is something else. The report of the United States Census for 1900 shows in the "South Mississippi belt" a death rate per 1,000 deaths from all causes, of 88.8 from malaria, and an actual increase of ratio since 1890. In Memphis the death rate per 1,000 deaths for 1905 was 92.1, while in one hospital the rate was 107 per 1,000. There were 2,487 total admissions, of which 414 were for malaria, with 16 deaths, giving a malaria mortality of 3.8 per cent. or 10.7 per cent. of all deaths in the hospital.

As a matter of fact this great malaria mortality is largely a matter of erroneous diagnosis. It shows that parallel with this problem of malaria prophylaxis from an economic viewpoint is the question of diagnosis of obscure disorders, because it is inferred that the state of nosologic knowledge of the intelligent patient reflects that of his physician. Being "full of malaria" is still believed by some to be the chief reason



of ill health. Patients come to me from the lowlands and the country surrounding Memphis and say that they have been out of sorts all the year and that they have been exposed to miasmatic influences so long that they know they are "just full of malaria." In most instances this is not the case. I have seen tuberculosis, sepsis, gall bladder disease, liver abscess, dysentery, uncinariasis, chronic nephritis and visceral malignant disease, in persons who come telling me the same tale of "malaria in the system." They may have taken calomel, or quinin, or some quack chill tonic, or, perhaps they have not taken anything in a long time and for this reason know they need something "to get the malaria out of the system."

Now, nothing is more amenable to proper treatment than malarial fever, and a recent infection is almost never anything but a fever. The sequelæ, the malaise, the cachexia, "biliousness," indisposition, etc., are never the result of an attack of malarial fever *per se*. All practitioners know that in the spring malarias are paroxysmal and, as the season advances, the recovery from an attack becomes less and less complete. We know that, as a rule, the physician does not get many cases of paludism to treat until mid-summer and that the condition becomes worse and the anemia more pronounced as the season advances. In the spring a patient can take his quinin "straight" and fare well, but toward the end of the season an ill-timed dose of quinin may produce grave consequences.

#### WHAT IS MALARIA?

Thayer, in the most magnificent work on malaria ever presented to the American physician, tells us that malaria is only fever, more or less paroxysmal, divisible into three main varieties, each caused by a blood parasite. He tells us to let our patients sit in the sun and the chapter on treatment goes into great detail of the relative merits of the different cinchona alkaloids and their salts. Who would advise a "swamper" to sit in the sun or to take quinin without preliminary treatment? Is it then that we have a different brand of malaria in Memphis from that in the hospitals in Baltimore?

I have devoted 15 years to the study of this alleged difference and to the question: What is malaria? I answer that in the beginning it is an infection of the blood by one or more groups of one or more varieties of blood parasites whose life function in the body is the destruction of hemoglobin. The sporulation, more correctly, segmentation, of these parasites initiates the train of symptoms, viz., chill, fever and sweat, with the well-known clinical modifications. Logically, each particular segmentation would be expected to cause the multiplication of this infection from 8 to 20 fold or more. We know that this does not happen and that frequently, after a few paroxysms, the chills, and later, the fever, disappear without specific treatment. We also know that each subsequent paroxysm results in a smaller and smaller reduction in the number of erythrocytes and amount of hemoglobin. Two things evidently happen: 1. A resistance to the infection is developed. 2. The blood-making function is stimulated to a point at which it more than keeps pace with the blood destruction. Hyperplasia takes place in the spleen, liver and kidneys, and gradually the way is paved for the condition which is called probably erroneously, chronic malaria. But we have no trustworthy evidence that any particular group of parasites from a single infection can undergo many short cycles, i. e., to segmentation, except the quartan, which is relatively rare. After a number of segmenta-

tions, conjugation is supposed to occur and the parasite goes into the long cycle, i. e., forms so-called resting bodies or gametes and gametocytes, which is the stage necessary for the beginning of the mosquito cycle or development into sporozoites. This so-called resting stage is the end-stage, so far as this particular infection of the patient is concerned; others of the same brood may persist in the active form but the associated symptoms call for treatment which eradicates them.

In the estivoautumnal fevers this long cycle may begin a few days after the first paroxysm, though usually, somewhat later. We know little about the life history of the malaria parasite in the spleen and bone marrow; possibly conditions there favor many repetitions of the short cycle, but it is significant that if such patients as are said to have chronic malaria are removed from further infections they soon recover, showing, as a rule, a developed property of self-immunization, rather than a chronic infection. Occasionally, it is true, we observe patients with recidiva long after such removal. It is also a common observation that the "cure" is ushered in by a critical paroxysm, due to disturbed symbiosis.

#### WHAT IS CHRONIC MALARIA?

For these reasons I believe that chronic malaria is a state of relative immunity during which repeated infections produce relatively insignificant reactions. We have a state of symbiosis in which the immunizing contest between the parasite and the blood cells and blood-making organs is in a state of equilibrium. This is the larvate malaria occasionally associated with symptoms simulating other diseases but more usually developing into paroxysms under the influence of shock, surgical or otherwise, the puerperal state, "taking cold," sudden change of environment, acute indigestion, etc. This is the "bad-drinking-water malaria" of the adherents of the hydric theory of transmission, which, until recently held much sway. Chronic malaria becomes acute more often through reinfection than in consequence of outside influences, though these may shorten the period of incubation. Under this hypothesis the merozoites resulting from segmentation do not invade new cells but hibernate somewhere in the interior and become active when reinforced by a new infection or die when the patient moves to a non-malarial climate, but they do not, *per se*, produce any paroxysms. Under frequent reinfections the patient becomes "bilious" to a marked degree; he fears to take quinin because he fears hematuria; he takes calomel, chill tonic, liver pills, anything except quinin.\*

As to the hemoglobinuria, Osler's "Practice," latest edition, says: "There is no question as to the malarial nature of this disease, but whether there is a special malarial parasite is not yet settled."

Quoting Thayer, he says: "There is little evidence to show that the malarial hemoglobinuria of the southern states is due to quinin."

In direct contradiction to this statement, I make the following assertion: In such cases (of chronic malaria without paroxysms or marked cachexia), quinin without a preliminary purge or a saline to restore the tonicity of the blood, produces symptoms of intoxication and sometimes hemoglobinuria; not necessarily quinin, but any factor disturbing symbiosis, as "taking cold," the majority, however, give a quinin history, the prolonged malarial infection being a necessary antecedent.

\* Schaudinn announces that he has observed a parthenogenesis of female gametes, e. g., a reversion and segmentation of these "resting" bodies. This revives a belief long since abandoned; at any rate, this is relapsing, not "chronic" malaria.



## TREATMENT.

What, then, are we to do in such cases? We are only considering therapy in so far as it has a bearing on the eradication of the endemic. If such a patient is put to bed and placed under the best hygienic conditions, given eliminatives, followed by arsenic, and the malarial leucocyte variation disappears, he may be considered as cured. If hemamebæ appear in the peripheral circulation during this time, tentative doses of quinin may be given to try the hemolytic reaction and then larger doses until a cure is effected. The time to give quinin, and the only time, is when developing parasites are found in the peripheral blood, provided, further, that the infection is fresh, as evidenced by a characteristic fever curve, otherwise a preliminary purge is absolutely demanded. It is not necessary to salivate your patients or to give calomel to all of them. In the autumn it is my routine practice, so far as I employ routine, to give two or three 10 or 15-gram doses of sodium thiosulphate at desirable intervals until the bowels are freely emptied. Pernicious cases must, of course, be treated more expeditiously and if acute perniciousness supervenes on chronicity, it is better to take chances with intravenous medication; there is slight probability of the patient recovering in any event.

If acute paroxysmal malarias are properly handled with a persistent follow-up treatment, such a condition can not develop, and the most prolific source of the season's infection is definitely eradicated. The prophylaxis of malaria and its definite local eradication depends alone on the complete cure of our malarial fevers. The small percentage of natives who do not have paroxysms or distinct evidences of the infection should have their blood examined occasionally. Two objections are urged against this plan: 1. The patient will object on the ground of expense and impracticability. 2. There are few skilled microscopists in the country.

As an economical proposition, bearing in mind that each malarial paroxysm adds to the sum of pathologic changes, more or less permanent, and that many disorders, progressively fatal, are mistaken in the beginning as "just a touch of malaria," is it cheaper to spend weeks and months vainly trying to regain health, or to have oneself looked over from time to time?

As to the second objection, 30 years ago it would have been regarded as the height of extravagance for a business house to employ a stenographer; to-day, it is a small concern that does not require a number of them; to-day there are laparotomists in the country, telephones, electric light, waterworks and trolley cars, and as soon as practitioners learn to appreciate the necessity for skilled microscopists they will have them also. Almost every patient with malaria in my charity service during the last quarter (July to October, 1906) had his blood examined before the treatment was begun; the temporary illness of an assistant is the only excuse for the "almost." We had one death in this service, a man brought in comatose, who died within two hours. In looking over the annual reports of a local hospital I find the following classification:

Various forms of malaria, 857 cases, 15 deaths.

The following is but little better:

	Cases.		Cases.
Estivoautumnal .....	95	Pernicious .....	6
Intermittent .....	24	Toxemia .....	4
Remittent .....	21	Tertian .....	264

In this list some visiting physicians made an attempt to classify their fevers properly, and the others did hap-

hazard guesswork. Among these I found, at random, two cases of the quartan type, one being associated with the estivoautumnal type. Here there were 16 deaths.

If it is borne in mind that of all fevers, malarial is the most tractable, what excuse have we to offer for a hospital death rate of from 2 to 6 per cent.? And if we bear in mind that the disease is absolutely preventable, how can we complacently look on a ratio of 11 per cent. to the total number of deaths?

I hold that such a state of affairs is absolutely unjustifiable, but the worst is yet to come. It is safe to assert that not one of these patients has been instructed in the matter of his responsibility to his fellow man in respect to harboring malarial organisms.

## CONCLUSION.

1. There is not the shadow of an excuse for failure to make an exact diagnosis in all fever cases.

2. The blood of residents of malarious localities should be examined at frequent intervals. This does not constitute an encroachment on personal liberty that can weigh a feather's weight as compared with vaccination.

3. Fever cases should be treated in accordance with the findings of a thorough blood examination, with especial reference to time of dosage and to the complete immunization of the individual for the sake of his neighbors.

4. Quinin judiciously used in accordance with findings of a blood examination very rarely does harm; its prohibition on the ground of possibly precipitating a hemoglobinuria is unpardonable; its administration during hemoglobinuria is very dangerous and usually unnecessary; a blood examination will save such patients from almost certain death.

5. The screening of houses and the destruction of breeding places of anopheles should be encouraged so far as possible, but the prophylaxis of malaria and its definite local eradication depends on the destruction of the parasite within its alternative host, man.

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*Clinical Notes*

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## THE PRETUBERCULAR STAGE OF PULMONARY TUBERCULOSIS.

CHARLES FRANCIS BEESON, M.D.

ROSWELL, N. M.

Though the symptoms in the pretubercular stage of pulmonary tuberculosis are extremely uncertain, there are many cases in which, if properly conducted, the patients may recover with scarcely the knowledge that they were affected with the dread disease.

Pulmonary tuberculosis is a disease, the incipency of which is of necessity slow, but which, after a time, may either become rapid, or continue in a chronic progressive course covering a considerable period of time. The majority of primary infections gain entry through the respiratory tract; and study of the physiology of respiration and of the histology of the lung will convince one of the difficulties which beset the entrance and lodgment of the bacillus and should demonstrate to the most skeptical that in all probability one germ only, or at most a single isolated colony primarily reaches the termini of the ciliated tubes, the entrance to the unprotected walls of the alveoli.

It requires from three to six weeks for the first tubercle to form; this tubercle must break down and infiltrate its



microscopic neighborhood, which in turn must pass through the same cycle of development, finally reaching by extension a state of magnitude sufficient to alter the local structures and systemic functions. Knowing this, we can appreciate the words of Professor Cornet, of Berlin, when he says that the very earliest period at which physical signs become known to us is from six months to one and a half years after the implantation of the germ.

I desire to call attention to an early if not a primary period in the development of this disease—one of latency which merges insensibly from a state of health into one of recognized disease.

The phthisical habit is to be recognized in a person who is tall, delicately built, with oval face, clear skin, blue eyes, long eye lashes, drooping shoulders, winged scapulæ, sunken chest, prominent clavicles and with ribs markedly slanting from behind forward, thin hands with in-curved nails. An almost opposite condition, viz.: the dark-skinned, raw-boned, thick-lipped type, has been associated with this disease. In all probability this is the result of a disproportioned make-up of the vital organs and a disturbance of that equilibrium which should exist between them, perhaps an arrested development in some of them. Sooner or later such an individual may fall a victim to this disease.

In such a person the chest measurements will be found to be less than 35 inches. By dividing the number of pounds weight by the number of feet in height we will have in the result the so-called corpulence, and if the result falls below 21 it is very inauspicious. Often there is an undersized heart, with a relatively lessened arterial blood pressure. The skin of the body may be marble white in contrast with the color of the hands and face, and often a brown pigmentation, the so-called liver spots, may be seen.

A close observer may note that the eyes are too bright and that perhaps one pupil is larger than its fellow at times, due to irritation of the ciliary nerve through the cervical sympathetic from slight changes in one apex. The lips may show a bluish tinge from deficient oxygenation or the margin of the gums show an unusual redness; one cheek will often show a transient blush. The hair becomes brittle and the mustache droopy. Appetite is variable and uncertain; a vague nausea at the sight of food being often present, and at meals the patient pushes aside the meat, nibbles at it or avoids it altogether. Decided variations in appearance may be noticeable from day to day, more especially with the changes in the weather; the weight may fluctuate, or there may be a gradual loss thereof, the flesh becoming flabby.

The patient fatigues easily, becomes tired and languid as evening approaches, and breath seems shorter than formerly; he can not do the work that he formerly could. The temperature will be found to be subnormal in the morning, with or without an afternoon rise, the thermometer registering slowly, often requiring from five to ten minutes to reach a half degree. Pains in the chest are not to be ignored. They may radiate to the shoulder and arm of affected side; the angle of the scapula is a favorite site. The patient clears his throat frequently, the voice is weak and often husky, and a single expiratory cough seems to relieve a vague irritation somewhere, though a careful examination of the lungs may reveal no abnormal sounds. A weakened respiratory murmur in one or both lungs would be suggestive and on full inspiration a rumbling noise is often heard at the end of the act as if the lung had been lying

dormant and were just opening up. A single cough often follows this inspiration if deep.

Careful inspection may reveal deficient expansion at one apex or the other, or the Litten shadow may not fall as it should. Owing to the loss of the normal elasticity of the lung tissue from a slight condensation of the parenchyma at a certain point, the latter part of the expiratory effort becomes audible, producing a prolonged expiration nearly always at or near an apex. The same changes would produce an impaired resonance at this point. The percussing finger may produce a localized muscular spasm, the so-called myoidema. By placing the ear close to the open mouth of the patient, a fine crepitus is sometimes heard during expiration, the laryngeal crepitus, sounding not unlike the scratching of a fine pen on paper.

Sooner or later a slight hemorrhage or a protracted "cold" will startle the patient, and from this event the beginning of pulmonary tuberculosis is usually dated by the layman, and only too often by the physicians of the present day. In reality this only means that either a congested tubercular area has leaked or that a tubercular focus has caseated and scattered, throwing toxins and bacilli into the surrounding tissues. From the effects of this cascated material on the lung tissue there will soon be positive signs of an active inflammation extending much more widely, however, than the actual focus of the disease.

In direct ratio to the virulence of the poison and the vulnerability of the tissues will be the ultimate course of the case, whether it be phthisis florida or the chronic ulcerative form.

## TREATMENT OF INGROWING TOENAIL.

GERALD B. WEBB, M.D.  
COLORADO SPRINGS, COLO.

Some years ago I published<sup>1</sup> a method of treating ingrowing toenail by the use of silver wire. Latterly I have made a few changes in the technic which simplify the method for those who found difficulty in the mechan-

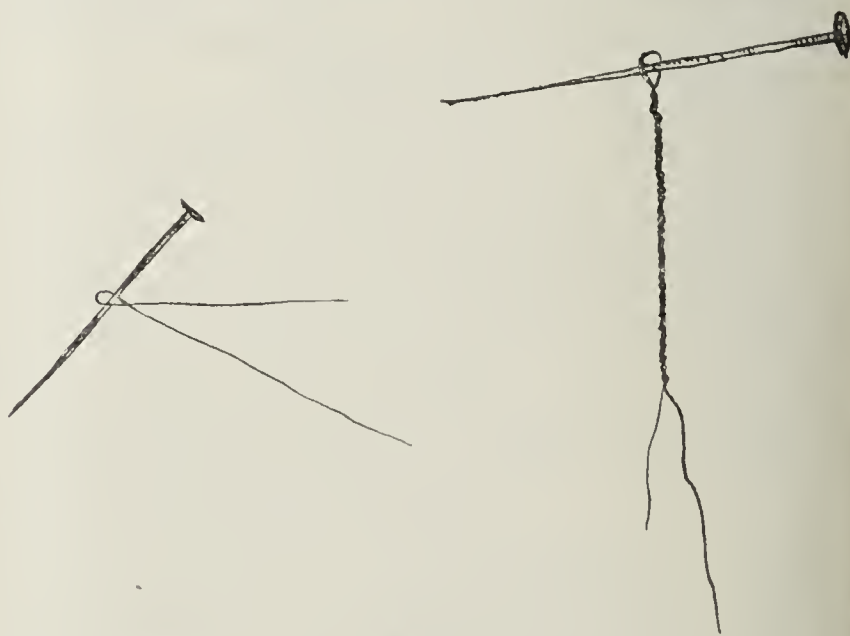


Figure 1.

ical adjustment of the wire. Instead of the annealed silver wire of pin size, I now take surgeon's silver suture wire, No. 26 (occasionally larger or smaller, depending on the case), and twist it, as shown in Figure 1, to get the effect of a piece of string. This can now be easily manipulated to fit the toe without the need of pliers or artery forceps.

1. Medical News, Dec. 5, 1899.



Having molded it to fit accurately under the nail and around the edges, as in Figure 3, a piece of adhesive plaster is laid on the toe (Fig. 2), the wire reapplied and kept in position by straps of adhesive plaster run around, as in Figure 4.

The principle consists of two factors: 1, mechanical, the replacing of the nail, often jagged, by a non-irritating, smooth substance; 2, chemical, the formation of the albuminate of silver by the contact of pus with the silver, thereby causing destruction of pus organisms.



Figure 2.

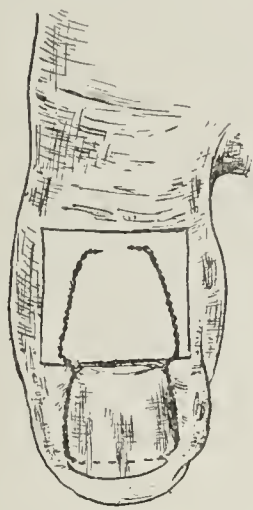


Figure 3.



Figure 4.

I usually advise patients to wear a boot which does not crowd the toes, and sometimes advise the application of a wedge of absorbent cotton between the big toe and the second toe. Patients can daily readjust the silver wire appliance themselves, and are instructed to wear it for ten days until the nail has had time to grow out. They are then advised as to the necessity, in future, of cutting the nail square across instead of rounding off too much of the sides.

## SUCCESSFUL RESECTION OF TWELVE FEET AND TWO INCHES OF THE ILIUM

IN CASE OF CRIMINAL ABORTION.\*

AXEL WERELIUS, M.D.  
CHICAGO.

In a careful search of the records of cases of bowel resection I find no successful resection of a greater length than in the following case:

*Patient.*—A young woman, aged 20, seen May 20, 1906, in consultation with Dr. M. Meinhardt.

*History.*—About six hours previously the patient had undergone an illegal operation, performed somewhere on the north side of the city. On awakening from the anesthetic she was informed that she would have to undergo another operation. She was then taken to the home of her affianced on the south side and Dr. Meinhardt called. He states that he found a large mass of intestines protruding from the vulva.

*Examination.*—I found the patient in bed but, except for some pain in the lower abdomen and some nausea, she complained very little. She was in the dorsal position, with the knees flexed. Pulse 90, temperature 99 F., and respiration 20. The expression was somewhat anxious and there was some restlessness. Heart and lungs were negative. The lower abdominal zone was slightly tender and the corresponding parts of the recti were rigid. An enormous length of the bowel, minus its mesentery, was seen escaping from the vulva.

*Operation.*—After a rapid examination the patient was immediately sent to St. Bernard's Hospital and prepared for operation. The following were present at the operation: Drs. J. P. Webster, Belson, Meinhardt and Quile. An incision about three inches in length was made through the right rectus. On

opening the peritoneal cavity it was found to be partly filled with blood. A large amount of the mesentery minus its bowel presented in the field. The disattached bowel was felt to escape through a rent in the left broad ligament into the uterus. The hemorrhage present seemed to come mainly from the injured broad ligament and not, as one would suspect, from the mesentery, as this was torn closely from the intestine and included the serosa. On account of some oozing from the border of the mesentery and to prevent future adhesions it was decided first to run a suture along its edge. This took considerable time. Then the gangrenous bowel, twelve feet and two inches (365 cm.), was resected and withdrawn through the vagina. An end-to-end anastomosis was made with a Murphy button. The uterus was next inspected and found to contain seven punctures. The one extending through the left broad ligament was somewhat enlarged and the interior of the uterus inspected. The fetal head and part of the placenta had been left. These were removed and the uterus curetted through the enlarged opening. The uterine punctures were then sutured and after the peritoneal toilet and the establishment of drainage the abdomen was closed in layers.

*Postoperative History.*—The patient was transferred to a private room in fair condition. Pulse was 150, but of good volume, temperature 97.4 F., respiration 30. A saline transfusion was given under the breasts. After awakening from the anesthetic she was put in Fowler's position. Strychnin, 1/30 gr. hypodermically, was given every three hours, and coffee and normal salt solution by the rectum every four hours.

During the night the patient rested fairly well, complaining but little of pain or nausea. The following morning at 9 her pulse was 120, respiration 26 and temperature 99.8 F. Nausea increased and emesis was very profuse and of dark brown color and the patient was very restless. Wound was dressed and looked good with a seemingly serous discharge. Abdomen was soft everywhere and no tympanites. In the afternoon the temperature rose to 102 F. At 2 p. m. she was given an enema—1 part magnesium sulphate, 2 parts glycerin, and 3 parts water—with good results. During the night she was restless and had four bowel movements. On the morning of the second day her pulse was 120, temperature 100.8 F., and respiration 20. Nausea and vomiting had practically ceased by the afternoon, and during the night she was given her first nutrient enema. She rested well, sleeping at intervals. By the morning of the third day her pulse was 104, temperature 100 F. and respiration 18. Wound began a profuse discharge of pus containing colon bacilli. This continued until the fourteenth day. On the fourth day, in the morning, her pulse was 92, temperature 100 F. and respiration 18. Nausea and vomiting had entirely ceased. In the afternoon she received milk by the mouth. Her condition on the fifth day as regards pulse, temperature and respiration was practically normal, and from that time her recovery was uneventful. The button was passed on the tenth day. During the entire course there was no tympanites. The diet was gradually increased till on the seventeenth day she was put on a regular diet. The patient was out of bed on the nineteenth day, and on June 17, the twenty-seventh day after the operation, she left the hospital. Two weeks afterward she was troubled with a diarrhea, which lasted about two weeks. Later she went into the country, where she improved quickly. On Feb. 5, 1907, eight months after the operation, she has gained 31 pounds, complains of no symptoms of adhesions, or local tenderness.

## GONORRHEA IN CHILDHOOD.

J. W. INGRAM, M.D.

MARSHFIELD (COOS BAY), ORE.

CASE 1.—Colored child, aged 7; previous history negative.

*History.*—The child had been sick for three weeks when I was called. The father stated that the child had been treated for typhoid fever during the entire time, but without any appreciable change for the better. The history was misleading in many respects. The child complained of nausea, slight headache, loss of appetite, abdominal tenderness, pain through

\* Read before the Southwest Branch of Chicago Medical Society, and patient and specimen presented, Feb. 5, 1907.



the small of the back, as the father put it, constipation, frequent and painful micturition. The temperature was less than 100 F., pulse was somewhat accelerated. The general appearance was that of one who had suffered long and patiently.

*Examination.*—I suggested to the mother that a more thorough examination of the child be made, to which she readily consented. In the outward appearance of the vulva there was nothing to attract special attention, except that the tissues were slightly inflamed; on pressure some tenderness was found to exist. On separating the labia a mucopurulent discharge was detected. Here the mother admitted that the child had suffered from leucorrhea for a month or more. With a small eyelet probe I managed to secure a sample of the discharge for examination. A microscopic examination of the discharge (Gram's method) was made and gonococci were found.

*Treatment.*—I put the child on a milk and other liquid diet, and prescribed a tonic treatment, an alkaline preparation for neutralizing the urine, and absolute rest in bed. Locally I prescribed a wash of permanganate of potash, 1 to 10,000, given by means of a small rubber syringe, three or four times daily; after each washing a small pledget of absorbent cotton, dusted with boracic acid, was placed in the vagina in such a way as to separate the labia. The child made a rapid recovery.

CASE 2.—This case is a little more interesting inasmuch as it occurred in a child of less than 4 years of age.

*Patient.*—Child, white, aged 3½. Previous history unimportant. This child had been under the care of a physician for over two weeks and had been treated for worms, general debility and cystitis, but without results.

*History.*—This was similar to that in the former case. I proposed a thorough examination of the child, but the parents objecting, I refused to be further consulted until I was allowed to make such examinations as I saw fit and the parents departed. The following morning I was called to their home to make such examinations as I saw fit.

*Examination.*—The entire vulva was highly inflamed and tender to pressure; the inner portions of the thighs were likewise red and somewhat tender. On separating the labia a creamy discharge oozed freely from the vagina. A small pledget of cotton was passed into the vagina and withdrawn saturated with the discharge. Microscopic examination (Gram's method) revealed gonococci.

*Treatment.*—The child was put on a milk diet, plenty of pure, fresh air, tonics, bowels opened freely, and absolute rest required. A neutralizing preparation was given to render the urine bland. Locally I prescribed a wash three or four times daily, of protargol 1 per cent., given by means of a small rubber syringe. After each washing a small pledget of absorbent cotton, dusted with boracic acid, was placed in the vagina in such a way as thoroughly to separate the labia. So far, this child seems to have recovered.

## HYSTERIA OR MALINGERING IN A GIRL OF TEN YEARS.

FLAVEL B. TIFFANY, A.M., M.D.

Professor of Ophthalmology, University Medical College,  
KANSAS CITY, MO.

In the light of my experience of more than a quarter of a century in the practice of ophthalmology this seems to me a unique case of unusual interest. The question is: Is it likely that this is a case of hysteria in a child of 10 years, with no manifestation or evidence of any immediate approach of the catamenia?

*Patient.*—Miriam G., aged 10, of light complexion, blue eyes, from Kansas, was brought by her father to consult me Jan. 8, 1907.

*History.*—The father stated that up to the week previous the child had seemingly good eyes with good vision, but last Friday, January 4, she came from school and said that during the afternoon, while studying, the page suddenly became red. Thereafter she complained of all colors appearing red, with the exception of objects of red color, which looked white. She spoke of the red brick sidewalk looking white, whereas the

light gray pavement was red. While in my office the father designated several articles of red color and she would instantly call them white, or he would point to some white object and she would say it was red.

*Tests.*—I suspected malingering at once and placed the patient twenty feet from a white light and asked her the color of the lamp; she instantly called it red. I then put on a trial frame and inserted a green lens, but she said the light still looked red. I then inserted a red lens; at first she said the light looked white, but finally said, when I put in another lens of the same shade, that one was a light red and one a dark red. I then suggested to her that I should place a lens in the trial frame which would correct the color blindness. With a plano before her eye she would name all colors correctly. I then tested her with the different colored yarns. She at first called all of them red, excepting the red skein, which she called white. I again suggested to her that I could correct the defect by glasses and once more placed the plano glasses before her eyes; then she named, as I pointed to them, the colors correctly. The child had a slight convergent strabismus with hypermetropia, and I suggested to the father that an operation to straighten the eyes would also effect a cure of the color blindness. Whether the fear of an operation influenced the child I do not know, but on January 9, at 5 o'clock, the color blindness, the father said, disappeared as suddenly as it came. This the child also related to me when she called at my office, January 10.

If this phenomenon had occurred in a willful, intractable, disobedient child, one would not have been so baffled for a cause of the malingering, but M. is a modest, obedient, rather retiring little girl of an excellent family.

I prescribed glasses for the existing hypermetropia and allowed the child to go home, advising them, however, to return in six weeks that I might keep the case under surveillance.

805 McGee Street.

## THE PASSAGE OF METHYLENE BLUE FROM THE MATERNAL TO THE FETAL CIRCULATION.

S. H. CORRIGAN, M.D.

SIoux FALLS, S. D.

Failure to find record of any similar observation in the study of placento-maternal circulation would seem sufficient reason for submitting the following:

A woman, three months pregnant, suffering much from a chronic cystitis, was given a capsule of methylene blue compound. As the medicine produced almost complete relief of symptoms, the patient continued taking it up to the time of her delivery, at full term. The average dosage given her was three grains of the methylene blue daily. At delivery the baby, an unusually vigorous child, attracted no special attention, but when the nurse was removing the first diaper she noticed a blue stain on the cotton; each subsequent change of diaper during the first eighty hours after birth gave evidence of methylene blue in the infant's urine, the color gradually disappearing. Nothing else unusual was found in the baby's condition. It was noticed that the liquor amnii showed no unusual color; careful inspection of the sheets and pads used during labor failed to show any trace of color from methylene blue.

From these observations I may perhaps venture to assert:

1. Methylene blue passes from the circulation of the mother to that of the fetus.

2. Either the amount thus passing is an exceedingly small portion of the drug absorbed by the mother or the drug passes from mother to child and *vice versa*.



During six months the mother received into her stomach about nine drams of methylene blue, while an estimate based roughly on the amount of colored urine passed by the infant would place the quantity of the drug in the child's body at time of birth not above one grain.

3. There being no evidence of methylene blue in the liquor amnii, the fetus does not evacuate the bladder, and the liquor amnii accordingly is in no degree composed of fetal urine.

4. The kidneys of the child *in utero* do not secrete urine beyond that found in the bladder at the time of delivery, or, if they do secrete urine beyond this amount, they do not excrete methylene blue, which may be in the fetal circulation.

The first evacuation of the bladder in this case, occurring very shortly after birth, produced the characteristic stain. So it would seem that the kidneys not only secreted urine but also excreted methylene blue, while the child was still *in utero*, but not more than that contained in the bladder at the time of delivery.

## APHONIA OF UNKNOWN ORIGIN AND OF SIX MONTHS' DURATION IN A TWO AND ONE-HALF-YEAR-OLD CHILD;

### DISCOVERY OF AN OPEN SAFETY PIN IN THE LARYNX.\*

JAMES T. CAMPBELL, M.D

Professor of Otology, Rhinology and Laryngology in the Post Graduate Medical School, Chicago.  
CHICAGO.

Aphonia is most often due to an inflammation of the larynx when the swollen tissues interfere with free approximation of the vocal cords, to new growths, to a neuritis, or to a paralysis of the recurrent laryngeal nerve. A foreign body in the larynx causing aphonia is rare indeed; yet a complete collection of all the foreign bodies which, at one time or another, have found their way into the larynx would, probably, comprise specimens of every known substance.

### ETIOLOGY.

Food products generally gain entrance during mastication while the person is laughing or talking. Metallic substances are occasionally impacted in the larynges of children while they are amusing themselves by putting coins, buttons, toys, etc., in their mouths. In rarer instances, teeth and tooth-plates become loosened during sleep and are drawn into the glottis.

Foreign bodies may also become fixed in the larynx, having previously passed upward through the trachea or esophagus. Edwards<sup>1</sup> relates the curious case of a boy in whom a bronchial gland became detached, passed by an ulcerated opening into one of the bronchi, and was thence expelled up the trachea, and became impacted in the rima glottidis.

Some idea of the frequency with which foreign matters become fixed in the different parts of the air passages may be gathered from a report made by Bourdillat<sup>2</sup> of 166 cases, in which analysis 80 cases were of foreign bodies arrested in the trachea, 35 in the larynx, 26 in the right bronchus and 15 in the left bronchus.

### SYMPTOMS.

The symptoms vary according to the size and shape of the foreign body. If fixed in the rima glottidis and large enough to fill the opening, death is almost instantaneous, unless the convulsive respiratory efforts of the patient succeed in dislodging it. On the other hand, small bodies such as fish bones, may remain in the larynx for an indefinite length of time without interrupting respiration and will merely give rise to coughing and a sensation of discomfort. Sharp and angular bodies cause very acute and continuous pain when they become so impacted as to press against the contiguous soft parts. Generally great anxiety and terror on the part of the patient accompany the entrance of any foreign body, however small, into the air passages and in many cases somewhat disguise the real importance of the accident.

### DIAGNOSIS.

As a rule, the history of the case is clear and laryngoscopic examination verifies or disproves the statement made by the patient. In children and hysterical women a correct diagnosis can not always be made immediately and at such times a skiagraph should decide the case in question.

There is always great danger while the foreign body remains in the air passages or larynx. It may become dislodged and assuming an altered position close the glottis and suffocate the patient. There is danger also of inflammation and tumefaction of the soft parts of the larynx which may cause more gradually the same result. Even after the foreign body is removed one should give a guarded prognosis as long as there are symptoms of local inflammation.

*History.*—Ruth J., aged 2, in January, 1906, was given a dose of castor oil by her father, while her mother held her. Violent coughing immediately ensued and persistent aphonia resulted; it was thought by her parents and by the local physicians that during the child's struggles the oil had been inspired into the larynx. They expected that with the advent of warm weather speech would return, but in this they were disappointed, and on Sept. 3, 1906, she was brought to me.

*Examination.*—On that day I was unable to make a laryngoscopic examination, but on the day following, at the Post-Graduate Hospital, she was anesthetized and with the laryngeal mirror I saw a metallic body lying on the upper surface of the right vocal cord.

*Removal and Recovery.*—With the Schroetter tube forceps I grasped this body and withdrew an open safety-pin, which was 23 mm. in length and 15 mm. in extreme breadth. The pin point and the looped hinge were held fast in the respective ventricles of the larynx. The child was cared for at the hospital for thirty-six hours and was then allowed to go home, speaking as plainly as before the castor-oil episode. The mother had no knowledge of a safety-pin being about her own or the baby girl's clothing, but probably it was crowded into the child's mouth during her struggles to escape the castor oil, and then drawn into the larynx during a forcible inspiration.

34 Washington Street.

*The Blood During Pregnancy After Splenectomy.*—Cova reports in *Ginecologia*, iii, 716, 1906, the findings in regard to the blood in a woman who became pregnant about a year after removal of the spleen on account of malarial enlargement. She was in good health thereafter. The number of red corpuscles and the number of whites were approximately normal throughout the pregnancy, as also the percentage of hemoglobin, but the proportion between the white leucocytes differed somewhat from normal. Polynuclear forms were abnormally abundant, while lymphocytes were scanty. Eosinophile leucocytes also abounded and increased in numbers during the confinement, while the red corpuscles showed somewhat reduced resisting powers.

\* Read before the Chicago Laryngological and Otological Society, Dec. 11, 1906.

1. Med. and Chir. Transactions, xxxvi.

2. McKenzic: Diseases of the Pharynx, Larynx and Trachea



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(A list of all accepted articles is published on one of the advertising pages of *The Journal* in the first issue of each month.)

(Continued from page 877.)

### BROMO-MANGAN.

#### LIQUOR FERRO-MANGANI BROMOPEPTONATI "DIETERICH."

Bromo-mangan is Ferro-mangan Dieterich with the addition of 3 per cent. of bromopeptone. Bromopeptone contains 11 per cent. of bromine.

The process of preparation is the same as that given under Ferro-mangan "Dieterich" with the addition of a solution of bromopeptone.

Bromo-mangan is a clear dark brown liquid of agreeable odor and taste.

**Method of Valuation:** After determination of the percentage of iron and manganese, a test method should be employed as described by Dr. Karl Dieterich in *Helfenberg Annals*, 1901, pages 162-165, to ascertain the percentage of halogens in bromopeptone: About 0.5 bromopeptone to be thoroughly mixed with a few grammes of a mixture of 1 part potassium nitrate and 2 parts sodium carbonate, either in a porcelain or platinum crucible. The mixture is then covered with a light layer of sodium carbonate, covered and carefully heated until reaction sets in. When finished a little potassium nitrate is added to obtain a smooth flux, then the molten mass is exposed to glowheat for about 15 minutes. After cooling the mass is dissolved in hot water, rinsed into a beaker, filtered, if necessary, acidulated with diluted acetic acid and bromate present reduced with sulphurous acid. The excess of acid is driven off by heat, the liquid strongly acidulated with nitric acid, again heated, until the gas formation ceases, then precipitated while hot with silver nitrate. The silver bromide is collected on a weighed filter, washed with very dilute ammonia water, as the preparation contains hydrochloric acid, dried and weighed.

**Actions and Uses.**—Bromo-mangan is a reconstructive tonic, blood making adjuvant and a sedative.

It is claimed to be useful wherever anemia is associated with nerve impairment, as in epilepsy, neurasthenia, hysteria, etc.

Manufactured by Chemische Fabrik Helfenberg A. G., near Dresden, Germany (The Reinschild Chemical Co., New York. U. S. trademark No. 44,333.

### EUPYRINE.

#### VANILLIN-ETHYLCARBONATE-PARA-PHENETIDIN.

Eupyrine,  $C_6H_4(OC_2H_5)N:[CH.C_6H_3(O.CO.OC_2H_5)(OCH_3)] 1:4 = C_{19}H_{23}O_5N$  is a compound of para-phenetidin with vanillin ethyl-carbonate.

It is prepared by the action of vanillin ethyl-carbonate,  $C_6H_3(COH)(O.CH_3)(O.CO.OC_2H_5)1:3:4$ , on an equivalent amount of para-phenetidin,  $C_6H_4(O.C_2H_5)(NH_2)1:4$ . Chemically it differs from acetphenetidin (phenacetin) in that the vanillin ethyl-carbonate group has replaced the acetyl group of acetphenetidin.

It occurs in light yellow, needle-shaped crystals, melting at  $87^\circ$  to  $88^\circ$  C. ( $188.6^\circ$  to  $190.4^\circ$  F.); tasteless, with faint odor of vanillin. It is insoluble in cold water, sparingly soluble in warm water and in cold alcohol, readily soluble in warm alcohol and in ether or chloroform.

Concentrated sulphuric acid is colored by eupyrine greenish yellow in the cold and dark brown on heating to the boiling point. Heated on platinum foil it burns without residue. Acids and alkalis decompose it.

**Actions and Uses.**—The toxic action of phenetidin is said to be counteracted in eupyrine by the vanillin. Doses twenty times as great as those used for man show no production of an amount of methemoglobin recognizable by the spectroscope. It is claimed to be a stimulant antipyretic.

Eupyrine is claimed to be useful as an antipyretic, especially for patients with a weak stomach or otherwise sensitive, on account of its freedom from side effects.

**Dosage.**—For adults, 1.5 Gm. (23 grains) once or twice daily. It can be given by itself as a powder.

Manufactured by Vereinigte Chlunfabriken, Zimmer & Co., Frankfurt a. M., Germany. (C. Bischoff & Co., New York.) U. S. patent No. 658,446, U. S. trademark No. 39,577.

### FERRO-MANGAN DIETERICH.

#### LIQUOR FERRO-MANGANI PEPTONATI "DIETERICH."

Ferro-mangan is a solution of a compound of peptone with iron and manganese, containing 0.6 per cent. of iron, 0.1 per cent. of manganese and 1.5 per cent. of peptone.

It is prepared by covering 40.0 Gm. of iron and manganese peptonate "Dieterich" with distilled water for one hour, then heating to boiling with 550.0 Cc. of distilled water and allowing to cool. An aromatic mixture is added consisting of 100.0 Cc. cognac, 75.0 Cc. alcohol, 90 per cent., 0.25 Gm. saccharin, 12.5 Cc. aromatic tinctures, and sufficient distilled water to make 1000.0 Cc.

Ferro-mangan is a clear liquid of a dark brown color and pleasant odor and taste. It is slightly acid in reaction.

The iron is in the organic or non-ionic form (see "Organic iron preparations").

**Method of Valuation:** The specific gravity at  $15^\circ$  C. ( $59^\circ$  F.) should be about 1.056. The percentage of dry residue at  $100^\circ$  C. ( $212^\circ$  F.) varies between 13.25 and 16.80. The percentage of residue after ignition varies between 0.99 to 1.05. The percentage of iron and manganese determined by well-known methods varies between 0.58—0.64 per cent. of iron and 0.13—0.19 per cent. of manganese.

**Actions and Uses.**—It is a reconstructive tonic and hematinic.

It is recommended in anemia, chlorosis, convalescence and wherever a general tonic is required.

**Dosage.**—4 to 16 Cc. (1 to 4 fluidrams), according to age, three times a day.

Manufactured by Chemische Fabrik Helfenberg A. G., near Dresden, Germany (The Reinschild Chemical Co., New York.) Not patented or trademarked.

### FORTOIN.

#### METHYLENE-DICOTOIN.

Fortoin,  $CH_2(C_{14}H_{11}O_4)_2 = C_{29}H_{24}O_8$ , is a condensation product of cotoin and formaldehyde.

It is prepared by condensation of cotoin and formaldehyde by means of dehydrating agents (hydrogen chloride):  $2C_{14}H_{12}O_4 + CH_2O = CH_2(C_{14}H_{11}O_4)_2 + H_2O$ .

Fortoin forms yellow, needle-shaped, tasteless crystals, melting at  $211^\circ$  to  $213^\circ$  C. ( $411.8^\circ$  to  $415.4^\circ$  F.). It is insoluble in water, sparingly soluble in alcohol, ether or benzol, but freely soluble in dilute alkalies, acetone or chloroform.

Fortoin dissolves in cold concentrated sulphuric acid with an orange color, and on warming the solution becomes ruby red. Heated on platinum foil it should burn without leaving any residue. On shaking with cold water or alcohol it should not yield any soluble constituents.

**Actions and Uses.**—Fortoin has an antiputrefactive, bactericidal action. It is said to cause an active, not passive, dilatation of the intestinal vessels by which the nutrition of the epithelium is improved and its regeneration hastened. This action is said to show itself in cases in which tannin produces only apparent success.

Fortoin is recommended as an antidiarrheic in acute and chronic intestinal catarrh and in the obstinate diarrheas due to pellagra and to tuberculosis.

**Dosage.**—0.25 Gm. (4 grains) three times a day for adults.

Manufactured by Vereinigte Chlunfabriken, Zimmer & Co., Frankfurt a. M., Germany. (C. Bischoff & Co., New York.) German patent No. 104,362, U. S. trademark No. 39,523.

(To be continued.)

**Naming of Carbon Compounds.**—The prefix "phen" is commonly used to indicate derivation from or relation to phenol, thus phenol, pheniol, phenetriol, phenetrol, etc. It has been proposed to apply the name phen to benzene,  $C_6H_6$ , and to indicate all benzene derivatives by this prefix.—*Pharm. Rev.*, September, 1906.



THE JOURNAL OF THE  
AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, MARCH 16, 1907.

THE INFREQUENCY OF TUBERCULOSIS IN LARYN-  
GOLOGISTS AND LUNG SPECIALISTS.

When, some years ago, Flügge and his pupils made the discovery that in coughing, or even in loud talking, patients with pulmonary tuberculosis gave off a fine spray containing tubercle bacilli, it was thought that an important factor in the spread of tuberculosis had been discovered. It was claimed by the discoverers that this form of infection, which they called "droplet" infection, was largely responsible for the transmission of the pulmonary form of the disease, and the idea that personal contact with phthisical patients was comparatively harmless, which had been fostered by the theory of the transmission of the disease by dried sputum, was more or less discredited. While it can not be said that the profession was entirely weaned from the theory of transmission from sputum dust, there is no doubt that the importance of this method of transmission was to some extent minimized, and the new theory to a certain degree adopted in its place. Whether this view is tenable is still more or less of an open question.

Saugman<sup>1</sup> of Copenhagen has for some time been an opponent of droplet infection, and the main fact on which he bases his opposition is that physicians who make a specialty of lung and laryngeal diseases are very rarely attacked by pulmonary tuberculosis. He points out, and with some justice, that no one runs greater risks from droplet infection than a physician engaged in examining the lungs or the larynx. The lung specialist, during the examination of a chest, places himself under conditions favoring droplet infection, for he is constantly urging his patient to cough, in order that doubtful physical signs may be brought out, and must of necessity inspire, perhaps for several hours daily, an atmosphere loaded with minute particles of moisture containing tubercle bacilli. The laryngologist is subjected to even more direct chances of infection, for probably all the members of this branch of the profession have the experience, almost daily, of patients coughing in their faces. That tubercle bacilli are actually transmitted under such circumstances is a proved fact. Moeller claims to have found them on the eye-glasses of an assistant, on the head mirror, on his check, and in his own nasal cavities after examining patients with laryngeal tuberculosis.

1. Ztschr. für Tuberculose, January, 1907.

As Saugman points out, notwithstanding these observations the fact remains that of 174 physicians in sanatoria for pulmonary tuberculosis questioned by him only two, or at most three, had become infected with tuberculosis during a period of over three years constant association with tuberculous patients. Of sixty-four laryngologists under similar conditions none had become tuberculous. The main conclusion that Saugman draws from these observations is that in healthy adults the inspiration of droplets containing tubercle bacilli is entirely, or almost entirely, free from risk so far as giving rise to tuberculosis is concerned. That this conclusion is justifiable we are not at all certain. We do not deny the facts or question the figures, but we do feel doubtful that conclusions drawn from these observations are applicable to healthy adults under all conditions. It must be pointed out that Saugman's figures deal with a special class of men, individuals who have a good working knowledge of what tuberculous infection means, and who are by no means anxious to court it. It is fair, we think, to assume that the great majority of these men take special precautions, and, it must be added, they are most of them working in institutions especially constructed to combat tuberculosis. There is little doubt that all of us, particularly the city dwellers, inspire a greater or less number of tubercle bacilli yearly. It would not be correct to argue therefrom that because those of us who are healthy resist infection the inhalation of tubercle bacilli is harmless. Saugman takes too little account of individual resistance in healthy adults and seems to forget that it is generally not the healthy but those who present local or general predisposing factors who contract the disease. For the present, in spite of Saugman's observations, we are justified in assuming that droplet infection probably plays some part in the transmission of tuberculosis.

## IMMIGRATION AND INSANITY.

For many years it has been a matter of observation that immigrants furnish an undue proportion of the insane in this country. This was forcibly pointed out during the last century by Dr. Foster Pratt and others. The native Anglo-American stock, when not depleted by emigration and deteriorated by intermarriage, does not seem to be excessively inclined to mental disease. There are sections in this country, especially in certain parts of the middle west and in the south, where foreign immigration has not materially been felt as a factor, and in which insanity is a comparatively rare disease, and while defectives may be found there, the degree and proportion of the particular evil is not specially alarming. In other sections, however, where the foreign element is more in evidence the proportion of insanity is rapidly rising, so that a foreign-born minority of the population furnishes a notable majority of the insane.

The present status of this question forms the subject of a paper read by Dr. Thomas W. Salmon at the recent



State Conference of Charities and Correction at Rochester, N. Y. He discusses a phase of the question which is just now of special interest, namely, the effect of the changed character of the present immigration from that of some years back. Then Irish, Germans and Scandinavians formed the bulk of the new comers and were considered in a general way more desirable additions to the population than the Slavs, Italians, etc., that form the greater portion of the present inflow. Taking the numbers of individuals of the different nationalities certified as insane at the immigration headquarters on Ellis Island and those deported from New York institutions as insane under the emigration laws, he finds a great preponderance of young insane—that is, individuals between the ages of 15 and 30 years—a fact which, as he shows, is of considerable practical importance as indicating a more rapidly increasing burden on the resources of the country. It also indicates, so far as it goes, a special mental instability on the part of these immigrants who, it must be borne in mind, must necessarily include a large number who escape the scrutiny of the inspectors and yet do not break down sufficiently within the two years limit to become public charges and, therefore, deportable. In the table given, Austria-Hungary, Russia and Finland furnish fully 50 per cent. of the total, Ireland and Italy being next. In proportion to the total immigration from special countries, however, the number of those rejected or deported is greater in the Irish and English than in the Slavs and Southern Europeans. The figures are too small to be as conclusive as desirable, though they are significant.

He also gives tables of the proportions of insanity among the different nationalities of foreign born in this country taken from advance sheets of a report of the United States Bureau of the Census, which are very striking. They show that 1 in every 121 of the Irish-born residents of this country is insane, 1 in 185 of the French born, 1 in 195 of the Scandinavians, 1 in 211 of the Germans, and so on in a gradually decreasing ratio till we reach the Italians with a proportion of only 1 in 439. It must be remembered, however, that the Italians and Slavs are comparatively recent comers and much of the insanity among them is yet to develop. This fact affects the figures given in his table comparing the ratio of insanity in the former and the later classes of immigrants, and the statistics are, therefore, not so encouraging as they might appear. "If it is impossible," he says, "to make any reliable comparison between ratios of insanity in the 'old' and the 'new' immigrations, it is not difficult to show that, even with lesser ratios of insanity in the 'new immigration,' the increase in its volume assures us that the influence of immigration on the prevalence of insanity in this state (N. Y.) will be more adverse in the future than it has been in the past unless energetic and successful steps are taken to prevent it."

As regards idiots and mental defectives other than the insane, ruled out by immigration inspectors, the figures

are somewhat different and not encouraging. Here the Hebrews and Italians are very largely in the majority, other nationalities being represented by comparatively insignificant figures. This class includes those who would be no less a burden on the community than the insane, comprising as it does a large proportion of individuals with criminal instincts or generally morally defective. Moreover, a very much larger number of such defectives must slip through the inspection than of those whose mental aberration is manifest, and the immigration law is imperfect inasmuch as it does not make their deportation mandatory, except in the case of idiots. The future, therefore, is not promising with the continuation of present conditions. The burdens will increase in all probability until some as yet unforeseen equilibrium is established or immigration ceases. While the immigration inspectors may endeavor to do their full duty—and Dr. Salmon shows that their efficiency has been steadily increasing—it is easy to see that their scrutiny necessarily must be inefficient to keep out the flood of defectives from Europe.

If we could inspect these people in their homes more could be done, but that would be difficult. In fact, we believe it has been tried to some extent and the measures taken by our Government have been resented and embarrassed in some cases by the local authorities abroad. We must remember, also, that a very large part, probably the great majority of the foreign-born insane, become such not so much from excessive or noticeable original defect as from stress under unaccustomed conditions after arrival in this country; they would probably have escaped insanity under their accustomed conditions at home. This is one of the unavoidable consequences of immigration and can not be completely met by any practicable measures except the exclusion of immigrants entirely. As Dr. Salmon says: "It is the sudden increase of stress on minds but poorly adapted to withstand a very moderate amount of stress which in many instances causes the early development of insanity." We should investigate, he thinks, the most common causes of adversity among newly-landed immigrants and remedy such as are remediable. Among these he mentions the tenement and sweat-shop evils, child labor, the urban concentration of immigrants, the exploitation by their own countrymen, and the common crime of wife desertion. There is work here for all the charity that we can give and it will be for our own profit and safety in the long run if we can give it. The question of the future of this country with the disturbing factors of the excessive influx of alien races is a serious one and sometimes severely tests our optimism. We believe, however, that the ultimate outcome will be good, but the problem nevertheless is one that deserves our careful attention. A composite race has its advantages and it may be that these evils that we see so prominently at present are after all only incidental to the working out of an eminently satisfactory result.



MILITARY EFFICIENCY AND THE MEDICAL SERVICE  
OF ARMIES.

"Health," said Napoleon, "is indispensable in war and can not be replaced by anything." This axiomatic saying of the greatest soldier of modern times has been proved time and again, in war after war, and campaign after campaign. The entire failure of the Walcheren expedition through the sickness of the command, the terrible losses of the allies in the Crimean war, the disastrous campaign of the French in Madagascar and the heavy losses of the Americans and British from preventable diseases in the Cuban and South African campaigns, all bear witness to the truth of Napoleon's remark. On the other hand, the Germans—who until the Japanese-Russian war have always been considered easily first in the science of preventive medicine—surprised the entire world by the exceedingly low sick rate which their armies maintained in the Franco-Prussian war of 1870-71. Still more recently the astonishing results of the Japanese in their war with Russia have established a new record in preventive medicine and one by which all other nations will be weighed in the wars of the future.

Now, why have Japan and Germany been able to attain results in the prevention of disease in their armies in the field beside which our own high inefficiency rates appear so discreditable? Simply because Japan neglected no measures which were deemed necessary to render her armies efficient, and gave official recognition, both in theory and practice, to the fact that "health is indispensable in war and can not be replaced by anything." Accepting this truth, they prepared for war in time of peace. The first essential in the promotion of efficiency by the prevention of disease was a medical corps adequate in size for war as well as for peace and composed of medical men of the highest class and thoroughly trained not only in the care of the sick but also in the prevention of disease under service conditions. The results thus attained by the Japanese in preventive medicine attracted the attention of the whole world, and we may rest assured that the American people in their next war will be satisfied with nothing less than the Japanese standard.

The keynote of Japanese success was preparedness—are we prepared? Congress has just adjourned, having again failed to pass the bill the title of which is "to increase the efficiency of the medical department," but whose main object is to increase the efficiency of the Army by making adequate provision for the care of the sick and the prevention of disease. In the light of what has so often been stated in these columns of the total inadequacy of the medical department of the Army even in time of peace, a complete breakdown in time of war is inevitable, and the failure of this bill can be considered nothing less than a national calamity and one which, when the time comes, will be felt in many homes throughout the country. When war comes again, as it will, and the cry goes up throughout the country of un-

necessary suffering, sickness and death among the soldiers who have responded to their country's call, and who deserve nothing less than the best attention that care and foresight on the part of their government can provide, the responsibility for failure will surely be fixed where it belongs—on the present Speaker of the House of Representatives. It was he, it is understood, who refused to allow the bill to come to a vote, though it had passed the Senate and had been favorably reported by the Committee on Military Affairs of the House. On Speaker Cannon, and on Speaker Cannon only, must rest the responsibility for the continuation of the present unsatisfactory conditions and for what may occur in case of war.

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## WEST VIRGINIA OSTEOPATHIC BILL NOT PASSED.

It is a pleasure to correct the statement made in last week's issue of *THE JOURNAL* that the bill passed by the West Virginia Legislature was the bill introduced by the osteopaths, similar to the one introduced in so many states. Dr. Wm. W. Golden, President of the West Virginia State Medical Association, writes that the bill adopted in that state was a substitute bill, which was passed through the efforts of the state association. The bill adopted requires osteopaths to pass an examination before the regular board of examiners, which, in West Virginia, is the State Board of Health. The examination is the same as that given to physicians, except in practice and treatment, on which subjects provision is made for the board to call in an osteopath as an assistant in the examination. This is a much safer law than the one first introduced. In this connection, attention is called to the summary of osteopathic legislation for 1907, which will be found in the department of Medical Economics in this issue. The danger to the public in the adoption of these bills, which are being persistently pushed by the osteopaths, is self-evident. State societies, and especially committees on medical education, should be alive to the situation and should use every means in their power to defeat these bills.

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## CONTAGION FROM RETURNED BOTTLES.

Physicians in Austria are reported to have found it necessary to specify that in case of refilling all prescriptions used in infectious diseases a new bottle shall be used. A number of suspicious cases of infection have emphasized the possible danger of infection from bottles taken from the sick room. In a recent case in this country a drug clerk raised the question whether or not bottles returned from scarlet fever patients might have been the cause of his taking the disease. The possibility is certainly a present one, especially if the bottle were wrapped in the patient's room and in paper that had been handled by the patient. The conveyance of any one of several diseases by this means should be borne in mind by physicians and pharmacists. The latter, to prevent error in the transmission of the number of the desired pre-



scription, could have a germicidal garbage-can, into which the messenger could drop the bottle after having held it up for the reading of the number by the pharmacist. The danger is not a pronounced one, but in epidemics every precaution should be taken.

#### AN OBJECT LESSON FOR LEGISLATORS.

The lower house of the Missouri Legislature now in session was stampeded recently by the discovery that one of its members was suffering from smallpox of a mild type which did not prevent him from occupying his seat. Since then a number of members have been attacked by the disease, and the safety of important party measures has been threatened by the absence of the victims. There are many rabid anti-vaccinationists in Missouri, and while, so far as we are aware, there is no pending legislation instigated by them, as in other states, the present condition of affairs affords an object lesson which may possibly be effective in preventing such measures in the present and possibly in some future legislatures. Of course, impressions produced by epidemics or disease outbreaks do not last forever, but as a rule they serve a purpose in stimulating sanitary zeal, and, while the medical profession does all it can to prevent epidemics, there is no reason why it should not utilize their occurrence to point a moral or adorn a tale. It is to be hoped that the smallpox outbreak in the Missouri Legislature will have a not unfavorable effect as regards the medical legislation now before that body.

#### PURE FOOD IN WEST VIRGINIA.

West Virginia is among the states which need a pure food law, and those who have the good of the public at heart are endeavoring to secure one. But, as usual, they have little cooperation from the newspapers. When the governor, in his message, urged the enactment of such a law every Wheeling paper omitted from the publication of the message what he said on this subject. "By request" one paper printed the governor's views several days later. This is just one indication of the opposition to be met in West Virginia. It is worth a great deal to have a governor outspoken on the side of pure food, and the governor of that state undoubtedly represents the views of the vast majority of the public when he says<sup>1</sup>: "It certainly is the highest duty of the state to protect its people against the iniquities aimed at in pure food legislation. Such legislation should include the sale of 'patent medicines,' which is one of the greatest frauds practiced on the people. Many of these so-called remedies are poisonous, deleterious to the human organism, and their sale is worse than obtaining money under false pretenses. On the label of every 'patent medicine' there should be required to be stated in plain language the stuff of which it is composed." Certainly the profession and those of the public who are not financially interested in the manufacture, sale or advertisement of nostrums agree with the governor, and we trust that they have become sufficiently aroused to demand and to secure the necessary legislation.

#### PHOTOGRAPHING AND WEIGHING THE SOUL.

Some twenty years ago the *Chicago Times*, which is no longer in existence, contained a two-column account from a correspondent in a western town regarding the photographing of the soul as it left the body. The correspondent graphically described the whole affair, giving in detail the modification made in the camera for the purpose, the special artificial light required and how it was obtained, the name of the individual, the disease of which he died, the name of the street and the number of the house and everything necessary to carry conviction that it was a record of an actual occurrence. Of course, the experiments were successful and a good photograph of the soul was obtained. The story took, was copied all over the country and commented on seriously. We are reminded of this by a report of similar experiments. During the past week the newspapers have contained an account of some remarkable experimental work conducted by a homeopathic physician of Haverhill, Mass. This gentleman had been pondering on the ponderability of the human soul and, to satisfy a craving for knowledge regarding this intangible but important nature of man, proceeded to weigh it. Just how he did it or what scales he used are details not furnished. It would be interesting to learn just how he knew when the soul left the body. As to this point, our Massachusetts scientist might have been aided in his experimental work had he known that he could obtain the cooperation of the gentleman who knew the facts, if he did not perform the experiments, regarding the photographing of the soul. We should be glad to give our Massachusetts friend the name of the gentleman who wrote the report for the *Chicago Times*, as he is still living and active. It is a pity that the two can not be brought together, for if we could get the soul weighed and photographed at the same time it would be laying a foundation for other investigations regarding this all important subject.

#### THE ANTITUBERCULOSIS CAMPAIGN.

The wide interest now being taken, both by the medical profession and the public at large, in the prevention and cure of tuberculosis has been the basis of previous editorial comment. Any means that may further stimulate professional and public interest in this subject is worthy of notice. Such a means is to be found in the report<sup>1</sup> recently issued by the government, in which is given a brief history of the fight made by federal and state authorities against the scourge of tuberculosis. National action has followed, rather than preceded, state activity, and the report gives a list of the states which have taken official action looking to the control of the disease, and gives, also, the dates of the beginning of the movement in those states. Twenty-nine states are thus listed and to Pennsylvania belongs the distinction of being the pioneer, having as far back as 1885 begun a crusade against tuberculosis. A résumé of the work done in each of the states and a list of the various state sanatoria make the report one of great value to those interested in this important subject.

1. West Virginia Med. Jour., February, 1907, p. 185.

1. Public Health Reports of the U. S. P. H. and M.-H. Service, Washington, D. C., March 2, 1907.



## Medical News

### ILLINOIS.

**Unlicensed Doctor Fined.**—William J. Black, Rockford, charged by the State Board of Health with practicing medicine without a license, did not appear when his case was called March 5, and was fined \$200.

**Personal.**—Dr. John F. Snyder, Monroe Center, was rendered unconscious by being thrown from his buggy in a runaway accident February 24. While driving across the railroad track the buggy of Dr. Jay A. Logan, Bartonville, was struck by an engine. Dr. Logan was thrown about 20 feet, escaping, however, with slight injuries. Dr. Alvin N. Keith, Peoria, is suffering from a severe attack of motor aphasia. Dr. Charles E. Crawford, Rockford, has been appointed by the State Board of Health, inspector for the northern district of Illinois. Dr. John W. Tope, Oak Park, has broken down from overwork in connection with the new Oak Park hospital.

**Legislative Progress.**—There has been no change in the status of the four osteopathic bills referred to in previous issues of THE JOURNAL, viz., Senate bill No. 21, and House bills Nos. 66, 318 and 319. The legislative committee of the state medical society and the State Board of Health feel that they will be able to prevent the passage of these bills, but they desire to receive the support of the organized profession. These organizations are also opposing the optometry bill (House 256), and the antivivisection bill (Senate No. 267), both of which are similar to the bills of like name that were killed in 1905. Senate bill No. 341 and House bill No. 474, introduced respectively by Senator McKenzie of Jo Daviess County and Representative Krape of Stephenson County, would repeal the itinerant-vendor section of the medical practice act, and permit the unrestricted practice of all "proprietary" medicine men who pay a tax of \$75 a year. Senate bill No. 341 has been rapidly advanced and is now on its third and final reading. Senate bill No. 377 and House bill No. 536 contain "jokers," which are not perceptible to the casual reader. These bills would revise section 7 of the medical practice act and omit two words, e. g., "material remedy" and thus would permit unrestricted practice of "magnetic healers" and others who profess to treat by mind, magnetism and manipulation. The State Board of Health has had introduced a bill (House No. 468), making necessary amendments to the State Board of Health act. This bill, which has been favorably recommended by the committee on sanitary affairs, is now on second reading. It is the intention of the board to have introduced also a bill covering defects in the medical practice act. This bill has been wisely held back in order to let those opposed to the medical practice act show their intentions.

### Chicago.

**Interne Examinations.**—At the annual interne examinations at Cook County Hospital, which began March 11, 111 applicants appeared. The examination continued through three days. The appointment of those who are successful will be made in July.

**Ambulance Service.**—During the first week of the ambulance service under the care of the department of health, the surgeons treated 60 sick and injured persons, and 226 patients were given first aid, of whom 183 were removed to the hospital and 37 taken home. Two insane persons were cared for and 9 dead bodies removed.

**Deaths of the Week.**—During the week ended March 9, 650 deaths were reported, 136 fewer than for the previous week, and 43 more than for the corresponding week of 1906, equivalent to an annual mortality of 16.08 per 1,000. The principal death causes were: Pneumonia, 125; consumption, 82; heart disease, 53; nephritis, 41, and violence (including suicide), and acute intestinal diseases, each 29.

**Communicable Diseases.**—The chief medical inspector reports that during the week 115 cases of diphtheria, 240 cases of scarlet fever and 130 cases of measles were reported to the department of health. This is a reduction of 26 in the number of diphtheria cases and 20 in the number of scarlet fever cases as compared with the previous week. The total number of infectious diseases reported was 495, or 35 fewer than last week.

**Personal.**—Dr. Gottfried Kochler stood at the head of the list as the result of the examination for chief food inspector. Dr. and Mrs. Philip H. Matthei celebrated their fiftieth wedding anniversary March 5. Mr. M. A. Lane, formerly of the department of anatomy at the University of Chicago, has taken charge of the histology work at the Turck Institute, and Prof. Conrad Jacobson, professor of physiologic chemistry at Armour Institute, has accepted the position of food analyst.

### INDIANA.

**Nostrum Advertisements on Wrapping Paper.**—The Cass County Medical Society, at a recent meeting, passed resolutions requesting local druggists not to use paper containing "patent-medicine" advertisements for wrapping medicines dispensed on prescriptions, and stating that, if necessary, the society will furnish plain paper to the druggists.

**Personal.**—Dr. and Mrs. Samuel D. Weir, Terre Haute, are taking a trip to Florida and Cuba. Dr. William J. Sandy has been appointed secretary of the board of health of Martinsville, vice Dr. A. Salem Tilford, resigned. Dr. Frank Broughton has resigned as secretary of the Waterloo board of health. Dr. William Flynn, Marion, has gone to Porto Rico for two months.

**Ill and Injured.**—Dr. Charles S. Stewart, Auburn, is reported to be dangerously ill from hemorrhage. Dr. Charles E. Patrick, Indianapolis, who has been seriously ill with nephritis, is reported to be convalescent. Dr. Martin V. McKinney, Charlestown, was declared insane in the Clark County Court, February 20. Dr. Ira L. Brown, Alamo, is suffering from cerebral hemorrhage. Dr. Edwin M. Trook, Marion, has had a severe attack of influenza.

**Epidemic Diseases.**—Fifteen employes of the Chicago, Lake Shore and South Bend Railroad are under quarantine at New Carlisle, on account of smallpox. Three cases of the disease have appeared. An epidemic of measles in severe form is reported from Muncie and Delaware Counties. Nearly 100 cases of measles are reported at Knightstown. On account of the prevalence of scarlet fever, four rooms of the Hibberd school, Richmond, have been closed. Michigan City is said to be threatened with an epidemic of typhoid fever. It is reported that more than 1,000 cases of influenza exist in Evansville.

**Sanitary Enactments.**—The following sanitary enactments have been passed by the legislature: A bill appropriating \$30,000 with which to buy 500 acres of land for a State Hospital Farm, which will be the state institution for the treatment of tuberculosis. The money is immediately available and the governor is to appoint a commission to select the land. A new statistical law which will require the State Board of Health to collect records of births, contagious diseases and marriages. The death records of the state since 1900 have been very accurate because of a peculiar penalty in the law which provides that "in the event of a burial without a permit, as required in this act, then the coroner shall disinter the body, hold an inquest and make report of his findings within three days to the nearest health officer." A law requiring cities, towns and counties to furnish free antitoxin to those too poor to purchase it. The State Board of Health is required to furnish blanks which are to be filled out by physicians for free antitoxin, and the blanks are a claim on the city, town or county in which the antitoxin is required. In the event of a physician abusing the law or securing antitoxin falsely, he is liable, for the first offense, to a fine of \$50, and for the second a fine of \$100 and imprisonment at the discretion of the court. A pure food bill along the lines of the national food and drugs act, providing \$15,000 for enforcement. A large food laboratory has already been established, with a competent food chemist in charge. There are three assistant chemists, two clerks and four inspectors. The inspectors will also be made deputy state health officers. This law contains one section in regard to slaughterhouses which will make it possible to promote sanitary conditions all over the state in this industry, and will do away with the insanitary slaughterhouses at present so common. Under the section it will be unlawful to sell the carcass of any animal for human food which has been slaughtered, prepared or handled under unsanitary conditions. Such carcass can be seized by the health officer and the sale stopped. On account of these new laws it will be necessary for the State Board of Health to issue a new book of instructions to health officers, also to pass new rules establishing standards for the pure food law. The physicians of the state are much gratified over these salutary laws, and feel that the State Board of Health and its efficient secretary, Dr. John N. Hurty, deserve much credit for their efforts.

### IOWA.

**Smallpox.**—Keosauqua reports nine cases of smallpox. Seven cases of smallpox in five families near Postville are reported. Several families at Loveland are quarantined and the public school is closed. Smallpox in the family of the station agent at Alta has caused the quarantine of the station.



**Surgical Society Formed.**—The Iowa Surgeons' Clinical Society was recently organized at Des Moines and the following officers were elected: President, Dr. Alanson M. Pond, Dubuque; vice-president, Dr. William W. McCarthy, Des Moines, and secretary-treasurer, Dr. David S. Fairchild, Jr., Clinton. Meetings of the society are to be held every three months.

**Personal.**—Dr. Henry E. W. Barnes, Creston, has decided to locate in Santa Ana, Cal.——Dr. Frederick P. Bellinger, Council Bluffs, is taking a trip to Peru, South America.——Dr. Daniel H. Killingsworth, Clarinda, was recently operated on in New York.——Dr. James M. Boothby, Dubuque, is reported to be seriously ill with hemorrhage of the lungs.——Dr. George E. Decker, Davenport, has been appointed a member of the State Board of Health, vice Dr. Robert E. Conniff, Sioux City.——Dr. E. R. Walker, Princeton, has been appointed assistant surgeon of the Iowa Soldiers' Home, vice Dr. William M. Morton, Iowa Falls, resigned on account of ill health.——Dr. Peter A. Bendixen, Davenport, has been appointed assistant local surgeon for the Chicago, Milwaukee & St. Paul Railway.——Dr. Frederick E. Welsh, Rutland, has returned from a trip to New Mexico.

### KENTUCKY.

**Pure Food.**—R. M. Allen, secretary of the Kentucky Pure Food Commission, made an address on pure food before the women's clubs of Louisville, March 6, in which he made an extensive exhibit of adulterated food products, described the work of the commission, and made a strong plea for pure food.

**Inspection of Dairies.**—At a conference held March 6 at Louisville, between members of the State Board of Health, its advisory committee, and representatives of the dairymen of Shelby County, plans were formulated for a series of dairy inspections throughout the state, to begin April 2. The work will be initiated at Shelbyville and then the dairies of Louisville and Jefferson County will be investigated.

**Nostrum Recommendation.**—Health Officer Dr. Maverell K. Allen, Louisville, has been considerably upset by the recommendation of a "cure" for consumption written by an employé of the health department on the official stationery on which Dr. Allen's name appears. This has been taken by a number of people as an advertisement bearing Dr. Allen's recommendation, and he has been kept busy explaining the matter.

**State Board of Health.**—The governor has appointed an advisory committee to the State Board of Health composed of the following: Morgan Hughes, Bowling Green, vice-president of the State Farmers' Institute; H. D. Rodman, Shelbyville, president of the State Dairymen's Association, and R. McDowell Allen, Lexington, secretary of the Kentucky division of the Interstate Pure Food Standard Commission. The appointees, in addition to their advisory position, will specially represent their organizations on the State Board of Health.

**Unprofessional Conduct Cases.**—At a hearing before the State Board of Health, March 6, charges of unprofessional conduct preferred against Dr. Sarah A. Murphy, Louisville; Dr. Robert T. Rudd, Fulton, and Dr. William R. Rubel, Smith's Grove, were considered. Dr. Murphy was granted a continuance of 40 days, with the understanding that after her trial in the criminal court for criminal malpractice she would agree to the revocation of her license as a medical practitioner. The license of Dr. Robert T. Rudd was revoked for two years and a continuance was granted in the case of Dr. William R. Rubel on account of the presentation by his attorney of a temporary restraining order, issued by the Warren circuit court.

### LOUISIANA.

**Personal.**—Dr. Frederick C. Mayer, New Orleans, has been traveling in Mexico, Yucatan and the West Indies generally, as medical inspector of the Louisiana State Board of Health, with reference to the yellow-fever situation and quarantine.

**Visiting Nurses' Association to be Formed.**—At a meeting held recently at the Jewish Orphans' Home, New Orleans, over which Miss Edith Loeber presided as chairman, a movement was inaugurated to institute a system of visiting nurses, similar to that already in operation in other large cities of the country.

**Compromise on Quarantine Question.**—A temporary compromise has been reached on the quarantine question, a provision of which is that Dr. Clifford H. Irion shall proceed to Washington to confer with the Secretary of the Treasury and the Surgeon General of the Public Health and Marine-Hospital Service looking to a satisfactory arrangement between the state and federal authorities for a lease of the quarantine station for a limited time.

### MARYLAND.

#### Baltimore.

**The City's Mortality.**—The mortality for the week ended March 9 was unusually high, being equivalent to an annual death rate of 23.38 per 1,000. The deaths from pneumonia and tuberculosis were unusually numerous. Accidents caused 16 deaths and measles 4 deaths.

**College Anniversary.**—The twenty-fifth anniversary of the founding of the Women's Medical College was celebrated February 26. Addresses were delivered by Dr. Guy L. Hunner, president of the faculty; Dr. Charlotte L. Murdoch, late of London, and Hilda L. Fletcher, a member of the graduating class. The annual oration was delivered by Dr. Lewellys F. Barker. Since the founding of the institution in 1882, 93 women have been graduated who are in practice in nearly all parts of the world. The college now has 35 students with a graduating class of seven.

**Personal.**—Dr. Eugene R. Smith is traveling in Palestine and Egypt this month. In April he will go to Italy, France and England.——Dr. L. McLane Tiffany is in Florida.——Dr. S. R. Barr, superintendent of the Baltimore and Ohio Railroad Relief Department, has gone to Southern California for a month for his health.——Dr. Hubert Richardson, lecturer on physiologic chemistry, neurology and psychiatry at the University of Maryland, who recently inherited an estate by the death of a relative in England, has resigned his position and returned to his former home.——A gold-mounted baton was presented to Dr. B. Merrill Hopkinson, director of the Madison Avenue Temple choir, March 1, by the members of the choir.

**McCormack in Baltimore.**—Dr. J. N. McCormack, chairman of the Organization Committee of the American Medical Association, visited Baltimore, February 28, and was the guest of the Medical and Chirurgical Faculty of Maryland at the University club. He was entertained at lunch by Dr. Hugh H. Young, and in the evening was the guest of honor at a dinner given by Dr. Hiram Woods, president of the faculty. In the afternoon he delivered an address before the members of the profession, and in the evening delivered a public lecture at McCoy Hall on "Things About Doctors That Doctors and Other People Should Know." The Governor of Maryland presided at the public meeting and addresses were made by the president of the school board, the president of the Board of Charities and Corrections, and others.

### MASSACHUSETTS.

**Deaths in the State.**—The census covering 1901-1905 inclusive, shows that in 1905 the death rate in Massachusetts was 16.8 per 1,000. Deaths from tuberculosis in Boston were 201.6 per 100,000; from cancer in Massachusetts were 89.3 per 100,000, and in Boston, 105.6 per 100,000.

**Fire in Hospital.**—By the calmness and bravery of the nurses and attendants at the Newton Hospital, a panic was prevented when a fire was discovered in the basement of one of the hospital buildings February 22. Fortunately, the fire, which was in the administration building, was soon brought under control.

**Epidemic Diseases.**—Methuen reports 128 more cases of communicable diseases in 1906 than in the previous year.——At Gardner two additional cases of scarlet fever were reported March 1, and 20 pupils of the public schools who showed symptoms of the disease were ordered to remain at home for observation.

**War on Consumption.**—The Lawrence board of health has issued a small pamphlet, prepared by the Boston Association for the Relief and Control of Tuberculosis, containing, in brief succinct paragraphs, directions how to prevent consumption, the things bad for weak lungs, the things good for weak lungs, and directions in regard to the special care of households and children.

**May Exclude Unvaccinated.**—The full bench of the Supreme Court of Massachusetts has decided recently that the school authorities have a right to exclude from school unvaccinated children even when a physician's certificate of unfitness for vaccination is presented, if there is an epidemic of smallpox in the district. The ease which was so decided occurred in Hyde Park in 1902, and has been in the courts ever since.

**Legislation Against Harmful Drugs.**—Dr. Ezra W. Clark, Brockton, representative in the legislature, has introduced a bill providing that morphin or its derivatives shall not be sold except on a physician's prescription, and only once on a prescription, and that on the label there shall appear whether the substances contain morphin, codein, opium, heroin, chloroform, cannabis indica, chloral hydrate, acetanilid or their derivatives.



**Appointments.**—Dr. Henry Pickering Bowditch has been made George Higginson professor of physiology, emeritus, from September, 1906, at Harvard University Medical School.—The following changes have been made in the staff of the first battalion, field artillery, M. V. M.; Captain George Osgood, Boston, has been made surgeon with the rank of major, vice Major John F. Harvey, Boston, retired; Dr. Edward B. Seever, Jr., Boston, has been appointed assistant surgeon with the rank of first lieutenant and Dr. J. Forrest Burnham, Lawrence, has been made hospital steward.

**Medical Society Meetings.**—At the annual meeting and banquet of the Eastern Hampden Medical Association, held in Springfield, February 28, the following officers were elected: President, Dr. Irving R. Calkins, Springfield; vice-president, Dr. Halbert G. Stetson, Greenfield; secretary-treasurer, Dr. Morgan B. Hodskins, Monson, and censor, Dr. Abbott L. Cooley, Chicopee Falls. At the banquet Dr. Leslie H. Hendee, Pittsfield, was toastmaster. The principal speaker was Dr. Vincent J. Irwin, Springfield, retiring president, who delivered a valedictory address on "The Doctor and the Doctor's Wife."

**Personal.**—Dr. Mary T. Bissell, superintendent of the North Adams Hospital, has resigned.—Dr. Henry J. Millard, North Adams, has been elected medical inspector of the Massachusetts department of the G. A. R.—Dr. Charles H. Thomas has been elected chairman of the Cambridge board of health.—Dr. Samuel T. Orton, Boston, has taken charge of the pathologic department of the Columbus (Ohio) State Hospital, vice Dr. Isabel Bradley.—Dr. David Cheever has been elected president of the class of 1901, Harvard University Medical School, and his engagement to Miss Jane W. Sargent is announced.—Dr. Walter C. Seeleye, Worcester, has been elected secretary of the Amherst Alumni Association.—Dr. Fred G. Bushold has been elected milk inspector for Lawrence, vice Dr. Patrick J. Hughes.

**Medical Bills.**—Among the medical and public health matters which are before the state legislature are the following: The osteopaths have been given leave to withdraw a petition for the establishment of a state board of osteopathic examination and registration; a bill providing for the appointment of school nurses for Boston has been cordially supported by many physicians before the committee on cities, as has also a bill directing the school committee to take charge of the physical training of children in school yards, playgrounds, parks, etc., during vacation seasons as well as other parts of the year; two bills directed against christian science practice have failed to pass the committee; a bill on the petition of Dr. Richard C. Cabot seeking more exact labeling of "patent" or proprietary drugs and foods has been approved by the committee; a bill urged by Dr. Charles E. Harrington of the State Board of Health, providing that the certificate of exemption from vaccination of a pupil in the public schools must be signed by the school physician assigned to that school was most vigorously opposed by anti-vaccinationists, and the committee has modified the recommendations by simply adding to the present law the words that the certificate shall be "granted for cause stated therein." Hence, if adopted, the law will read: "A child who has not been vaccinated shall not be admitted to a public school except on presentation of a certificate granted for cause stated therein, signed by a regular physician, that he is not a fit subject for vaccination."

#### MINNESOTA.

**Clinical Hospital Donated.**—Walter J. Trask, Los Angeles, has offered \$114,000 to the University of Minnesota for a clinical hospital to be known as the Elliot Memorial Hospital in memory of Dr. Adolphus S. Elliot and Mary S. Elliot, his wife.

**Scarlet Fever.**—As the result of an outbreak of scarlet fever at Tower the school board has closed the schools for a week. Two deaths have occurred from the disease.—Bruno is suffering from a severe attack of scarlet fever which has caused the schools to be closed. Three deaths are reported.

**Personal.**—Dr. Gustav A. Renz has been appointed health commissioner of St. Paul, vice Dr. Justus O'Hage.—Dr. Fletcher W. Penhall, Morton, was seriously injured by being thrown from his carriage February 17.—Dr. Emil H. Beckman, city physician of Minneapolis, has resigned to accept a position in St. Mary's Hospital, Rochester.

#### MISSOURI.

**Hospital Saturday and Sunday.**—At the annual meeting of the Hospital Saturday and Sunday Association, St. Louis, it was reported that the total receipts from the collections during 1906 were \$39,574.77 and the receipts from member's dues \$407. On Christmas the amount distributed to hospitals was \$38,734.81.

**University Medical Department.**—A conference regarding the state university medical department was held recently at Kansas City between committees of the legislature, the curators of the university and Mayor Beardsley, relative to the conditions under which the third and fourth year medical classes from the university will be brought to Kansas City. The curators require a bonus of \$150,000, land in the vicinity of the General Hospital building and exclusive clinics at the General Hospital.

**Personal.**—Dr. John Young Brown, St. Louis, has resigned as superintendent of the City Hospital, to take effect April 1. He has been appointed professor of clinical surgery at St. Louis University and chief surgeon at St. John's Hospital, vice Dr. A. Van Liew Brokaw, deceased.—Dr. James Romine, Kansas City, is reported to be seriously ill at a Hospital in Wichita.—Dr. Harry T. Randle, Clayton, has been appointed a member of the medical staff of the United Railways Company.—The residence of Dr. W. B. Prim, Deerfield, was burned to the ground March 2.

**Smallpox.**—On account of the prevalence of smallpox in Jefferson City, the mayor issued a proclamation on February 26 closing theaters, skating rinks, dance halls, and all places of public amusement.—A detention hospital has been established near Jefferson City.—Several cases of smallpox are reported among the factory girls in St. Joseph.—It is reported that there were 50 cases of smallpox in Jefferson City before the first case appeared in the House of Representatives.—The local board of health of Jefferson City issued an appeal to the State Board March 3, asking it to revoke the order closing places of public amusement. The appeal states that during the six weeks of the epidemic there were 38 cases of smallpox, all in modified form; that all cases have been clearly traced to the same foci of infection; that the epidemic is completely under control; that at present there are but 27 cases in the city, and that ten patients would be on that day discharged.

#### NEW YORK.

**Applies for Pardon.**—An application has been made for a pardon for Dr. Edward F. Conrad of New York, who in May, 1905, was convicted of criminal malpractice by the New York County Medical Society and sentenced to prison for from one to two years. He wishes to be restored to citizenship and to be permitted to resume the practice of medicine. Decision on the application has been reserved.

**Medical Societies Agree on Single Standard.**—It is regarded as a matter for congratulation that an agreement has been reached whereby the different medical societies have decided to accept the legislation creating one medical board. The osteopaths are to pass a medical examination after 1910, and no one is to be permitted to practice osteopathy unless he has taken a three years' course of nine months a year in a recognized school of osteopathy.

**Bills Introduced in the Legislature.**—The following bills of interest to the medical profession have been introduced in the state legislature: An act to amend the agricultural law, relative to the sale of slaughtered game, animal or fowl that shall have been kept in cold storage, provides that after 15 days such products shall have attached thereto in plain letters the words "Cold Storage," or that there shall be a conspicuous sign over the place of sale, in black letters at least four inches long with the words "Cold Storage" thereon.—An act to amend the public health law, in relation to pharmacy, limiting the application of the article, which is not to apply to the practice of a practitioner of medicine who is not the proprietor of a store for the dispensing or retailing of drugs, medicines and poisons, it shall not prevent practitioner of medicine from supplying their patients with such articles as they may deem proper, and except as to the labeling of poisons it shall not apply to the sale of medicines or poisons when not for the use or consumption of the purchaser for destroying insects or any substance for use in the arts, or to the manufacture and sale of proprietary medicines or to the sale by merchants of essences and substances in general use.—An act to provide for the keeping of medical and surgical appliances in railroad cars, which provides that every passenger car shall have a medical and surgical chest, containing plasters, bandages, absorbent cotton, gauze and all necessary appliances for emergency use; that each chest shall have attached thereto, printed in conspicuous type, a card of instructions containing in plain and simple language the mode and use of the various articles above enumerated. Violation of this law incurs a penalty of \$5 per car for each day that such violation shall continue.—An act to amend the labor law, relative to confectioneries, provides for the drainage,



plumbing and proper ventilation of all buildings or rooms occupied as biscuit, bread, macaroni, spaghetti, pie or cake bakeries. —An act to amend the penal code in relation to crimes against the public health and safety, with reference to the sale of poisons, which provides that it shall be unlawful for any person to sell at retail or furnish any poison named in the schedule without affixing or causing to be affixed a label containing the name of the article and the word "poison" distinctly shown, with the name and place of business of the seller, all printed in red ink, together with the name of such poison printed or written thereon in plain, legible characters.

#### New York City.

**Outdoor Department Opened.**—The Jewish Maternity Hospital, 270 East Broadway, has opened its outdoor department and applicants are received daily except Sunday, from 3 to 5 p. m.

**No Danger of Diphtheria Epidemic.**—The two internes ill with diphtheria who were taken from Bellevue Hospital to the Minturn Hospital, are reported to be entirely out of danger, and the three other internes who were under suspicion are said not to have the disease, so that there is no danger of an epidemic as was feared by some.

**Lecture on Tropical Medicine.**—The Society of Tropical Medicine will hold its first meeting in New York at the New York Academy of Medicine, March 29. Dr. Louis L. Seaman, who has recently returned from a trip to Central and Eastern Africa, will be one of the speakers and will give an address on the hygienic conditions and the diseases which he observed during this trip.

**Contagious Diseases.**—There were reported to the sanitary bureau for the week ended March 2, 418 cases of tuberculosis, with 192 deaths; 326 cases of measles, with 6 deaths; 301 cases of diphtheria, with 51 deaths; 297 cases of scarlet fever, with 17 deaths; 51 cases of whooping-cough, with 7 deaths; 41 cases of typhoid fever, with 9 deaths; 14 cases of cerebrospinal meningitis, with 12 deaths; 4 cases of smallpox, and 86 of varicella, making in all 1,538 cases, with 294 deaths.

**The Bulkley Lectures.**—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will close his clinical course with four special lectures as follows: March 27, "Practical Points in the Diagnosis and Treatment of Diseases of the Skin;" April 3, "Errors in Diagnosis and Treatment; Don'ts in Dermatology;" April 10, "Danger Signals from the Skin;" and April 17, "The Significance and Treatment of Itching." A lecture is also announced on April 24 by Dr. William Seaman Bainbridge on "Some Phases of the Cancer Problem." The lectures will be given in the outpatient hall at 4:15 p. m.

**Public Hearing on the Milk Question.**—The health committee of the board of aldermen gave a public hearing March 7 on the project of compelling by ordinance the pasteurization of all the milk sold at retail or wholesale in this city. The ordinance provides that after June 1 no raw milk or cream shall be sold at retail or offered for sale in the city of New York, unless it comes from herds certified as free from tuberculosis, and unless the milk or cream has been certified by the department of health, as containing not more than 50,000 bacteria to the cubic centimeter. All milk and cream not conforming to this standard shall be pasteurized by exposure to a temperature of 167 degrees for at least 30 minutes. For the purpose of enforcing this ordinance it shall be unlawful to offer raw milk or cream for sale unless thus certified or in cans on which the name of the dairy is distinctly named. It gives methods for examining herds and provides for bacterial examination by the board of health. Mr. Strauss was present and quoted from many eminent authorities to show the importance of pasteurization. A letter from the board of health was read stating that this body feels that its first and most important work is to supervise the conditions under which milk is produced, preserved, transported and sold. The board considers the ordinance defective in regard to the number of inspectors and to the bacterial and chemical examination. The board has under consideration further measures, but does not think it advisable at present to adopt partial or untried measures which are likely to delay or defeat the purpose in view. The board of health had for many years advocated sterilized or pasteurized milk for infants. The final hearing will be held in two weeks, when action will be taken.

#### NORTH CAROLINA.

**Smallpox in College.**—Smallpox appeared recently at the Boys' College, Oak Ridge, but the two patients were promptly quarantined and the entire community vaccinated.

**Degenerative Legislation Checked.**—A number of bills introduced in the legislature providing that "graduates of reputable medical colleges can legally practice medicine in the counties of Clay, Cherokee and Graham without securing a license from the State Board of Medical Examiners" met with the usual fate of such measures and were filed.

**Personal.**—Dr. Herbert A. Royster, Raleigh, entertained the faculty and members of the junior and senior classes of the University of North Carolina, Medical Department, at a dinner February 22.—Dr. Peter R. Hatch, Youngsville, is reported to be quite ill at his home.—The sophomore class of the Medical College of North Carolina was given a banquet by the president of the college, Dr. John Peter Munroe, February 22.

**Society Meetings.**—The Medical Society of North Carolina will hold its annual meeting at Morehead City-by-the-Sea on May 28, 29 and 30. On June 3 and 4 the Tri-State Medical Association of Virginia, North and South Carolina will hold its annual meeting at Norfolk, Va. This arrangement will make it convenient for the members to attend the American Medical Association, at Atlantic City, thus taking in the three meetings, with an absence of only about ten days from home.

#### OHIO.

**Tuberculosis Hospital.**—Work has been started on the new tuberculosis hospital which Cleveland will erect at Warrentonville.

**New Laboratory for Medical College.**—The trustees of the Western Reserve Medical College, Cleveland, are preparing to erect a new laboratory for experimental medicine, which is the joint gift of Col. O. H. Payne and H. M. Hanna. The structure will be of steel skeleton construction, with sides and roof of glass as far as practicable.

**Society Meetings.**—The physicians of Bryan have organized a society to be known as the Bryan Medical Association. The following officers were elected: President, Dr. John W. Riggs; vice-president, Dr. Daniel C. McTaggart, and secretary-treasurer, Dr. Malvin V. Replogle.—At a meeting of the Union Medical Association of the Sixth Councilor District, held February 21, at Akron, Dr. Robert D. Gibson, Youngstown, was elected president; Dr. John H. Seiler, Akron, secretary, and Dr. Harold H. Jacobs, Akron, treasurer.

**Society Celebrates Semi-Centennial.**—The Cincinnati Academy of Medicine celebrated its semi-centennial by a banquet at the Hotel Sinton, March 4, at which 350 were present. Dr. John E. Greiwe, the retiring president, was toastmaster and speeches were made by Dr. Bryon Stanton, the only charter member present, and others. The following officers were elected: President, Dr. Frank W. Langdon; vice-presidents, Drs. William Gillespie and John C. Oliver; secretary, Dr. Mary K. Isham; treasurer, Dr. Alexander G. Drury; librarian, Dr. Arch I. Carson; censors, Drs. John E. Greiwe, Edwin W. Mitchell and E. Gustav Zinke; and trustees, Drs. James F. Heady, Asa B. Isham and Nathaniel P. Danderidge. Dr. O. D. Norton, the oldest member, who is now 86 years old, was too ill to attend the celebration, but sent his greetings and farewell.

**Personal.**—Dr. Jacob A. Kimmell, Findlay, is making a visit to Panama and Central America.—Dr. Charles E. Sawyer, Marion, is critically ill at his home.—Dr. William T. Ramsey has been elected health officer of Cambridge.—Dr. Walter R. Griess, Cincinnati, has been elected assistant surgeon of the police and fire department.—Dr. Theodore W. Rankin is reported to be critically ill with typhoid fever at his home in Columbus.—Dr. Peter E. Joseph, Sr., Cincinnati, is reported to be critically ill with heart disease at his home.—Dr. Alvin L. Light, Dayton, has been appointed jail physician.—Dr. Samuel S. Wilson, Xenia, is taking a trip to Cuba.—Dr. Adams B. Howard, superintendent of the Cleveland State Hospital, has resigned.—Dr. Frederick Lahmere, Barberton, is reported to be seriously ill with typhoid fever.—The Cincinnati Academy of Medicine recently entertained Dr. George W. Crile, Cleveland, who spoke on transfusion of the blood.

#### PENNSYLVANIA.

**New Miners' Hospital.**—The secretary of the United Mine Workers has announced that Shamokin has been selected as a site for the new miners' hospital.

**Railway Surgeons Meet.**—At a meeting of the staff surgeons of the Pittsburg & Lake Erie Railroad, held in Pittsburg, the following officers were elected: President, Dr. John D. Milligan, Pittsburg; vice-presidents, Drs. William A. Shannon, Ellwood City, and John J. Allen, Monaca, and secretary-treasurer, Dr. Edward M. Iland, Coraopolis.



**Personal.**—Dr. J. Lawrence Eisenberg has been elected pathologist of Charity Hospital, Norristown, vice Dr. Fred N. Henderson, resigned.—Dr. Stoddard P. Gray, Chester, has been seriously ill with pneumonia.—Dr. William T. Davies, Jr., Harrisburg, has been elected first resident surgeon at the Miners' Hospital, Fountain Springs, to succeed Dr. Clay W. Weimar, resigned.—Dr. James M. Matthews, Reading, recently celebrated his ninetieth birthday anniversary.—Dr. Edwin S. Heiser, Lewisburg, sailed from New York for Europe, February 7.

**Hearing on Vaccination.**—All the so-called evils and alleged dangers to human existence were brought out March 5 by the State Anti-Vaccination League of Philadelphia at a hearing on the anti-vaccination bills now pending before the legislature. Stereopticon views showing alleged cases in which children have become infected from vaccination, resulting in death, were thrown on the screen and commented on by the secretary of the league. The anti-vaccinationists are not opposed to the vaccination of persons who desire to be inoculated with the virus, but they object most strongly to the compulsory vaccination of those children of the public schools of the state whose parents object to the inoculation. Health Commissioner Dixon, in addition to reciting the experience of foreign countries, like Germany, where smallpox has been virtually wiped out by vaccination, gave a number of cases that have occurred during his own term of office to prove how smallpox spreads among the unvaccinated. Drs. William M. Welch and Jay F. Schamberg, Philadelphia, delivered most convincing arguments and gave actual facts from the thousands of cases that they have treated at the Municipal Hospital to demolish the assertions of the anti-vaccinationists. Among the other speakers in favor of vaccination were Dr. Seneca Egbert, dean of the Medico-Chirurgical College of Philadelphia, and Dr. Joseph MacFarland of Philadelphia.

#### Philadelphia.

**White Entertained.**—The Franklin Inn Club entertained Dr. J. William White at an informal dinner March 1. Among those present were Drs. Hobart A. Hare, R. Tait McKenzie, Marshall Scull, John H. Musser, J. Chalmers Da Costa and Charles W. Burr.

**Personal.**—Dr. Alfred Gordon has been elected president of the Philadelphia Neurological Society.—Dr. Henry W. Stelwagon, who has been clinical professor of dermatology at the Woman's Medical College of Pennsylvania for 22 years, has resigned on account of pressure of private practice.—Dr. S. Weir Mitchell celebrated his seventy-seventh birthday anniversary February 15.

**Visiting Nurses.**—At the annual meeting of the Visiting Nurses Society, it was announced that if \$15,000 can be raised, they will receive a gift of \$10,000. According to the secretary's report 45,368 visits were paid last year—an increase of 7,086 over the previous year. In 1893, when the society was started, 10,000 visits were made to the sick poor. The visits reported do not include the work in the two day nurseries at the Starr Center, or that of the school nurses. Only graduates of hospital training schools are employed by the society, whose object is to give the best home nursing to the poor and those of moderate means. There is still great need of a nurse for special work in tuberculosis and for a night nurse to send to special emergency cases.

**New Home for College of Physicians.**—It was recently decided that the new home (see illustration on the next page) for the College of Physicians of Philadelphia should be at Twenty-second and Market Streets. The lot being 130 by 184 feet, with streets on three sides, gives an opportunity for the building to get a maximum amount of light and of fire protection. The college, which is a medical society and not a teaching body, was founded in 1787 by Benjamin Rush, John Redman (who was its first president) and others. In 1865 the present site was first occupied and the library of the society at that time was comparatively insignificant in size. To-day, according to the estimation of C. P. Fisher, the librarian,<sup>1</sup> it ranks third in size and importance among the medical libraries of the world. The beginnings of the library were made by donations from the members of the society and it owes much of its growth to the generous contributions that have been made either in the form of books or of money. The entire library endowment fund at the present time, the income from which is used for the purchase of books and journals, amounts to \$60,965. This amount includes thirteen large funds, together

with the gifts of a number of smaller subscribers. The growth of the library during the first seventy-five years of its existence was slow, so that in 1836 the library contained only 291 volumes and in 1866 9,513. Since that time its growth has been steady, the number of volumes nearly doubling itself every ten years. The present number of bound volumes is 82,305, of pamphlets 56,116, and of dissertations 20,978; 728 current periodicals are on the journal racks of the library. The catalogue is made on typewritten cards and is undergoing a thorough revision, about half of the work having been completed. This work is considered one of the finest examples of type-written card indexes in existence. The library contains a large number of medical antiquities and curiosities, among which may be mentioned a copy of what is probably the first medical book printed (about 1470), the first edition of the first medical dictionary (1473), the first edition of the first book printed on diseases of the eye (1474). Altogether there are 123 books printed before the year 1500. The first medical publication in the colonies was a "broadside" or poster instructing the people of New England "how to order themselves and theirs in the small pocks or measles." As was mentioned in THE JOURNAL, Jan. 12, 1907, page 148, Mr. Carnegie offered to contribute \$100,000 toward the new home on condition that an equal amount was raised by the society. This amount is now forthcoming, and the committee has been authorized to obtain full plans, specifications and bids. The new building alone will cost about \$250,000, to which the cost of furnishing must be added. To Dr. S. Weir Mitchell, it is reported, more than to any other one man, is due the credit of this undertaking. Dr. Mitchell obtained the gift from Mr. Carnegie and also obtained about one-half of the entire amount subscribed.

#### VIRGINIA.

**Darlington in Richmond.**—Dr. Thomas Darlington, health officer of New York City, recently delivered an address at Richmond on "The School Nursing and Medical Inspection of Schools," in which he spoke on some phases of the anti-tuberculosis work and gave the audience an idea of the importance and value of the work done by visiting nurses.

**Personal.**—Dr. Stark A. Sutton, Norfolk, assistant surgeon of the second battalion, Seventy-first Infantry, Virginia Volunteers, has resigned.—Dr. Philip T. Southall, assistant physician at the Eastern State Hospital, Williamsburg, has resigned.—Dr. Elisha Barksdale has been elected president of the Lynchburg board of health, vice Dr. Patrick H. Casey.—Dr. William W. Gill, city physician of Petersburg, has resigned and will locate in Chicago.

**Society Seeks Repeal of License Tax.**—At the annual meeting of the Wise County Medical Society, held at Norton, the following officers were elected: President, Dr. T. M. Cherry, Glamorgan; vice-presidents, Drs. William G. Painter, Big Stone Gap; Robert P. Carr, Norton, and George W. Tompkins, Georgell; secretary-treasurer, Dr. Henry M. Miles, Wise. It was decided that each member of the Wise County Medical Society contribute the sum of \$1 to be used by the committee appointed by the State Medical Society to secure the repeal of the license tax, which sum is to be paid to treasurer of this society.—At a meeting of the Richmond Academy of Medicine and Surgery, the following officers were elected: President, Dr. Ennion G. Williams; vice-presidents, Drs. John S. Horsley, McGuire, Newton, and R. Bowman; secretary, Dr. Mark W. Peyser (re-elected); treasurer, Dr. L. K. Sheppard, and executive committee, Drs. Stuart McGuire, William S. Gordan, Daniel J. Coleman, and Ramon D. Garcin.

#### CANADA.

**Vaccination.**—The Toronto board of education has refused to reinstate compulsory vaccination, claiming that it is not its place to usurp the authority of the city's health officer.—Vaccination is gaining favor in Montreal. In 1906 4,217 persons were publicly vaccinated in that city. Of this number 121 were aliens or strangers. As a people the citizens are now about as well vaccinated as any other city in Canada, whereas only a few years ago but about 20 per cent. of the population was vaccinated.

**Personal.**—Dr. E. D. Hudson, of the house staff of the Winnipeg General Hospital, will commence practice in Hamiota, Man., in partnership with Dr. Alexander Lawson.—Dr. Henry Esson Young, Atlin, B. C., who has just been elected a member of the British Columbia legislature, has been called to the cabinet as provincial secretary.—Dr. Samuel C. Corbett, Winnipeg, has sailed for the Mediterranean.—Dr. G. B. Archer has gone to Bengal, India, to engage in missionary work.—Dr. Vaux, Toronto, has sailed for Naples, Italy.—Dr. Thomas A. Davies, Toronto, has gone to Europe for graduate work.

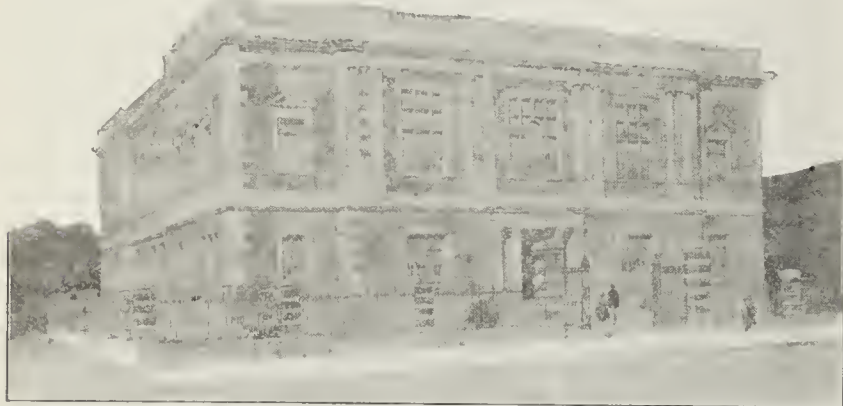
1. An Account of the Library of the College of Physicians of Philadelphia, reprinted from the Transactions, third series, xxviii, 1906.



## FOREIGN.

**Bubonic Plague in Siam.**—Since 1904 bubonic plague has been reported in various parts of Siam, but the diagnosis has always been based on either clinical symptoms or the simple examination of smears made from buboes or other organs. In the cases recently appearing in Phrapatoom, cultures and experiments on lower animals were made, including rubbing the organisms on the shaven skin and subcutaneous inoculations. By these methods a positive diagnosis of bubonic plague was made.

**Dutton Memorial Professorship.**—A research professorship in the Liverpool School of Tropical Medicine has been proposed as a memorial to Dr. Joseph Everett Dutton, who did valuable work in four successive expeditions sent out by this school to Nigeria, the Gambia, Senegambia and the Congo Free State. He described *Trypanosoma gambiense*, the parasite since recognized as the cause of sleeping sickness, and gained high distinction for himself and a world-wide renown for his school. While investigating tick fever, previously little known, he contracted that disease and died. The committee in charge of the fund say: "All who knew Dr. Dutton agree that the most fitting form which a memorial can take is one which will help to continue those researches in tropical medicine for which he gave his life." It is proposed to raise \$50,000, and over \$20,000 has already been pledged. The committee calls attention to the remarkable benefits conferred on commerce and travel by the additions to our knowledge of tropical diseases. The case of the Panama Canal is cited as one instance. Many problems are yet awaiting solution. Any contribution to this fund should be sent to Mr. A. H. Milne, Hon. Secretary, Liverpool School of Tropical Medicine, Liverpool.



Proposed New Home for College of Physicians of Philadelphia (see previous page).

**Crocker's Suit to Recover the Fee Paid a French Physician.**—The cable has reported that the French courts have rejected the plea of the American, Mr. Crocker, for restitution of the fee of \$20,000 paid to Doyen in advance for treatment of Mrs. Crocker, who had an inoperable cancer. Doyen's serum treatment seemed to aggravate her condition and her husband discontinued it in a little less than a month, but did not formally dismiss Doyen until six weeks later. Some months after the death of his wife he instituted suit for recovery of the fee, saying that it was obtained under moral constraint, and that the sale of a therapeutic serum under these conditions is against the law, and that such a contract sale (*à forfait*) is also illegal. He further contended that as only a few applications of the remedy had been made, Doyen was entitled only to remuneration for the treatments actually given. The *Semaine Médicale*, February 27, gives the full text of the decision in the case, which is altogether favorable for the interests of the medical profession. It brings up a new point, namely, the conditions under which a physician has the right to employ as a means of treatment a new and non-standardized serum. The contract between Doyen and Crocker did not refer to the commercial exploitation of a new and secret remedy, but to a treatment in which a new serum was used. A treatment of this kind, given by a registered physician, the court said, does not conflict with the laws regarding the commercial exploitation of viruses and serums. Such a contract, entered into freely by the parties, is not illegal. That it was entered into freely by Crocker is shown by his engaging an agent to look after his interests, and by his not signing the contract till after considerable discussion. Doyen's part of the contract was to attend Mrs. Crocker, whom he stated to be "suffering from a recurring mammary cancer on the way to generalization, and inoperable, and which I hope to cure." He did not give any assurance that he could do so, but his success in a number of similar cases, he said, encouraged him in this hope.

## LONDON LETTER.

LONDON, Feb. 23, 1907.

### Admission of Women to the Diploma of the Royal College of Surgeons.

With that conservatism which is so prominent a feature of the British character, the Royal College of Surgeons has persistently refused to admit women to its examinations, although with that absence of logic which is equally a national characteristic, it allows women to use both the library and the museum of the college. At last there are signs that the fortress of prejudice is about to capitulate after a prolonged struggle. As long ago as 1895, an influential petition was presented to the Royal College of Physicians and Royal College of Surgeons asking that the examinations be open to the students of the London School of Medicine for Women. At that time there were over 200 women on the medical register and there was a steadily increasing demand for women practitioners. The petition was discussed by both colleges and in each case rejected by a very narrow majority—a majority of 9 in 109 in the case of the College of Physicians, and of 10 in 106 in the case of the College of Surgeons. The College of Surgeons has now voluntarily raised the question and appointed a committee to consider the admission of women to its examinations. As the examinations of the two colleges are conjoint it is scarcely probable that one will surrender without the other. Women physicians are preparing a petition to the Royal College of Physicians. They point out that at present English students are compelled to resort to the examinations of the Irish and Scotch colleges. In these countries hide-bound conservatism is not a national characteristic. The number of women on the medical register now amounts to 750, of whom more than 400 have been students of the London School of Medicine for Women. The petition also refers to the greatly increased recognition accorded to women in the medical profession, as shown by the number of appointments held by them at home and in India, Persia, Africa and Egypt. The petition is signed by the staff of the Royal Free Hospital (the London hospital attended by women students), and by a number of the foremost physicians and surgeons of the day. It is understood that the Royal College of Surgeons is taking advice on certain legal points raised by the question.

### The Laziest Man on Earth.

An extraordinary case is reported from Belfast. A man named Thompson, who lives with his mother at Clare, Lurgan, went to bed in 1877, when he was a boy of 11, and did not leave it until three weeks ago, establishing a world's record for laziness. He was looked after by his mother, and his presence in the house was hardly known to the villagers. Probably he would have remained in bed for the rest of his life had not his mother been taken ill and had to be removed to the infirmary. Left helpless and alone Thompson was compelled to get up. A search was made for the suit which he discarded twenty-nine years ago, but he was unable to dress without assistance. Two neighbors were called in and the work of squeezing him into the suit occupied three men a whole evening. When dressed he was too tired to walk and an ambulance had to be brought to convey him to the infirmary. He reposed there until his mother was well enough to leave the infirmary, when he followed her home. He was compelled to walk, as the authorities refused an ambulance. Many physicians have attempted to stimulate Thompson out of his chronic lethargy. Irritating plasters were applied, but without effect; mild electric currents failed to ruffle him, and the physicians left him to enjoy the serene calm they were unable to disturb. Thompson is healthy and suffers only from chronic laziness. On returning home he again took to bed. A later report states that he has changed his mind and says that he will sleep less. The sight of the green fields and the busy world has awakened him to some interest in life. He says that he is determined to make amends for the wasted years in the past. However, no report has yet been made that he has made a move.

### VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Feb. 25, 1907.

### Nicotin-Poor Tobacco.

The abuse of tobacco has prompted medical authorities to recommend the production of tobacco in which the dangerous substances, especially nicotin, were either removed or rendered innocuous. The Austrian government, which has the monopoly of the tobacco trade, took the matter up, and began some time ago to produce special brands of tobacco which had been subjected to certain manipulations in order to comply with the wishes of certain parties. These tobacco brands were almost



entirely free from nicotin. The public, however, refused the article; it was not the tobacco from which they had been used to derive so much pleasure, and it was found that a certain percentage of nicotin must be retained in the tobacco leaves and smoke; otherwise the flavor and the peculiar taste of the leaves are sure to suffer. A number of patents were thereon taken out on processes of denicotinizing tobacco, the following methods being still in use by the government tobacco factories: For weak tobacco, from which a small quantity of nicotin is to be removed, an alcoholic lime solution is used. The chemical interaction results in the formation of insoluble lime salts of the malonic and citric acid, which latter are necessary for the flavor of the tobacco, while the nicotin and pyridin substances are mostly washed out. The smoke of such tobacco contains only 50 per cent. of nicotin in comparison with the smoke of the unwashed tobacco. Instead of lime a solution of potash may be used.

The latest patented process, which gives the best results and which is now adopted in the majority of the government factories, consists in heating the ready-made cigars and cigarettes to a temperature of nearly 200 degrees C. The advantage of this method lies in the fact that finished goods, even if they have been sold, can be subjected to the denicotinizing process. The idea underlying this method centers in the fact that nicotin, though boiling at 240 degrees C., can be distilled over at 150-200 degrees without boiling. Thus the cigars are placed in an air-tight vessel and dry warm air is allowed to circulate freely between them by means of a system of glass pipes. The nicotin and ammonia are extracted by the heat and are condensed in liquid form on the walls of the vessel, whence these substances are conducted away by a system of tubes. The temperature within the vessel is kept constant, varying according to the sort of tobacco employed. Tobacco subjected once to this treatment has the percentage of nicotin reduced by 20 to 50 per cent.

If treated two or three times the nicotin is reduced by 70 per cent., and treating it four times removes 95 per cent. of the poisonous alkaloid. But such tobacco is no longer pleasant to smoke, so that the government factory finally was content to extract only 50 to 70 per cent. As regards the physiologic action of such nicotin-poor tobacco, it has been found that in cases of tobacco amblyopia and other forms of tobacco neuritis, where total abstinence was not advisable for fear of bad effects, the habit of smoking could be kept up if this kind of tobacco was used; but even these had to be restricted to two or three per day. A curious by-effect, which was discovered by chance, was that in some cases of obstipation, smoking "nicotin-free" tobacco resulted in a cure. But whether *post hoc* or *propter hoc* is still a question.

## Pharmacology

### LACTOPEPTINE.

#### Report of the Council on Pharmacy and Chemistry of the American Medical Association.

The following report was submitted to the Council by a subcommittee:

We have devoted considerable time to the investigation of Lactopeptine (powder) and report as follows:

The label on the package contains this statement: "Lactopeptine contains the five active agents of digestion—pepsin, diastase (veg. ptyalin), pancreatin, lactic acid and hydrochloric acid—combined in the proper proportion to insure the best results."

Examinations demonstrated that more than 90 per cent. of Lactopeptine is milk sugar.

The amount of pepsin contained in Lactopeptine is somewhat less than 10 per cent. of official pepsin.

Careful examination failed to show the presence of either diastase or pancreatin.

Examination demonstrated a minute trace of chlorid only, therefore the preparation does not contain any appreciable amount of hydrochloric acid. The amount of lactic acid, calculated from the quantity of potassium hydroxid required for neutralization, was found to be 3 per cent.

From the above, it is evident that Lactopeptine (powder) is at least no more efficient as a digestive agent than the ordinary Saccharated Pepsin, official in the 1890 U. S. Pharmacopeia, but replaced in the pres-

ent Pharmacopeia by the more active and dependable Pepsin.

These findings were submitted to the manufacturers of Lactopeptine, the New York Pharmacal Association, who, in their reply, stated: "Regarding the assertion that Lactopeptine does not contain pancreatin and diastase, we herewith confirm and reassert our statement that Lactopeptine is and has always been manufactured in accordance with the published formula and that the ferments referred to exist in the preparation as stated in the formula."

In view of these reasserted claims regarding the composition of Lactopeptine, another specimen was purchased in the open market. Its examination showed that it was of even poorer quality than the first specimen examined. The tests not only failed to show the presence of diastase or pancreatin, but also failed to show the presence of any appreciable amount of pepsin.

From these experiments, your subcommittee must conclude that Lactopeptine contains but small amounts of pepsin, that it contains no hydrochloric acid or mere traces only, and that it contains neither diastase nor pancreatin. Hence, the statements made by the manufacturers in regard to the composition of Lactopeptine are incorrect. Since the composition of Lactopeptine is not that given by the manufacturer, but, instead, corresponds to a weak saccharated pepsin, it is evident that the claims made as to its therapeutic value are unwarranted, exaggerated and misleading. It is, therefore, recommended that Lactopeptine be not approved. In view of the wide publicity given to the claimed composition and therapeutic value of the article, it is further recommended that this report be published.

The recommendations of the subcommittee were adopted by the Council, and in accordance therewith the report is published.

W. A. PUCKNER, Secretary.

Reduced to a few words, the above report shows that—whatever the manufacturer may have put into it—Lactopeptine as it exists on the market was found by the subcommittee to be only equal to a weak saccharated pepsin, which has but one-tenth the digestive power of the official pepsin and that Lactopeptine at times is inert.

That the subcommittee which examined Lactopeptine could find neither diastase nor pancreatin was to be expected, since it has been demonstrated repeatedly that those ferments are destroyed by pepsin in the presence of acid. The examination shows that in the absence of solvents the presence of lactic acid still enables the destruction of pancreatin and diastase. That the manufacturers should have attempted to manufacture such an impossible product, and that the medical profession should have accepted it, is not creditable to either party concerned.

That the subcommittee should fail to find the hydrochloric acid claimed to be contained in the product was a foregone conclusion. If it is remembered that ordinary hydrochloric acid is a solution of hydrogen chlorid in water and that hydrogen chlorid itself is a gas, the absurdity of the claim that it is contained in a dry powder is apparent.

It is astonishing that physicians should so long have used a product about whose therapeutic value extravagant claims have been made, when the very statements in regard to its composition should have condemned it.

### Kidney Remedies.

In THE JOURNAL, Feb. 9, 1907, page 534, we reproduced from the *British Medical Journal* analyses of several of the most widely advertised kidney remedies sold in Great Britain. The same publication now publishes a report of Warner's Safe Cure and other similar preparations.

#### WARNER'S SAFE CURE.

This preparation, according to the literature supplied by the manufacturers, is "purely vegetable," says the *British Medical Journal*, and this predilection on the part of the public for vegetable remedies is probably responsible for potassium nitrate being classed as a vegetable. Analysis of this remedy showed "the presence of potassium nitrate,



alcohol, glycerin, a trace of oil of wintergreen and vegetable extractive." No alkaloid or similar active principle was found and the extract had little distinctive taste or character, all its properties pointing strongly to its consisting largely of taraxacum, with some other extract containing a small quantity of tannin.

VENO'S SEAWEED TONIC.

The label on this preparation, according to our contemporary, states that the remedy "contains in a pleasant and agreeable form the active principle of seaweed . . . is prepared on an entirely new principle and is free from poisonous and mineral drugs." Analysis shows that the mixture contains "a small proportion of undissolved sediment, which, when collected and examined, agrees in all respects with the insoluble portion of leptandrin. Glycerin, a little phosphate, alcohol and a trace of chloroform are present and vegetable extractive. Careful examination of the latter gave evidence of the presence of the constituents of cascara sagrada, senna and rhubarb."

MUNYON'S KIDNEY CURE.

The label on this preparation is said to bear the words: "Cures Bright's disease, gravel, all urinary troubles, and pain in the back or groins from kidney diseases." It is stated that the pills were found to vary much in size, the average weight being 0.6 grain. Analysis showed them "to consist of ordinary white sugar; no trace could be detected of any alkaloid or other active principle, or of any medication. The sugar was determined quantitatively and found to be just 100 per cent. of the weight of the pilules."

Tucker's Asthma Cure.

This nostrum, which is applied by a special atomizer, is discussed by O. Anselmino (*Pharmaceutische Centralhalle*, Dec. 6, 1906), who states that he has determined by experiment the amount of fluid which is delivered by various instruments. His experiments show that at a single inhalation comprising 100 compressions of the rubber bulb about 0.15 gm. (2.5 minims) would be sprayed from the Tucker apparatus. Professor Strübing has shown that the amount may reach 0.40 gm. (6 minims), an amount which is of no small moment considering the composition of the remedy. The two analyses of Tucker's liquid for inhalation which have been made differ materially. That of Aufrecht, made in 1903, gives the following composition:

Cocain hydrochlorate	1 per cent.
Potassium nitrate	5 per cent.
Glycerin	35 per cent.
Bitter almond water	35 per cent.
Water	25 per cent.
Vegetable extractives (probably from stramonium)	4 per cent.

Bertram in 1905, on the other hand, found:

Atropin sulphate	1 per cent.
Sodium nitrate	4 per cent.
Vegetable extractives dissolved in water with some glycerin	0.52 per cent.

Anselmino found at one examination that hydrocyanic acid was present, but a second sample contained none. The former sample also contained a nitrite, but no potassium nitrate. The amount of alkaloid was 1 per cent., the greater part of which was cocain.

The inconsistencies in the analyses, they say, are partly due to the fact that proprietary remedies often vary in their composition from time to time and partly to difficulties inherent in the analysis of complex mixture. While atropin and cocain can be identified by characteristic qualitative tests, their quantitative determination is very difficult and, when the quantities are so small, it is practically impossible.

Bertram has proposed the following formula as a substitute for the inhalation liquid:

Atropin sulphate	gr. ii	15
Sodium nitrite	gr. viii	6
Glycerin	gr. xxx	2
Distilled water, to make	℥ss	15

Mix and dispense in a bottle of dark glass. To be sprayed from an atomizer and inhaled for three minutes.

Anselmino thinks, however, that a 1 per cent. solution of atropin is not safe for frequent inhalation, as atropin poisoning may occur.

Correspondence

Hypertrophy of the Turbinate.

BROOKINGS, S. D., March 4, 1907.

To the Editor:—After reading with interest the article of Dr. Kuyk in THE JOURNAL of March 2, in which he describes his method of dealing with hypertrophy of the inferior turbinate, I am prompted to describe a method which has proved successful in my hands. The observations of Dr. Kuyk on such points as excessive removal of tissue, the destruction of the function of mucous glands, etc., are wise. I would discard entirely the cautery for this work and make use of methods which are more truly surgical. The class of cases in which the cautery is still advised I believe can be treated more satisfactorily and with fewer objectionable results by the method which I have been using. I refer to those chronically swollen turbinates which shrink under the application of adrenalin and give free breathing space. The turgescence is accounted for by a dilated condition of the turbinal cavernous tissue.

Submucous cauterization of such a turbinal seems to be even less rational than the old method of cauterizing through the mucosa. For some time I have made use of a submucous operation with a saw knife, a sketch of which is shown.



The tissues are anesthetized with a non-ischemic anesthetic, such as alypin. The mucosa is made clean as possible and just before making the incision the site is swabbed with a 1 per cent. solution of alphozone. The saw knife is inserted in the anterior end of the turbinal and carried as far back as may be desirable, hugging close to the bone. With a few sawing sweeps of the knife the adjacent cavernous tissue is broken down and the knife withdrawn, leaving a single opening of the size of the width of the knife. Free bleeding will occur, which will effectually settle any doubt as to possible infection, if ordinary asepsis has been observed. The nostril is then packed tightly with compressed cotton tampons. In two or three days' time the tissues have healed and remain permanently contracted without any external disturbance.

The advantages claimed for this method, which is recommended only in such cases as are mentioned above, are: 1, It is a clean operation; 2, it is simple in technic; 3, it takes but a moment of time, lessening pain and shock; 4, the after-treatment is so simple that there is practically none; 5, the pain and discomfort following cautery or open operation are almost entirely absent; 6, the function of the mucosa is not impaired.

No claim as to originality of the operation, other than the use of the saw knife, is made, the idea being to obtain the advantages of the submucous cauterization without the reaction and disturbance of function of mucosa which may follow.

J. G. PARSONS.

The Relation of a Scarlet Fever Epidemic to the Milk Supply.

EVANSTON, ILL., Feb. 17, 1907.

To the Editor:—As a matter of information you may be interested in knowing why the Evanston Branch of the Chicago Medical Society unanimously passed a resolution stating that in the opinion of its members almost the sole source of contagion in the recent epidemic of scarlet fever was infected milk.

Last August there were several cases of scarlet fever which we were satisfied came from infection in the milk supply of a certain company which obtained its milk from a point in a neighboring state. For a short time this company gave milk from another source, and furnished affidavits and statements to show that we were mistaken. Occasional cases occurred until Jan. 13, 1907. At that time this company was supplying less than one-seventh of the milk for Evanston, and from its Evanston depot. It also supplied from this depot Wilmette, Kenilworth, Rogers Park and Edgewater. On January 14, 15, 16, 17 and 18 there were reported over a hundred cases of scarlet fever in this territory. Whole families came down at once, and



even those supposed to be immune showed symptoms. It was noticed that nearly every case used milk from the company in question, and Dr. Parkes, our commissioner, at once prohibited more milk being brought from the locality previously referred to. I think no milk was brought here from that point after Thursday, January 17, and immediately there was a falling off in new cases. Within a week there were in Evanston city 137 cases, of which 99 per cent. showed connection with this particular milk supply. These cases were scattered, not being limited to any section of town (except as hereinafter stated), nor to any church, school or social set. The west side of town, inhabited chiefly by mechanics and laborers, gets its milk supply from local herds, and very little other milk was sold there. Consequently few cases occurred there.

The Chicago authorities did not prohibit the Wisconsin milk for more than a week after Dr. Parkes acted, and as a consequence when the epidemic was subsiding in Evanston it was increasing in Chicago, until in two days more cases were reported than ever before.

Finally, though the company in question has tried to make us believe that every precaution was taken to prevent infection we are convinced—to put it mildly—that they were mistaken. We have evidence that employes at the out-of-state plant and people on the farms from which the milk came were sick with scarlet fever.

When Dr. Parkes prohibited the receipt of milk from the suspected plant, the company attempted to ship butter and condensed milk in bottles from that station. The Department of Agriculture informs me that bulk condensed milk, while heated to a degree sufficient to kill tubercle bacilli, is not sufficiently heated, probably, to kill other pathogenic germs.

HENRY B. HEMENWAY, M.D.

1243 Chicago Avenue.

#### Fig Packing in Smyrna.

FESHN, EGYPT, Feb. 14, 1907.

*To the Editor:*—During a trip to Turkey last fall I learned some interesting and disagreeable facts concerning the fig packing industry, especially at Smyrna. Nothing about the factory was clean, neither the packers, the rooms nor the utensils. The season, of course, is short and the packing employes are enlisted from the street rabble and are said to include many women of questionable character. Those who have visited oriental cities know what the hygiene and physical conditions of the packers must be, coming from the most insanitary homes and belonging to a class where diseases of the most loathsome and infectious types run riot. The figs are packed by hand (the stems being bitten off with the packers' teeth) and are molded with their hands and mouths. During the process of packing the figs are dipped in sea water. This water is taken from the bay at the very shore and is decidedly filthy. Last year the Turkish government prohibited the use of water taken near the shore, but this, like all other orders of the Turk, was simply a device of the officials to extort money from the proprietors for the privilege of taking water from the most convenient place. Between the packers' mouths and hands and the polluted waters of Smyrna Bay one may judge what wonderful possibilities there are of contracting diseases from eating "choice Smyrna figs."

Our government has taken the right course regarding pure-food products in the United States. It certainly would be well to now turn its attention to those of foreign production and importation.

H. B. HANSON.

**The Contro-Lateral Sign in Sciatica.**—Moutard-Martin and Parturier reported at the last meeting of the Soc. Méd. d Hôp. de Paris that in 5 cases of sciatica they noticed a hitherto undescribed sign of the affection. The patient reclines without a pillow, and the thigh on the sound side is raised and flexed on the pelvis as he lies still. At a certain point the flexion causes a sharp pain in the buttocks on the affected side. The pain is generally at the sciatic point, but not always, and it was noted with both neuralgia and neuritis of the sciatic nerve. They call it the "induced contro-lateral pain," and regard it as an important differentiating sign.

## Book Notices

ATLAS AND TEXT-BOOK OF HUMAN ANATOMY. By J. Sobotta, Professor of Anatomy in the University of Würzburg. Edited with additions by J. P. McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Michigan. Vols. I and II. Vol. I, Bones, Ligaments, Joints and Muscles. With 320 illustrations, mostly in colors. Cloth. Pp. 258. Price, \$6.00 net. Vol. II, Viscera, including the Heart. Cloth. Pp. 194. Price, \$6.00 net. Philadelphia: W. B. Saunders Company, 1906.

In this book the text and atlas, which were published separately in the original German, are combined. Two volumes of convenient size have already appeared, covering bones, ligaments and muscles in the first, and viscera, including the heart, in the second. The vessels, nerves, etc., remain to be treated in forthcoming parts of the work.

The book is designed for students and practitioners rather than for specialists in anatomy, and is well adapted for its purpose. The illustrations are numerous and well selected. There are many lithographic plates which, in color and outline, reproduce more closely than those in most atlases the actual appearance of dissecting room preparations. There are also a large number of extensive sections of the body in various planes. These are well illustrated and are valuable in showing the relations of viscera and other structures in their natural positions undisturbed by dissection. The representation of the individual bones of the skull each in a color of its own, in which it appears consistently throughout the series of pictures, is a good feature which should be of material help in the study of these structures. The text is simple, clear and concise and has been translated into good English by Dr. W. H. Thomas. A number of brief additions inserted in small type by the editor of the American edition add materially to its interest, and should stimulate the student to further anatomic study. Occasionally the results of recent anatomic investigation are introduced in this way, as for instance an account of the auriculo-ventricular muscle bundle of the heart, Vol. II, page 173.

The nomenclature is based on the B. N. A., the names adopted by the committee of the International Anatomical Association, which met in Basel in 1895. This nomenclature is much the best which has yet appeared. It was published entirely in Latin, and while something may be said in favor of translating the names into English in books for the use of English-speaking students, such changes are always at the expense of conformity with international usage. In this book some attempt has been made to adapt the Latin names to our vernacular. Many of them are translated into English, many are dropped, other names being substituted for them, while some are partly translated and left partly in their Latin forms. Some of these changes make the names more readily intelligible, but some are at the expense of accuracy, e. g., "greater tubercular ridge" for "crista tuberculi majoris," Figure 114. The ridge is not tubercular. "Obturator foramen" is used instead of "foramen obturatum," Vol. I, page 96. It is not logical to speak of a foramen as obturator, even though the term has been extensively used in English books. Changes are sometimes at the expense of clearness, for instance, the use of the name "ulnar lateral carpal ligament," instead of "ligamentum collaterale carpi ulnare," Figure 203.

The terms of direction and position are sometimes different from those of the B. N. A. Thus the latter uses "externus" always to indicate position near the body surface, and "lateralis" always to indicate position relatively distant from the median plane of the body. Lack of uniformity in the application and spelling of anatomic names is to be regretted, because the subject of anatomy is one especially adapted to develop in the student habits of accurate work and of accurate and definite statement of fact. While the changes made are of some advantage in that the names are more intelligible, the disadvantages seem more than sufficient to offset them, and on the whole the retention in texts and atlases of the international nomenclature unaltered would seem preferable. In this country we are in a transition stage in the matter of anatomic nomenclature, as is noted in the editor's preface, and we are still compelled to consider the older forms made familiar by



long usage. The book is a beautiful one with several new and valuable features, and is a distinct addition to the anatomical literature accessible in English.

PRECIS DE DIAGNOSTIC CHIMIQUE, MICROSCOPIQUE ET PARASITOLOGIQUE, par les docteurs Jules Guirart et L. Grimbort. 960 pp. avec 503 figures, cartonné, 15 francs.

Among the numerous recent works in the general field of clinical diagnosis, this deserves prominent mention. Chemical, microscopic and parasitologic methods are coming daily into more general clinical use; yet students and investigators are confronted by the great difficulty that the desired data are scattered through such diverse and often inaccessible publications. This is peculiarly true of the parasitologic side of the question. That these authors, in spite of their incisive and condensed manner of presentation, have taken 960 pages to present a compendium, is at once evidence of the extent of the field and of their own command of it.

The work opens with two chapters on bacteriologic technique, after which are treated *seriatim* in distinct chapters the examination of the blood, pus, pathologic fluids, milk, nasal mucus, sputum, materials from the mouth, pharynx, stomach, intestine, liver, skin, ear, eye and genital organs, the urine and finally chemical reactions and tests. In each chapter the organ and its products, normal and abnormal, are discussed from the standpoint successively of chemistry, microscopy and parasitology, which latter term is taken to include bacteria, fungi and animal parasites. The methods recommended have been selected with a view to eliminate the more difficult or doubtful, and to present primarily such as are useable by the educated physician. Every effort has been exerted to make the compend thoroughly practical and, as the preface states, "even though a large number of physicians still disdain the methods of the laboratory, as incompatible with the exigencies of daily practice, it must be recognized that these methods demand increasing attention from the clinician mindful of his responsibility. . . . To-day the physician who holds to the ancient diagnosis may be compared to the surgeon who still smiles at antisepsis and asepsis."

The tables are numerous and well arranged and the illustrations abundant. In the latter color has often been used to good effect in the differentiation of such appearances as are presented by stained preparations. Some figures of the bacteria are, however, rather crude, and in general this group is the least satisfactorily illustrated.

The usual work on clinical diagnosis handles animal parasites in a very superficial and inadequate fashion. The reverse is true of the work under consideration. The detailed methods for conducting examinations, the structures available for differential diagnosis and the clinical importance of various species are admirably set forth. The illustrations are selected with care from the best authorities, though unfortunately their source is not always given, and the text represents the most recent discoveries in this rapidly expanding field. One can not help regretting the absence of references to the principal sources of information, but in a compendium, already at the maximum by virtue of the field covered, lack of space is probably a satisfactory explanation. American students and investigators will thank the authors for their service in producing so comprehensive and practical a work.

TOXINS AND VENOMS, and Their Antibodies. By Em. Pozzi-Escot. Authorized Translation by A. I. Cohn, Ph.D. First Edition. Cloth. Pp. 101. Price, \$1.00 net. New York: John Wiley & Sons, 1906.

This little book is a curiosity in its way. The complex subject of immunity, antigens and antibodies is discussed in a superficial, incomplete, and at times reckless manner. Thus we are told that a typhoid toxin is obtainable from the typhoid bacillus and that "this toxin, injected into guinea-pigs, develops in them typhoid fever." Unintelligible phrases, such as "therapeutic diphtheritic toxin," "pathologic diphtheria," "antitoxic serums with a specific but transient immunity," "the serum of vaccinated rabbits is an antivenom toward erysipelas," etc., occur frequently. The translation may be responsible for some of these peculiarities, because it presents many evidences of having been made by one unfamiliar with the subject. Careful search fails to reveal a single reference to an American author.

## Miscellany

### Prevention of Yellow Fever in Havana.

Dr. J. R. Kean, U. S. Army, adviser to the sanitary department of Cuba, now under the provisional administration of the United States, sends us the following interesting summary of the system for the prevention of yellow fever in Havana. As now in operation this comprises the following:

1. Methods to prevent the breeding of stegomyia. 2. Methods of disinfection to destroy infected mosquitoes when cases occur. 3. Methods for the detection and reporting of yellow fever.

1. This is recognized as the basic or fundamental procedure and is organized as follows: The city, which has a population of approximately 300,000, is divided into 42 districts, to each of which is assigned a district inspector, who makes house-to-house inspections. He is accompanied by two laborers, who carry cans of oil and a ladder for the purpose of inspecting tanks, gutters, etc. This inspector is in uniform and wears a badge bearing the seal of the sanitary department; he also has a written paper, showing his authority. He inspects his district, following the streets in prescribed order, and each afternoon leaves at the sanitary department a report showing the sanitary condition of each house inspected. The next morning he must begin his inspection at the house next to the one where his inspections of the preceding day terminated. Four special inspectors supervise the work of the district inspectors, two of them being medical officers of the U. S. Army. In addition to seeing that the inspectors fulfill the prescribed hours of work, they reinspect houses in the different districts which have been recently reported on by the district inspectors as being free from breeding places for mosquitoes. If larvae are found on these premises they are collected and brought to the department as evidence against the district inspector, who when convicted in this way of negligence, is punished first by stoppage of ten days' pay, and if the offense is repeated, by dismissal.

Mosquito work in Havana is simplified by its excellent water supply and the comparatively small number of cisterns. All cisterns, cesspools and tanks are required by law to be screened, so as to be mosquito-proof; and the enforcement of this sanitary ordinance is one of the special duties of the district inspectors. The fact that mosquitoes are being bred on the premises of any householder is a violation of the ordinances which, after proper warning and explanation, is punished by a fine. This system of house-to-house inspection has been in operation since November, and the people have become educated as to its object, so that there is now little friction produced by it, and it is difficult to find either mosquito larvae or adult stegomyia in Havana or its suburbs.

One division of the mosquito work is devoted to the draining, or where this is not possible, the petrolization of ponds, pools or other collections of water in open lots, streets and fields, and consists of two petroleum brigades and two brigades for ditching and draining. The petroleum brigades also make systematic collection of tin cans, crocks, bottles and other rubbish which may collect water, and provide breeding places for mosquitoes.

2. The disinfecting brigades, which are three in number, are composed of trained men with overseers of long experience, and follow the technique which was devised by Col. W. C. Gorgas, now chief sanitary officer at Panama, who was chief sanitary officer of Havana in 1901. When a case of fever is reported which is regarded as suspicious, a disinfecting brigade proceeds at once to the house occupied by the patient, who is, if possible, first removed to the hospital for contagious diseases. If he can not be moved, his room is isolated and the rest of the house disinfecting, together with all of the other houses in the immediate neighborhood. Sulphur is the fumigating agent habitually used, pyrethrum being used only in special cases where sulphur would by its injury to fabrics, furniture, etc., occasion serious financial loss. In such cases the mosquitoes are carefully collected and destroyed. The disinfecting squad is very thorough in its procedure of closing all cracks and openings. Large openings are closed by a specially made Manila paper or by canvas.



3. Physicians are required to report all suspicious cases, and also all cases of diseases such as dengue and influenza, which may be mistaken for it. Such cases when reported are seen by the board of diagnosis, which is composed of the chief sanitary officer, the director of the Hospital for Contagious Diseases, and three other distinguished physicians of Havana. If the physician prefers to do so, he can have his patient visited by two members of the board instead of the full board.

The great majority of non-immunes in Havana are Spanish immigrants, and these furnish the great majority of the cases of yellow fever. For example, of the 71 reported cases of yellow fever in Havana during the year 1906, all were Spanish except 8. Of the 41 cases reported from the rest of the island outside of the city of Havana in 1906, all were Spanish except one, who was a Cuban child. These Spanish immigrants have a custom which enormously contributes to the detection of cases of yellow fever and other contagious diseases among them. Each Spanish immigrant, on his arrival in Cuba, joins one of the cooperative societies or clubs, which are made up of the natives of the several provinces of Spain. Each one of these clubs supports a quinta or hospital, to which each member has the right to admission for treatment in case of sickness. These quintas are among the largest and best equipped hospitals in Havana. They are required to put all non-immune patients who have fever in screened wards, and to point them out to the medical inspector of the sanitary department, who visits each quinta daily. In this way the cases of yellow fever occurring among the Spanish non-immunes in Havana are in the great majority of cases isolated and recognized with a certainty which would otherwise be totally impossible; and so the failure on the part of physicians to report cases, which, of course, exists in Havana as in other cities, is minimized accordingly. A reliability is thus given to the sanitary reports of the city of Havana, which it would be very difficult for any other city of like size to obtain. There has been no yellow fever in Havana since December 8, except one isolated case, which occurred Dec. 24, 1906.

**Peruna a Beverage, not a Medicine.**—The test case brought by the New York State Commissioner of Excise to establish the character of peruna as a liquor and subject to all provisions of the law requiring the sale of whisky, brandy, wines, ale, beer, etc., was tried at Syracuse, Dec. 10-15, 1906, before Supreme Court Justice Rogers and a jury. Five of six bottles of peruna purchased by the commissioner were analyzed and the analysts testified that the preparation contained between 26 and 27 per cent. alcohol, and only traces of cubebs and ginger and a small percentage of solids not drugs. The contents of the sixth bottle and a part of one other bottle were given to the defendants for analysis by their chemist, whose analysis showed substantially the same results as obtained by the commissioner's chemists. Justice Rogers, to simplify matters for the jury, gave them the following list of questions:

1. Is the preparation contained in the five bottles of peruna produced by the plaintiff, consisting of water, alcohol and certain drugs, a proper remedy for the cure of Bright's disease?
2. Is the preparation contained in the five bottles of peruna a proper remedy for the treatment and cure of acute catarrh?
3. Is the preparation contained in the five bottles of peruna a proper remedy for the treatment and cure of chronic catarrh?
4. Is the preparation a proper treatment and cure for disease of the mucous membrane?
5. Was the quantity of alcohol, 26 or 27 per cent., contained in the preparation in question necessary to hold the drugs actually put therein in the solution?
6. Was the quantity of drugs contained in one bottle of the alcohol, diluted with water, sufficient in amount in tablespoonful doses, three or four times a day, to produce any appreciable remedial effect?

The jury answered all six of the questions in the negative, deciding, in effect, that peruna is not a remedy for the treatment of any disease, and that it is so much a liquor that the sale should require a liquor tax certificate. The defendants were granted a thirty days' stay of execution and will appeal to the Appellate Court. The *Oil, Paint and Drug Reporter* states that since the case was commenced the Peruna Drug Manufacturing Company has changed the formula of the preparation so that another test case will be necessary to determine whether or not the amended peruna is a liquor or a medicine, and that this decision, therefore, applies only to

the preparation which is now manufactured by another company according to the old peruna formula.

**The Relation of Alcohol to Tuberculosis.**—The criticisms by Wolff, in the *Beitr. z. Klin. d. Tuberkulose*, iv, 3, of the assumption that alcohol causes tuberculosis and should not be used in the treatment of this disease, have called forth a rejoinder in the *Prag. med. Wochschr.*, 1906, No. 12, by Holitscher. While it is difficult to draw a correct conclusion as to the etiologic rôle of alcohol in tuberculosis from general vital statistics, on account of the numerous factors to be taken into consideration, the statistics of certain trades, such as brewers, distillers, waiters, etc., indicate that alcohol plays a certain direct part in the causation of consumption. Experiments also have shown that tuberculous animals die sooner when fed on alcohol. The large proportion of alcoholics found among phthisical patients, varying from 40 per cent. (Liebe) to 88 per cent. (Barbier, Rendu and Constan), is further evidence. The small number reported from certain clinics is probably due to the elastic use of the term "abuse of alcohol" by some observers. The value of these statistics, however, is impaired by the fact that the proportion of alcoholics to the entire population is not known. The indirect action of alcohol in producing poverty and other unfavorable influences should not be neglected, and its influence on posterity especially should be emphasized more than Wolff has done. In regard to the use of alcohol in sanatoriums for tuberculosis, Holitscher contends that its use at the table should be condemned and that whatever is given should be administered in definite doses as a medicine. He takes the view that although alcohol has been shown to be oxidizable in the organism, it ought not therefore to be regarded as a food any more than morphin. The use of alcoholic drinks in consumptive sanatoriums is unnecessary, and should be avoided, as the valuable hygienic lesson of the injurious effects of these drinks can be taught effectively by the example of these institutions. "To-day the indispensability of a 'moderate' use of alcohol is proclaimed by many. But it is not to be doubted that even this teaching, no longer in accord with the progress of science, will find its place among the obsolete; and the sanatorium barring alcohol will hold the field as the only justifiable and truly exemplary and hygienic one."

**Restoration of Vision by Transplantation of Cornea.**—Zirm gives an illustrated description in the *Wien. klin. Wochenschr.*, 1907, page 61, of what he styles the first successful graft of cornea in the human eye. He ascribes his success to the fact that he used the vigorous cornea from the eye of a lad of 11, just removed on account of injury from an iron splinter, and that he performed the operation during deep anesthesia, without antiseptics, with the von Hippel trephine. The flap was kept between two pieces of gauze moistened with physiologic salt solution and was engrafted by manipulating the gauze to bring it into place without touching it with an instrument. The graft was held in place by two crossed threads passed through the conjunctiva of the eyeball. His patient had been blinded by a caustic in both eyes, and the graft has restored vision in the left eye so that his earning capacity is restored. The condition of the graft has remained satisfactory during the 13 months since the operation, but in the other eye it caused disturbances compelling its removal. The case was mentioned by our Vienna correspondent on page 812.

**Injection of Fresh, Normal Serum to Arrest Hemorrhage.**—P. E. Weil announces that he has found intravenous injection of 15 cc. of fresh blood serum, or twice this amount injected subcutaneously, by far the most effectual means to arrest hemorrhage. In hemophilia, in purpura, in pernicious anemia accompanying purpura, in short, in all cases of a constitutional tendency to hemorrhage the effects realized were sometimes amazing, as he relates in detail in an article published in the *Tribune Médicale* for Jan. 12, 1907. The serum from man, rabbit, horse or beef serum all proved effectual, but a few by-effects were observed with the latter, and he advises the use of human or rabbit serum, freshly drawn. The above dosage is for adults; half the amounts are sufficient for children. He explains the action of the serum as stimulating the production of the coagulating ferment or rendering more active the amount already present.



## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

### PROPOSED OSTEOPATHIC BILLS.

#### Persistent, Concerted Action by Osteopaths for Favorable Legislation in Many States.

A summary of the present status of osteopathic legislation will not be without interest and profit. Up to Jan. 1, 1907, twenty-nine states had adopted some provisions for the licensing of osteopaths. Of these, eleven have adopted amendments to the medical practice act, authorizing the existing state board to examine and license osteopaths. Three states have added an osteopath to the state board; in eleven states special osteopathic examining boards have been established; in three states osteopaths are exempt from the operation of medical practice laws; while in one state they are allowed to pursue their calling after registration in the office of the county clerk.

There are, then, twenty states in which no osteopathic legislation has as yet been secured. In seventeen of these states the legislature is now in session; in twelve of these osteopathic bills were promptly introduced. In addition, bills were introduced in seven states with a view to modifying existing osteopathic legislation. From these facts, it might be claimed by the applicants for special legislation for osteopaths, that the simultaneous appearance of nineteen bills in one month is conclusive evidence of the universal and overwhelming demand on the part of the public for osteopathic legislation. When, however, we examine the facts, this apparent demand, as far as the public is concerned, disappears. On comparing the bills the surprising discovery is made that, although supposed to originate independently in state legislatures, separated in some cases by thousands of miles, these bills all bear the evidence of being the work of one hand. For example, House Bill No. 31, introduced Jan. 14, 1907, in the legislature of the state of West Virginia, contains the following provisions:

Section 1 provides for the appointment of a state board of osteopathic examination and registration of five members.

Section 2 provides that any person, before engaging in the practice of osteopathy, shall make application for a certificate, stating name, age and residence, evidence of preliminary education, date of diploma of graduation from an osteopathic school, and name of the school of osteopathy from which the applicant graduated. This section also provides that the board may, at its discretion, accept, as the equivalent of any part or all of the second, third and fourth requirements (that is, of all educational requirements) evidence of five or more years' practice of osteopathy. The section further provides that the board may, at its discretion, dispense entirely with an examination in the case of an osteopath licensed to practice osteopathy in any other state or territory, whose requirements are of equal grade, or of any osteopath who has been in the actual practice of osteopathy for five years.

Section 3, lest some one might be omitted and fail to come under the generous provisions of the preceding section, provides that any person over 21 may make application for a certificate and on examination may be licensed.

Section 4 provides for fees.

Section 5 specifies that osteopaths shall be subject to all state and municipal regulations regarding contagious and infectious diseases.

Section 6 provides for recording certificates in the county clerk's office.

Section 7 provides penalties for the violation of the act.

Section 8 specifically provides that osteopathy is not the practice of medicine, although section 5 specifies that osteopaths shall observe and be subject to all state and municipal regulations the same as "physicians of other schools of medicine."

Section 9 provides for reports on the part of the officers of this board.

In the Oregon legislature Mr. Wilson introduced House bill No. 236, Jan. 23, 1907, entitled, "An act to regulate the practice of the system, method or science of treating diseases, known as osteopathy, and creating a board of examination and registration of the same and providing for the violation of this act." In this bill the definition of osteopathy, which is found

in section 8 of the West Virginia bill, is switched to section 1, and is considerably shortened, but the phraseology is identical. Section 2 of the Oregon bill is, with the exception of some slight changes, identical in verbiage with section 1 of the West Virginia bill. In like manner the succeeding sections of the bill coincide almost absolutely. The Oregon bill gives the board authority to accept five years' experience in place of all educational requirements, and also makes it mandatory on the board to grant a license to any licensee of any other state. The absolutely identical wording proves clearly that the Oregon and West Virginia bills both emanated from the same source. Senate bill 5221, introduced by Senator Foraker of Ohio in the United States Senate, evidently emanated from the same source, although it was rewritten and differed somewhat in verbiage. It provided for an osteopathic licensing board for the District of Columbia and contained the general reciprocity clause found in the other bills. It also contained the following paragraph under section 8:

And said board of osteopathic examiners is further authorized and directed to issue in favor of its licentiates such certificates, if any, as may be necessary to enable such licentiates, without examination, to obtain license to practice osteopathy in other jurisdictions.

It is evident that the object of the osteopaths in endeavoring to get a bill through Congress was to have Congress recognize osteopathy as well as to make certificates issued by the District of Columbia good all over the country. This bill was killed in committee by a vote of two to one.

Assembly bill No. 61, introduced into the California legislature by Mr. Lemon; Senate bill No. 21, introduced in Illinois by Mr. Chafee; House bill No. 66, introduced in Illinois by Mr. Allen; House bill No. 790, Massachusetts; House bill No. 690, Pennsylvania; Senate bill No. 28, Utah, all possess the same general characteristics. A number of the bills contain some special features which are interesting. For instance, the Illinois bill provides that "any person within thirty days after the organization of the board, holding a certificate to treat human ailments without the use of medicine and presenting such certificate, shall be licensed by the board, provided he files a certificate of the Illinois Osteopathic Association, setting forth that he is a graduate of a reputable school of osteopathy, etc."

However, all the bills provide for a separate board of osteopathic examiners and for an examination before licensing, but with so many exemptions as practically to nullify the examining features. Each one of them, except the District of Columbia bill, contains a specific definition of osteopathy and specifies that it is not, in any sense, the practice of medicine and each provides for unlimited license without examination of any person already licensed in any other state "having an equal standing." As this clause appears in all of these bills this provision practically means that, having been licensed in one state, there is no limit to the extension of the right of the individual to practice osteopathy.

It is evident that this simultaneous flood of practically identical osteopathic bills is the result of a well-planned effort to secure, in each state, legislation which will give the individual osteopath all the privileges of a member of the medical profession, while expressly stating that he is not practicing medicine. In addition, these bills provide for unlimited and practically universal reciprocity, and also permit the board to substitute a variety of other qualifications for the educational requirements, thus allowing the licensing of practically any one whom the board may wish to license.

#### Society Secretaries to Confer.

Dr. John B. Donaldson, the secretary of the Washington County (Pa.) Medical Society, having been requested to arrange for a meeting of secretaries of county societies at the Reading meeting of the state society, September 23-26, has issued a circular letter to the county secretaries urging them to be present and to utilize the features of the meeting. The idea of such a meeting of county secretaries is excellent and should be made a regular feature of every state society meeting. As Dr. Donaldson well says, "a great deal depends on the secretary." The results of this innovation will be carefully watched and, we hope, imitated by other state societies.



## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

IOWA Board of Medical Examiners, Des Moines, March 19-21. Secretary, Dr. Louis A. Thomas, Des Moines.

OKLAHOMA Board of Medical Examiners, Guthrie, March 26-27. Secretary, Dr. J. W. Baker, Enid.

UTAH State Board of Medical Examiners, Salt Lake City, April 1. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, April 1-2. Secretary, Dr. Aniel Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, April 2. Secretary, Dr. S. D. Van Meter, 1723 Tremont St., Denver.

IDAHO State Board of Medical Examiners, Boise, April 2. Secretary, Dr. J. L. Conant, Jr., Genesee.

MINNESOTA State Board of Medical Examiners, the Old Capitol, St. Paul, April 2. Secretary, Dr. W. S. Fullerton, St. Paul.

MONTANA State Board of Medical Examiners, the Capitol, Helena, April 2. Secretary, Dr. W. C. Riddell, Helena.

WEST VIRGINIA State Board of Health, Wheeling, April 2. Secretary, Dr. H. A. Barbee, Point Pleasant.

GEORGIA ECLECTIC Board of Medical Examiners, Senate Chamber, State Capitol, Atlanta, first week in April. Secretary, Dr. L. F. Rugg, Madison.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, first week in April. Secretary, Dr. E. R. Anthony, Griffin.

KENTUCKY State Board of Health, City Hall, Louisville, April 2-3. Secretary, Dr. J. N. McCormack, Bowling Green.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, April 2-4. Secretary, Dr. H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, State House, Providence, April 4. Secretary, Dr. Gardner T. Swarts, Providence.

ARKANSAS State Medical Board, Little Rock, April 9. Secretary, Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Medical Board, Little Rock, April 9. Secretary, Dr. V. H. Hallman, Hot Springs.

DISTRICT OF COLUMBIA Board of Supervisors in Medicine, Washington, April 12. Secretary, Dr. Geo. C. Ober, Washington.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 16. Secretary, Dr. Chas. L. Tisdale, San Francisco, Cal.

MISSOURI State Board of Health, St. Louis and Kansas City, April 16-18. Secretary, Dr. J. A. B. Adeock, Warrensburg.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, April 17-19. Secretary, Dr. J. A. Egan, Springfield.

TEXAS State Board of Medical Examiners, Austin, April 30-May 2. Secretary, Dr. T. T. Jackson, San Antonio.

TEXAS Eclectic Medical Board, Dallas, about April 25. Secretary, Dr. L. S. Downs, Galveston.

**Amended Law in West Virginia.**—Dr. S. L. Jepson, member of the West Virginia State Committee on Medical Education, writes that an amendment to the Medical Practice Act has been secured which provides that hereafter, to obtain a license to practice medicine in West Virginia, the candidate must be a graduate of a "reputable medical college recognized as such by the State Board of Health." Another amendment makes provision for reciprocity.

**Increased Entrance Requirements.**—The faculties of the following colleges have voted to require a preliminary year in physics, chemistry, biology and languages to apply to all students beginning medical study after Jan. 1, 1910:

Illinois Medical College, Chicago.  
College of Medicine and Surgery, Chicago.  
Kansas Medical College, Topeka.  
Oakland College of Medicine and Surgery, California.  
Amerlean College of Medicine and Surgery, Chicago (effective, 1908).

**Graduation Required in Hawaii.**—Dr. George Herbert, chairman of the Board of Medical Examiners, and Dr. F. Howard Humphris, secretary of the Hawaiian Territorial Medical Society, state that in order to practice medicine in Hawaii the candidate must have graduated from a medical college having not less than four years of study.

**Higher Entrance Requirements in Minnesota.**—By a recent ruling of the Minnesota State Board of Medical Examiners, "beginning June, 1911, all applicants for license to practice medicine in that state, graduating in that or a subsequent year, must have satisfied all the entrance requirements, and completed the first two years' work of the College of Science, Literature and the Arts of the University of Minnesota, or present credits for a course elsewhere which is ruled by the said college . . . as equivalent thereto; provided, that a medical student may be matriculated with a condition in not more than one full-year subject or two half-year subjects." All conditions must be removed before beginning the second course in medicine. This ruling, therefore, applies to all students matriculating for the session of 1907-8 or thereafter.

Another ruling restores the one-year residence clause to the conditions for reciprocity.

## Marriages

J. A. PACKER, M.D., Selma, La., to Miss Mattie Adams of Lovelady, Texas, March 3.

L. P. SPRAGUE, M.D., Rutland, Vt., to Miss Maude Thurber of Brainardsville, N. Y., recently.

CARL P. STRUVE, M.D., South Elgin, Ill., to Miss Jessie Margaret Burns of Chicago, February 24.

ISAAC EUGENE NERVIG, M.D., to Miss Edna Shadle, both of Sioux City, Iowa, at Harvey, Ill., March 2.

FRED B. TAPLEY, M.D., Sacramento, to Miss Alice Stewart of Amador County, Cal., at Vallejo, Cal., recently.

BENNETT GROVE WILLIS, M.D., Hartington, Neb., to Miss Maud Elizabeth Ray, at Omaha, Neb., February 6.

JOHN HENRY WADE, M.D., Ashland, Ky., to Mrs. Edith Stephens of near Point Pleasant, W. Va., February 26.

RAYMOND FRANKLIN METCALFE, M.D., captain and assistant surgeon, U. S. Army, to Mrs. Gertrude Marshall Beverly of Columbus, Ohio, in New York City, February 27.

## Deaths

**Benjamin Franklin Price, M.D.** Cincinnati College of Medicine and Surgery, 1873; a member of the American Medical Association; a veteran of the Civil War; for 25 years a resident of Braddock, Pa.; one of the organizers of the Braddock Medical Association, and a founder of the Braddock Hospital; for six years the president of the local board of health, and for one term a councilor; died at his home in Portland, Ohio, February 22, from tuberculosis, after an illness of more than a year, aged 61.

**Albon Z. Howard, M.D.** Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, 1879; a member of the American Medical Association, Oshkosh Medical Club, and Brainerd District Medical Society; a well-known specialist on diseases of the stomach and nervous system, of Oshkosh, Wis., died at his home in that city, February 24, from diabetes, after an illness of one year, aged 54. At the funeral members of the Oshkosh Medical Club acted as pall-bearers.

**George Bingham Fowler, M.D.** College of Physicians and Surgeons in the City of New York, 1871; a member of the state and county medical societies; health commissioner of New York City under the administration of Mayor Strong; founder of the *Dietetic Gazette*, and for six years associate editor of the *American Journal of Obstetrics*, died at his home in New York City, from hemorrhage of the stomach, March 6, aged 59.

**George C. Lewis, M.D.** Medical College of Ohio, Medical Department of University of Cincinnati, 1875; a member of the state and county medical societies; for eight years coroner of Jefferson County, Ind., died suddenly from heart disease, at his home in Madison, February 27, aged 51. At a special meeting of the Jefferson County Medical Society appropriate resolutions regarding the death of Dr. Lewis were adopted.

**David G. Linvill, M.D.** Western Reserve University Medical College, Cleveland, Ohio, 1849; a member of the state and county medical societies; said to have been the oldest practitioner of Northern Indiana and a pioneer of Whitley County, where he had lived for more than 60 years, died at his home in Columbia City, from senile debility, after an illness of two weeks, February 18, aged 86.

**Eugene Marguerat, M.D.** New York University Medical College, 1859; a member of the state medical society, and in 1868 president of the Cook County Medical Society; a surgeon in the Army throughout the Civil War, and one of the best known practitioners of Chicago, died at his home, March 7, from cerebral hemorrhage, after an illness of one week, aged 78.

**Lewis Frederick Suesserott, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1879; a member of the state and county medical societies; from 1886 to 1902 coroner of Franklin County, Pa., and for six years physician to the jail, died at his home in Chambersburg, Pa., March 2, from pleuro-pneumonia, after an illness of four days, aged 50.

**William R. Blakeslee, M.D.** New York University, New York City, 1875; a veteran of the Civil War; formerly a practitioner of Virginia, and a member of the medical society of that state and of Pennsylvania; who recently returned from a trip to British Guiana, where he had gone in search of health, died February 26, at his office in Lestershire, N. Y., aged 61.

**Clifton Scott, M.D.** Kentucky School of Medicine, Louisville, 1883; a member of the American Medical Association; for-



merly professor of science in Highland Park College, Des Moines, Iowa, died at Mercy Hospital, Des Moines, February 27, from pneumonia following an attack of cerebral hemorrhage, after an illness of one week, aged 54.

Elisha E. Mullinix, M.D. University of Maryland School of Medicine, Baltimore, 1874; a member of the American Medical Association; a member of the staff of the Frederick City Hospital, and one of the most esteemed practitioners of Frederick County, Md., died at his home in Urbana, March 5, from pneumonia, after an illness of one week, aged 56.

Ryan G. Mendenhall, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1867; New York University Medical College, New York City, 1872; for two terms a member of the state legislature from Linn County, Kan., and at the time of his death mayor of La Cygne, died at his home, February 27, from heart disease.

William Henry Johnston, M.D. Bellevue Hospital Medical College, New York City, 1871; a member of the state medical society and once president of the Lewis County Medical Society; a veteran of the Civil War, died at his home in Port Leyden, N. Y., March 1, after an illness of more than a year, aged 66.

Columbus Hixson, M.D. Miami Medical College, Cincinnati, 1866; for more than 30 years a practitioner of Kansas City, and one of the founders of Kansas City Medical College, died at the General Hospital, Kansas City, March 6, five days after injuries received by being run down by a hack, aged 80.

Thomas Crawford McNeill, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1860; a surgeon in General Forrest's cavalry during the Civil War, died at his home in Paris, Tenn., February 9, from paralysis, after an illness of more than four years, aged 77.

Austin F. Denlinger, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1883; a member of the medical pension examining board of Carbon County, Pa., died at his home in Lansford, March 1, from hemorrhages, after an illness of two days, aged 50.

Jacob Kulp Cassel, M.D. Pennsylvania Medical College, Gettysburg, 1871; assistant surgeon of the Fifty-seventh Pennsylvania Volunteer Infantry during the Civil War, died at his home in Philadelphia, March 2, after a short illness, aged 72.

William S. D. Johnson, M.D. Medical Department of the University of Missouri, St. Louis, 1850; for many years a practitioner of La Belle, Mo., died at the home of his son in Versailles, Ill., February 22, after an illness of five days, aged 83.

William Aaron Butman, M.D. Baltimore Medical College, 1898; secretary of the Boston Medical Society from 1902 to 1905, died at his home in Somerville, Mass., February 11, from tuberculosis, after an illness of several years, aged 37.

George A. Hayunga, M.D. New York University, New York City, 1863; a surgeon in the United States Navy from 1861 to 1866, and thereafter a practitioner of New York City, died at the home of his nephew in New York City, March 6, aged 67.

Conrad Karges, M.D. Washington University, Medical Department, St. Louis, 1883; for many years mortuary clerk in the St. Louis health department, died suddenly at his home in St. Louis, February 24, from heart disease, aged 58.

William Henry May, M.D. College of Medicine, Syracuse (N. Y.) University, 1890; a member of the state and county medical societies; bacteriologist of Syracuse, N. Y., died in a hospital in that city, March 2, after an operation, aged 42.

Horace Still, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1877; for several years a member of the local school board, died at his home in Norristown, March 1, from influenza, after an illness of one week, aged 51.

Hance C. Chesney, M.D. Medical College of Fort Wayne, Ind., 1883; for several years justice of the peace at Custer City, Pa., died at his home in that place, March 1, from uremia, after an illness of two days, aged 44.

Otto F. Voigt, M.D. American Medical College, St. Louis, 1886; died at his home in Bailey's Harbor, Wis., February 23, from heart disease, seven weeks after a fall in which he sustained severe injuries, aged 62.

D. G. Shirley, M.D. University of Tennessee, Medical Department, Nashville, 1888; a member of the state and county medical societies; a practitioner of Tyler, Texas, died in West Dallas, February 25, aged 47.

James L. Carr, M.D. Cincinnati College of Medicine and Surgery, 1877; a member of the state and county medical societies, of Monon, Ind., died suddenly from heart disease at that place, February 22.

Oscar A. Armstrong, M.D. Medical Department of Fort Worth (Texas) University, 1899; died at his home in Neola, Texas, February 1, from pneumonia, after an illness of eleven days, aged 32.

George Lee Fife, M.D. Western Pennsylvania Medical College, Pittsburgh, 1890; died at his home at Blair Station, Pa., from pneumonia, February 26, after an illness of four days, aged 39.

Frederick G. Merrill, M.D. Bellevue Hospital Medical College, New York City, 1879; of New York City, died from uremia, at the home of his brother in Skowhegan, Me., February 25, aged 51.

Frank W. Homer, M.D. Hahnemann Medical College and Hospital, Chicago, 1897; of Spokane, Wash., died at his farm on White Bluff Prairie, from nephritis, February 23, aged 38.

James C. Flynt, M.D. University of Louisville (Ky.) Medical Department, 1878; died at his home in Gurley, Ala., from influenza, after a long illness, February 25, aged 71.

Mortimer F. Sweeting, M.D. New York Homeopathic Medical College and Hospital, 1850; died suddenly from pneumonia, at his home in South Butler, N. Y., aged 80.

Hamilton J. Coffroth, M.D. University of Maryland School of Medicine, Baltimore, 1879; of Greensboro, Md., died at the University Hospital, Baltimore, March 7, aged 50.

Joseph D. Livezey, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1871; died at his home in Philadelphia, February 25, aged 65.

Albert W. La Wall, M.D. University of Buffalo, Medical Department, 1897; died at his home in Seio, N. Y., February 22, from heart disease, aged 33.

Charles Reed, M.D. College of Physicians and Surgeons in the City of New York, 1879; died at his home in Brooklyn, March 5, from pneumonia, aged 51.

William Clay McGee, M.D. Baltimore Medical College, 1894; died at his home in Canton, Ohio, February 1, after an illness of four weeks, aged 39.

James L. Williams, M.D. Miami Medical College, Cincinnati, 1876; died at his home in Indianapolis, February 27, after a long illness, aged 67.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

### KENTUCKY PRESIDENTS OF THE AMERICAN MEDICAL ASSOCIATION.

SPRINGFIELD, ILL., Feb. 27, 1907.

*To the Editor:*—Some years ago I saw the statement that a larger percentage of ex-presidents of the Association were either natives of Kentucky, graduates of Kentucky schools or connected with Kentucky schools than from any other state. Can you give me any information on this subject? H. J.

ANSWER.—Ten ex-presidents of the American Medical Association are or have been associated with Kentucky.

At the twelfth annual meeting, held in Louisville, Ky., in 1859, Dr. Henry Miller of that city was elected president. Dr. Miller was born in Glasgow, Ky., Nov. 1, 1800, and died in Louisville, Feb. 8, 1874. He was professor of obstetrics in the University of Louisville.

At the nineteenth annual meeting held in Washington, D. C., in 1868, Dr. William O. Baldwin, of Montgomery, Ala., was elected President. Dr. Baldwin was born in Montgomery, Aug. 9, 1818, and died in the same city, May 30, 1886. He was graduated in medicine from Transylvania University, Kentucky, in 1837.

At the twenty-second annual meeting held in San Francisco, 1871, Dr. David W. Yandell, of Louisville, was elected president. Dr. Yandell was born in Murfreesboro, Tenn., April 4, 1826. He was professor of surgery in the University of Louisville, and died in Louisville, May 3, 1898.

At the twenty-eighth annual meeting, held in Chicago, 1877, Dr. Tobias G. Richardson, of New Orleans, was elected president. Dr. Richardson was born in Lexington, Ky., and was graduated from the University of Louisville in 1848. He died in New Orleans, May 26, 1892.

At the thirtieth annual meeting held in Atlanta, Ga., in 1879, Dr. Lewis A. Sayre, of New York City, was elected president. Dr. Sayre was born in New Jersey in 1820, and was graduated from the Transylvania University, Ky., with the degree of A.B., in 1839. His medical education was obtained at the College of Physicians and Surgeons in New York.

At the thirty-first annual meeting held in New York City, in



1880, Dr. John T. Hodgen of St. Louis, was elected president. Dr. Hodgen was born in Hodgenville, Ky., Jan. 17, 1826, and died in St. Louis, April 28, 1882.

At the thirty-seventh annual meeting held in St. Louis, in 1886, Dr. Elisha H. Gregory was elected president. Dr. Gregory was born near Russellville, Ky., Sept. 10, 1824, and was graduated from the St. Louis University in 1849.

At the forty-first annual meeting, held in Nashville, Tenn., in 1890, Dr. William T. Briggs of Nashville was elected president. Dr. Briggs was born in Bowling Green, Ky., Dec. 4, 1829, and died at Nashville, June 13, 1894.

At the forty-ninth annual session, held in Denver, 1898, Dr. Joseph McDowell Mathews, of Louisville, was elected president. Dr. Mathews was born in Newcastle, Ky., in 1847, and was graduated from the University of Louisville in 1867.

At the fifty-fifth annual session, held at Atlantic City, Dr. Lewis S. McMurtry, of Louisville, Ky., was elected president. Dr. McMurtry was born in Central City, Ky., and was graduated from Tulane University in 1873.

#### COMPOSITION OF "KARGON."

ST. LOUIS, March 4, 1907.

*To the Editor:*—Can you give me any information regarding the composition of "Kargon," one of the ingredients of a prescription advertised in the daily press as a "simple home mixture which any druggist can put up?"

M. J.

ANSWER.—From the reports of our chemists who analysed this nostrum it appears to contain potassium acetate and buchu as the essential constituents. One chemist concludes his report as follows: "This wonderful remedy, then, seems to be acetate of potash, about 15 grains to each teaspoonful, and fluid extract of buchu." Another chemist states: "Kargon contains buchu, potassium acetate, glycerol and 18 per cent. alcohol."

The nostrum is put up by the Kargon Extracting Company of Cincinnati, the title "extracting" evidently referring to the process to which the gullible public's purse is subjected. The mixture is advertised as "being composed of common everyday vegetable (?) ingredients" as being better than "patent medicines" which are largely "alcoholic concoctions." The method of advertising is as ingenious as it is misleading. Appearing, in many cases, as solid reading matter, it discourses on the importance of the free action of the kidneys as an essential to health. A harmless-looking prescription is then given, consisting of Fluid Extract of Dandelion, Compound Kargon and Compound Syrup of Sarsaparilla, which can "be procured from any good pharmacist and mixed at home." The "Compound Kargon" is always carefully sandwiched between the two pharmacopeial preparations with but one evident object in view, that of leading the public to suppose that Kargon is but one of the numerous standard diuretics. Of course a combination of acetate of potash and fluid extract of buchu with fluid extract of dandelion and compound syrup of sarsaparilla makes an active diuretic. But it is a combination that in the majority of cases of kidney disease will do great harm. And no matter what the conditions, if used indiscriminately and "taken regularly," as the advertisements advocate, it can not be otherwise than dangerous.

#### THE SPRAGUE MERCANTILE AGENCY.

CALDWELL, IDAHO, Feb. 16, 1907.

*To the Editor:*—Last summer a representative of the Sprague Mercantile Agency of Chicago, Ill., called on me and exhibited some very doubtful accounts which they claimed to have been successful in collecting. I gave them about \$1,000 worth of accounts to collect for me with the following result: They induced one debtor to pay me \$60; I had previously had to pay a membership fee of \$50 and also \$1.50 interest on the note for fee for ninety days; in addition there was \$9 to pay as 15 per cent. on the \$60 collected. I was thus "out" fifty cents for collecting the \$60. They then collected from another debtor \$41, which they failed to account for. They wanted me to give them unlimited power to collect and have me pay after collections were made; this I refused to do. They already have \$101, or 10 per cent. of the face value of the accounts, and I have nothing.

J. J. HAMILTON, M.D.

[This seems to be in line with the experience of some of the correspondents of the *Medical World*; this journal, which has exposed other concerns, published some letters from physicians who complained bitterly of the methods pursued by the Sprague agency. These letters expressed the opinion that the membership fee which was exacted, constituted the most important thing—to the agency, and the correspondents seemed to be unanimous in characterizing the company in terms that were anything but complimentary.—Ed.]

#### THE BABINSKI REFLEX.

—, IND., March 5, 1907.

*To the Editor:*—Please explain the so-called Babinski reflex. How is it elicited and what does it indicate?

B.

ANSWER.—This reflex, first described by Babinski in 1896, consists in deliberate extension of the toes, and especially of the great

toe, followed by dorsi-flexion of the ankle joint when the sole of the foot is gently or firmly stroked. This sign is generally associated with disease of the anterior columns of the spinal cord—the pyramidal tracts. It is always pathologic except in very young children, not yet able to walk, in whom a similar but more rapid response is obtainable. Walton and Paul, however, after an extensive investigation reported (*Jour. Nerv. and Ment. Dis.*, June, 1900), that in early infancy no constant or characteristic movement of the toes occurs, though extension is rather more common than flexion. They also state that the Babinski sign occurs in about 70 per cent. of all cases of paraplegia and in about the same proportion of cases of disease of the pyramidal tracts. In the latter condition it is often the first symptom to appear.

#### VACCINE FROM MICROCOCCUS NEOFORMANS.

—, FEB. 21, 1907.

*To the Editor:*—Please give in your Queries and Minor Notes the method employed in preparing the vaccine from cultures of *Micrococcus neoformans* for the treatment of cancer.

X. Y. Z.

ANSWER.—According to Doyen, the *Micrococcus neoformans* was discovered by him in 1885, and was frequently observed by him in tumors both benign and malignant until in 1900 he succeeded in cultivating it. He claims that it has been found in tumors in all parts of the world by observers who have followed his technique, which he described in a communication to the Paris Academy in 1901. He prepares his vaccine as follows:

A bouillon from the breast of a cow in lactation is inoculated with a piece of a malignant tumor or with cancer juice. The bouillon should be peptonized and contain 1 per cent. of glucose, although the latter is not essential. From two to two and one-half years are necessary to obtain the toxin. The cultures must be renewed once in two months, and it is necessary to precede each new inoculation of the bouillon by a passage of the micro-organism through a susceptible animal, preferably the white mouse. Great care must be used in the cultivation, as the slightest variation in the temperature of the oven or in the composition of the bouillon may cause poor development or death of the micro-organism. Two forms of toxin are prepared: 1, a pure form obtained after 12 to 18 months of culture, and, 2, an attenuated form which is produced by treating the culture with 7 per cent. of quinin hydrochlorid, 2 per cent. of cacodylic acid and 2 per cent. of methylarsenic acid, which must be added under strict aseptic precautions. Two kinds of vaccine must be prepared. It is dangerous to employ for these vaccines young cultures; they must be at least 2½ years old. The weaker vaccine is prepared by heating the cultures for two days to a temperature of 45 C. (113 F.), and the stronger by heating the same cultures to a temperature of 40 C. (104 F.) for the same time.

Criticism of Doyen's claims has been made by French surgeons and a commission appointed by the French Congress of Surgery in 1904 reported in 1905 somewhat unfavorably as to his clinical results. His more recent work is summarized in his address to the French Congress of Surgery, Oct. 1 to 6, 1906, and in a report by Cornil to the *Berliner klinische Wochenschrift* (Feb. 4, 1907). Doyen refers to the work of Ehrlich, who has demonstrated the transformation of epithelioma into sarcoma after several passages through white mice. Immunization was obtained which seemed to be equally effective against both sarcoma and epithelioma. Doyen believes he has been able by means of the micro-organism of neoplasms (*Micrococcus neoformans*) to produce in the white rat several varieties of epithelioma and of enchondroma and in the white mouse a melanotic sarcoma. He thinks that it is necessary at present to admit the etiologic identity of sarcoma and carcinoma. The treatment of cancer by vaccines prepared from attenuated cultures of the *Micrococcus neoformans* has been undertaken by several experimenters, including Wright, and the results have been very uniform and demonstrate that it is possible from a pure culture of *M. neoformans* to prepare a vaccine which produces favorable changes in case of cancer that have not been obtained by any other method. It is possible to determine the true value of the treatment by Wright's opsonic method and to regulate the therapeutic use of the vaccine for each patient. Doyen reported 64 cases (*Semaine médicale*, 1905, p. 490), and has recent reports of 56 more in which the results have been very satisfactory. Of the 19 patients who were living, June 30, 1905, 3 have since succumbed, in two the cancer having invaded the pleura before the beginning of the treatment, of the 16 surviving cases only two are in a serious condition. Doyen relates some remarkable cases and expresses the opinion that it is possible to arrest the progress of cancer in certain cases and that injection alone may cure cases in which surgery is impotent.

In the discussion Cazin took exception to the assumption of Doyen that sarcoma and carcinoma, except in mixed tumors, showed any signs of a mutual transformation.

Cornil gives a critical estimate of Doyen's work, which he divides into that relating to his serum treatment, and that with the causa-



tion of cancer. In regard to the former he cautions us that too early conclusions should not be drawn. Doyen operates before instituting the serum treatment when operation is possible. By injections of cultures of the micrococcus, Doyen claims that he has been able to obtain tumors in white rats and mice, but never in dogs or other animals. Although the tumors produced by the injection showed the histologic character of malignant growths, they failed to follow the clinical course of such tumors in their spread to the lymph glands and other organs. It may be that the animals experimented on died too soon for such results to follow. It can not be said, therefore, that Doyen has produced cancer, but only cancer-like tumors.

Jacobs and Geets (*Lancet*, 1906, i, 964-966) state: "The researches which we have made in connection with cancer have convinced us: (1) that we have in cancerous cachexia a specific micro-organism, the *Micrococcus neoformans* of Doyen; (2) that the anti-cancerous sera of Doyen with which we have experimented are wholly useless; and (3) that it is practicable to immunize the human organism by means of a series of inoculations of the *Micrococcus neoformans* vaccine provided that these are properly controlled by examinations of the opsonic power of the blood." They propose the employment of a vaccine made from cultures of the same age (as those used by Doyen?) sterilized at 60 degrees C., washed freely, and standardized by the enumeration of the bacilli as advocated by Wright.

Those interested in this subject are referred to the following bibliography:

Doyen: *Le Micrococcus Neoformans et les Neoplasmes*, Par., 1903, Sleichner frères et Cie.

Doyen: *Presse Médicale*, 1904, II, 671.

Calmette: *Berlin. klin. therap. Wochsch.*, 1905, 13; also *Wien. klin. therap. Wochsch.*, 1905, 13.

Alvarado de Mattos: *Estudo do microbio de Doyen Movimento med.*, Coimbre, 1904-5, IV, 365-369.

Doyen: *Le micrococcus neoformans*, *Bull. et mem. Soc. anat. de Par.*, 1905, lxxx, 457-460, also 467, 529, 534; *Rev. de therap. med. chir. Par.*, 1905, lxxii, 226-230.

Doyen: *Bull. med.*, Par., 1904, xviii, 909; *Bull. et mem. Soc. anat. de Par.*, 1905, lxxx, 207-209; *Bull. et mem. Soc. de chir. de Par.*, 1905, n. s. xxxi, 698-732.

Doyen: *Rev. de Therap. med.-chir.*, 1904, lxxi, 721-731; *Semaine medicale*, 1905, 490, also Oct. 10, 1906.

Doyen: *Bull. et mem. Soc. anat. de Par.*, 1906, lxxxi, 40-43; *Rev. de therap. med. chir.*, Par., 1905, lxxii, 728-731.

## The Public Service

### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 9, 1907:

Carroll, James, surgeon, appointed surgeon with the rank of major, from March 2, 1907.

McAlister, John A., dental surgeon, left Presidio of Monterey, Cal., for Fort Sheridan, Ill., for duty.

Stallman, George E., dental surgeon, ordered from Fort Sam Houston, Texas, to Fort McIntosh, Texas, for duty.

Millikin, John D., dental surgeon, returned to Fort Leavenworth, Kans., from duty at Fort Riley, Kans., and ordered to Fort Des Moines, Iowa, for one month, and Fort Omaha, Nebr., for twenty days.

Gregory, Verde B., contract surgeon, relieved from duty at Fort Adams, R. I., and ordered to Janesville, Wis., for annulment of contract.

Chase, Alpha M., contract surgeon, returned to duty at Fort Sam Houston, Texas, from leave of absence.

### Navy Changes.

Changes in the Medical Corps, U. S. N., for the week ending March 9, 1907:

Schwerin, L. H., acting asst.-surgeon additional duty on board the *Florida*.

Plummer, R. W., P. A. surgeon, detached *Denver* to Chicago Recruiting Station.

Stepp, J., P. A. surgeon, detached *Don Juan de Austria*, to *Denver*.

Shaw, H., P. A. surgeon, commissioned P. A. surgeon from Oct. 28, 1906.

Jenness, B. F., P. A. surgeon, commissioned P. A. surgeon from Nov. 11, 1906.

Hyden, R., Valz, E. V., Smith, F. W., asst.-surgeons, appointed asst.-surgeons from March 5, 1907.

Schwerin, L. H., acting asst.-surgeon, detached temporary duties on *Florida* to resume duties Naval Hospital, Norfolk, Va.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service, for the seven days ended March 6, 1907:

Stoner, G. W., surgeon, granted leave of absence for two days in February, 1907, under the provisions of Paragraph 189 of the Regulations.

Rosenau, M. J., P. A. surgeon, directed to proceed to Harrisburg, Pa., for special temporary duty, on completion of which to rejoin his station in Washington.

Burkhalter, J. T., P. A. surgeon, granted leave of absence for two days in February, 1907, under the provisions of Paragraph 191 of the Regulations.

Salmon, T. W., asst.-surgeon, granted leave of absence for one day in February, 1907, under the provisions of Paragraph 191 of the Regulations.

Frost, W. H., asst.-surgeon, granted leave of absence for one day.

de Vallin, Hugh, asst.-surgeon, granted leave of absence for one day under the provisions of Paragraph 210 of the Regulations.

Kennard, K. S., acting asst.-surgeon, granted leave of absence for one day in February, 1907, under the provisions of Paragraph 210 of the Regulations.

McLarty, A. A., acting asst.-surgeon, granted leave of absence for 30 days from February 26.

Stearns, H. H., acting asst.-surgeon, granted leave of absence for two days in February, under the provisions of Paragraph 210 of the Regulations.

Wilson, J. G., acting asst.-surgeon, granted leave of absence for three days in February, 1907, under the provisions of Paragraph 210 of the Regulations.

Wilson, R., acting asst.-surgeon, excused from duty for a period of 15 days without pay, from March 16, 1907.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 8, 1907:

#### SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 16-23, 2 cases.

Florida: Jacksonville, Feb. 16-23, 1 case.

Georgia: Augusta, Feb. 19-26, 2 cases.

Indiana: Indianapolis, Feb. 17-24, 1 case; La Fayette, Feb. 18-25, 2 cases.

Iowa: Cedar Rapids, Feb. 1-28, 1 case; Davenport, Feb. 14-28, 3 cases; Des Moines, Nov. 22-Feb. 22, 16 cases; North English, Dec. 1-Feb. 10, 75 cases.

Louisiana: New Orleans, Feb. 15-22, 8 cases, 1 death.

Michigan: Detroit, Jan. 26-Feb. 2, 8 cases, Feb. 9-23, 13 cases.

Missouri: St. Joseph, Feb. 16-23, 25 cases; St. Louis, Jan. 26-Feb. 2, 1 case.

New York: New York, Feb. 16-23, 1 case.

North Dakota: General, Sept. 1-30, 4 cases, 1 death; Oct. 1-31, 14 cases.

Ohio: Cincinnati, Feb. 22-March 1, 1 case.

Oregon: Milton, Jan. 10-Feb. 23, 10 cases.

Pennsylvania: Homestead, Feb. 14-28, 2 cases.

South Dakota: Sioux Falls, Feb. 16-23, 1 case.

Washington: Spokane, Feb. 18-23, 10 cases; Tacoma, Feb. 2-9, 1 case.

Washington: Spokane, Feb. 16-23, 10 cases; Tacoma, Feb. 2-9, 1 case.

Wisconsin: La Crosse, Feb. 16-23, 1 case; Milwaukee, 9 cases.

#### SMALLPOX—FOREIGN.

Africa: Cape Town, Jan. 12-19, 1 case.

Argentina: Buenos Ayres, Jan. 5-12, 8 cases.

Brazil: Rio de Janeiro, Jan. 13-20, 3 cases, 1 death.

Canada: Nova Scotia: Digby County, Feb. 23, present; Halifax, Feb. 16-23 (on S. S. *Pomeranian*), 1 case, (imported); Toronto, Feb. 16-23, 2 cases; Yarmouth County, Feb. 23, present.

Chile: Coquimbo, Feb. 2, 25 cases, 1 death; Iquique, present.

China: Hongkong, Jan. 12-19, 3 cases, 2 deaths.

Ecuador: Guayaquil, Jan. 1-31, 23 deaths, Jan. 26-Feb. 9, 3 deaths.

France: Paris: Feb. 2-9, 7 cases.

Great Britain: Bristol, Feb. 2-9, 2 cases; Cardiff, 4 cases, 1 death; Liverpool, 1 case; Manchester, 1 case; Southampton, 1 death.

Italy: General, Jan. 31-Feb. 7, 8 cases.

Luxemburg: Canton Remich, Jan. 26-Feb. 9, 12 cases.

Madeira: Funchal, Feb. 10-17, 1 case, 1 death.

Mexico: Aguas Calientes, Feb. 9-16, 8 deaths.

Netherlands: Flushing, Feb. 9-16, 2 cases.

Persia: Gilan Province, Nov. 1-30, present; Kermanshah, present; Mash-Had, Dec. 31, present; Tourmat-i-Haidari, Oct. 1-Nov. 20, 56 cases.

Russia: Odessa, Feb. 2-9, 19 cases, 4 deaths; St. Petersburg, Jan. 26-Feb. 2, 1 case.

Spain: Seville, Jan. 1-31, 22 cases.

#### YELLOW FEVER.

Ecuador: Buday, Feb. 13, 1 death; Duran, Feb. 14, present; Guayaquil, Jan. 1-31, 22 deaths, Jan. 26-Feb. 9, 3 deaths; Hulgra, Feb. 8, 1 case, 1 death.

#### CHOLERA.

India: Bombay, Jan. 22-29, 2 deaths; Coehln, Jan. 14-22, 2 deaths; Madras, Jan. 19-25, 2 deaths; Rangoon, Jan. 12-19, 6 deaths.

#### PLAGUE.

Brazil: Rio de Janeiro, Jan. 13-20, 9 cases, 3 deaths.

Chile: Antofagasta, Feb. 2, 8 cases, 2 deaths; Taltal, Jan. 31, epidemic.

Egypt: Alexandria, Feb. 4-6, 1 case, 1 death; Ismailia, Jan. 28-29, 2 cases, 1 death; Suez, Feb. 3, 1 case, 1 death; Assiout Province, Jan. 29-Feb. 6, 3 cases, 3 deaths.

India: Bombay, Jan. 22-29, 51 deaths; Rangoon, Jan. 12-19, 18 deaths.

Japan: Formosa, Dec. 1-31, 202 cases, 184 deaths.

Mauritius: Dec. 6-20, 44 cases, 28 deaths.

Peru: Callao, Jan. 14, 1 case; Catacaos, 8 cases, 2 deaths; Chiclayo, 16 cases, 10 deaths; Lima, 3 cases, 3 deaths; Mollendo, 2 cases, 1 death; Pascasnayo and San Pedro, 30 cases, 10 deaths; Paifa, 5 cases, 3 deaths; Trujillo, 21 cases, 12 deaths.

Turkey in Asia: Djeddah, Jan. 11-20, 17 cases, 16 deaths.



## Society Proceedings

### COMING MEETINGS.

Assn. of American Med. Colleges, Richmond, Va., May 6, 1907.  
Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.  
American Association of Anatomists, Madison, Wis., March 27-29.  
Med. Assn. of District of Columbia, Washington, April 2.  
Tennessee State Medical Assn., Nashville, April 9.  
Mississippi State Medical Association, Gulfport, April 10.  
South Carolina Medical Association, Bennettsville, April 10.  
Medical Assn. of State of Alabama, Mobile, April 16.  
Florida Medical Association, Tampa, April 17.  
Medical Association of Georgia, Savannah, April 17.  
Medical and Chir. Faculty of Maryland, Baltimore, April 23-25.

### ST. LOUIS MEDICAL SOCIETY OF MISSOURI.

*Regular Meeting, held Feb. 16, 1907.*

DR. JOHN GREEN, Jr., reported the first meeting of the ophthalmic section a success. Of a total of twenty-five members, twenty were present and there were eight contributions to the program.

DR. JESSE S. MYER gave some interesting demonstrations of esophagoscopy on a patient having stricture of the esophagus. He demonstrated three principal uses for the esophagoscope, viz.: diagnosis, removal of foreign bodies, and a most valuable aid in treatment of strictures. He stated that the use of the esophagoscope was attended with no danger if the obturator be removed as soon as the point of the instrument passes the ericoid cartilage, and if the instrument be passed further under direct scrutiny of the operator.

#### Medical Education at Home and Abroad.

The following papers were read: America, by Dr. John Young Brown; Paris, by Dr. C. G. Chaddock; London, by Dr. Llewellyn Williamson; Berlin, by Dr. A. E. Meisenbach; Other German Universities, by Dr. W. C. Gayler; Vienna, by Dr. Louis Rassieur.

#### DISCUSSION.

DR. A. RAVOLD said that America has a great deal to offer in facilities for medical education. After a student has finished the prescribed medical course and has spent one or two years in a hospital or with some good clinician, he is ready to look about to learn a specialty. America has splendid laboratories and just as great masters in charge as will be found anywhere. They will take the student as far as they can and push him off into original research. We have the best surgeons the world has produced. The question is, with all these advantages, should one go abroad? It takes a tremendous time to learn a new language. He had a slight knowledge of German, but when he arrived in Germany it all evaporated. For the first five weeks he had difficulty in making his wants known. For the first three months, although studying German six and seven hours per day, he was unable to catch the drift of the lectures at all. During the next three months he was able to catch sentences from the lectures. At the end of a year he could catch the import of most that was said and felt elated over his achievement. After eighteen months he could understand all that was said, translate it mentally, and take notes in English, still unable to think in German. He said he did not believe himself duller than the average student, but that he wanted to tell the truth about medical education abroad. He believes, however, that it pays to study abroad for the great cultural advantages and for the reason that it broadens our views and makes us capable of seeing good in the accomplishments of men in any part of the world.

DR. K. W. MILLICAN said in regard to the statement of Dr. Williamson concerning the poor boarding houses in London for medical students that one should never seek a boarding house in London, but should secure lodgings and take meals out. He said that two nicely furnished rooms could be had in a desirable part of the city for thirty shillings a week, including service such as he had never seen in this country.

DR. J. M. BALL said the reason that European countries had been in the ascendancy in medicine up to the present time is because of their centralized form of government. In this country it seems impossible to have proper national control of medical matters because of the question of states rights.

### CHICAGO MEDICAL AND CHICAGO PEDIATRIC SOCIETIES.

*Joint Meeting, held Feb. 27, 1907.*

DR. J. W. VANDERSLICE, President of the latter, in the Chair.

#### SYMPOSIUM ON SCARLET FEVER.

##### Etiology and Pathology of Scarlet Fever.

DR. LUDVIG HEKTOEN's remarks are included in a paper which will appear in THE JOURNAL next month.

##### Prophylaxis of Scarlet Fever.

DR. HEMAN SPALDING said that scarlet fever is not so generally infectious as measles or smallpox. In a community of susceptibles—those never having had the disease—about 38 per cent. will contract the disease when exposed to it; whereas in a like community, about 90 per cent. will contract smallpox or measles if exposed to those diseases. Only 7 per cent. of those who have never had the disease, above 40 years of age, are attacked when exposed to scarlet fever, and infants under four months of age were rarely attacked.

The proof is strong that the infection can be conveyed through the milk supply. Fruit and vegetables peddled from a house where scarlet fever exists can be the means of spreading the disease. The infection has been conveyed through the mails in letters sent from an infected house.

The prophylaxis consists in separating the sick from the well and destroying all infection emanating from the scarlet-fever patient. No articles of furniture, such as carpets, rugs, curtains, ornaments, books, etc., except the things actually needed for the care and comfort of the patient, should be left in the sick room. The floor of the sick room should be gone over with a mop or cloth wrung out of a disinfectant. All dishes and table utensils used in the sick room should be placed in a disinfecting fluid before being taken from the room. All discharges from the mouth and nose in scarlet fever should be received on pieces of old soft cotton, linen or worn handkerchiefs, and burned at once. Complete isolation should be enforced until all desquamation of the skin is completed, and there is entire absence of discharge from the ears, nose, throat, suppurating glands or inflammation of the kidneys. The time required for sealing will vary from four to eight weeks. A too early termination in cases of scarlet fever and careless and faulty isolation of patients are the most serious problems in the management of this disease in a large city. All cases not properly isolated at home should be taken to a hospital. He laid great stress on the point that after scarlet fever the entire house should be disinfected.

##### Clinical History and Diagnosis of Scarlet Fever.

DR. JOHN M. DODSON presented a summary of the course and symptoms of scarlatina as presented in 300 cases treated at the Memorial Institute for Infectious Diseases. He described the course of the usual type of moderate severity, and then noted the distinctive features of the more severe forms of the disease. All types of scarlatina are characterized by abruptness of onset and the brevity of the prodromes.

The diagnosis of scarlatina, when typical, is seldom attended with doubt. The sharp onset with vomiting, angina, rapid rise of temperature and pulse, and the prompt appearance of the eruption on the palate and skin, with the striking injection of the fauces and the peculiar tongue, combine to form a picture little likely to be confused with any other disease.

##### Atypical Cases of Scarlet Fever.

DR. M. P. HATFIELD said that any variation from a typical case of the disease would constitute, in his judgment, an atypical case. He is distrustful of vomiting as pathognomonic symptom of scarlet fever. Fever rises very suddenly, going up almost simultaneously with the vomiting, the backache, the headache or sore throat of which the child complains. He knows of cases of scarlet fever that have come on insidiously with slight malaise, slight indisposition on the part of the child, without any notable elevation of temperature. These cases would run a doubtful course, and yet be followed by a nephritis of the most discouraging character. One should



not rely on the thermometer too implicitly in making a diagnosis of scarlet fever. He places a great deal of reliance on a characteristic angina. As to erythema, there are more variations in this than any single symptom found in the course of the disease. As to desquamation, he saw a case in which there was a sloughing off of the cast of the whole upper lip. In one case the eruption did not extend above Poupart's ligament. This patient made a satisfactory recovery without any drawback. *Scarlatina fulminans* kills patients by the intensity of the toxins before the physician is able to make a diagnosis. He reported one such case.

#### Treatment of Scarlet Fever.

DR. ALFRED C. COTTON said the main indications are to support the patient and to aid in the elimination of the toxins. Thus far sera have been disappointing. His results from the use of Marmorek's antistreptococcic serum have not been satisfactory. The treatment of the intoxications, attended with high temperature, should be inaugurated by free catharsis. He believes in the value of mercurials as eliminants. Where the temperature is 104 or 105 degrees persistently, with symptoms of profound intoxication, he has seen beneficial results from cold baths. Where there is delirium and restlessness, quiet is restored and sleep induced by the cold bath, the cold pack or a tepid sponge bath.

#### DISCUSSION.

DR. H. MANNING FISH spoke of coryza following scarlatina. Nasal catarrh of itself is not dangerous, but if allowed to persist, it may involve the sinuses or it may cause very serious complications of the eye or the brain, or by metastasis implicate other organs. A serious ocular complication following scarlatina is optic neuritis. In these cases treatment should be directed toward the sinuses rather than to the eye. Purulent empyema is the source of cerebral complications, owing to the intimate vascular supply between the cranium, the orbit and the sinuses.

DR. WILLIAM L. BAUM has looked for cases of Duke's disease during the recent epidemic, but has been unable to find a single instance which tallies with the description given by Duke. In the differential diagnosis of scarlet fever, measles, etc., at the Cook County Hospital they rely on examinations of the blood in all doubtful cases. In the mildest forms of scarlatina there is a decided leucocytosis, which is of great importance in the beginning of the disease. The epitrochlear glands are enlarged, and likewise the glands of the groin in about 80 per cent. of the cases. The minimum period of isolation should be six weeks, no matter how mild the attack. He deprecated the practice of those physicians who, to accommodate their patients, want to fumigate houses at the end of three weeks. School inspection, he said, should be a permanent feature.

DR. H. B. HEMENWAY of Evanston referred to the epidemic of scarlet fever in that city. He presented a statistical report of the cases, and gave unmistakable evidence that the epidemic could be traced to infected milk.

DR. H. W. CHENEY saw a series of scarlet fever treated last summer in Vienna with Moser's serum. The action of this serum begins to manifest itself in from eight to twelve hours after injection. A marked fall in temperature occurs, often the temperature drops to normal within twenty-four hours, and continues there or nearly so. The pulse shows much the same change. The rash, when the injection is given, either does not develop or fades away more rapidly than usual. A marked betterment is noted in the general condition of the patient. The serum has been used in the Children's Hospital in Vienna since 1900. Before 1900 the mortality from scarlet fever at this hospital was 15 per cent., and since that time it has averaged less than 9 per cent. The mortality in other hospitals in Vienna, where the serum has not been used during this period, since 1900, has averaged 13 per cent. The serum has been given in over 200 cases, only the severest cases being so treated.

DR. O. TYDINGS said the serious complications attending or following cases of scarlet fever are largely due to diseased

conditions of the nasal passages and throat. He believes that if the nose and throat are kept in a healthy condition there will be no sinus or middle ear complications.

DR. H. G. VAUGHAN believes that epidemics of this disease can be traced to infected milk. There have been approximately 110 cases of the disease in Oak Park, and although some suspicion arose as to the epidemic being due to infected milk, this suspicion has not been verified after a most careful examination of the sources of supply.

DR. A. H. BURR believes the epidemic in Rogers Park was due to infected milk supplied by one company.

#### COLLEGE OF PHYSICIANS OF PHILADELPHIA.

##### SECTION ON GENERAL MEDICINE.

*Regular Meeting, held Jan. 14, 1907.*

Dr. WILLIAM E. HUGHES in the Chair.

##### Chronic Intestinal Autointoxication.

DR. F. FORCHHEIMER, Cincinnati, said that intestinal auto-intoxication might be defined as that condition in which toxins formed in the intestines are absorbed by the organism in which they are produced. The use of this term, he said, had been objected to and that of enterotoxismos or intestinal toxemia substituted. Strictly speaking, only that process should be called autointoxication, which is caused by the toxic bodies resulting from metabolism and not due to any exogenous cause such as bacterial activity. Attention was called to an analysis of 77 cases examined by the ordinary clinical methods in which intestinal autointoxication was believed to be present.

Children were excluded because the clinical picture in them differs very much from that in the adult. In concluding the paper Dr. Forchheimer said that if the endeavor were made to get a composite picture in order that the diagnosis of chronic interstitial autointoxication might be made the following would have to be taken into consideration:

1. In the gastro-intestinal tract there are Riggs' disease, various forms of stomach troubles, change in functional activity of the colon and demonstrable retention of feces due to one cause or another.
2. In a large percentage of the cases indican is increased in the urine and a microscope shows in a large percentage of cases calcium oxalate (50 per cent.); uric acid and urates (25 per cent.); red corpuscles (about 30 per cent.) in 28 cases about 33 1/3 per cent.; the alternation of polyuria with oliguria was noted.
3. Half of the female patients had menstrual trouble.
4. Next to Riggs' disease nervous symptoms were present in the largest number of patients. Of these 77 patients 31 had headaches.
5. In a large number (58 out of 77) cardio-vascular changes were observed; over one-half were due to neuroses and to myocardial conditions.
6. Of the 77 patients 50 had locomotor symptoms, gouty joints, but especially muscular symptoms.
7. Twenty-two patients had skin lesions.

From the combination made by various symptoms, the diagnosis of chronic intestinal autointoxication should be easily made, and, as a matter of fact, this is the case in practice, as is shown when this diagnosis is followed by the logical therapeutic measure.

The great difficulty was pointed out of determining the importance of the intoxication in an individual case; whether it produces all the symptoms, whether it is the cause or the result of other conditions, whether it is the product or the predisposing cause. The greatest caution should be taken before chronic intestinal autointoxication should be looked on as the final diagnosis. In the selected cases this diagnosis was made only ten times. In all the other cases the autointoxication was looked on simply as a contributory cause, present and requiring treatment, but not the principal disease.

#### DISCUSSION.

DR. HOBART A. HARE said that in a large percentage of cases of autointoxication the effects of the toxic materials are exercised on the nervous system, on the muscles and joints, thus producing widely varying symptoms. Certain articles of food produce toxicity, and a case was related in which eggs, some time after being eaten, caused this effect. In some instances the chewing of a rubber band or chewing gum with the expectoration of the saliva aids in the elimination of the toxicity. One class of cases cited was that presenting a particular type of dull con-



stant headache for days or weeks, unrelieved by the ordinary methods nearly always associated with the presence of excessive phosphates in the urine, the urine being alkaline. Another class of cases is unaccompanied by pain, but associated with profound melancholia and depression.

An important point, in Dr. Hare's opinion, is that of the activity of the kidneys in regard to the elimination of poison. He emphasized the need of renal purges instead of simply purges by the bowel. The necessity was pointed out of studying the condition of the bowels in relation to enteroptosis, believing that most of the poisons absorbed under these circumstances are from the intestine and not from the stomach, and that good results can not be secured until the enteroptosis is corrected. The two types of autointoxication were referred to: (1), that due to intestinal absorption; (2), that due to faulty metabolism. These are frequently confused and should be separated. The intestinal cases can be relieved to some extent by renal and intestinal purges and some drugs, while the second is not usually benefited to any great extent by these methods.

DR. DAVID L. EDSALL said that he believes that from the examination of the urine alone the conclusion is not warranted as to whether abnormalities in the urine are the consequences of changes in the intestinal tract or the result of abnormalities in the liver, excretory or various other organs in metabolism.

DR. JOSEPH SAILER said that the subject of gastrointestinal autointoxication has been to him a very hazy one. The chief difficulty in its study is that the work has been based largely on certain symptoms which are by no means pathognomonic of the condition. He attaches much importance to the study of the activity of the ferments in the gastric juice and believes that there are unquestionably a great variety of conditions, both natural and artificial, which have the capacity of inhibiting ferment activity in the stomach, and also a great variety of artificial conditions which have the capacity of limiting the ferment activity in the intestines. Various cases of migraine, he said, can be brought on by certain food, and relieved as soon as the diet is corrected. An interesting group is that in which the symptoms are referable to the peripheral nerves, only relieved by lavage of the stomach, purgation, and other treatment applied usually to the gastrointestinal tract.

## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

### Angina Pectoris.

Barber, in the *London Practitioner*, states that in a severe attack of angina pectoris, amyl nitrite should be inhaled at once; a capsule, containing 3 or 5 minims, should be broken in a handkerchief and the vapor inhaled. If this fails to give relief in a minute or two chloroform may be tried; this is best administered on a sponge, in a smelling bottle, by the patient himself. For persistent pain morphin, gr.  $\frac{1}{4}$  hypodermically, is required, and in a feeble patient may be counteracted by the injection of liquor strychninæ hydrochloridi (B. P.), min. iii (.01). At the same time the following stimulant should be administered:

R. Spiritus ætheris  
Spiritum ammonii aromatici, āā.....m. xxx 2|  
Aquæ camphoræ .....fʒi 30|

M. Sig.: Give at one dose.

Brandy, fʒss (15.00), may be given instead of the above.

As an alternative for amyl nitrite, 1 or 2 minims of spiritus glycerylis nitratis (U. S. P.), or tablets nitroglycerin, gr. 1/100 (U. S. P.), may be taken. Amyl nitrite usually acts more promptly, but in some cases one of these latter will give relief when amyl nitrite fails.

Tabellæ natrii nitritis.....gr. iiss 15|

Sig.: One to four such tablets as required for pain.

In mild cases, or for pain persisting after the attack is much alleviated, hot applications to the precordium are often comforting. When the attack has subsided the patient should rest, avoid all exciting causes and confine himself to a very light diet for the remainder of that day; a milk diet with arrowroot is the best. Alcohol should be avoided.

When these attacks recur a course of nitrites is often very beneficial. The following combination is of service:

R. Spiritus glycerylis nitratis.....m. i 06  
Tincturæ cardamomi compositi.....m. xxx 2|  
Spiritus chloroformi .....m. x 60  
Aquæ, q. s. ad.....fʒi 30|

M. Sig.: Take at one dose if needed every three to four hours.

Professor Osler recommends increasing the dose gradually every five or six days till headache and flushing are produced. The nitrites may be taken for several weeks. Perhaps the most difficult cases are those in which there is a tendency toward failure of compensation of the heart, as the spiritus glycerylis nitratis may increase this, and the administration of digitalis may bring a return of pain. Patients must be kept in bed while this preparation is being given. Caffein and nuxvomica may be more useful than digitalis in these cases.

R. Spiritus glycerylis nitratis.....m. i 06  
Caffeinæ citratæ.....gr. ii 12  
Tincturæ nucis vomicæ.....m. viii 50  
Syrupi aurantii .....fʒss 2|  
Aquæ, q. s. ad.....fʒi 30|

M. Ft. solutio. Sig.: Take one such dose three times daily.

The diet should be of a light farinaceous character. Soft-boiled eggs and fish may be allowed, but in severe cases peptonized milk, or milk and barley water only, should be taken for a short time.

### AVOIDANCE OF ATTACKS.

The most important point for the patient who is liable to angina pectoris is the regulation of his life in such a way that he may avoid all forms of exciting cause. The exciting causes are very variable; probably the most common are physical exertion and distension of the stomach, and perhaps emotion. Hurrying for a train, walking fast uphill, all forms of exertion, especially after ingestion of food, must be avoided. Mental excitement, business worry, anger, or emotion of any kind, may set up an attack. Exposure to cold bathing, substances that have a toxic action on the heart, as tea, tobacco, coffee and alcohol, are all exciting causes which must be guarded against. An even, quiet life, free from excitement, with plenty of fresh air and very gentle exercise, is what is needed, warm clothes in the winter, and for the proper action of the skin warm baths are required.

The diet should consist of white, boiled fish, soft-boiled eggs and milk puddings; fresh meat may be allowed, and is best underdone. Plenty of water, or some mineral water, should be taken. Vegetables and other articles likely to cause flatulence must be avoided.

The meals should be taken regularly and no supper allowed. The bowels must be kept acting regularly by a so-called "dinner pill" of aloes and nuxvomica, or an occasional dose of calomel, gr.  $\frac{1}{2}$  or 1, followed next morning by a saline. A digestive tonic may at times be beneficial.

R. Sodii bicarbonatis.....gr. xx 1|20  
Tincturæ aurantii amari.....m. xx 1|20  
Infusi calumbæ (B. P.).....fʒss 15|  
Aquæ chloroformi, q. s. ad.....fʒi 30|

M. Sig.: Take one such dose three times daily after meals.  
Or:

R. Acidi nitrohydrochlorici dil.....m. x 60  
Tincturæ nucis vomicæ.....m. viii 50  
Tincturæ aurantii amari.....m. xx 1|20  
Aquæ, q. s. ad.....fʒi 30|

M. Sig.: Take one such dose three times daily after meals.

Of drugs which have a curative action, potassium iodid in doses of from 10 to 20 grains (0.6 to 1.3) three times a day, is strongly recommended by Sir Lauder Brunton in arterial degeneration. It is administered, of course, freely diluted with water, to prevent iodism, and its effect must be



carefully watched. Arsenic and strychnin combined give benefit in some cases.

R. Liq. strychninae hydrochloridi (B. P.)	
Liq. arsenici hydrochlorici (B. P.), āā. m. iii	18
Tincturae aurantii amari. . . . . m. xx	1 20
Aquae, q. s. ad. . . . . f3i	30

M. Sig.: Take one such dose three times daily after meals.

In neurotic cases potassium bromid is very beneficial and may be added to the alkaline digestive tonic prescribed above. When both anemia and valvular disease of the heart are present, digitalis and iron may be combined:

R. Tincturae digitalis. . . . . m. x	60
Liquoris ferri chloridi. . . . . m. xv	1
Acidi citrici. . . . . gr. v	30
Syrupi limonis (B. P.) . . . . . m. xxx	2
Aquae dest., q. s. ad. . . . . f3i	30

M. Sig.: Take one such dose three times daily after meals.

Digitalis must be given very cautiously, as it may bring on the pain. In cases in which there have been premonitory symptoms, the application of the galvanic electric current over the vagus in the neck has effectually warded off the attack.

The great essentials, then, in the treatment of angina pectoris are a quiet life, a wise diet, and the administration of nitrites in an attack. A patient subject to angina pectoris should carry amyl nitrite capsules or the tablets of nitroglycerin, gr. 1/100 U. S. P.

Gibson, in the London *Practitioner*, states that ethyl iodid, otherwise known as hydriodic ether, is also of value in this condition given by inhalation in doses of 5 minims. The drug may be put up in glass capsules. The action is probably due to the liberation of free iodine. It is impossible to foretell whether the nitrites or the iodid series in a given case will give the most benefit. A very serviceable combination is supplied in capsules of ethyl iodid and chloroform, each capsule containing 5 and 10 minims respectively of the two drugs. In Gibson's experience, the chloroform has lessened the discomfort produced by the hydriodic ether.

(This subject will be continued.)

#### Pruritus Ani.

Cowles, in the *New York Medical Journal*, recommends the following:

R. Unguenti hydrargyri ammoniati. . . gr. xxv	1 60
Adipis benzoinati . . . . . 3i	30

M. Sig.: Apply locally as directed. Or:

R. Hydrargyri chloridi mitis. . . . . 3ii	8
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Sig.: Use locally as a dusting powder as directed.

If there is much thickening of the skin surrounding the anus some preparation of salicylic acid should be used, for example:

R. Acidi carbolici. . . . . gr. xv	1
Acidi salicylici. . . . . gr. x	60
Ichthyoli . . . . . m. xxiv	1 60
Petrolati . . . . . 3i	30

M. Sig.: Apply locally as directed.

A hot sitz bath or the application of hot compresses often confers immediate relief. The following formula is recommended by Morris:

R. Acidi carbolici. . . . . gr. xx	1 20
Cocainae hydrochloratis. . . . . gr. x	60
Petrolati . . . . . 3i	30

M. Ft. unguentum. Sig.: Apply locally as directed.

Caution should be taken not to induce the cocain habit.

#### Leucorrhea.

Hammond, in the *Therapeutic Gazette*, recommends the following to be used in the local treatment of this condition: *Douches*.—These should be bland, consisting of plain hot water or normal salt solution, or they may be astringent. From two to four quarts of water should be used at a time once or twice a day; the douche should be given in the reclining position:

R. Acidi carbolici . . . . . 3iv	120
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Sig.: Eight to ten teaspoonfuls to four quarts of hot water and use as vaginal douche. Or:

R. Pulveris aluminis . . . . . 3x	300
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M. et ft. chart. No. x. Sig.: Dissolve one powder in four quarts of water and use as vaginal douche. Or:

R. Plumbi acetatis . . . . . 3i	4
Aquae dest. . . . . f3iv	120

M. Sig.: From two to five teaspoonfuls to each quart of water to be used as vaginal douche. Or:

R. Hydrargyri chloridi corrosivi. . . . . 3vi	24
Aquae dest. . . . . f3vi	180

M. Sig.: One teaspoonful to four quarts of hot water to be used as a vaginal douche. (This makes a solution of 1 to 4,000.) Or:

R. Zinci sulphatis . . . . . 3xx	80
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M. et ft. chart, No. xx. Sig.: Dissolve one powder to each quart of hot water and use as a vaginal douche.

Burtenshaw recommends the following combination:

R. Pulveris aluminis	
Zinci sulphatis	
Acidi carbolici	
Sodii biboratis, āā. . . . . 3i	30
Aquae dest., q. s. ad. . . . . 3vi	180

M. Sig.: Four tablespoonfuls to four quarts of water to be used as a vaginal douche.

#### Soft Corns.

The *Druggists Circular*, February, 1907, gives the following formula for the treatment of soft corns:

Acidi salicylici	
Menthol, āā. . . . . 3i	4
Olei theobromatis . . . . . 3iv	120

No directions are given, but this preparation may be applied every night after soaking the feet in warm water.

#### Inaccurate Prescription Writing.

In replying to a correspondent who asks: "What is liquor strychninae?" the *Druggists Circular* calls attention to the fact that many physicians write prescriptions which leave room for guesswork on the part of the pharmacist. In regard to the article in question it is stated that if the prescription was written by a British physician he probably had in mind the liquor strychninae hydrochloridi of the British Pharmacopeia, the formula for which is:

Strychninae hydrochloridi. . . . . gr. xviiss	1 13
Alcoholis (90 per cent.) . . . . . f3i	30
Aquae dest., q. s. . . . . f3iv	120

If an American physician wrote the prescription it is probable that he meant the liquor strychninae acetatis of the National Formulary, the formula for which is:

Strychninae acetatis. . . . . gr. iii	21
Acidi acetici dil. . . . . m. xlviii	3 5
Alcoholis . . . . . f3vi	25
Tincturae cardamomi comp. . . . . m. xv	1
Aquae, q. s. . . . . 3iii	100

The strength of the British preparation is one grain of strychnin hydrochlorid to 110 minims, while the strength of the National Formulary preparation is approximately one grain of strychnin acetate to the ounce.

## Medicolegal

#### Must State Way One Holds Himself Out as Physician.

The Supreme Court of Vermont says, in the case of *State vs. Wilson*, that it has been decided by some courts, under statutes prohibiting the practice of medicine without a license, and which enumerated various acts which should be regarded as "practicing medicine," that an indictment charging the offense must allege some one of the acts so enumerated. In this case the material allegation in the indictment, apparently following the language of the statute, was that the respondent "did hold himself out to the public as a physician in this state, without having . . . passed the examination required by law, . . . and without having received a license from the medical registration . . . to practice as a physician." But it is held that this was not sufficient. The court says that there are various ways in which the respondent might have held himself out to the public as a physician, and he was entitled to know in what manner the state claimed he "held himself out" before he was compelled to plead. As the rule is sometimes stated, the allegation must descend far enough into particulars, and be certain enough in its frame of words to give the respondent reasonable notice of what will be produced against him at the trial. The court thinks that the alle-



gation in this indictment did not fulfill the respondent's right under the constitution "to demand the cause and nature of his accusation."

#### City and County Both Liable for Smallpox Expenses.

The Court of Appeals of Kentucky says, in the case of *Pulaski County vs. City of Somerset*, that in the year 1900 an epidemic of smallpox existed in said county, within and without said city. Both the county and city had a board of health appointed as required by statute. There arose a conflict of opinion between those residing within the city and without as to whether the county or city should bear the expense of treating and guarding the persons afflicted. At a meeting of the members of the fiscal court of the county and the members of the city council, together with the members of both boards of health, it was agreed between all parties that the county and city, through their proper boards, should jointly provide means and care for all persons afflicted with contagious diseases, and to provide guards so as to prevent the spread of the disease. Later it appeared that the city concluded that the county was responsible for the whole of the expense incurred. But the court holds that, under the statute with reference to the question involved, there was no doubt that both the city and county were responsible for the expense; the city for that incurred in treating those afflicted within the city limits, and the county for that in treating those so afflicted without the city.

#### Different Community Requirements Recognized.

The Supreme Court of Wisconsin says, in the case of *State vs. Evans*, that it is not only desirable that drugs be dispensed to the public by skilful and competent persons to avert peril from occasional mistakes, but it is far more desirable, nay, practically essential, that medicines be within prompt and easy reach by the public. The danger to life or health to be expected from occasional error of an incompetent salesman is hardly comparable to the injuries likely to result from exclusion of whole communities from opportunity to obtain the ordinary remedies often essential momentarily to save lives. It is, therefore, within the field of legislative discretion to provide only such restrictions as to competence of the dispenser as will not unduly prevent dealing in medicines. The court is fully persuaded that legislators, within the bounds of reason, might have believed that this result could be obtained in the large communities consistently with requiring the competence, age and experience prescribed for registered pharmacists, but that, in very small or sparse villages and towns, in many cases, the profits would not be sufficient to attract such men, and such communities might be left unprovided; that thus the very force of nature and human nature had created a class distinguished in respects directly relevant to the subject of protection of life and health by regulating the dispensing of medicines, and therefore proper of recognition and differentiation in framing laws on the subject. If a given restriction which tends to protect lives and health in one class of communities will menace them in another, the very imposition of it generally and without exception might be most obvious and oppressive discrimination.

#### Physical Conditions to which Spouse Could Testify.

The Supreme Court of Utah says that in the personal injury case of *Davis vs. Oregon Short Line Railroad Company* the plaintiff's wife testified that prior to the accident her husband's health was good. Then, over the objection of the defendant's counsel, she was permitted to answer the question "whether he was affected with pains in his back and side," prior to the accident; also, whether his condition was different from one time to another, and what the facts had been and were at the time immediately after the injury with reference to his being lame. The court holds there was no error in this. It says that the witness was the plaintiff's wife, and had lived with him for many years, was in attendance on him during his illness, and was in a position to observe and to inform herself of his general physical condition as it was, both before and subsequent to the time he was injured. The rule is well settled that a non-expert witness, having been in constant

attendance on a person, and having had the opportunities for observing the movements and general physical condition of such person, as the record showed were afforded Mrs. Davis in this case, is competent to testify whether the person is in good or poor health, and whether such person is afflicted with pains, or is free from pain.

Likewise, the Court of Civil Appeals of Texas holds, on the appeal of the *St. Louis Southwestern Railway Company of Texas vs. Lowe*, that questions asking a husband whether his wife had ever had any cough, lung or female trouble prior to a certain exposure to cold at the railway company's depot were not subject to the objection that they called for the opinion of the witness. Whether his wife had ever had a cough, lung or female trouble prior to such exposures were questions of fact, about which he was competent to testify, and his testimony in relation thereto was the statement of a fact, not merely the expressions of an opinion.

#### Period of Gestation—Cross-Examination from Books.

The Supreme Court of Iowa holds in the case of *State vs. Blackburn*, a prosecution for rape, that objections to the testimony of physicians called as witnesses for the state as to the usual time of the gestation, it appearing that the prosecuting witness had given birth to a child 299 days after the alleged connection with the defendant, were not well taken, as the testimony of the witnesses tended to show that the period of gestation might extend beyond that length of time. It says that while the paternity of the child was not a fact necessary for the state to establish in order to make out the crime, the birth of a child within a possible period of gestation after the alleged connection would tend to corroborate the testimony of the prosecutrix as to the fact of such connection.

The court also holds that there was no error in the prosecution being allowed, on cross-examination of physicians testifying as experts for the defendant with reference to the period of gestation, to refer to statements found in medical text-books on the subject which the witnesses stated were standard authorities, and to ask the witnesses whether they agreed with the statements found in such text-books. This line of examination was objected to on the theory that the prosecution was thus allowed to put in evidence the statements found in such text-books. This court has held that medical books can not be introduced as independent evidence. And in *State vs. Thompson*, 127 Iowa, 440, it is said that it is not proper to get the statements of such books into the record as independent evidence by asking a witness whether certain books do not contain statements quoted by counsel from them. But in these cases the objection is to the statements in the books as independent evidence. There is nothing to indicate that the usual practice of cross-examining a medical witness by calling his attention to statements in books admitted by him to be standard is improper.

#### Sufficient Evidence of Abortional Advertising.

The Supreme Judicial Court of Massachusetts in the case of *Commonwealth vs. Hartford*, overrules exceptions to a conviction on an indictment, under the statute of that state, charging the defendant with knowingly distributing a circular or advertisement giving notice of a place where illegal operations might be performed on pregnant women. It says, among other things, that, while the acts made criminally punishable are distinct from the crime of procuring an abortion, evidence describing the rooms with their furnishings, the envelopes addressed to physicians containing similar cards, and her statements relating to the origin of her acquaintance with the officer to whom she had given the card described in the indictment, was properly admitted, not only as being descriptive either of the defendant's place of business, or of her employment, but also as indicative of her guilty knowledge of its contents. It is true that mere possession of this card was not a crime, for the offense charged was its distribution or circulation as a paper conveying information where operations were performed for the purpose of procuring the miscarriage of pregnant women, but if intentionally handed to a patient who was seeking such treatment the offense would



have been complete, and this equally would be true if the receiver was inquiring as to similar aid in behalf of a proposed patient. The weight of the defendant's argument, therefore, was that because it was procured by false representations there was no proof either of distribution or of circulation. Generally solicitation to commit a crime to which the party solicited yields does not exonerate the wrongdoer, or exempt him from prosecution, and under the statute it is the circulation or distribution with guilty knowledge which is made unlawful, although patients may not be obtained. The intention with which it is put out is the controlling element, and if the defendant issued the card as an advertisement containing the information sought this would be a violation of the statute. If from a desire to obtain patronage she chose to rely on the officer's statements rather than to require any corroboration before acting on them such conduct would neither lessen her criminal responsibility, nor render his testimony incompetent if the jury were satisfied that it was delivered voluntarily with a criminal purpose, which was clearly and accurately explained in the instructions given.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Boston Medical and Surgical Journal.

February 28.

- 1 \*Study of Hydronephrosis. A. T. Cabot, Boston.
- 2 \*Surgical Treatment of Tuberculosis of the Kidney. F. S. Watson, Boston.
- 3 \*Tuberculosis of the Kidney. P. Thorndike, Boston.
- 4 \*Experimental Studies in Arteriosclerosis. O. Klotz, Montreal, Canada.
- 5 Visceral Arteriosclerosis. H. Brooks, New York.
- 6 Innervation of the Uterus. W. L. Burrage.

1. **Hydronephrosis.**—A number of cases are reported by Cabot for the purpose of calling attention to the confusion which still exists as to the relations of false and true hydronephrosis. In true hydronephrosis the sac which contains the fluid is the distended pelvis of the kidney, while in false hydronephrosis the fluid is contained in a sac outside the kidney. One case is reported in which both conditions coexisted in connection with one kidney. This was properly a case of congenital hydronephrosis, although the dilatation of the kidney was not noticed until some years after birth. A congenital obstruction of the ureter, by looping over a vessel, was responsible for the condition. In another case cited the obstruction seemed to be a valvular one at the junction of the ureter with the renal pelvis. In this case a nephrotomy was done as a preliminary to a nephrectomy with excellent results.

2. **Surgical Treatment of Tuberculosis of Kidney.**—Watson's beliefs in regard to the surgical treatment of tuberculosis of the kidney are in accord with those entertained by other writers on this subject.

3. **Tuberculosis of Kidney.**—Thorndike believes that in the comparatively small but constantly increasing number of patients in whom the diagnosis can be made before much destruction of kidney tissue or involvement of other organs has taken place, hygiene and climate should have a chance before the kidney is removed. He believes that this treatment will often do away with the necessity for an operation. For the more numerous later cases nephrectomy is always the operation of choice, and should be done in every instance, if the patient can stand it and if he has another kidney capable of doing a fair amount of work, whether the disease has passed beyond the limits of the organ to be removed or not, and whether the other kidney be involved or not.

4.—See abstract in THE JOURNAL, Jan. 19, 1907, page 266.

#### St. Louis Medical Review.

February 23.

- 7 \*Extraordinary Anatomic Curiosity. H. J. Scherek, St. Louis.
- 8 Gallstones. N. F. Baker, Fulton, Mo.
- 9 Diagnosis of Gallstones. R. Hill, St. Louis.

7. **An Anatomic Curiosity.**—In the case reported by Scherek the thumbs presented the appearance of a long forefinger, and

the Roentgen ray showed that there was an extra phalanx in each thumb. There was perfect control of the last phalanx and the joint could be bent without trouble. The thumbs were long and tapering, and the nail of each thumb was set more on the dorsal aspect of the digit than is usual in normal cases.

#### New York Medical Journal.

March 2.

- 10 \*Trypsin in Cancer. W. S. Bainbridge, New York.
- 11 New High-Frequency Devices. H. G. Piffard, New York.
- 12 \*New Bed Frame; also an Apparatus for Application of Body Casts. C. M. Fauntleroy, Philadelphia.
- 13 \*Study of Shreds in Urine in Their Relation to Diagnosis and Prognosis. D. Saxe, New York.
- 14 Accessory Sinuses of the Nose from the Rhinologic Standpoint. C. W. Richardson, Washington, D. C.
- 15 Accessory Sinuses of the Nose from an Ophthalmologic Standpoint. W. C. Posey, Philadelphia.
- 16 \*Acid Intoxication. C. G. L. Wolf, New York.
- 17 \*Appendicitis. B. S. Talmey, New York.

10. **Trypsin in Cancer.**—Bainbridge has employed trypsin in a few cases with unsatisfactory results. He cautions against the formation of premature conclusions in any case in which the trypsin treatment is employed and refers in particular to one case which had been under his care and which had been reported by others as a cure. He says that the observations made thus far are too incomplete to warrant making any definite statements as to the value of this treatment. It should be tested scientifically, and while it is being so tested all judgment as to its efficacy should be suspended.

12. **New Bed Frame.**—The frame described by Fauntleroy is made from three-eighths iron piping bent at right angles at each of the four corners and cut through the middle of the cross bars, which have on their inner surface, around the lumen of the pipe, a series of right and left hand threads to receive the corresponding threads on the screws at each end of the frame. The threads extend into the cross bars for about three inches on each side of the cut ends. Threads of the same length are on the end screws on each side of the taps; this enables the frame to be increased in width about six inches if desirable, by simply turning the end screws by means of a small wrench fitted to the tap. The cover for the frame is made of heavy canvas, and is in two parts. Each half is made in the form of a bag, one of which is a little longer than the other; these bags are closed on both sides and at one end by reinforced stitches, thus giving an amply strong cover that will safely withstand sufficient tension. The bags are slipped on over the ends of the frame and are provided at the center of the closed end with a small opening, which leaves uncovered only the tap on the end screws, thus making it perfectly easy to apply the wrench, and by turning the tap to increase the width of the frame, thereby making the cover as tense as desirable. As the frame is covered on both sides alike, it is only necessary to reverse it should it become soiled by food, etc., accidentally spilled, or by the body excretions as may occur from incontinence due to pressure myelitis in bad cases of Pott's disease or from other causes. The bed frame is made in different lengths to accommodate children ranging in years from 3 to 14.

13. **Study of Shreds in Urine.**—Saxe presents the results of a study of shreds in the urine in a large number of cases of urethritis and prostatovesiculitis. The method of staining the shreds is as follows: 1. Fix with alcohol and ether for ten minutes (or imbed in collodion; dry and soak in water for ten minutes). 2. Stain for from one to two minutes in Unna's polychrome methylene blue. 3. Wash well in distilled water. Dry. 4. Dehydrate for a few seconds in 95 per cent. alcohol. Dry with filter paper. 5. Clear in xylol or in clove-thyme mixture. Dry with filter paper. 6. Mount in balsam. Saxe found that the study of shreds is not of great value in the localization of the affection in the anterior or the posterior urethra, but that the presence of prostatic or vesicular shreds which can be recognized microscopically is an aid to the localization of the process. The study of urethral shreds is valuable in determining the stage of the process. In the prognosis the variety of urethral shreds present is of limited usefulness. The fewer the shreds and the fewer the pus cells, the better the prognosis, and vice versa.



16. **Acid Intoxication.**—Wolf discusses the condition designated as acid intoxication or acidosis. He says that acidosis is not synonymous with acid intoxication. It is a distinct entity which he defines as being the production through a faulty metabolism, or otherwise, of acid products which may or may not produce intoxication. Wolf claims that on the surface the theory of acid intoxication is altogether plausible, and has the advantage of fitting in with certain clinical data. When it is subjected to strict criteria, however, it fails to stand the test. It also has the very unfortunate property of leading one to diagnosticate as toxemias clinical conditions the urinary symptoms of which are entirely due to insufficient food intake. From this standpoint it is in the hands of many a positive clinical menace.

17. **Appendicitis.**—Talmey reports two cases of appendicitis with delayed operation in which abscesses were found in other parts of the abdomen. In the first case cited the appendix was found gangrenous and what was left of it was removed. Fourteen months later the patient again suffered with pain in the lower abdomen. This was found to be due to the presence of about half a pint of pus in Douglas' pouch. In the second case the abscess extended from the cecum to the vault of the diaphragm beneath the liver. The patient died two days after the abdomen was opened. Talmey also reports two cases to show the difficulties that sometimes attend the diagnosis of appendicitis.

#### Medical Record, New York.

March 2.

- 18 \*Influenza in Its Relation to Diseases of the Nervous System. J. Collins, New York.
- 19 \*Relation of the Tonsil to Infection and Infectious Diseases. R. C. Brown, Milwaukee.
- 20 A New Streptothrix Pathogenic for Cattle. C. F. Kieffer, Fort D. A. Russell, Wyoming.
- 21 \*Preservation of Hearing. W. S. Bryant, New York.
- 22 \*Case of Acute Edema of the Pharynx. G. Link, Indianapolis.
- 23 Case of Trichiniasis. J. M. Ferrer, New York.

18. **Influenza in Relation to Nervous System.**—Collins says that the baneful effects of the pathogenic activity of the Pfeiffer bacillus on the nervous system have been overestimated, and that in reality influenzal and postinfluenzal neurosis and psychoses are not very common. The bacillus of influenza may and does cause meningitis, encephalitis, myelitis and possibly neuritis. The toxins produced by the pathogenic activity of the influenza bacillus are adequate exciting causes of neurasthenia and psychasthenia, of neuritis and neuralgia, of various forms of insanity, of independent nervous systems, such as insomnia, vertigo, headache, and they may be contributory to the causation of any disease that afflicts the human being. Nevertheless, neither the bacillus of Pfeiffer nor its toxins, he declares, is a common cause of nervous disease. The disorders of the nervous system that stand most frequently in causative relation to influenza are those dependent not on the direct action of the bacillus of influenza on the nervous system, but on the activity of toxins produced by the pathogenic activity of these germs. These are neurasthenia and psychasthenia, neuralgia and neuritis, and diseases and disorders of the nervous system attending and dependent on arteriosclerosis.

19. **Relation of Tonsil to Infection.**—Brown shows how admirably, from an anatomic standpoint, the tonsil is arranged to resist infection. Inflammation of the tonsil is caused by a pathogenic germ which is endeavoring to enter and the inflammation itself is a defensive reaction. When the resistance of the body is lowered, or the germs are virulent enough to overcome the other means of defense, or if the tonsil is wounded, a positive chemotaxis having been produced, there is a lacunar tonsillitis. When a negative chemotaxis is produced there is a general systemic infection without a tonsillitis. Finally, the relation of the tonsil to infection and infectious diseases is one of protection.

21. **Preservation of the Hearing.**—Bryant believes that early observation will detect insidious conditions which cause over 95 per cent. of deafness, and that judicious treatment will cure these conditions before serious impairment of hearing has taken place. He suggests that the otologist should be

consulted once a year, after every cold, and whenever anything unfavorable is noticed in the ear.

22. **Acute Edema of the Pharynx.**—In the case reported by Link an acute edema of the pharynx and unconsciousness followed an attack of simple tonsillitis of ten days' duration. A speedy and successful tracheotomy was done.

#### Illinois Medical Journal, Springfield.

February.

- 24 \*Treatment of Senile Gangrene. E. H. Ochsner, Chicago.
- 25 Pneumonia. R. H. Bradley, Marshall, Ill.
- 26 The Law as to Expert Testimony in Illinois. W. A. Evans, Chicago.
- 27 \*Surgery of the Gall Bladder. M. W. Bacon, Chicago.
- 28 Renal Functional Tests and Diagnostic Methods of Nephrectomy, Nephrotomy, Nephropexy and Ureteral Surgery. F. A. Leusman, Chicago.
- 29 Diabetes, Not a Disease *Per Se*. S. A. Oren, Lewistown.
- 30 Serious Surgical Emergencies. J. A. Day, Jacksonville.
- 31 \*Congenital Stenosis of Pylorus. H. W. Cheney, Chicago.
- 32 \*Prescribing. H. J. Achard, Elgin.

24.—See abstract in THE JOURNAL, Jan. 12, 1907, page 162.

27. **Surgery of the Gall Bladder.**—Bacon reports 14 cases of disease of the gall bladder to emphasize the value of conservatism and of drainage in the operative treatment. In a series of 100 cases the mortality was only 3 per cent. Among the cases reported are the following: Acute cholecystitis with a large stone in the cystic duct, 2 cases; calculi in the gall bladder with previous inflammatory attacks and adhesions, 2 cases; acute cholecystitis with thickened gall bladder from previous attacks of inflammation and obstruction of cystic duct by calculi, 2 cases; hydrops of gall bladder with obstruction of cystic duct by calculi, 2 cases; acute cholecystitis with thickened gall bladder and obstruction of cystic duct without calculi, 2 cases; empyema of gall bladder, with one stone  $4\frac{3}{4}$  inches long, 1 case; carcinoma of gall bladder (patient died ten days after an exploratory operation), 1 case; acute obstruction of common duct by calculi, 2 cases.

31. **Stenosis of Pylorus.**—Cheney reports a typical case of hypertrophic stenosis of the pylorus in which a successful operation was done. Symptoms first manifested themselves when the infant was four and one-half weeks old. The baby vomited two or three times a day. A gastroenterostomy was done the morning of the eighth day after the appearance of the first symptom.

32. **Prescribing.**—The proprietary medicine question is discussed by Achard, who insists that physicians ought never to be asked to use or to prescribe any preparation unless they are fully and freely informed of its composition. The use of proprietary articles has often made physicians lose sight of the fact that they must prescribe for conditions rather than for names of diseases; that they must attend to the underlying causes and treat the symptoms as they arise. Achard says that prescribing is not copying ready-furnished formulas, but is an art which involves an intelligent comprehension of a symptom-complex, and the knowledge of how to meet the requirements of the case. Achard speaks of the use of ready-made preparations as lazy, unscientific and not quite honest. He suggests that it is better to master thoroughly and to use twenty remedies which admit of a greater variety of combinations than to know the names of a hundred compounds and to prescribe them according to directions on the label.

#### American Journal of Medical Sciences, New York.

February.

- 33 \*Symptomatology, Diagnosis and Surgical Treatment of Cervical Ribs. W. W. Keen, Philadelphia.
- 34 \*Compulsory Vaccination, Antivaccination and Organized Vaccination. G. Dock, Ann Arbor, Mich.
- 35 \*Clinical Manifestation and Treatment of Acute Cardiac Dilation. B. Robinson, New York.
- 36 \*Experimental Studies of Cardiac Murmurs. W. S. Thayer and W. G. MacCallum, Baltimore.
- 37 \*Aneurism of Arch of Aorta: Rupture into the Superior Vena Cava. M. H. Fussell, Philadelphia.
- 38 \*Different Forms of Albumin Occurring in the Urine. T. W. Hastings, and B. R. Hoobler, New York.
- 39 \*Pathology and Treatment of Nephritis. P. W. Webster, Chicago.
- 40 \*Roentgen Rays in Unresolved Pneumonia. D. L. Edsall and R. Pemberton, Philadelphia.
- 41 \*Study of Diphtheria Epidemic at the Adirondack Cottage Sanitarium for Incipient Tuberculosis. L. Brown, A. H. Allen, and E. J. S. Lupton, Saranac Lake.
- 42 Chemical Affinity of Mucus for Hydrochloric Acid. N. B. Foster.



33. **Cervical Ribs.**—Keen reports the history of a patient on whom he operated and discusses all cases recorded in the literature in which an operation was done.

34. **Vaccination.**—Dock believes that recent epidemics of smallpox show conclusively the need of more vaccination. He says that what is needed is not statutory compulsion, but an organized and scientific procedure that shall have the confidence and support of a large majority of the people and that shall have no weak spots in any part. The present methods make certain a high ratio of smallpox cases with an unduly low protection to the individual. There is nothing, he asserts, in the fundamental law of the land to prevent the passage of safe and efficient vaccination laws, which should aim at a widespread protection by vaccination and revaccination. The operation itself should be a matter of permanent record, and a certificate from an authorized official should be proof of the vaccination of each individual. The operators should be trained for their work, familiar with the vaccination laws, and bound to follow them. Dock would control the manufacture of vaccine by competent experts. He says that vaccination should be done at fixed times of the year when epidemic diseases are not most prevalent, in places appointed and equipped for the purpose; the individual should be examined after the operation at a time fixed by the regulations, or at once on suspicion of complication. He would permit private vaccination only under special conditions with revision of the result by a competent health officer.

35. **Acute Cardiac Dilatation.**—Three varieties of cardiac dilatation are considered by Robinson: 1. The cardiac dilatation which shows itself during the course of some acute infectious disease. 2. The cardiac dilatation of nervous origin, due primarily many times to the wear and tear of an anxious and working life, but in which the strain falls far more directly on the brain and nervous system generally than on the muscular make-up of the body. 3. The rapid or sudden cardiac dilatation which comes to those whose excesses in eating or drinking or the use of tobacco are notable and long continued and who are unable to bear even temporary physical strain without experiencing painful threatening or alarming effects which become manifest very soon or immediately after the exertion.

36. **Cardiac Murmurs.**—Having studied the character of the heart sounds of the normal dog, Thayer and MacCallum have produced, as far as possible, the lesions commonly observed in man, each in several cases. In other experiments they have made a few observations concerning the development of functional basic murmurs. The authors suggest that when auscultation is taught in small sections, several exercises in the study of experimental cardiac murmurs in the dog would do more toward making clear in the mind of the student the essential facts, without which rational diagnosis of cardiac lesions is impossible, than any other method of instruction. Aortic and pulmonic stenoses were produced by the passage of a cord about the vessel just above the valves. Aortic insufficiency was produced in eight instances. The nearest approach that was made to producing a mitral stenosis was to apply a clamp at about the position of the mitral ring. In six cases mitral insufficiency was produced by tearing the valves of chordæ tendinæ with a knife hook.

37. **Aneurism of Arch of Aorta.**—Fussell reviews 36 recorded cases and adds one case of his own of aneurism of the arch of aorta which ruptured into the superior vena cava. The diagnostic signs of this occurrence are said to be a sudden cyanosis, edema and dilatation of the veins of the face, head, neck, arms and chest; a peculiar, continued high-pitched murmur, present in about half the cases, and the physical signs of aneurism of the aorta.

38. **Forms of Albumin in Urine.**—Out of 5,330 specimens examined by Hastings and Hoobler, 4,068 showed reactions for albumin by heat and acid, or by salting or heat and acid, or by both. Nucleoalbumin alone was found in 839 of the specimens. The authors claim that albuminuria does not, necessarily, nor does it usually, indicate nephritis; but it may be indicative of nephritis, and, therefore, can not be disre-

garded in diagnosis. Albuminuria with casts is good evidence of nephritis, either temporary or permanent, in conditions showing the other evidences of Bright's disease. In no instance did nucleoalbuminuria alone occur in a case which suggested in any way nephritis. In only one instance was serum albumin absent in a case with the clinical diagnosis of nephritis. The authors emphasize the frequency of non-renal albuminuria and the occurrence of nucleoalbuminuria alone in a large percentage of cases. They recommend the addition of saturated salt solution with subsequent heating and acidifying with acetic acid as the safest test for serum albumin.

39. **Nephritis.**—Webster discusses the modern conceptions of nephritis, the influence of cardiovascular changes, albuminuria and cylindruria, chlorid retention, edema, uremia and the treatment of nephritis. He says that it is important to recognize that each case is a law unto itself, and that routine treatment is not only irrational, but condemnatory. He regards the limitation of salt as unnecessary because the theory on which its deprivation is based is not tenable. He considers the surgical treatment of nephritis rational in some cases and successful in many.

40. **Roentgen Rays in Unresolved Pneumonia.**—Edsall and Pemberton report the history of five patients who were treated with Roentgen rays for unresolved pneumonia with most excellent results. The authors state first that no results can be expected unless the duration of the condition has been reasonably short—a few weeks at most—for if organization has occurred a satisfactory result of treatment is almost inconceivable. Second, the condition should be chiefly a real lack of resolution and not a continued inflammation of the lung. Third, it is exceedingly important to determine, so far as possible, that one is actually dealing with unresolved pneumonia and not with tuberculosis. The treatment should be begun tentatively and with brief exposures and small doses until it is determined in the individual case that serious results are not likely to ensue.

41. **Diphtheria Epidemic.**—The epidemic of diphtheria reported on by Brown, Allen and Lupton lasted 51 days. Eleven cases of diphtheria and in 32 other individuals diphtheria bacilli were found on culture. There were no fatalities and no serious complications. In all, over 400 immunizing doses of antitoxin were given to 129 tuberculous and 45 non-tuberculous individuals. In no case did any infection occur. In four instances diphtheria developed between the fourteenth and sixteenth days following the first injection, and in one case four days and in another one day after the second injection. The authors state that in the presence of diphtheria epidemic patients with pulmonary tuberculosis should be treated as regards the diphtheria like otherwise healthy individuals. Mild diphtheria seems to exert little or no harmful influence on the pulmonary lesion in the tuberculous, and the antitoxin in small or large doses seems to have little or no effect on the pulmonary tuberculosis. Immunizing doses may be given patients with fever. Complications seem to occur after diphtheria no more often, probably less, in the tuberculous than in the non-tuberculous.

#### The Ophthalmic Record, Chicago. January.

- 43 \*Relief and Cure of Migraine by Correction of Errors of Refraction. A. R. Baker, Cleveland.
- 44 Stereoscopic Charts for Hyperphoria. D. W. Wells, Boston.
- 45 Operation for Secondary Cataract Embedded in the Vitreous. R. Denig, New York.
- 46 \*Melanotic Flat Sarcoma of the Choroid with Unusual Clinical Symptoms. G. E. de Schweinitz and C. M. Hosmer, Philadelphia.
- 47 Cataract Lid Retractor and Fixation Forceps. A. E. Prince, Springfield.
- 48 Cysticercus Cellulosæ of the Iris: Operation with Perfect Recovery. R. Rembe, Chicago.
- 49 Sarcoma of the Choroid. W. G. Gilbert, Calais, Me.

43. **Refraction Cure of Migraine.**—Inquiry made of 100 patients suffering from migraine showed Baker that 55 were cured, that is, there was no return of migraine, after the error of refraction was corrected. Thirty-one patients were greatly benefited and seldom had attacks, and when they came the attacks could usually be accounted for by leaving off the spectacles, excessive eye work, worry, indiscretion in eating



and drinking, commencing presbyopia, etc. Of the fourteen patients who were not benefited by correction of the error of refraction, five were cured by tenotomy of the ocular muscles, and one was cured by the use of the pessary. Eight patients continued to suffer more or less severely from migraine, but all continued to wear glasses and said they could not do without them. Baker calls attention to the fact that it is possible for a person with emmetropic eyes to have migraine from eyestrain; consequently, a correction of an error of refraction may not entirely cure a patient of migraine if the patient continues to overwork.

**46. Melanotic Flat Sarcoma of Choroid.**—The case reported by de Schweinitz and Hosmer is interesting from several standpoints. It illustrates the value of transillumination as a diagnostic agent and because flat sarcomas of the choroid are comparatively rare. Noteworthy features of the case were the recurring attacks of neuralgic pain, edema of the lid and localized edema of the bulbar conjunctiva with injection of the overlying superficial vessel. The diagnosis was confirmed microscopically.

#### Albany Medical Annals.

February.

50 What Shall We Eat? What Shall We Drink? How Shall We Be Saved? G. S. Eveleth, Little Falls, N. Y.

51 \*Importance of Intracellular Enzymes in Physiology and Pathology. H. C. Jackson, Albany, N. Y.

52 \*Extrauterine Pregnancy. G. S. Towne, Saratoga Springs, N. Y.

**51. Importance of Intracellular Enzymes.**—Jackson presents a very complete review of the character, properties and mode of action of intracellular enzymes. Incidentally, he remarks that it is decidedly questionable whether or not the beneficial results which are so often reported as the result of the so-called enzyme treatment of carcinoma and other conditions are in the relation of cause and effect in connection with the enzyme. He says that scientifically there does not seem to be any reasonable basis for the treatment.

**52. Extrauterine Pregnancy.**—Towne reports two cases of extrauterine pregnancy. The first case was rather a simple one of isthmie tubal pregnancy partially aborted; the second one was a ruptured tubal pregnancy, being almost a tubo-uterine type. Both cases show the necessity of immediate surgical intervention.

#### The Laryngoscope, St. Louis.

January.

53 Practical Problems in Otology and Rhinology. D. Grant, London.

54 \*Relation of Pathologic Condition of Nose and Accessory Sinuses to Visual Apparatus. J. A. Stucky, Lexington.

55 Mixed Laryngeal Infection. C. E. Munger, Waterbury, Conn.

56 \*Lymphosarcoma of Pharynx. O. T. Freer, Chicago.

57 Optic Neuritis in Thrombosis of Cranial Sinuses and Internal Jugular Vein. H. G. Langworthy, Dubuque, Iowa.

58 \*Operations on the Ear in Tuberculous Patients. W. G. B. Harland, Philadelphia.

59 Points in the Anatomy of the Temporal Bone to be Considered in Connection with Mastoiditis. J. Hollinger, Chicago.

60 Facial Hypoglossal Anastomosis. J. C. Beck, Chicago.

61 \*Traumatic Laryngitis with Eversion of Laryngeal Ventricle. J. H. Abraham, New York.

62 Speculum for Submucous Resection of the Septum. H. P. Mosher, Boston.

63 Simple, Strong Tonsil Snare. H. P. Moseley, New York.

**54. Relation of Nasal and Accessory Sinuses to Eye.**—Stucky claims that not enough attention is given to the treatment of the acute form of nasal accessory suppuration, and that the importance of its early recognition is not fully appreciated. He is convinced that many cases of paresis and paralysis of the extraocular muscles, supposed to be due to rheumatism or to syphilis, are caused by sphenoidal or ethmoidal disease. He has seen one case of ophthalmoplegia externa in which Killian's operation gave complete relief. The symptoms of the eye disturbance vary as much as do the size, shape and position of the sinuses. Stucky urges a closer relationship between the oculist and the rhinologist.

56.—See abstract in THE JOURNAL, Dec. 22, 1906, page 2123.

**58. Operations on Ear in Tuberculous Patients.**—Harland finds that there are three operations that are occasionally called for in tuberculous patients with ear complications: 1, Incision through the drum membrane; 2, removal of granulations and establishment of free drainage from the middle ear in cases with purulent discharge; 3, mastoid operation.

**61. Traumatic Laryngitis.**—Following a very severe pummeling, one blow landing on the right side of the larynx, Abraham's patient complained of dysphagia, melena and epistaxis. He could not talk above a whisper. The mucosa of the larynx was inflamed and infiltrated. Covering and completely obscuring the right vocal cord was an oval tumor, deeply injected, which was diagnosed as an eversion or prolapse of the laryngeal ventricle. Abraham applied ice compresses, put the patient to bed and administered sulphate of magnesia. On the fourth day a 1 per cent. solution of alun was sprayed into the larynx; later this was gradually increased up to 5 per cent. The patient recovered his voice and regained his usual health.

#### St. Paul Medical Journal.

February.

64 \*Two Cases of Endothelial Sarcoma of the Brain; Successful Removals with Subsequent Death. C. E. Riggs, St. Paul.

65 Tent and Porch Living for Consumptive Patients. R. M. Phelps, Rochester, Minn.

66 \*Submucous Resection of the Nasal Septum for Correction of Septal Irregularities. W. R. Murray, Minneapolis.

67 Cytotoxins. L. S. B. Robinson, St. Paul, Minn.

68 Uterine Fibroids Complicating Pregnancy. A. MacLaren, St. Paul.

**64. Sarcoma of Brain.**—Riggs claims that in every case of brain tumor radical operation should be done if possible. If this is not advisable, decompressive trephining should be done. He regards cerebral decompression as a definite recognized means of surgical endeavor in every inoperable case. He urges that palliative operations should always be done early and before optic atrophy has occurred. Pain will kill; headache, therefore, may be of such intensity as to demand this procedure. The first patient whose history is given by Riggs died about three months after the operation from what is called a complication of diseases. There was no postmortem. In the second case the growth evidently was of metastatic origin, the primary tumor being situated in the lung. This patient died about six months after the operation, from which considerable benefit had been received.

**66. Submucous Resection.**—Murray refers briefly to all the operations that have been employed for the correction of irregularities of the nasal septum, but expresses himself as favoring submucous resection.

#### American Practitioner and News, Louisville.

February.

69 Malaria. W. F. Blackford, Louisville.

70 Scalp and Skull Injuries. J. T. Dunn, Louisville.

#### Journal of the Minnesota State Medical Association, Minneapolis.

February 15.

71 Symptoms and Diagnosis of Gallstones with Report of Cases. C. G. Swenson, Braham, Minn.

72 Mitral Lesions of Endocarditis. G. J. Schottler, Dexter, Minn.

73 The Tuberculosis Problem. W. H. Aurand, Minneapolis, Minn.

74 Retroversion of the Uterus. D. N. Jones, Gaylord, Minn.

March 1.

75 Sidelights from Recent Literature on the Etiology and Pathology of Pneumonia. S. M. White, Minneapolis.

76 Complications of Pneumonia. H. H. Witherstine, Rochester.

77 Symptoms, Diagnosis, Course and Prognosis of Pneumonia. E. H. Bayley, Lake City, Minn.

78 Superficial Lesions Caused by the Diplococcus Pneumoniae. E. S. Judd, Rochester.

79 Experiences in Obstetrics. C. T. Granger and G. T. Joyce, Rochester.

80 Case of Tetany. L. C. Weeks, Detroit.

81 Rocky Mountain Spotted Fever. W. Chowning, Minneapolis.

82 Case of Strangulated Hernia. C. H. Hunter, Minneapolis.

#### Vermont Medical Monthly, Burlington.

February 15.

83 \*Unusual and Abnormal Conditions of the Appendix. A. P. Heineck, Chicago.

84 Perforative Appendicitis. S. A. Russlow, Randolph, Vt.

85 Treatment of Pneumonia. J. M. French, Milford, Mass.

86 Urinary Diagnosis in Nephritis. G. H. Parmenter, Montpelier.

87 Therapeutics of Quinin. J. P. Newton, Benson.

83.—This article appeared in the Mobile Medical and Surgical Journal, June, 1907.

#### Detroit Medical Journal.

February.

88 Present Status of Surgery of Prostate. P. Thorndike, Boston.

89 Hyperemia as Treatment for Acute and Chronic Inflammatory Disease. M. Ballin, Detroit.

90 Study of the Infant's Stool. P. Selter, Solingen, Germany.

91 Etiology and Treatment of Pruritus Ani. J. A. McVeigh, Detroit.



## Medical Sentinel, Portland.

February.

- 92 President's Address, Portland Academy of Medicine. S. E. Josephi, Portland, Ore.
- 93 Surgical Anatomy of the Mastoid Antrum. C. W. Shaff, Lewiston.
- 94 Value of Blood Examination in Surgery. R. I. Newell, Spokane.
- 95 Diarrhea in Infancy and Early Childhood. A. Hunter, Kendrick, Idaho.
- 96 Gelseminin. R. J. Smith, Smithfield, Utah.

## Kentucky Medical Journal, Bowling Green.

March.

- 97 \*Tuberculosis of the Peritoneum. L. S. McMurtry, Louisville.
- 98 Protection of the Innocent from Venereal Infection and Prostitution. F. M. Stites, Hopkinsville.
- 99 \*Gonorrhea Up To Date. J. T. Windell, Louisville.
- 100 Asepsis. W. H. Taulbee, Maysville.
- 101 Relation Between the Railway Company and the Railway Surgeon. C. H. Vaught, Richmond.
- 102 Management of the Epileptic State. C. Pope, Louisville.
- 103 Hyperchlorhydria or Hyperacidity. G. E. Huddle, Bowling Green.
- 104 Medical Consultations. J. A. Lewis, Georgetown.
- 105 Observations of European Surgery. O. E. Bloch, Louisville.
- 106 Treatment of Hepatic Abscess by Aspiration and Siphonage. O. H. Reynolds, Frankfort.

97, 99.—See abstract in THE JOURNAL, Oct. 29, 1906, page 1401.

## Medical Fortnightly, St. Louis.

February 25.

- 107 Critical Analysis of the Expert Testimony in the "Jack the Stabber" Case. D. S. Booth, St. Louis.
- 108 Systematic Treatment of Syphilis. W. S. Gotthell, New York.

## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

## British Medical Journal.

February 16.

- 1 \*Objects of Hunter's Life. H. T. Butlin.
- 2 \*Ichthyosis and Its Treatment. W. A. Jamieson.
- 3 \*Treatment of Rodent Ulcer by Zinc Ions. L. Jones.
- 4 \*Secondary Suture of the Great Sciatic Nerve. J. Sherren.
- 5 \*Idiopathic Dilatation of the Rectum and Colon as Far as the Hepatic Flexure. H. M. Fletcher and H. B. Robinson.
- 6 \*Parathyroids and Accessory Thyroids in Man. D. Forsyth.
- 7 Influence of Increased Barometric Pressure in Man; Saturation of Tissue Fluids with Nitrogen. M. Greenwood.

1. **Objects of Hunter's Life.**—Butlin gives a short sketch of the life of Hunter, taking up particularly the scheme of his life and the means he took to accomplish what he did.

2. **Treatment of Ichthyosis.**—Jamieson lays great stress on the importance of promoting exfoliation of the unduly adherent and effete horny cells in this affection. He recommends the use of resorcin combined with glycerin, in union with starch, which is said to form a bland, persistent, soothing and softening medium with which the resorcin may be combined. He advises using a medicated soap, and a super-fatted one with which resorcin and salicylic acid are incorporated because this prepares the way for the subsequent glycerinization. He has also found the internal administration of cod-liver oil, in small doses, at night, of some service.

3. **Treatment of Rodent Ulcer.**—The method described by Jones can be carried out with an ordinary portable battery. The process is based on the principle of the introduction of zinc ions into the tissues of the ulcer by means of a continuous current. The ulcer is made to assume the appearance of an ordinary simple sore, and in many instances it is healed in a few weeks after a single application. An ordinary medical continuous current battery, with a galvanometer, a pair of wires, a flat pad for completing the circuit at the negative pole, and a rod or other electrode of zinc attached to the positive pole, completes the outfit. The zinc must be covered with three or four layers of lint, which serve as a reservoir to hold the zinc solution, a 2 per cent. solution of the sulphate being very suitable. The zinc should be freshly cleaned or amalgamated, and the solution should be made with distilled water. It is as well not to touch the zinc electrode or its covers with the fingers unnecessarily, because every touch imparts a trace of sodium chlorid from the skin, and tends to reduce the efficiency of the process a little by bringing in some foreign ions. The circuit is completed through the usual pad electrode applied to any convenient part of the patient, the zinc electrode of suitable size is held on the rodent ulcer, and the current is slowly

turned on until a current of 5, or 8, or 10 milliamperes is reached, according to the size of the electrode used.

4. **Secondary Suture of Sciatic Nerve.**—Sherren reports a case of complete division of the great and small sciatic nerves at the lower part of the sciatic plexus, the result of a bullet wound. He sutured the distal end of the great sciatic to the central end of the lumbosacral cord and second sacral nerve, enclosing the junction in a decalcified bone tube. The peripheral end of the small sciatic he sutured into a small transverse cut in the great sciatic below the point of union to the lumbosacral cord and second sacral nerves. Six weeks after the operation a prick was appreciated over nearly the whole of the small sciatic area, and a week later sensation was restored over the whole of this area. The operation was done six months after the accident occurred. Six months after the operation deep touch was appreciated and well localized over all the affected area, sensibility to prick has been restored to the leg, but the foot remains insensitive to this stimulant.

5. **Idiopathic Dilatation of Rectum and Colon.**—The patient, whose history is given by Fletcher and Robinson, was a boy 12 years of age. Except for the large size of the abdomen and a tendency to constipation, nothing was noticed by the boy's parents until about two weeks before his admission to the hospital. The rapid wasting with great abdominal distension, accompanied by vomiting and obstinate constipation, suggested an acute condition and closely simulated tuberculous peritonitis. An operation was decided on. A mid-line incision was made below the umbilicus and a large tense bluish-colored tumor presented, with very large distended veins coursing over it, and with a lace-like pattern on its surface, due to the hypertrophied and separated muscular bundles. The bladder was attached to the lower part in front. The swelling was proved to be free at the sides and in front, and to extend upward in the middle line to the ensiform cartilage. To explore this further the incision had to be extended considerably upward, and the tumor was brought out of the belly. The following was found to be the condition of things: The mid-line swelling started from the pelvic floor and expanded immediately like the body of a flask; above the navel it began to narrow into the neck of the flask, but yet its circumference was as large as a man's arm. Just below the ensiform cartilage there was a somewhat acute bend to the left, and the gut, with almost the same caliber, went straight down into the left iliac fossa, formed a loop, and became continuous with the descending colon. Further exploration showed that the dilatation continued along the descending and transverse colon, with very little diminution in size until the hepatic flexure was reached. The ascending colon was only slightly enlarged, and filled with some hard fecal lumps, and the cecum and appendix were normal. The colon beyond the hepatic flexure contained many pounds of soft, dark fecal material, which was squeezed out through the rectum by gradual pressure on the gut from within, with dilatation of the anal canal by the assistant's finger. It was remarked at the operation when this had been evacuated that the hypertrophy of the bowel wall was so great as to feel "as thick as the sole of a boot." The finger, after passing through the internal sphincter, entered an enormously dilated cavity whose walls were touched with difficulty. No hard or enlarged glands were felt in the mesentery; there were no signs of peritonitis nor any abnormal band. The rectum before emptying was measured with an aseptic silk ligature at its greatest circumference from mesentery to mesentery, and proved to be 19¾ inches. The abdominal wall was closed in layers. The boy remained well for about nine months, when he began to complain of abdominal pain which rapidly became worse, but was relieved by ginger brandy. Diarrhea followed, the boy became comatose and died in coma 24 hours after the onset of the abdominal pain. At the postmortem the rectum and colon were found enormously distended. The authors suggest that the terminal enteritis may have been due to the ingestion of some toxic substance.

6. **Importance of Parathyroids.**—Forsyth has examined the parathyroids in about 60 human beings, and in over 70 different species of animals. As the result of these studies he concludes that the relationship between the parathyroids and



age, between the parathyroids and accessory thyroids, and between accessory thyroids and age is so clear as to be strong evidence against admitting for the parathyroids the physiologic value attached to them by many experimenters.

### The Lancet, London.

February 16.

- 8 \*Leucoderma and Analogous Changes in the Pigmentation of the Skin. W. H. Evans.
- 9 \*Injury and Deformity of the Epiphysis of the Head of Femur: Coxa Vara. R. C. Elmslie.
- 10 \*Some Affections of Pancreas. S. Phillips.
- 11 \*Large Vesical Calculus Successfully Removed by Suprapubic Operation. H. Littlewood.
- 12 \*Cancer of the Esophagus. E. Pratt.
- 13 Value of Bacteriologic Examination of Blood in Typhoid and Other Bacteriemias. F. G. Bushnell.

8. **Leucoderma and Pigmentation of Skin.**—Evans holds that in no way does the nervous system have any act or part in the production or the localization of the patches of leucoderma; that the disease is in all probability due to the action of some toxin, derived from the alimentary canal, assisted by local injury and the action of light; and that the mechanism by which this is carried out is the vital action of peripatetic cells.

9. **Coxa Vara.**—Elmslie discusses the clinical history of this affection very fully, taking up in the order mentioned its history, clinical varieties, pathology and treatment.

10. **Affections of Pancreas.**—Phillips discusses six cases of chronic interstitial pancreatitis and 20 cases of carcinoma of the pancreas which have come under his observation. The paper is to be continued.

11. **Vesical Calculus.**—Littlewood removed a calculus weighing 18 ounces and 5 drams from the bladder of a man aged 47, who stated that a diagnosis of his condition was made when he was 15 years of age. Operation was refused at that time. Since then he has had constant urinary trouble, frequent and painful urination, and has many times passed blood. After the age of 32 the symptoms became so aggravated that an operation had to be done.

12. **Cancer of Esophagus.**—The case reported by Pratt was one of primary tumor of the esophagus, situated just above the diaphragm, with secondary tumors of the liver.

### Journal of Obstetrics and Gynecology of the British Empire, London.

February.

- 14 \*Chronic Septic Infection of the Uterus and Its Appendages. A. Donald.
- 15 \*Pathology of Chronic Metritis. W. F. Shaw.
- 16 Intractable Uterine Hemorrhage and Arteriosclerosis of Uterine Vessels. E. H. B. Macdonald.
- 17 Case of Vesical Calculi Due to Perforation of Bladder by Suppurating Dermoid Tumor of Ovary. J. A. C. Kynoch.

14. **Chronic Septic Infection of Uterus and Appendages.**—Donald gives a comprehensive account of the progress and results of certain inflammatory processes as they infect the uterus, tubes and ovaries.

15. **Pathology of Chronic Metritis.**—Shaw gives the results of the microscopic examination of 38 uteri extirpated for chronic metritis alone, and of 7 extirpated for chronic metritis with some other concurrent disease. In three cases there was carcinoma of the cervix, in two intramural fibroids, in one a tubo-ovarian abscess, and in one double ovarian disease. For comparison he also examined 23 normal uteri from patients of various ages and the endometrium removed by curtetting in 50 cases of endometritis. He found that the hemorrhage of chronic metritis does not depend on changes in the vessel walls of the mesometrium. In 21 instances the vessels were not increased in number nor were any changes observed in the vessel wall, but in the histories of these 21 hemorrhage was of quite as frequent occurrence as in the other 17. Endometritis was present in each of the 38 cases. The changes in the connective and muscular tissues were also studied carefully and are reported on at length. Shaw concludes that chronic metritis is a simple hypertrophy of the mesometrium and is not a connective tissue hyperplasia.

### Glasgow Medical Journal.

February.

- 18 Need of Progressive Study of Industrial Diseases. J. W. Allan.
- 19 \*Treatment of Conjunctivitis. A. F. Fergus.

- 20 Plea for Study of the Deaf Child and for Teaching of Speech to the Semi-deaf and Semi-mute (con.) J. K. Love.
- 21 \*Treatment of Neurasthenia. W. F. Somerville.
- 22 \*Case in which the Radical Mastoid Operation was Performed for Purulent Otitis Media. J. G. Connal.
- 23 Throat Department of Glasgow Royal Infirmary. J. Macintyre.

19. **Treatment of Conjunctivitis.**—Fergus compares the modes of treatment of conjunctivitis in vogue 25 years ago with those now employed.

21. **Treatment of Neurasthenia.**—Somerville advises rest in bed for several weeks, with judicious feeding, massage, passive movements and then resistance exercises and the high-frequency current in the treatment of neurasthenia. On the whole, his treatment does not differ from that employed by others.

22. **Radical Mastoid Operation.**—When seen for the first time Connal's patient, a boy 12 years of age, had a primary diphtheria of the external auditory canal. The diagnosis was confirmed microscopically. On account of subfebrile temperature and a slightly fetid purulent discharge from the ear a radical mastoid operation was done. After the operation there was a persistent elevation of temperature, associated with pain in the joints which yielded to administration of sodium salicylate.

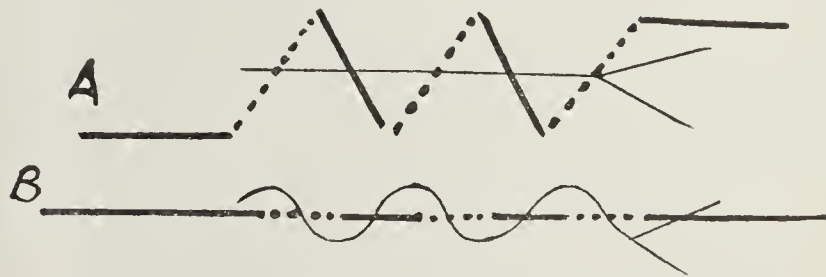
### Revue de Chirurgie, Paris.

Last indexed, XLVII, page 2126.

- 24 (XXVI, No. 11, pp. 607-784.) Frequency of Bony Prominence Above Internal Condyle. (Apophyse sus-épitrochléenne.) C. Féré.
- 25 \*Congenital Talipes Varus. (Pied varus cong.) De Vlaccos.
- 26 \*Radical Treatment of Inguinal Hernia. (Hernies inguinales.) L. Gratschoff. Commenced in No. 10.
- 27 (No. 12, pp. 785-948.) \*Evacuation of the Parotid Cavity by Resection of the End of the Jaw. (Evidement de la loge parotidienne.) L. Bérard and R. Leriche.
- 28 Nature and Origin of Cysts in the Bones, Especially Simple Cysts of the Long Bones. (Kystes des os.) E. Kummer.
- 29 Treatment of Arteriovenous Aneurism. (Anévrisme art.-vein.) D. J. Cranwell.
- 30 \*Removal of Vas Deferens and Seminal Vesicle in Genital Tuberculosis. (Vaso-vésiculectomie.) R. Baudet and L. Kendirdjy. Commenced in No. 9.
- 31 \*Operative Indications in Old Traumatism of the Skull. (Traum. anciens du crâne.) L. Tixier. Commenced in No. 11.

25. **Congenital Talipes Varus.**—De Vlaccos ascribes this condition to deficient amniotic fluid, and relates the details of three cases which sustain this view. In treatment, the position of the knee and hip joints must be regulated, and if a cast is applied, it must include part of the pelvis. If the abductors are much contracted, he advises tenotomy at once, instead of wasting time on orthopedic measures.

26. **Radical Treatment of Inguinal Hernia.**—Gratschoff's method has already been described in THE JOURNAL, on page 758 of vol. XLVI, 1906. Special advantages are claimed for his method of suture which does not bind the tissues at any point. The stitches are taken with a single thread of strong silk. The ends of the thread are fastened to an elastic steel bow above the skin. The tension of the bow tends to straighten out the thread so that by the end of eight days the thread is in a single straight line, while the tissues have yielded and the former straight incision is now a wavy line. The steel bow



A, suture the day of operation; B, a week later.

is about 13 cm. (5 or 6 in.) long, with a perforated bulging tip at each end. Two small hooks and a catch to hold the thread are soldered on the convex side, and to these the thread is fastened. With a curved needle the thread is then passed through the skin 1 or 2 cm. from the inner end of the incision, then through the internal pillar of the ring and the external pillar, through the internal pillar a second time, and so on until the necessary number of stitches have been taken, when the thread is brought out through the skin about 1 cm.



from the outer end of the incision. As a rule, two stitches for each pillar are sufficient. The thread is then drawn taut and fastened to the curved bow. At the end of eight days the bow and suture are removed. He says that with this technic the radical operation is completed in ten minutes, including the anesthesia. The danger from the anesthesia and from infection are comparatively slight, and he declares that there is no danger of embolism. In case of recurrence the simple operation can be done again without fear. This technic is contraindicated only in cases with a defective posterior wall in the inguinal canal.

**27. Evacuation of the Parotid Cavity.**—Bérard and Leriche had occasion to remove a large tumor which had recurred in the parotid region and also two other malignant tumors at the same point in other cases. Instead of blind groping in the parts, they evolved a technic for systematic access to the region by resection of the entire end of the jaw, including the posterior condyle. After perfecting the technic on the cadaver they followed it in two more recent cases, with eminently satisfactory results, as they relate in detail with illustration.

**30. Extirpation of Vas and Seminal Vesicle in Case of Tuberculosis of the Genital Organs.**—Baudet and Kendirdjy discuss the indications and contraindications for this operation. Among the latter are concomitant cystitis or advanced lesions in the lungs. Bad general condition is not a contraindication if it is presumably the result of the genital tuberculosis, and the age need not be taken into consideration. The operation has been done on a child of 3 and on a man of 62. It is indicated in case of a urinary fistula due to the tuberculous affection of the seminal vesicle; in case of rectal obstruction or urinary disturbances not due to cystitis; when the seminal vesicles are much enlarged or continue to increase in size after subsidence of the epididymitis under treatment, and also when manifest lesions exist along the vas deferens. Under other conditions the operation is regarded as too serious to compensate for the possible gain. Forty-seven cases are reviewed and summarized, the list including a number of unpublished cases. The perineal route was followed in 30, Young's method in 3, the inguinal route in 6, the Kraske or sacral route in 2, and the parasacral in 5. Four of the case histories are from Baudet's own experience and 8 from Roux's.

**31. Operative Treatment of Old Traumatic Lesions of the Skull.**—Tixier concludes from his study of this subject that too little attention has been paid in the past to the cerebrospinal fluid in the pathogenesis of symptoms from traumatism, recent or remote. He also emphasizes the necessity for investigating the past history for an accident to the skull in all cases of brain trouble. He declares that Jacksonian epilepsy should be regarded in the same light as a motor or sensory cortical paralysis, in connection with localization of the symptoms. Besides this form, generalized epilepsy may be observed as a sequel to an accident to the skull in individuals free from any nervous taint, and benefit is liable to follow trephining in such cases. Young children display a great tendency to diffuse symptoms consecutive to circumscribed localized traumatism affecting the skull. Even general epileptic seizures in adults are not rare as the consequence of a traumatism affecting regions other than the Rolandic area. Headache may resist all palliative measures, and by its intensity may demand surgical intervention. Such symptoms as contractures, signs of organic decay, coma and the like, although usually regarded as grave and incurable, are likely to retrogress under appropriate surgical treatment of the cranial lesion. In short, Tixier does not recognize a single absolute contraindication to surgical treatment, saying that it is never too late to operate and trephining offers the only chance of recovery for patients who have exhausted all the resources of medical therapeutics. Lumbar puncture is the only means of determining quantitative or qualitative modification of the cerebrospinal fluid. Undue pressure from this fluid is responsible for many of the symptoms of trauma affecting the skull. A chronic lesion left from some old injury may induce a reaction on the part of the meninges whose existence is revealed by the presence of lymphocytes in the centrifugated sediment.

This reaction may be observed long after the acute stage is past. Lumbar puncture also relieves undue tension of the cerebrospinal fluid and thus banishes the symptoms from this cause. Headache, vertigo, edema of the papilla, epileptiform seizures and the like are sometimes favorably influenced by withdrawal of the excess of cerebrospinal fluid, but the results are liable not to be permanent, as the same cause that produced the hypertension in the first place induces it again. In operating for an old trauma of the skull, trephining is more or less an exploratory operation, and the opening should be made large. In case the cortex presents a normal appearance, before proceeding to more radical measures, it is wise to wait a while to see if the mere trephining will not relieve without further intervention. He advises meningo-periosteal suture to prevent trouble later from adhesion between the dura and cortex. The results have been much better with definite resection of the bone than with temporary resections. In case of recurrence or of complete or relative failure, he advises not to hesitate to operate again. It frequently happens that at the first operation the lesion was overlooked or the lesions found were supposed to be responsible for all the trouble. A series of operations may thus be extremely important; reports of patients cured after a third operation are not exceptional in medical literature.

#### Revue de Gynécologie, Paris.

*Last indexed, XLVII, page 1333.*

- 32 (X, No. 5, pp. 771-960.) \*Technic of Gynecologic Laparotomy. (Soins pré-opératoires; détails de technique opératoire.) L. Dartigues.
- 33 \*Isolated Flaps of Peritoneum for Patching the Viscera. (Greffes péritonéales.) L. Loewy.
- 34 \*Introduction of Medicinal Substances into the Uterine Mucosa by Electricity. (Introduction d'ions en gynécologie.) A. Zimmern.
- 35 \*Pregnancy in a Cornu of the Uterus. (La grossesse angulaire.) P. Lequeux.
- 36 \*Tuberculosis of the Vulva. (Tub. de la vulve.) X. Bender.
- 37 (No. 6, pp. 963-1152.) Torsion of Hematosalpinx Complicating Congenital Atresia of the Vagina. (Torsion des hémato-salpinx, etc.) M. Chaput.
- 38 \*Reciprocal Relations Between Epitheliomata of Uterus and Ovary. (Epithéliomas de l'ut. et de l'ovaire.) Albertin and A. Jambon.
- 39 \*Tuberculosis in Hernias. (Tub. herniaire et vagino-péritonéale.) G. Cotte.
- 40 \*Acute Hemorrhagic Pancreatitis with Diffuse Fat Necrosis. (Pancréatite aigue hém.) C. Lenormant and P. Lecène.

**32. Laparotomies in Gynecology.**—Dartigues reviews his experiences with 1,000 laparotomies at Pozzi's clinic, and describes the preferred technic and preparation, with 37 illustrations. Among the points emphasized is the advisability of refraining from saline injection or infusion during the first few hours after a laparotomy, as otherwise the oozing is much more profuse and the tendency to hemorrhage is augmented by the increased volume of the blood, distending the blood vessels and threatening rupture or tearing out of the sutures. By waiting a few hours before making the injection, the danger of hemorrhage, he states, is much reduced.

**33. Grafts of Peritoneum.**—Loewy gives an illustrated description of the process of healing when an isolated flap of the peritoneum has been used to cover or patch a defect in a viscus. By using an isolated flap there is no danger of a persisting and vascular band between it and the rest of the peritoneum, while at the same time the flap heals in place and becomes an integral part of the surface on which it is implanted, according to experiments on animals. He further describes 4 cases in which the method was successfully applied in the clinic. In 2 cases the "Loewyte," as the transplanted flap is called, was used to cover a defect in the uterus, in another two flaps were used on the liver after removal of a hydatid cyst. In another case, removal of an ovarian cyst left a defect which was covered with a flap of omentum held in place with four stitches. In other cases the defect was packed with the flap of omentum or the flap was applied after supravaginal hysterectomy, or to the tube after removing an adherent loop of intestine.

**34. Ions in Gynecology.**—Zimmern relates favorable experiences at Pozzi's clinic with drugs introduced into the uterine mucosa by means of electrolysis.

**35. Pregnancy in the Uterine Cornua.**—Lequeux concludes his study of this subject with the remark that rupture is rare



in this condition, which is half way between normal and tubal pregnancy. Expectant treatment is the principle to be followed, but when the diagnosis is uncertain, there should be redoubled caution. There are occasionally pains and hemorrhage during the first four months. The lateral location of the tumor, without tendency to slide down toward the pouch of Douglas, and the finding of the round ligament entirely outside the hypertrophied mass, are the signs that differentiate an "angular" from an ectopic pregnancy.

**36. Tuberculosis of the Vulva.**—Bender has encountered 2 new cases of tuberculosis of the vulva and has collected others on record, bringing the total to 48. Besides the classic ulcerative form, there is another variety with merely hypertrophy, edema, and an aspect suggesting elephantiasis. Traumatism was noted in a number of cases, and transmission from the male was evident in others. Sometimes the lesions recur again and again after extirpation and energetic treatment; in other cases a complete cure is realized. In some cases the course of the affection is extremely slow; from 7 to 17 years in some instances. Treatment should be by extensive removal into sound tissue, with immediate suture, he says, except in presence of extensive tuberculous lesions elsewhere. Multiple fistulas should be slit over a grooved sound and thermocauterized.

**38. Concomitant Epitheliomata of Uterus and Ovary.**—Albertin and Jambon describe 2 cases of simultaneous cancer in uterus and ovary. In one case the uterine tumor was primary and in the other the ovarian. They affirm that malignant disease of the ovary requires ablation of the uterus and the adnexa of the other side, and, likewise, that hysterectomy for malignant disease should invariably be accompanied by bilateral oöphorectomy. The nervous disturbances that may follow are less to be feared, they declare, than ovarian or uterine metastasis.

**39. Tuberculosis in a Hernia.**—Five cases of tuberculous processes in a hernia are reported, accompanied by vaginoperitoneal complications. One patient was a child of 7; the others were men between 16 and 33. The lesions were apparently primary in all, and were treated by resection. Other cases that have been published are summarized, a total of 136.

**40. Acute Hemorrhagic Pancreatitis.**—Lenormant and Lécène had occasion to operate on a young man presenting suddenly symptoms of severe, acute ileus and peritonitis of unknown cause. Nothing abnormal was found at the laparotomy except small white spots, like drops of candle grease, noticed at certain parts of the great omentum. The appendix, stomach and intestines were normal, and the abdomen was sutured without further enlightenment, but the postmortem findings thirty-six hours later revealed inoperable hemorrhagic pancreatitis with diffuse fat necrosis, on a basis of an old chronic, mild interstitial pancreatitis. The particulars of 36 similar cases from the literature are added. Six of the otherwise doomed patients were saved by a prompt operation. This allows the pancreatic secretions a way of escape through the drain. It is their retention, the authors state, that sets up the fat necrosis and other mischief. In Porter's case the pancreatic affection recurred a year later, and an operation was again undertaken, with successful outcome. This time the trouble was a fluctuating focus in the head of the pancreas.

#### Beiträge z. Klinik der Tuberkulose, Würzburg.

*Last indexed, XLVII, page 1689.*

- 41 (VI, No. 3, pp. 228-326.) \*Tuberculosis in Early Childhood. (Tub. im frühen Kindesalter.) A. Schlossmann.
- 42 \*The Neutrophile Leucocytes in Specific Treatment of Chronic Pulmonary Tuberculosis. (Alt-Tuberkulin, Neu-Tuberkulin Koch, Tuberculinum Denys und Hetol.) Uhl.
- 43 Case of Regular Premenstrual Hemoptysis in Tuberculosis. (Prämenstruellen Lungenblutungen.) A. Scherer.
- 44 \*Tuberculosis of the Esophagus. (Tub. des Oesoph.) H. v. Schrötter.
- 45 Relations Between Hemoptysis and Fibrin Casts in Sputa. (Beziehung zwischen Hämoptoe und Fibringerinnsel im Auswurf.) J. Port.
- 46 (No. 4, pp. 327-431.) \*Collateral Tuberculous Inflammation. (Kollaterale tub. Entzündung.) N. P. Tendeloo.
- 47 Tuberculin Diagnosis of Pulmonary Tuberculosis. (Zur Tub.-Diagnostik der Lungentub.) F. Junker.
- 48 Alcohol and Tuberculosis. (Schlusswort.) Wolff.
- 49 Experimental Study of Action of Old Tuberculin. (Wirkungen des Alttuberkulins.) G. Schröder.

**41. Tuberculosis in Early Childhood.**—This article is the address prepared by Schlossmann for the Fifth International Tuberculosis Conference recently held at The Hague. He regards Behring's act in calling attention to the connection between infection in infancy and the development of tuberculosis in later years, as the most important progress in the campaign against tuberculosis since the discovery of the tubercle bacillus. Careful study of the records and wide personal experience have convinced Schlossmann that the death rate from tuberculosis in infancy is much higher than indicated by the official reports. He regards 6.8 per cent. as the general average death rate from tuberculosis during the first year of life. He accepts it as established that a primary tuberculous affection of the lungs and bronchial glands can originate from the intestinal tract, and that infection by way of inhalation is of much less frequent occurrence. He is also convinced that tuberculosis in the overwhelming majority of cases is a "child's disease." Persons who escape it during childhood seldom develop it later. This assumption explains among other things the larger proportion of cases of tuberculosis among the poor. The children of the well-to-do are better protected during childhood, while in later life the conditions are more even in the two classes. Prevention of tuberculosis among children is a problem that can be solved with comparatively little effort and expense. If only a tenth of the sums spent hitherto in combating tuberculosis among adults were diverted to prophylaxis of the disease among children, inestimable good might result. The rearing of human beings free from tuberculosis is a much easier task, he asserts, than the attempt to cure the already existing disease.

**42. Influence of Tuberculin Treatment on the Neutrophile Leucocytes.**—On page 494 of vol. xlii, 1904, THE JOURNAL published a summary of Arneth's views in regard to the importance of the modifications in the neutrophile leucocytes as an index of the course of infectious diseases. Uhl has been applying Arneth's method as a means of tracing the progress of tuberculous processes under specific treatment at the Edmundsthal sanatorium. No improvement in the blood picture was obtained with cinnamic acid, but the blood picture improved constantly under the influence of tuberculin treatment, with very few exceptions. Even very small doses were followed by unmistakable improvement.

**44. Tuberculosis of the Esophagus.**—In the 2 cases reported by von Schrötter the right lung was primarily affected and the corresponding part of the esophagus became involved. He was able to inspect the lesion directly with the esophagoscope, the first time, he says, that this has been done in the clinic. He believes that a large focus elsewhere is a prerequisite for a tuberculous lesion in the esophagus, with adhesion of the wall.

**46. Collateral Tuberculous Inflammation.**—Tendeloo remarks that many tuberculous foci in the lungs first manifest their presence by collateral inflammation, as in the case of hydrops of the knee and in many cases of apparently primary tuberculous pleurisy. The original focus may be so small that it is overlooked even at autopsy. He presents further evidence to prove that the tubercle bacillus and its toxins are liable to induce collateral inflammation near or at a distance, and also that such inflammation is liable to retrogress completely or to subside into cheesy degeneration and connective tissue organization.

#### Berliner klinische Wochenschrift.

- 50 (XLIV, No. 3, pp. 65-92.) "Ascending" Tuberculosis of Female Genital Tract. (Ascend. Tub. im weiblichen Genitaltrakt.) P. v. Baumgarten.
- 51 Subglottic Laryngoscopy. (Subglottische Laryngoskopie.) M. Senator.
- 52 The "Silver Spirochetes." (Zur Kritik der Silberspirochæte.) E. Gierke.
- 53 Study of the Production of Mucus in the Stomach. (Schleimabsonderung im Magen.) M. Pewsner. Commenced in No. 2.
- 54 The Breathing Test. (Atemprobe.) H. Marx.
- 55 (No. 4, pp. 93-124.) Catalytic Influencing of Autolysis of the Liver by Colloidal Metals. (Beeinflussung der Leberautolyse durch kolloidale Metalle.) M. Ascoli and G. Izar.
- 56 Importance of the Albuminoid Precipitated by Acetic Acid in Children's Urine. (Bedeutung des durch Essigsäure fällbaren Eiweisskörpers im Harn der Kinder.) L. Langstein.



- 57 Which Elements of the Inflamed Tissues Simulate "Silver Spirochetes," (Weiche Gewebsbestandteile, etc.) H. Friedenthal.
- 58 Reliability for Diagnosis and Specificity of the Complement-Binding Method in Typhoid and Paratyphoid. (Komplementbindungs-methode.) J. Leuchs.
- 59 Study of Fever. (Einiges über das Fieber.) H. Beitzke.

**Deutsche medizinische Wochenschrift, Berlin and Leipsic.**

- 60 (XXXIII, No. 4, pp. 129-168.) \*Treatment of Endocarditis. (Endocarditis.) G. Hoppe-Seyler. Clinical lecture.
- 61 \*Action of Arsenic on Trypanosomes and Spirochetes. (Wirkung des Atoxyls auf Trypanosomen und Spirochäten.) Uhlenhuth, Gross and Bickel.
- 62 \*Excessive Secretion of Gastric Juice During Digestion. (Ueber digestiven Magensaftfluss.) I. Boas.
- 63 \*Change in Chemistry of Stomach After Gastroenterostomy and the Influence of this Operation on Ulcer and Carcinoma of the Stomach. (Änderung des Magenchemismus.) M. Katzenstein. Commenced in No. 3.
- 64 \*Technic of Intravenous Therapy. (Zur Methodik der intravenösen Therapie.) H. Strauss.
- 65 Voluntary Dilatation of the Pupill. (Willkürliche Erweiterung der Pupillen.) M. Reichardt.
- 66 New Remedies, Specialties and "Patent Medicines." (Neue Arzneimittel, etc.) F. Zernik.
- 67 Vegetable Diet as the Diet for the Masses and in Therapeutics. (Vegetarische Diät als Volksernährung und als Heilmittel.) W. Ebstein.
- 68 \*Professional Secrecy. (Zur ärztlichen Schweigepflicht.) E. Landsberg.

60. Treatment of Endocarditis.—Hoppe-Seyler declares that the treatment of endocarditis consists in absolute quiet, after the causal trouble has been discovered and corrected so far as possible. Suppurative otitis media, follicular tonsillitis, chronic appendicitis, abscess in the prostate, adnexitis, gonorrhea or a pneumococcus affection may be the underlying cause, ignored in some instances. He relates the case of a girl with repeatedly recurring endocarditis with high fever, infarcts in the lungs, anemia, emaciation, etc., who was supposed to be tuberculous, but who was promptly cured of all these symptoms and restored to apparent health by removal of the tonsils on account of recurring tonsillitis. In case of articular rheumatism with endocarditis, sodium salicylate should be pushed to 4 or 6 gm. (60 to 90 grains) a day for adults, unless symptoms of very severe intoxication develop. Co-existing nephritis is no contraindication, as the nephritis is a consequence of the rheumatism, and energetic treatment of the latter cures both. In case of a septicopyemic affection, besides the local measures, he has obtained good results with quinin, giving 0.3 or 0.5 gm. quinin hydrochlorate several times a day to act on the bacteria in the blood. It may have to be kept up for weeks, adding iron in case of anemia. This treatment acts on the deposits of bacteria in the endocardium, but it acts very slowly, so that the lack of evidences of improvement in the first few weeks should not deter from continuing the treatment. If not tolerated by the mouth, the quinin can be given by the rectum or, possibly, subcutaneously. The most dangerous form of endocarditis is that induced by pneumococci, and hence, the use of the antipneumococcus serum seems rational, although it is not certain in its effects, according to the reports to date. Other curative sera sometimes benefit and sometimes do not. The physician's examination must be as little disturbing as possible. An exacerbation has frequently followed too prolonged percussion, auscultation, etc. Visits, talking, listening, bright light, noises and strong odors must be kept away from the patient.

In case of pain in the heart region a few leeches or a wet cup applied to the interspaces are useful, or a light ice bag or coil of light rubber tubing through which cold water is passed. Light, nourishing diet, nothing hot or cold, slightly acidulated water to drink, and heart tonics should be the main reliance, with scrupulous avoidance of abrupt movements likely to induce embolism. In the chronic form, so long as the heart shows much incompetency, the patient should stay in bed. The urine should be repeatedly examined for albuminuria, as nephritis is liable to develop suddenly without signs of its existence except from the lack of effect from the heart tonics. Diaphoretics, especially pilocarpin, should be avoided, as also moist heat, light and steam baths. Vegetable laxatives are useful, but calomel, he states, should be avoided on account of its liability to induce irritation in the kidneys, as also sulphate of magnesia and soda sulphate and mineral waters containing them. If the latter are absorbed and eliminated through the kidneys they may irritate them still

further. Symptoms of valvular trouble require rest and regulation of the heart action; local application of cold is useful here, and possibly also the bromids, valerian, and, in case of angina pectoris, nitroglycerin, etc. A mild and yet effectual means of regulating and stimulating the heart action, especially with anemic patients, is administration of pills of camphor and reduced iron, each 6 gm. (about 90 grains), in 90 pills, from 3 to 6 daily for weeks. Wet packs to the chest are not well tolerated, and warm or cold baths before retiring are rather exciting than otherwise in case of heart trouble. In the after-treatment he warns that the patients must keep very quiet on hot, damp days, and that all sports are dangerous, including bicycling. The sensation of fatigue is not experienced with sports until the stage of exhaustion has been reached, while with walking, mountain climbing, Swedish exercises, etc., fatigue is an early sign. He relates an instance of the loosening of an infectious thrombus in the arm or leg in the course of horseback riding, leading to a fatal exacerbation of the long past endocarditis. Tepid sea-water baths are excellent, but sea bathing must be avoided.

61. Action of Arsenic on Trypanosomes and Spirochetes.—Encouraged by Koch's reported success with arsenic in sleeping sickness, systematic experimental research with it in other trypanosome and spirochete affections is being conducted at Berlin. The results to date have been rather favorable, so that a trial of arsenic is urgently recommended in trypanosome affections in horses and those due to spirochetes in fowls, and possibly in syphilis.

62. Excessive Secretion of Gastric Juice During Digestion.—Besides the continuous excessive secretion of Reichmann's disease and the paroxysmal hypersecretion accompanying certain nervous affections and undoubtedly due to nervous influences, there is a third form of excessive secretion occurring only during the process of digestion. Boas has had occasion to observe this latter form in 12 patients, all men. The most prominent symptom was the emaciation, the patients losing 20 or 30 pounds in a comparatively short time, probably from the waste of so much gastric juice. Its effect on the intestines is to induce extreme constipation. The subjective symptoms are similar to those of chronic nervous dyspepsia, while the splashing sound is of frequent occurrence. Its presence under these conditions, he adds, is a warning to be very cautious in basing deductions on it in practice. The resemblance of the clinical picture to that of nervous dyspepsia and atony of the stomach has convinced him that many cases diagnosed in the past as nervous dyspepsia or atony of the stomach, were in reality cases of this digestive hypersecretion. The anomaly is best diagnosed by examining the stomach content fasting, again after a test breakfast without fluids, and again after another test meal. Treatment should aim to bring the weight up to normal, to avoid substances liable to stimulate the gastric secretion, and to promote the digestion of starch, which seems to suffer most from the condition. These indications are met by a diet of albumin, fat, sugar or dextrin, and white bread crust, alkaline beverages at meals and systematic treatment with alkalies, preferably a teaspoonful of sodium citrate four times a day. One of his patients thus took nearly three pounds of sodium citrate in the course of three months with constant benefit and final restoration to normal. He asserts that he has never witnessed any untoward results from prolonged administration of the vegetable alkalies, given alone or with a little magnesia.

63. Remote Effects of Gastroenterostomy in Ulcer or Cancer of the Stomach.—Katzenstein has been conducting research on dogs and comparing the results with clinical experiences, and has found that bile and pancreatic juice always find their way into the stomach after a gastroenterostomy. This occurs at first continuously and later only after ingestion of food. Their appearance in the stomach is hastened by the presence of fat in the food. In consequence of this admixture of alkaline intestinal juices, the stomach acidity is reduced by a chemical reaction and also by reflex inhibition. Pepsin is rendered inactive by even a transient alkaline reaction, but Katzenstein states that trypsin is not much affected by a transient acid



reaction. The hydrochloric acid-pepsin digestion is thus much impaired by a gastroenterostomy. One of the practical results of this research is the explanation of the benefit from gastroenterostomy in case of cancer of the stomach. Improved motor conditions are not the only factor; still more important, probably, is the action of the pancreatic juice on the surface of the cancer which, he asserts, it presumably digests and thus checks the growth of the cancer. The operation is consequently indicated in case of inoperable cancer of the stomach not only in the pyloric region, but also elsewhere. Another point to which he directs attention is the prompt healing of an ulcer when the secretion of hydrochloric acid can be checked completely. This can be accomplished by food rich in fats, frequent meals and large amounts of fluids; water by reflex action induces an increased secretion of bile and pancreatic juice and an increased outflow of these juices into the stomach.

64. **Technic for Intravenous Injection.**—Strauss gives an illustrated description of his technic for intravenous injection of strophanthus or digitalis in serious acute cardiac incompetency, or for the few other indications for intravenous medication, of which he recognizes only acute sepsis or pyemia and acute articular rheumatism refractory to the salicylates. He makes the injection extremely slowly, choosing the most prominent vein, the farthest from the artery, after application of a tourniquet above.

68. **Professional Secrecy from a Lawyer's Standpoint.**—Landsberg, professor in the law department at Bonn, here discusses various legal aspects of professional secrecy in case of proceedings in the criminal and civil courts. In conclusion, he remarks that physicians are apt to overestimate the dangers for them of failure to respect the principle of professional secrecy. The persons liable to claim damages from them in case they have failed to maintain professional secrecy are, as a rule, those whose earning capacity or position depends on the public's ignorance of their diseased condition. The nurse who persists in retaining her position although she knows that she is endangering the health of the child in her charge, the phthisical dairy superintendent who keeps up his work although amply warned by the physician as to the danger of infection of the community—persons of this category earn their money under false pretenses, as it were, and it is simple equity, Landsberg asserts, that damages can not be claimed for loss of a position held only under false pretenses. He cites Roman law and more recent German jurisprudence to establish this point, adding that this principle of equity will remain as long as there is any law, and physicians can rely confidently on it.

#### Münchener medizinische Wochenschrift.

- 69 (LIV. No. 5, pp. 153-200.) Incarceration of Three Appendices Epiploicæ in Hernia. (Brucheinklemmung von App. epipl.) H. Mohr.
- 70 \*Influencing of Heart Action and Blood Pressure by Pressure on Painful Points. (Beeinflussung der Herzthätigkeit und des Blutdrucks von schmerzhaften Druckpunkten aus.) Rumpf.
- 71 \*First Thousand Childbirths under Scopolamin-Morphin. (1,000 Geburten im Skopolamin-Dämmerschlaf.) C. J. Gauss.
- 72 \*Scopolamin-Morphin in Obstetrics. (Skop.-Morph. in der Geburtshilfe.) Preller.
- 73 \*Technic of Spinal Anesthesia under Scopolamin-Morphin for Abdominal and Gynecologic Operations. (Lumbalanästhesie im Skop.-Morph. Dämmerschlaf.) Penkert.
- 74 \*Operative Treatment of Menacing, Profuse Gastric Hemorrhage. (Op. Therapie bei lebensgefährliche profusen Blutungen.) G. Hirschel.
- 75 \*Preparation for Operations on the Hands. (Op. an den Händen und deren Vorbereitung.) K. Vogel.
- 76 \*Alcohol in Obstetrics and Gynecology. (Alk. in der Geb. und Gynäkologie.) A. Theilhaber.
- 77 Nervous Eructation. (Nervöses Aufstossen.) R. Adler.

70. **Influencing the Heart Action by Pressure on Painful Points.**—Rumpf gives directions for applying this means of diagnosis to exclude simulation. He has found it very valuable in differentiating certain cases of general neurosis accompanied by neuralgia or local pain and tenderness. Excitation of the painful point causes temporary acceleration of the pulse or first slowing and then acceleration of the pulse, a weaker, sometimes irregular pulse rate, dropping of a few waves in the radial artery, cyanosis of the face and, occasionally, a rise or fall in the blood pressure. On cessation of the exci-

tation these symptoms soon subside, the changes in the blood pressure being the last to right themselves. In some cases he observed also profuse local sweating in the axilla, brow and hands. These findings require a special excitability on the part of the nervous system or heart to produce them. In one of the typical cases described, a healthy man was injured in a railroad accident and complained of pain in the back of the head, sensitiveness to noises, forgetfulness and irritability, impairing his earning capacity. As the painful point in the occipital region was rubbed the pulse became small, the face pale and cyanotic and sweat poured out of the axilla and hands. The pulse increased from 100 to 136. Rubbing other points failed to induce any of the above symptoms, and the course of the case confirmed their positive interpretation. Rumpf writes the article to call attention to the technic of the examination. Disregard of any of the points completely invalidates the results. The examination must be done with the patient in bed, where he has lain quietly for some time. If the heart action is previously irregular the findings are unreliable. The patient must breathe quietly and regularly during the entire test. A single test is not so reliable as when the findings of several repetitions are compared. It is important, further, to apply the test to the corresponding sound side or region for comparison. In another case described, rubbing the most painful spot on the right side, after a railroad accident affecting this side, sent the pulse from 88 to 144, proving to his satisfaction that the severe neuralgia of the right lumbar and pelvic region observed was the result of the trauma.

71 and 72. **Report of One Thousand Childbirths Under Scopolamin-Morphin Anesthesia.**—Gauss writes from Krönig's gynecologic clinic at Freiburg to praise the scopolamin-morphin "twilight sleep" in obstetrics. The mortality of the children has fallen 3 per cent. since this technic has been adopted; the average amount of blood lost by the mothers in 363 cases was 277.7 gm., a low physiologic average. Any deviation from the technic he has described—based on the patient's power of perception at the time—upsets all the conclusions in regard to the method. It stands or falls with this technic, and he disclaims all responsibility where it is not scrupulously followed. It requires great attention and close supervision of the patient. The special features of the technic and the dosage were given on page 912. A card is filled out for each patient, recording the subjective symptoms (fatigue, thirst, pains in sacrum, abdomen, perineum), and the objective symptoms (sleep during labor pains or during intervals, twitching of the hands, color of the face, influencing of the pain and consciousness). The details of the childbirth are also recorded and the frequency, length and energy of the straining pains. Also the details in regard to heart sounds, pulse, respiration and temperature. He calls this record the "scopolamin curve," and states that accumulating testimony is all in favor of this method of inducing painless delivery. Preller relates his experiences with Gauss' technic in 120 cases; they were very favorable, but he recognizes a number of contraindications beyond those which Gauss accepts.

73. **Spinal Anesthesia in Combination with Scopolamin-Morphin for Gynecologic and Abdominal Operations.**—Penkert writes from the same clinic to commend the scopolamin-morphin technic as a valuable preliminary to spinal anesthesia. He asserts that it relaxes the abdominal walls and excludes all perception of what is going on, while the analgesia is complete—thus affording ideal conditions for laparotomies. The technic used differs a little from Bier's; larger doses of the spinal anesthetic are used, but the pelvis is never raised. He found the by-effects of the anesthetic much less than with other technics. The method is now currently employed for all abdominal and gynecologic operations in the clinic, where it is regarded as the most humane technic known to date.

74. **Operative Treatment of Menacing Gastric Hemorrhage.**—Hirschel reviews the experience of others in this line and reports a case in which a man of 29 had presented hematemesis twice on one day and twice five days later. The loss of blood was excessive the last time, and the patient was pulseless and only half conscious when first seen by a physician, who ordered



the man's removal to a hospital. At operation, which was performed at once, nothing abnormal was discovered in the outer aspect of the stomach, but an incision in the lesser curvature showed an ulcer, as large as a penny, with an opening into a small artery. A portion of the stomach wall, about the size of a silver dollar, was resected and the wall then sutured. Symptoms of retention later required a secondary gastroenterostomy, since which the patient has been in good health. Hirschel declares that the large percentage of cancers that develop on the basis of an ulcer should turn the scale in favor of resection in doubtful cases.

75. Preparation for Operations on the Hands.—THE JOURNAL has already mentioned Vogel's statements in regard to the great benefit of preliminary application of superheated air in disinfection of the hands. By the intense sweating induced, germs are dislodged from the depths and swept outward so that a nearer approach to asepsis is possible than with any other technique. He here describes experiences with this method as a preliminary measure before operations on the hands, especially on the horny hands of toil. The hand is placed in a hot-air apparatus for an hour morning and night for two or three days before the operation, otherwise the patient uses it as usual. In every instance the operations thereafter on the skin and tendons were followed by primary healing. In his wide experience with industrial accidents to the hand he has found it wiser to sacrifice one of the fingers so as to use it to patch up the others and to restore their function rather than to keep all the fingers with more or less impairment of function.

76. Alcohol in Obstetrics and Gynecology.—Theilhaber quotes from the Iliad to show that the opposite views regarding alcohol as a tonic or as a depressant have come down to us from prehistoric days. He calls attention to the influence of alcohol in inducing hyperemia in the genital organs, which contraindicates its use in all gynecologic affections with a tendency to hemorrhage or excessive secretion and in inflammation, especially of gonorrheal origin. It is also contraindicated in the menopause for the same reasons. He expresses surprise that physicians in general have held back from taking a decided stand in regard to alcoholism, although they are the leaders in the campaign against other scourges; cholera and typhoid fever, he asserts, are far from being as deadly as alcohol in the long run.

Hygiea, Stockholm.

Last indexed, page 914.

- 78 (LXVIII, No. 12. Pp. 1217-1360.) \*Etiology of Sympathetic Ophthalmia. (Simpatiska ögoninflammationens etiologic.) J. Widmark.
- 79 \*Treatment of Migraine with Hypnosis. (Behandlingen af migrän medelst hypnos.) E. af Geijerstam.
- 80 Manifestations of the Mental Condition from the Standpoint of the Prison Doctor. (Sinnesbeskaffenhetsutlåtanden från fängelseläkarsynpunkt.) T. Petré.
- 81 Spontaneous Delivery After Operative Slitting of the Cervix Uteri in a Preceding Pregnancy. (Spontan förlösning efter föregående operativ klyfning af cervix uteri.) E. Essen-Möller.
- 82 (LXIX, No. 1, Pp. 1-112.) Application of Physical Chemistry to the Doctrine of Immunity. (Fysikaliska kemiens användning inom immunitetsläran.) S. Arrhenius.
- 83 Blindness in the Scandinavian Countries and Finland in 1900. (Förekomsten af blindhet.) J. Widmark.
- 84 Bacteriology of Air and Soil in Antarctic Regions. (Svenska Sydpolarexpeditionen 1901-1904.) E. Ekelöf.
- 85 Perforation of Gastric Ulcer and 4 Cases of Perforation from Ulcer or Cancer. (Ventrikelperforation.) O. Lundblad.
- 86 Technic of Gastroenterostomy. (Til gastroenterostomiens teknik.) A. Reuterskiöld.

78. Sympathetic Ophthalmia in Sweden.—Widmark's tables show that the percentage of cases of blindness after sympathetic ophthalmia in Sweden is far larger than in the other countries of Europe, reaching 18 per cent. of the total number of cases in 1905, while the proportion in other countries during the last few years was less than 6 per cent. He ascribes this mainly to the way in which the population is scattered over large areas, making it difficult for the patients to seek medical help in time. In his experience with 10 cases of sympathetic iridocyclitis since 1896, treatment with large doses of sodium salicylate proved successful in 80 per cent. Eight of the patients recovered with good and in some cases exceptionally good vision. He ascribes sympathetic ophthalmia to bacterial invasion.

79. Hypnosis in Treatment of Migraine.—Geijerstam reports 15 cases of rebellious migraine in which a cure was realized with systematic application of hypnosis. In 3 other patients no benefit was apparent. The intensity and frequency of the attacks were reduced, without interfering with the patient's usual occupations and daily routine. In 3 of the improved cases the diagnosis of migraine on a rheumatic basis was probable, but improvement was as marked in these cases as in the rest. In the first case a woman of 32 had suffered since childhood from migraine, lasting about 36 hours and recurring at irregular intervals. There were no signs of hysteria and examination by an ophthalmologist and rhinologist was negative. After a month of bromids, galvanism and massage, none of which gave relief, he commenced to apply hypnosis and gave 7 daily sittings, followed by the same number again after a two weeks' interval. The patient was extremely hard to hypnotize, and after numerous attempts he succeeded only in inducing numbness over the entire body, and was tempted to suspend treatment, but then improvement became apparent and the patient has been entirely free from the migraine during the two years since. Other patients have been cured for five years or more. All his patients, with one exception, were women. Hysteria could not be positively excluded in some of the cases.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

HYGIENIC LABORATORY BULLETIN No. 26. M. J. Rosenau, Director. Stability of the Oxidases and Their Conduct Toward Various Reagents, Conduct of Phenolphthalein in the Animal Organism, Test for Saccharin, and a Simple Method of Distinguishing Between Cumarin and Vanillin, Toxicity of Ozone and Other Oxidizing Agents to Lipase. Influence of Chemical Constitution on the Lipolytic Hydrolysis of Ethereal Salts. By J. H. Kastle. Paper. Pp. 51. Washington: Government Printing Office, 1906.

MANUAL OF PRESCRIPTION WRITING, with a Full Explanation of the Methods of Correctly Writing Prescriptions. By Matthew D. Mann, A.M., M.D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo. Revised by E. Cox Mann, M.D. Sixth Edition, Revised and Enlarged. Cloth. Pp. 232. Price, \$1.00. New York and London: G. P. Putnam's Sons, 1907.

PATHOLOGY AND DIFFERENTIAL DIAGNOSIS OF INFECTIOUS DISEASES OF ANIMALS. By Veranus Alva Moore, B.S., M.D., Professor of Comparative Pathology, New York State Veterinary College, Ithaca, N. Y. With an Introduction by Daniel Elmer Salmon, D.V.M. Second Edition Revised and Enlarged. Illustrated. Cloth. Pp. 506. Price, \$4.00 net. Ithaca: Taylor & Carpenter, 1906.

DISEASES OF THE NOSE AND THROAT. By J. Bruce Ferguson, M.D., Instructor in Diseases of the Nose and Throat in the Postgraduate Medical School, New York. Series Edited by Victor Cox Pedersen, A.M., M.D., Lecturer in Surgery at the New York Polyclinic Medical School and Hospital. Cloth. Pp. 243. Price, \$1.00 net. Philadelphia: Lea Bros. & Co., 1906.

ANATOMICAL TERMINOLOGY, with Special Reference to the Basle Anatomical Nomenclature. By Lewellys F. Barker, M.D., Professor of Medicine, Johns Hopkins University, Baltimore. With Vocabularies in Latin and English and Illustrations. Cloth. Pp. 103. Price, \$1.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

BLOOD SERUM THERAPY, Preventive Inoculation and Toxin and Serum Diagnosis, for Veterinary Practitioners and Students. By Walter Jowett, F.R.C.V.S., D.V.H., Formerly Demonstrator of Comparative Pathology in the University of Liverpool. Cloth. Pp. 204. Price, \$1.75 net. Chicago: W. T. Keener & Co., 1907.

MODERN SURGERY, GENERAL AND OPERATIVE. By John Chalmers Da Costa, M.D., Professor of the Principles of Surgery, Jefferson Medical College, Philadelphia. Fifth Edition. Revised and Enlarged. 872 Illustrations. Cloth. Pp. 1283. Price, \$5.50 net. Philadelphia: W. B. Saunders Company, 1907.

MAKERS OF MODERN MEDICINE. By James J. Walsh, M.D., Ph.D., LL.D., Professor of the History of Medicine and Nervous Diseases. Fordham University Medical School. Cloth. Pp. 362. New York: Fordham University Press, 1907.

HISTORY OF THE ECLECTIC MEDICAL INSTITUTE, Cincinnati, Ohio, 1845-1902. Biographical Sketches of Members of the Various Faculties and Graduates. By Harvey Wickes Felton, M.D. Cloth. Pp. 203. Cincinnati, 1902.

REPORTS OF THE TRUSTEES AND SUPERINTENDENT of the Butler Hospital. Presented to the Corporation at its Sixty-third Annual Meeting, Jan. 23, 1907. Paper. Pp. 49. Providence.

VERHANDLUNGEN DER BERLINER MEDIZINISCHEN GESELLSCHAFT, aus dem Gesellschaftsjahre, 1906. Band XXXVII. Paper. Pp. 453. Berlin: Druck von L. Schumacher, 1907.

REPORT OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION. Being the Fifty-fourth Report on the Public Schools of New Hampshire. Cloth. Pp. 498. Concord, 1906.



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVIII.

CHICAGO, ILLINOIS, MARCH 23, 1907.

No. 12.

## Original Articles

### THE COMMON BACTERIAL INFECTIONS OF THE DIGESTIVE TRACT AND THE IN- TOXICATIONS ARISING THEREFROM.\*

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NEW YORK CITY.

After presenting some general considerations relative to the bacterial flora of the human digestive tract in health, and showing that none of the experimental studies made by investigators is really conclusive as to the necessity of bacterial action in the digestive tract for the maintenance of health in adult mammals of the highest type, Dr. Herter proceeded:

Clearly, then, the intestinal bacteria are not required to carry on the ordinary digestive processes of normal nutrition. It has been supposed that the intestinal bacteria aid in the digestion of cellulose which they are undoubtedly able to decompose fermentatively. This argument loses much of its force if it be true, as lately maintained by Bergmann, that most of the cellulose eaten by herbivora is provided with intracellular enzymes capable of decomposing cellulose.

The real significance of the normal intestinal flora probably lies, not in any immediate relation to processes of digestion but in a wholly different direction. It is impossible to avoid the entrance of bacteria into the digestive tract. The obligate bacteria (for example, *B. lactis aerogenes*, *B. coli*, *B. bifidus*) adapt themselves to the secretions of this part of the body and ordinarily hold their own against new-comers. By virtue of their adaptation, they are not ordinarily harmful to their host, but, on the contrary, they are, under some circumstances, capable of doing service by giving rise to conditions that discourage the growth of many harmless and harmful species which man can not readily exclude from his digestive tract. I believe that the chief significance of the obligate intestinal bacteria lies in their potential capacity for thus checking the development of other types of organisms capable of doing injury.

Speaking of the defensive action of the digestive juices, Dr. Herter said that the normal human organism is provided with more or less efficient methods of defense against bacterial invaders. The acidity of the gastric juice, for instance, checks the growth of many non-sporulating bacteria and is, in a measure, destructive to most varieties. If, however, bacteria are administered in very large numbers, there is a chance that some of them will find their way into the intestine. This is particularly true when microbes are taken into the empty

stomach or into a stomach with defective motility which secretes little gastric juice of low acidity. Dr. Herter goes on to say:

A long, largely anaërobic intestinal tract permitting gradual resorption of the contents is a physiologic necessity in order that a loss of water and its detrimental consequences may be spared the organism. The presence in the colon of immense numbers of obligate micro-organisms of the *B. coli* type may be an important defense of the organism in the sense that they hinder the development of that putrefactive decomposition which, if prolonged, is so injurious to the organism as a whole. This adaptation is the most rational explanation of the meaning of the myriads of colon bacilli that inhabit the large intestine. This view is not inconsistent with the conception that under some conditions the colon bacilli multiply to such an extent as to prove harmful through the part they play in promoting fermentation and putrefaction. An alkaline reaction of the medium appears to favor their putrefactive functions if peptones be present.

The influence of reaction on the growth of intestinal anaërobes was studied very carefully by Dr. A. J. Wakeman, who found that the growth of putrefactive anaërobes is favored by neutral reaction and restrained by the presence of acids. This explains the favorable influence of milk (containing lactic acid formers) in controlling putrefactive decomposition in the digestive tract. Dr. Herter has this to say with reference to the aërobic and anaërobic conditions in the digestive tract:

#### AEROBIC AND ANAEROBIC CONDITIONS IN THE DIGESTIVE TRACT.

There are many conditions which influence the character and extent of bacterial decomposition in the alimentary tract: among them are the chemical character of the food, the solubility of the food in the digestive juices, and the volume and composition of these digestive juices. Intimately intermingled with these factors of food and secretory activity is the influence of aërobic and anaërobic conditions in the digestive tract on the nature of the bacterial activities that occur there. The initiation of putrefactive decomposition in the digestive tract, as elsewhere, depends very largely, though probably not exclusively, on the activities of obligate anaërobes. An important portion of the digestive tract is most of the time under anaërobic conditions.

The facts all point to the correctness of the view that we largely owe the initiation of bacterial proteid cleavage there to the agency of the strict anaërobes, but it does not follow that intestinal putrefaction is carried on through the sole activity of these organisms. The intestine abounds with micro-organisms, which are able to attack albumoses and peptones and to effect the further

\* Abstract of the Harvey Society Lecture, delivered at the New York Academy of Medicine, Nov. 3, 1906.



degradation of the proteid molecule, thus entering into a symbiotic action with the strict anaërobes.

The symbiosis of aërobes and anaërobes is a biologic phenomenon of much consequence in determining the distribution of anaërobic bacterial processes in the digestive tract. Without such symbiotic action, the development of strict anaërobes would be confined to those parts of the digestive tract into which oxygen passes rarely, and then only in small amounts. The large intestine is seldom visited by free oxygen, but it is probably usual in man for the small intestine to contain a little air.

It is probably safe to assume that in the mouth the free presence of oxygen constantly acts as a deterrent to anaërobic growth. In spite of this, however, anaërobic life is possible. Caries of the teeth, which was formerly referred to aërobic bacteria, seems clearly the result of the invasive action of anaërobes on the tooth pulp. In removing decomposing food masses by the intelligent use of a tooth brush, one not merely admits air to the anaërobes, but also removes many aërobes, which, through the symbiotic action already mentioned, facilitate the multiplication of the former.

In a stomach which secretes little or no hydrochloric acid and which is sluggish in emptying its contents, the chances for anaërobic development are good, and hence we frequently find under these circumstances that there are evidences of putrefactive decomposition of food that has been unduly retained in the stomach (e. g., production of sulphuretted hydrogen, mercaptan, butyric acid, etc.). On the whole, however, I think one may say that in the course of chronic gastric affections the number of anaërobic micro-organisms in the stomach is seldom great.

Of the conditions of bacterial life in the small intestine, very little is known because of the inaccessibility of the contents of this portion of the digestive tract. However, observations at operation after gunshot wounds and at early autopsies have shown that putrefactive micro-organisms are commonly few in the upper two-thirds of the small intestines. In man there is in the ileum within a foot or two of the colon a marked increase, both in the number of bacteria and of their varieties. Hence we find that the mixed fecal bacteria taken from this level of the lower ileum are capable of inducing putrefactive changes in native proteids and in more simple nitrogen-holding media, even in health, and that anaërobic conditions of bacterial life are exaggerated in pathologic states. We may indeed look on the ileum as the debatable land of digestive territory.

In the large intestine we find the most dense accumulation of bacteria and the best conditions for anaërobic growth. The transition from small to large intestine is in this respect very striking. The anaërobic conditions are well maintained throughout the colon and it is here that we find the greatest numbers of anaërobes and the most pronounced evidence of putrefaction. There is, however, a gradual fall in the number of living bacteria beyond the ileocecal valve, so that in the rectum the numbers of cultivable bacteria are very much less than in the ascending colon. It should be noted, however, that the variety of bacteria in this region is often not so great as in the ileum, although their numbers are in excess.

Dr. Herter then discussed the characters of the bacterial flora of carnivorous and of herbivorous animals and the reducing action of meat. He says that in the

case of carnivorous animals living on raw meat there seems little doubt that anaërobic conditions may exist throughout the digestive tract, and that the reducing action of meat in the upper part of the tract may contribute materially to diminish the quantity of oxygen carried into the intestines. Meat which has been cooked slightly still possesses considerable reducing power, and it is not unlikely that there are cases of excessive intestinal putrefaction in man which depend on the excessive activity of anaërobes in which the conditions of anaërobiosis are favored by excessive meat eating.

Attention was also directed to the influence of the epithelial cells lining the digestive tract. Dr. Herter thinks that in cases where there is excessive production and absorption of indol (and of other noxious substances) this epithelium acts as a protective agency to the organism as a whole. Furthermore, the epithelial cells prevent the passage of bacteria from the lumen of the gut into the body tissue.

Evidence is gradually accumulating to show that pathogenic micro-organisms may be present in moderate or even in considerable numbers in the intestinal tract under some conditions without giving rise to clinical manifestations of deranged function. To quote Dr. Herter:

It is likely that in all these cases the pathogenic organisms in question are held in check by other bacteria present in the digestive tract or by the bacteria and the intestinal secretions, so that they are unable to multiply in a significant manner or to gain entry into the cells of the mucous membranes. It seems not unreasonable to suppose that this restraint may be overcome by errors in diet, depressed general conditions, or by alterations in the secretions of the digestive tract, and that thus definite infection by the hemiparasitic bacteria that are present becomes possible. The considerations just mentioned as applying to these bacteria probably hold equally true of the more saprophytic forms concerned in intestinal putrefaction.

A variety of conditions may be presumed so to favor the development of these anaërobes that their products, instead of being formed in such small amounts as to be harmless, begin to exert a detrimental effect on the organism. Especially important are influences which alter the character of the secretions in the large intestines or bring there unusually large quantities of partly digested proteid food. In certain conditions of the digestive tract an excessive or even a moderate meal of proteid food will precipitate an intoxication or a seizure of vomiting or diarrhea. There are cases classed as ptomain poisoning in which the digestive tract rather than the food is responsible for the observed disorders.

It is evident that, while at all periods of life the human digestive tract contains numerous micro-organisms, the biologic characters of these organisms are not the same at all ages. In this may be found a cause for the different types and decomposition in the digestive tract. For instance, in the digestive tract of a nursing infant there is found a relatively simple bacterial flora, which should be a matter of interest to those who wish to obtain an insight into the physiology of digestion. The great majority of the bacteria are Gram-positive.



Among these may be mentioned *B. bifidus*, *B. acidophilus*, *B. aerogenes capsulatus*, *B. lactis aerogenes*, and *B. putrificus*. As the result of his study of the distribution of bacteria in the intestine of the nursling from autopsies on babies dying in the first six months of life from causes not closely connected with the digestive tract, Dr. Herter presents the following summary:

In the normal nursling the mouth contains few bacteria and these are for the most part derived from the skin and the nipple—*Staphylococcus pyogenes aureus*, bacilli of the *B. coli* group and *B. lactis aerogenes*. In the stomach also the bacteria are few and the bacterioscopic picture shows usually a few positive or negative diplococci or streptococci, or negative coccobacilli, or positive or negative bacilli suggesting the *B. coli* and *B. lactis aerogenes* groups. The normal bacteria of the greater portion of the small intestine are short Gram-negative bacilli of the colon and *lactis aerogenes* groups, mixed sometimes with a few positive and negative cecal forms. In the lower ileum the organisms of the bifidus type appear and at the transition from lower ileum to cecum there is a striking change in the proportions of coli and bifidus types, and the former lose their dominant numerical position. The ascendancy of the bifidus type increases in the colon to such an extent that in the rectum this type has the appearance of being present in pure culture.

The bacterial flora of the intestinal tract of the nursling is thus only moderately numerous as regards variety. The bacteria are concentrated in the regions that lie between the lower ileum and the anus, the ileocecal junction presenting most organisms capable of being cultivated and the greatest variety. The comparatively small number of bacteria found in the small intestine has its explanation partly in the small amount of food that lodges there and partly, perhaps, in the bacteriolytic action of the succus entericus, which, though moderate, is appreciable. Wherever particles of transformed casein are found there will bacteria also be abundant, but with the exception of the lower ileum the small intestine does not harbor food-masses to any considerable extent. The epithelial cells are said to contain an antitryptic ferment and this passes to some extent into the succus entericus, where it is perhaps capable of exerting a restraining influence on that peptonization of proteid which is the first essential step toward putrefactive decomposition.

A satisfactory study of the products of the mixed fecal flora from normal nurslings has not yet been made. One fact, nevertheless, stands out, that on sugar-bouillon containing blood the volatile acid or acids produced give a molecular weight corresponding closely to that for acetic acid. The insignificant amounts of the higher volatile fatty acids points to the absence of considerable numbers of anaërobic putrefactive bacteria. In harmony with this is our observation that the Welch-Nuttall incubation test with rabbits does not produce the gas-liver from putrefactive anaërobes. The mixed fecal flora when grown on plain bouillon make indol, doubtless owing to the multiplication of colon bacilli.

If one makes a comparison of the bacteria of the digestive tract of infants fed on cow's milk with the flora of the digestive tract of breast-fed infants, many points of resemblance and also some typical and important differences are found. In general, the number of bac-

terial forms present is greater in the case of the bottle-fed infant than in the breast-fed infant, especially when the milk has not been sterilized or pasteurized. When sterilized milk is employed the increase in the number of bacteria in the digestive tract is dependent, at least in part, on the presence of anaërobic bacteria or facultative varieties capable of forming spores. Dr. Herter says that many of the bacterial forms found in the nursling's intestinal tract are also inhabitants of the intestine of bottle-fed infants, although in the case of the latter the organisms of the colon type predominate, so that the microscopic picture is Gram-negative instead of Gram-positive.

The products of decomposition in the intestinal tract of bottle-fed infants are said to be remarkably small in amount, as is the case in nurslings also. The large intestine of a normal bottle-fed infant contains merely a trace of indol or none at all. Only a moderate amount of volatile acid is obtained from the distillate of an acidified watery suspension made from any portion of the contents of the intestinal tract, and, of this, acetic acid forms by far the larger amount. This, Dr. Herter thinks, indicates that such bacterial processes of decomposition as occur within the intestinal tract are of a fermentative rather than a putrefactive nature.

After infancy the more varied diet increases the opportunities for the entering of many kinds of bacteria into the digestive tract, and, although individual variations are considerable, Dr. Herter describes conditions that are fairly typical for persons in good health and favorable environments. He says:

*The Bacterial Conditions After Infancy.*—During childhood and adolescence one sees a slow transition from the conditions of infancy to those of adult life. *B. bifidus*, although present, is much less numerous, and other types are more numerous. Still the numbers of putrefactive anaërobes are small and putrefactive processes in the intestine are not active. This is shown by the presence of only a very small amount of indol and phenol in the feces, and, in the urine, by low ethereal sulphates and the absence or small amount of indican and phenol. The reaction with dimethylamidobenzaldehyde  $((CH_3)_2N.C_6H_4.CHO)$  is slight or moderate—often so slight that its existence is questionable. During temporary derangements of digestion there may be an increase of the ethereal sulphates or indican, but this is very transitory.

Toward adult life great differences exist in the habits of different persons, and these are in a degree reflected in the nature of the bacterial processes of the digestive tract. In adult life the individual experiences new responsibilities, new dangers, an enhanced emotional life and often a larger proportion of indoor life and more sedentary habits. The dietary is apt to undergo an alteration in the direction of increased and frequently injudicious liberty and the use of tea and coffee. Also the use of tobacco and alcoholic drinks is either increased or begun. Sooner or later these things lead to slight derangements of digestion which manifest themselves clinically. One occasionally meets with persons of unusually robust physical and mental health in whom the bacterial conditions of adolescence persist until the fiftieth year, or longer. A large proportion of persons,



however, by the time they reach the age of 50 present different physical conditions, although they are in no sense in a state of invalidism, but work hard and most of the time feel well. While in such persons the fecal flora shows nothing striking, it is usually not difficult to demonstrate that the number of putrefactive anaerobes in the intestine is larger than in healthy adolescents. In short, we find in middle life a large number of persons whose health is good or fair, in whom the putrefactive processes are distinctly more active than is the case with most younger persons of normal health.

These persons, though in good health, are not robust. A period of sustained hard work is followed by considerable mental and physical fatigue. Dining out and the use of alcoholic drinks are indulgences quickly followed by unpleasant consequences. Exercise out of doors becomes more and more a necessity. The individual is conscious that it requires careful living to keep him in a condition compatible with the performance of his duties.

The main difference between the putrefactive conditions found at 50 and at 70 is that at the latter period they are a little more marked in their intensity and affect a much larger proportion of the population. The subjects in question at this later period of life are not ill, but in order to keep fairly well have to be very careful as to their habits of living. They are moderately anemic and easily develop slight disorders of digestion. They weigh less than formerly and, though they may still be well nourished in appearance, are conscious of losing strength from year to year. They are undergoing what is usually regarded as normal involution. It may be confidently asserted that the onset of senility may be distinctly accelerated through the development of intestinal infection in which the putrefactive anaerobes are prominently represented. I have observed this in cases where it has appeared certain that other toxic causes of premature senility could be excluded.

The methods of investigation employed by Dr. Herter in the pursuit of knowledge in connection with this subject are described at length. They relate in part to the study of the morphologic and cultural characteristics of the bacteria found in the digestive tract under different conditions, but in the main they deal with the products of the life activities of these bacteria when grown on different culture medium. Dr. Herter discusses the study of a microscopic field with the aid of the Gram stain, the isolation and identification of individual bacteria by means of plate cultures, the study of anaerobiosis by means of cultures and by animal experiments, the study of gas production, and such other procedures as are commonly carried out in the identification of bacteria. To quote Dr. Herter:

The appearance of the Gram-stained flora gives, as a rule, but not always, an indication of the dominant flora in the lower part of the intestine. One can not rely on it alone, but in connection with data derived from other methods it helps us to form a conception of the bacterial types present. In addition to the study of the mixed fecal flora in the fermentation tubes, as a routine procedure, four flasks, each containing about 500 c.c. of medium, have been inoculated with a suspension of the mixed fecal flora and incubated seven days. The media employed have been peptone-bouillon, peptone-bouillon with calcium carbonate, sugar-bouillon and sugar-bouil-

lon with calcium carbonate. Under the conditions prevailing in these flasks a large part of the growth has been anaerobic and a high degree of anaerobiosis has been maintained, owing in part to the formation of reducing products, such as hydrogen, incidental to the fermentative and putrefactive cleavages. It has been found in general that the anaerobes grow more abundantly in the flasks which were kept neutral by the presence of calcium carbonate. The chemical examination of the seven days' flasks has included two different series of procedures. The peptone-bouillon flasks were examined for hydrogen sulphid, methyl mercaptan, volatile fatty acids, ammonia, indol, skatol, phenol, alcohol and acetone. Quantitative determinations have regularly been made in the case of the volatile fatty acids, ammonia, indol, skatol and phenol. In the sugar-bouillon flasks the contents have been examined for alcohol and acetone, volatile fatty acids and the non-volatile organic acids. The molecular weights of the barium salts of the volatile fatty acids have regularly been determined. An interesting observation has been made that in the flasks containing calcium carbonate the molecular weights obtained for the volatile fatty acids have nearly always been somewhat higher than in the case of the molecular weights obtained from the volatile fatty acids of the sugar-bouillon flasks. This fact confirms the evidence of the microscopic fields and shows the greater abundance of the putrefactive anaerobes in the neutral flasks than in the sugar-containing flasks that are allowed to become acid. Methyl mercaptan has been determined by the isatin-sulphuric acid method. I have published previously the method used for the determination of indol and skatol and their separation by means of  $\beta$ -naphthoquinone-sodium-monosulphonate and the dimethylamidobenzaldehyd reaction. The chemical methods of studying the feces and urine are those that are fully described in the text-books relating to these subjects. To these known methods has been added the color reaction of the filtered watery extract of the feces with Ehrlich's aldehyd and also the urinary reaction with this reagent.

The chemical products of intestinal fermentation and putrefaction, the individual susceptibilities as possible factors in determining clinical types of putrefaction, the types of chronic excessive intestinal putrefaction, and, finally, the therapeutic considerations which arise as the natural result of Dr. Herter's very careful study, are discussed by him as follows:

#### THE CHEMICAL PRODUCTS OF INTESTINAL FERMENTATION AND PUTREFACTION.

I shall use the word fermentation to designate the decomposition of carbohydrate and fatty substances and the word putrefaction to apply to the cleavages of proteid and allied substances. The products of putrefaction include the substances containing sulphur or nitrogen or both sulphur and nitrogen. The fermentative and putrefactive processes overlap in the sense that they furnish some products in common, such as carbon dioxide and volatile fatty acids, and, furthermore, they are linked by the fact that excessive fermentation in the digestive tract nearly always leads to excessive putrefaction. Of the products of fermentation the carbon dioxide acts mainly as a cause of flatulence in the stomach or small intestine. The acids formed—chiefly acetic and lactic—are irritants and may be exciters of vomiting and diarrhea. When in excess the acids may be excreted, unburned, and thus withdraw alkali from the tissues.



It is possible that a mild degree of acidosis may thus result from fermentative processes in the intestine.

It is now well established that various molds and bacteria are capable of acting on media containing sugar in such a manner as to give rise to the production of oxalic acid. Dr. Helen Baldwin has shown that by prolonged feeding of dogs with large amounts of sugar a mucous gastritis is incited and that oxalic acid is present in the stomach and urine. It was also found that in media containing beef extract and sugar, oxalic acid was produced after inoculations with the contents of the stomachs of persons showing marked grades of oxaluria. Although gastric fermentation is not the chief source of oxalic acid in the body, it is possible that it may have an influence in causing the condition known as oxaluria.

When we turn to the consideration of the nitrogen-holding and sulphur-holding products of putrefactive cleavage, the scantiness of our knowledge comes into view with almost discouraging clearness. That putrefactive processes are attended by the formation of bases such as ammonia, amines, diamines (such as putrescin and cadaverin), cholin, neurin, sulphur compounds and various aromatic bodies, has been known many years and something has been learned, though by no means enough, about the media and the bacteria which determine the presence and proportions of these substances. When, however, we ask ourselves what we can safely say of the conditions under which such substances arise in the human intestines and of their pathologic effects, we are able to give in most instances only very inadequate answers.

*Basic Substances.*—Although ammonia is regularly formed in the course of putrefaction in the intestines, it is probably present in too small quantities to be toxic. The organism is well adapted to care for moderate quantities of ammonia which, as is well known, is united with carbon dioxide in the liver and elsewhere to form urea. It is possible, however, that ammonium butyrate may act as a local irritant in the intestine. Likewise we know nothing of any toxic action from methylamine or other alkyl amines. Cholin and, perhaps, neurin have been found in the intestinal tract in experiments on animals, but we lack positive evidence that they can under these conditions exercise their poisonous effects on the organism.

*Putrescin and Cadaverin.*—Although the study of the conditions under which putrescin and cadaverin are formed in the intestinal tract is of much biologic interest, there is at present little evidence that these diamines are ever formed in sufficient quantities in the human intestine to constitute in themselves factors in the production of states of intoxication. The association with cystinuria is a striking fact, and the further investigation of this condition will doubtless give us the explanation of the relationship between the production of diamines and the formation of cystin, if, indeed, there be any necessary relation.

*Sulphur Compounds.*—The sulphur compounds resulting from putrefactive decomposition in the intestines have received little attention from the standpoint of their pharmacologic action. It is very difficult at present to form a just estimate of their importance in intestinal intoxications.

There is reason for thinking that the production of hydrogen sulphid in the digestive tract is of more importance to the organism than the formation of mercaptan. This gas is regularly formed in the intestines and its presence can be demonstrated in freshly voided feces.

The mixed fecal flora, both in health and disease, produce hydrogen sulphid in cultures containing partially hydrolyzed proteids (bouillon). In health probably hydrogen sulphid is formed only in the colon and perhaps in the lower part of the ileum. There are, however, pathologic conditions in which it occurs in the stomach. It is not necessary to assume the presence of a pathogenic organism in these cases, as it is well known that *B. lactis aerogenes* and colon bacilli liberate it when growing in certain media. In marantic children I have found organisms capable of producing hydrogen sulphid in pepton-bouillon in the stomach and the first part of the small intestine; while in children dying of bronchopneumonia, such results were obtained only from the flora of the lower ileum and colon.

We have at present very little satisfactory knowledge of the influence of hydrogen sulphid on the organism in cases where the gas is liberated in the intestine. Senator and others have described poisoning by this gas. Among the symptoms which have been met with in such cases there have been prominent those pointing to disordered function of the central nervous system, including headache, dizziness, delirium, mental depression, drowsiness, stupor and collapse. Somewhat similar manifestations have been observed in experimental poisoning by hydrogen sulphid in animals and men.

#### AROMATIC PRODUCTS OF PUTREFACTIVE DECOMPOSITION.

*Phenol and Cresol.*—In some pathologic conditions attended by excessive putrefaction in the intestine these substances are found in the intestinal contents in amounts considerably above the normal amount, which is always small. But one never, however, finds them in large quantities—never so much, for example, as in the case of indol. Notwithstanding this, the quantity excreted in twenty-four hours in the urine as phenol potassium sulphate may be fairly high owing to the fact that phenols are produced in the organism in the course of the metabolism of normal cells. In certain putrefactive cases I have found these substances in considerably greater amounts in the urine, but even here, however, it does not appear that the phenols can be regarded as important toxic agents, although it is likely that the continued absorption of moderate quantities from the intestine over a long period of time may harm the cells of the liver and other structures concerned with the pairing of phenol and sulphuric acid, especially if the cell protoplasm of the liver has previously been somewhat damaged.

*Skatol.*—This substance is formed in very small quantities from time to time in some normal persons and very abundantly in some persons suffering from excessive intestinal putrefaction. In persons with marked intestinal or nervous disorders I have occasionally found in the feces as much as 8 or 10 mg. of skatol in 100 gm. of feces. Usually the amount is much less than that of indol, but this rule is not invariable. Like indol, it is derived from tryptophan, but what are the conditions, bacterial and other, that determine its formation rather than the formation of indol, we do not at present know. I have found that the administration of skatol to monkeys by the mouth and by subcutaneous injections has been followed by the appearance of a substance in the urine giving the Ehrlich dimethylamidobenzaldehyd reaction and that the administration of 0.1 gm. of skatol to man has heightened the Ehrlich reaction in the urine. In most cases in which the feces contain considerable skatol the urine gives a strong reaction with Ehrlich



aldehyd. Skatol behaves in the organism much like indol as respects its toxic properties, but it is somewhat less poisonous. There is seldom reason to attribute to it any definite pathologic effects. It is possible, however, that, like phenol, it may, under some conditions, play an auxiliary part with other substances in damaging living cells.

*Indol*.—Indol is not a product of tryptic digestion of proteids and probably can not be formed in the course of physiologic processes without the intervention of organized ferments such as bacteria. The indol produced in the intestine is, like skatol, derived from tryptophan. In early life the production of indol in the intestines is in general very slight and there are some older persons also who, even while suffering from disorders of digestion, do not form indol. On the other hand, the production of considerable quantities of indol in the large intestine is a feature of many instances of intestinal putrefaction and in some cases the quantity formed is large. That indol may be absorbed in considerable amounts is shown by the appearance of large quantities of indican in the urine of persons in whom the intestine contains large amounts of indol.

While it is true that in general the aromatic compounds are resistant to oxidation, it is probable that whenever indol is introduced in moderate quantities into the organism of carnivorous and omnivorous animals, a portion of it is burned completely in the body. It may be regarded as settled that the liver, muscles, intestinal epithelium and other cells normally exert a protective action to the nervous system in screening it from the effects of an injurious percentage of indol in the blood, by the ability of these structures to quickly bind any indol which comes to them. The differences in the observed toxic effects are probably dependent on inequalities in different persons in their ability to oxidize indol and to pair it with sulphuric acid. As to the effects of absorbed indol on the organism in disease, it is necessary to speak with caution, since there is no evidence that indol is the only toxic substance absorbed in those cases where it enters the organism from the gut.

The idea that the circulation of free indol in the blood may act in a depressing manner on the muscular structures is suggested by the rapid muscular fatigue which comes on in some persons who have suffered for a long period of time from a high grade of indicanuria. In some cases of excessive intestinal putrefaction in childhood associated with retardation in growth and abdominal distension there is clearly a poisoning of the muscular system. These children show signs of fatigue very rapidly, and in some cases where the condition has come on in early life they are slow in learning to walk. Their urine contains not only a large amount of indican, but a considerable quantity of phenol. It is likely that phenol in these cases plays a part in the muscular depression. Perhaps in some instances it is as much a factor in inducing fatigue as is indol.

#### INDIVIDUAL SUSCEPTIBILITIES AS POSSIBLE FACTORS IN DETERMINING CLINICAL TYPES.

Instances are many in which clinical experience has made it clear that two persons of approximately the same weight react differently to the same drug and do so regularly. Of individual human susceptibilities and reactions to the action of enterogenous poisons almost nothing is now known. Nevertheless, one can not fail to recognize the possibility that such individual susceptibilities and reactions may play an important part in de-

termining the clinical manifestations of intoxications. It is well known to clinicians that there are some persons who promptly develop a widespread urticaria after indulgence in certain foods or drinks, such as shell-fish or strawberries or champagne. In some persons the indulgence in a single glass of champagne is followed within twenty-four hours by manifestations of gout. In others champagne causes headache and the excretion of increased amounts of uric acid.

The explanation of these different effects is to be sought in the individual cellular reaction of the patient rather than in the poison. There are probably many similar examples of individual susceptibility, but when we come to study the question in relation to processes found in the digestive tract we can not make close comparisons between different persons because we can not say what substances are being absorbed. We may know that a certain group of patients are alike in having intense indicanuria, but we can not say that the intoxications may not be different in these cases owing to differences with respect to the absorption of other substances than indol. Among half a dozen persons suffering from extreme indicanuria one suffers from headache, sometimes migraine-like; another is prone to lumbago; another perhaps has epileptic seizures; another has mental depression; another progressive muscular atrophy, and still another suffers from cyclic vomiting. There is good reason for suspecting that very similar bacterial processes in the digestive tract lead in one case mainly to digestive disturbances and in others, owing to a lesser sensitiveness in the digestive tract itself, to better absorption of poisons and the development of more remote consequences, such as acute arthritis, anemia or nervous disorders. While it is possible that these very different manifestations are always connected with different and perhaps specifically different types of gastroenteric infection and intoxication, the possibility is not excluded that even such very different derangements may have much in common in their etiology. That the mental and emotional peculiarities of individuals have a large part in fixing the type of nervous reactions that occur in consequence of intoxications has become apparent to careful students of pathologic conditions.

#### TYPES OF CHRONIC EXCESSIVE INTESTINAL PUTREFACTION.

The variations in the clinical manifestations and pathologic accompaniments of chronic excessive intestinal putrefaction suggest that the etiologic conditions vary in different patients. The three types that I would suggest are:

1. The *Indolic Type* of chronic excessive intestinal putrefaction. This is marked by striking indicanuria and probably is due to members of the *B. coli* group.
2. The *Saccharo-Butyric Type* of chronic excessive intestinal putrefaction, which seems to be initiated chiefly by the anaërobic forms. In its simplest examples there is very little indol in the gut.
3. A *Combined Type*, or cases combining the characteristics of Groups 1 and 2.

*Indolic Type of Chronic Excessive Intestinal Putrefaction*.—In these cases the members of the *B. coli* group form indol in considerable quantities and they probably invade the small intestine in large numbers. The bacterial cleavages seem largely to replace normal tryptic digestion.

Provisionally we may classify here that type of chronic intestinal indigestion found in marantic chil-



dren with large abdomens. In the treatment of these children much patience is necessary. At first their digestive processes must be improved. Carbohydrates should be greatly restricted and should be given as rice or Huntley and Palmer biscuits. The milk may be peptonized to promote its earlier absorption. Chicken, beef and mutton are permissible, but they should be finely divided. In a child 5 or 6 years old it may be advisable to give only two meals a day. Considerable benefit seems to follow daily irrigation of the colon, which facilitates the removal of the putrefactive products before they are absorbed. The children should exercise, but should be spared fatigue. They should rest much. Because they stand cold badly, they do best in a mild climate during the winter. Improvement may be possible after several years of rigid régime. The retarded growth, however, is evident even at puberty. Some of these patients seem always susceptible to intestinal disorders, and may never become strikingly robust.

*The Saccharo-Butyric Type of Chronic Excessive Intestinal Putrefaction.*—In this type the seat of the putrefactive process is the large intestine and lower ileum. It is due to the activity of the strictly anaërobic butyric acid producing bacteria. Although our study is not yet exhausted it may confidently be stated that in many cases *B. aerogenes capsulatus* is largely responsible. With this form may be associated *B. putrificus* and possibly sometimes the bacillus of malignant edema, although often these forms are not found in cultures on any of the ordinary media.

The abundance of putrefactive anaërobes, especially of *B. aerogenes capsulatus*, gives a peculiar character to the intestinal contents. The organisms attack carbohydrates and proteids vigorously and butyric acid is formed from both, together at times with propionic, caproic or valeric acid. These acids are largely responsible for the odor of the stools. From proteids, besides these acids, hydrogen, carbon dioxid and perhaps methane are formed. As a consequence the feces have a low specific gravity and often a decidedly light color. The presence of hydrogen leads to the extensive reduction of bilirubin and other pigments. The Schmidt test with mercury bichlorid gives a strong pink color. The stools have an acid reaction, although the acids are neutralized in part by ammonia and other bases formed in the process of putrefaction. It is probable that the ammonium butyrate acts as an irritant to the gut, causing soft stools or diarrhea. Indol is absent or present in small amounts. Phenol occasionally is found in slight excess. In the urine the ethereal sulphates at times are excessive, although the reason for this is not clear. Mercaptan may be present in the feces as a trace; it also is found in cultures by means of the isatin-sulphuric acid test. It has been noted that as the patient improves the mercaptan becomes less or disappears, but the explanation of this phenomenon is at present unknown.

In nearly all adults the *B. aerogenes capsulatus* is present in the intestines in small numbers. It is possible that this organism is responsible for repeated slight attacks of intestinal putrefaction, although it may not in these mild cases lessen the duration of life. In some persons in whom a high grade of putrefaction is present, a condition of actual invalidism may be induced and life may be definitely shortened as a consequence of the intoxication.

The presence of ammonium butyrate may give rise to irritation of the intestine and this may be associated with an excessive desquamation of the epithelium, not only

in the intestine, but in the mouth and stomach as well. We have evidence of this in the presence of a large number of nuclei in the feces, and it is well recognized that excessive desquamation of the lingual epithelium is associated with digestive disorders. The patients suffer from flatulence. They tolerate carbohydrates and acids badly, and are very liable to attacks of diarrhea after a meal of carbohydrates. Acids may be formed in the mouths of these patients through the influence of anaërobes. This adds to the irritability of the intestine. It is possible that in advanced cases the *B. aerogenes capsulatus* may invade the small intestine and there find sugar from which to form butyric acid, etc. After the carbohydrates are thus exhausted, the anaërobic forms in the large intestine set up putrefactive processes in the proteids which exist there.

It is also noteworthy that many patients who suffer from severe intestinal putrefaction are distinctly anemic. The first change in the blood seems to be a decrease in its volume; then the hemoglobin falls somewhat and finally the cells themselves are reduced in number. The grade of anemia varies extremely, from a moderate secondary anemia to the most serious grades of the progressive pernicious form.

*The Combined Indolic and Saccharo-Butyric Type of Chronic Excessive Intestinal Putrefaction.*—Examples of this type of intestinal putrefaction are common. There are many putrefactive anaërobes in the gut, and also a persistent and well-marked indicanuria, which is but slightly influenced by diet. The nervous symptoms are relatively prominent and appear early. They are emotional irritability and periods of mental depression; muscular or mental activity soon induces a striking fatigue. Later the blood disturbances may appear. Although these patients have intervals of improvement that continue for months, on the whole the general tendency is downward. They become less robust and recuperate less promptly from every succeeding attack. They may run along for ten or fifteen years in a weak condition, with periods of slow improvement, and finally may present the picture of a pernicious anemia. In others the nervous symptoms increase and the patients may need treatment in a sanitarium or in an asylum for the victims of melancholia.

These various manifestations in different individuals may represent merely a differing reaction to the same poison. Whether the nervous system or the blood shall bear the brunt of the attack is determined by the relative vulnerability of these tissues in that particular individual. It is noticed also that under treatment one group of symptoms may improve quite independently of the other.

There is a more rapid advance of invalidism than is the case of either type (1) or type (2) alone. The atrophy of the fat and muscle and the blood changes are present, and perhaps also there are chronic parenchymatous changes in the kidney and liver as a result of the constant poisonous action.

#### THERAPEUTIC CONSIDERATIONS.

The difficulties that beset our efforts to control and modify excessive intestinal putrefaction are obvious. Although the cases arrange themselves in groups, everyone presents certain points of difference. Our experience is so incomplete that as yet our efforts are more or less experimental. Notwithstanding this, one may lay down rules for partial guidance that are based on certain principles, but a careful regard for individual traits is imperative.



The mild cases often show a rapid improvement and lose the evidences of putrefaction. The patient feels well, yet he can hardly be called normal, because he has deficient reserve power and will easily relapse to his former condition after an indiscretion in eating or excessive fatigue or worry. The long-standing cases improve slowly at best. The chemical products of putrefaction may be reduced in amount, but the symptoms often persist, and even under most favorable circumstances the patient is liable to frequent and protracted exacerbations.

The following principles must be regarded in treating all the three types of putrefaction: (1) Avoidance of continued reinfection that follows the ingestion of putrefactive bacteria with the food; (2) the promotion of prompt digestion and rapid absorption from the small intestine; (3) the reduction of the number of putrefactive anaërobes in the ileum and colon.

1. To avoid infection and reinfection the mouth must receive scrupulous care. Carious teeth and gingivitis must be treated carefully by the intelligent use of the tooth brush and of washes containing peroxid of hydrogen. In conditions of gastric atony a process of putrefaction begins in the stomach that normally starts in the colon. Gastric fermentation and putrefaction are controlled by lavage every day, perhaps best in the morning. The reduction of the number of bacteria here leads to lessened damage to the bowel at lower levels.

In the preparation of food ordinary cleanliness is very effective. It is probably better to use cooked food as much as possible. Fruit is not above suspicion, for Dr. Rettger has determined that the bacillus of malignant edema is commonly present on banana peel. This suggests the advisability of peeling all fruit that is eaten. Milk always contains a large number of bacteria and often some of the putrefactive forms, especially *B. putrificus*. The lactic acid formers abound, but their action is rather beneficial in that they antagonize other and harmful forms. Sterilization of the milk is of little value. Pasteurization or the ordinary boiling kills the lactic acid formers, but does not harm the spores of the putrefactive organisms. Cheese, except fresh home-made cheese, contains many putrefactive forms, and is best avoided, particularly inasmuch as many of these patients lack the protective action of the normal amount of hydrochloric acid in the stomach.

2. With rapid digestion and prompt absorption little pabulum for the putrefactive organisms reaches the colon. These processes are facilitated by measures that improve the secretory and motor functions of the stomach. Chief among these is proper mastication, which largely determines the ability of the body to utilize food. When large masses of meat are swallowed, they commonly appear in the feces. Comminution of food outside the body is not an adequate substitute, for the patient then loses the emotional stimulus to gastric secretion and also the digestive action of the saliva itself. The administration of hydrochloric acid often helps for a time, but in long-standing cases, especially those of the combined indolic and saccharo-butyric types, it is of little use. Ferments, such as pepsin and pancreatin, are of doubtful value, although they can not be said to be always useless. Diastase gives better results, as it enables the patient to utilize more extensively the carbohydrates of the food. If, as often happens, the stomach is irritable, it is advisable to give small meals and to administer flaxseed or other demulcent before eating. The best pancreatic stimuli, aside from the quality of the

chyme, are cheerful emotional accompaniments of eating, and rest, physical, mental and sexual. Prompt absorption is promoted by restricting the amount of food, especially of proteid food. Meat should rarely be eaten more than once a day.

3. To reduce the number of putrefactive organisms in the colon, one turns naturally to intestinal antiseptics. While these drugs may act efficiently on bacteria in the stomach, evidence of their continued action in the intestine is variable. Perhaps the salicylates are most likely to check fermentation and putrefaction in the stomach and small intestine. It is conceivable that certain oxidizing substances which are slowly dissociated, such as manganese bioxid, may reach the colon in time to liberate their oxygen there and thus, in part at least, remove the anaërobic conditions that obtain in this part of the intestine.

The use of laxatives may be followed by temporary benefit, in that they lessen absorption from the gut, as is shown by a decrease of the ethereal sulphates in the urine, after their use. They must, however, be given with caution, lest they increase the irritability of the bowel and lead to diarrhea and loss of strength. On the whole, they are useful in acute and subacute cases only.

There are certain very tempting methods which aim to substitute harmless bacteria for the putrefactive organisms, but more evidence is needed as to the value of this procedure. It is a common practice to introduce lactic acid formers in kumys and kefir and also in bacilac, a fermented milk introduced by Metchnikoff, which is free from yeasts. Irrigation of the colon two or three times a week is often followed by a decrease of the ethereal sulphates in the urine and by relief from symptoms, including both the mental symptoms and the anemia. This procedure is more efficacious in the saccharo-butyric and combined types of putrefaction.

#### PROGNOSIS.

In considering the prognosis in these patients, the duration of the condition is as important as its intensity. Better results are obtained in those cases induced by gross errors of life, the correction of which is followed by improvement or complete recovery. In a highly neurotic person the outlook is less hopeful. A protracted rest for two or three years, with careful attention to the principles of treatment laid down, offers the best hope of health.

### THE RELATION OF DISEASE OF THE NASAL ACCESSORY SINUSES TO DISEASE OF THE EYES.\*

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That the nose and its pathology have a direct influence on the health and function of the eyes has long been admitted, and the more obvious and striking forms of interdependent diseases have for a long period been recognized and treated.

It is unnecessary to mention the ordinary examples of associated disease. I wish to call your attention to a practically unrecognized condition. The symptoms of this condition are purely ocular. The patient never has a reason to suspect a nasal origin, and, as use of the eyes almost invariably increases the headache of this condition, he consults an oculist for relief. Another

\* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



reason for believing that the eyes are at fault is that correct glasses relieve for a time all or the greater part of the symptoms. This may be explained by the lessened congestion of the ciliary body resulting from a relief of eyestrain, however small in amount. And, as congestion is the basis of this condition, even a slight reduction of its total amount will, for a time, give relief from the more prominent eye symptoms.

The first point which attracted my attention to the possibility of involvement of the neighboring sinuses was that this particular class of headaches was usually unilateral, or, if bilateral, the pain was greater about one or the other eye. The nose, however, shows no distinct anatomic or pathologic condition to account for the one-sided headache, except on very close examination with suprarenalin and cocain, when the middle turbinal will be seen to be closely applied in its anterior third to the lateral nasal wall, or even may be found sufficiently boggy or hypertrophied to resist shrinkage by these agents. The literature, especially the German, furnishes abundant evidence of the close relation existing between these sinuses and the orbital contents. These cases, however, are all of the suppurative type of sinusitis, and a nasal examination reveals evidence of pus in one or more of the locations characteristic of sinus infection, while in the class of cases here presented no pus could be detected in the nose at any time except in a few cases which showed mucopus after probing and irrigating the frontal sinus.

The frontal sinus and the ethmoid cells opening into the infundibulum are the sinuses chiefly involved. Pihl<sup>1</sup> reports a case of retrobulbar neuritis from chronic antrum suppuration, but here again the presence of pus coming from the antrum should be easily demonstrated, and it is almost impossible for the nonsuppurative condition here described to occur in the antrum of Highmore, because, from its position at the lower end of the hiatus semilunaris, the ostium is never blocked by a congested middle turbinal or, if blocked at all, it is often reopened by the varying turgescence of the turbinal.

The clinical picture presented in this condition is as follows: The origin of the trouble dates back to an attack of so-called grippe or to a very severe cold. The patient has had headaches more or less severe and always unilateral when they first appear, although often they become general after an hour or more. The patient usually speaks of having neuralgia. The pain occurs during sleep as well as in the daytime, frequently beginning and ending with some regularity at a given hour each day. During the existence of the pain there is often unilateral lachrymation, swelling of upper eyelid and tenderness on pressure at the inner orbital angle or over the anterior wall and floor of the frontal sinus as compared with pressure applied to the same areas on the opposite side. The patient experiences intervals of complete relief, during which the eyes may be used for near work indefinitely. During attacks, however, use of the eyes is almost impossible, as it intensifies the symptoms markedly and may even be accompanied by blurring and mixing of print. Insufficiency of both accommodation and convergence is usually observed and there may be a reduction of distant vision.

On stooping over to pick up an article from the floor the patient experiences marked increase in pain and often becomes dizzy on resuming the erect position. While stooping he is usually able to put his finger on the area of greatest pain and describes the sensation as

one of increasing pressure as though the painful area was being pushed slowly forward by a force from behind. The circulatory disturbances of the menstrual period aggravate the condition and each cold brings it on. Jarring, as in riding on a train, is almost unbearable during an attack. The patient's ability to think clearly is disturbed. The pain is only partially controllable by opiates. Excess in eating or drinking alcoholic beverages aggravates or even may bring on attacks.

As a rule, no history of nasal disease is obtainable. In fact, patients often object to a nasal examination as a waste of time and a useless procedure, being perfectly sure that the trouble is entirely in the eyes. Close examination will reveal a swollen boggy turbinal or one which is anatomically so close to the lateral nasal wall as to press on the hiatus semilunaris and thus interfere with free interchange of air and free exit of normal secretions from the frontal and anterior ethmoidal cells.

If a patient gives a history of having experienced any of the above symptoms he should be seen during an attack and an attempt made to relieve the acute symptoms with suprarenalin and cocain applied about the middle turbinal and into the infundibulum. If an attack can be relieved thus, the hypertrophied anterior end of the middle turbinal should be resected to give free access to the infundibulum and hiatus semilunaris.

The etiology of this condition depends on the anatomic relation of the middle turbinal to the hiatus semilunaris and the infundibulum. The air in the frontal and anterior ethmoidal cells is imprisoned there by pressure of the middle turbinal against the lateral nasal wall, the turgescence filling in the hiatus semilunaris and effectually blocking it. The lining mucous membrane of the sinuses absorbs the oxygen in the imprisoned air and thus creates a vacuum. This absorption results in negative pressure and consequent swelling of the lining membrane with increased blood supply to this region. Stasis, to a greater or less degree, results and may be shown by swelling of the upper eyelid. Pressure of the congested tissues on the contained nerve endings, together with this stasis, produces the symptoms and results in reflex vasomotor disturbances in the circulation of the neighboring structures. Robertson<sup>2</sup> advances a similar theory. Ewing and Sluder<sup>3</sup> described a similar condition which Sluder ascribed to an abnormal approximation of the uncinate process of the ethmoid to the bulla of the ethmoid.

I have also seen the specimen in Hajek's collection, to which Sluder refers, and it is easy to understand how such a narrowing of the hiatus might cause this condition by turgescence of its own lining membrane. This must be rare, however, as compared with a pathologic turbinal which possesses infinitely greater possibilities for alternate shrinking and swelling owing to its venous sinuses. Sluder and Ewing offer no explanation of the condition, being satisfied with the statement that there is an intrasinus change of air pressure. The long-recognized otalgia in acute otitis media is analogous in its etiology to this sinus condition. It seems improbable that sufficient stasis could occur throughout the orbital circulation to bring about such severe symptoms by itself alone. The exit of blood from the orbital structures is well provided for by the superior and inferior ophthalmic veins and their communicating branches emptying backward into the cavernous sinus and the ophthalmic-facial vein emptying forward into the facial

1. Pihl: *Klin. Monats. f. Augenh.*, July, 1905.

2. Robertson: *THE JOURNAL A. M. A.*, March 5, 1904.

3. Ewing and Sluder: *Trans. Amer. Oph. Society*, May 2, 1900.



vein. The ophthalmo-facial vein anastomoses with the above ophthalmic veins, and in case of need the main venous current may flow into the deep veins of the face instead of, as usual, into the cavernous sinus.

This suggests the probability of a further influence which, I think, is to be found in the disturbances of vasomotor control secondary to the irritation of the branches of the fifth nerve lying in the lining membrane of these sinuses. That no direct circulation of infectious material occurs in the orbital vessels is shown by the subsidence of all symptoms in a few minutes in typical cases when patency of the infundibulum is restored. On the other hand, the arterial supply to these sinuses comes from the ophthalmic artery and the stasis within the sinuses must cause back pressure in the orbital branches of this artery.

Pus or mucopus may or may not be found and when present indicates only that the mucous transuded from the swollen membrane has become infected from the nose. In fact, it is not impossible to imagine that a great many cases of suppurative sinusitis have their origin in a frequently recurring condition such as is here described. The essence of the whole matter is that there is interference with the free interchange of air between the nasal chamber and the accessory sinuses.

In going over the literature of sinus disease I found nothing in reference to the particular type of disease here described. Ziem<sup>4</sup> found disease of the uveal tract to be a frequent result of chronic nasal disease either directly from an accessory sinus by way of the veins and lymphatics or indirectly through the general circulation. Recurring cyclitis and choroiditis and even glaucoma in the early stages are favorably influenced by treatment of the accessory sinus infection. Senile cataract he found to be always accompanied by chronic pus discharge from the nose, and in those cases where the cataract was not mature he obtained increased vision by treatment of the nasal condition, although the lens opacity was unaffected. In empyema of the antrum of Highmore, Ziem<sup>4</sup> frequently found contraction of the visual field. This observation has been confirmed by Berger and by Kuhnt, not only in involvement of the maxillary sinus, but also of the frontal and other accessory sinuses. The fields showed no typical picture, as in one case the field for white would be contracted and that for colors only slightly affected and *vice versa*. In a few cases, in addition to the concentric contraction, a further segment-like contraction was observed in that portion of the field corresponding to the location of the sinus involved.

Grünwald, Engelmann and M. Schmidt found no contraction of the visual fields.

Kuhnt saw several cases in which one or both nostrils were completely closed so that not even by the greatest effort could air pass through them, and there existed no trace of lowered vision, contracted fields, muscular or accommodative asthenopia.

Ziem<sup>4</sup> considers that the functional disturbances of the eyes are due to a passive congestion of the orbit and of the choroid and ciliary body.

Hajek has observed asthenopic symptoms in cases in which the ethmoid cells were involved, as well as in many cases of frontal and maxillary sinus involvement. Grünwald believes that all tissues in the neighborhood

of the infected sinus are in an inflammatory condition which is exaggerated by any strain or effort which increases the blood flow to the part, such as an accommodative effort which brings on a sensation of discomfort. This discomfort is relieved by an unconscious relaxation of the accommodation, and the patient experiences a blurring and haziness of the object looked at. This Grünwald terms psychic asthenopia.

Berger, Knies and Zarniko<sup>5</sup> believe the ocular symptoms to be reflex in nature from the sensory nerve ending of the nasal mucosa.

Zarniko<sup>5</sup> holds that to make Ziem's theory of passive congestion tenable the venous channels of the orbit must be relatively small and narrow. I am inclined to agree with Zarniko in this particular, as the reverse is true, the exit of venous blood from the orbit being particularly well provided for in all directions, both backward, in the cavernous sinus through the superior and inferior ophthalmic veins and into the deep veins of the face through the ophthalmo-facial which connects with the inferior ophthalmic vein. The main vein, the superior ophthalmic, has no valves except where tributary veins enter, and so its blood may flow in either direction, into the cavernous sinus or through the communicating vein into the inferior ophthalmic and so into the deep veins of the face.

Eversbusch has observed that in sympathetic ophthalmia there is often marked swelling in the nose on the side first affected and that it remains unilateral until the later stages of the process. He now considers this to be an important symptom preceding the prodromal symptoms of involvement of the healthy eye, and has the nose examined in each case where sympathetic ophthalmia might be expected, in order not to wait too long before enucleating; and also in enucleating the first eye he does not suture the conjunctiva nor use a pressure bandage, as he considers a free flow of blood necessary to remove the toxins which remain in the veins of the orbit and nose.

In the exacerbation of iridocyclitis, Eversbusch has many times found an accompanying catarrhal nasal condition or a marked exacerbation of an existing catarrh. In a case of severe iridocyclitis, when the patient refused enucleation and all treatment for two months had failed to influence the condition, Eversbusch had a hypertrophied inferior turbinal removed as a last resort. There was free bleeding for several hours, with the result that the ciliary injection disappeared almost entirely in both eyes, the vitreous haze cleared and the action of the mydriatics, previously unsatisfactory, became complete. This improvement lasted eight or ten days, when a fresh attack both in nose and eyes was relieved by enucleation of the first eye, the second eye healing with full vision.

The treatment of this condition is operative. Having made the diagnosis, the middle turbinal should be cocaineized and a notch made at the point of its anterior insertion into the lateral nasal wall, a Myles punch being used. The free end of a wire loop on a Krause snare is now introduced into the notch, where it is held firmly while the canula of the snare is pushed along the under surface of the middle turbinal as far as is considered necessary. Closing the snare gives a clean-cut, smooth-edged wound which rapidly heals. In case the turbinal is not large, much useful tissue may be saved by merely

4. Ziem: *Centralbl. f. Augenh.*, 1887, pp. 131, 358; also *Monats. f. Ohrenh.*, pp. 231, 261, 371, 150; *Berlin. klin. Wochft.*, Nos. 37, 38, 39; *Internat. klin. Rundschau*, p. 324; *Deutsche med. Wochft.*, No. 5; *Munch. med. Wochft.*, No. 16.

5. Zarniko: *Die Krankheiten der Nase und des Nasenrachens*, Berlin.



punching out a portion along its line of insertion, thus uncovering the hiatus. As a rule, probing and irrigation are unnecessary and when carried out always leave room for doubt as to the part they play in producing the mucopus occasionally found.

#### HISTORY OF CASES.

CASE 1.—Mrs. E. had pain in left eye in 1892 after "grippe," beginning after rising and continuing until 10 a. m., when it gradually became easier and ceased entirely at noon. The condition improved during the summer, but each winter during the months of January, February and March she has had similar attacks of variable severity.

In February, 1905, she caught cold and pain appeared about left eye, beginning at 9 a. m. and ending at 2 p. m., leaving the eye weak and watery, especially when she tried to read. The ocular condition was normal, but there was tenderness on percussion and pressure about left frontal sinus. No pus was found in nose, but a large septal spur, which pressed against the middle turbinal and kept it constantly irritated and congested, was removed and astringent applications were made to the turbinal. One hour later the pain had disappeared. For three weeks there was a mucopus discharge, slight in amount, seen under the middle turbinal, but the restored drainage banished all symptoms.

CASE 2.—Mrs. C. H. H. six years ago noticed tiring of eyes after an hour's reading. Two or three times weekly she has supraorbital pain, chiefly about right eye. After correction of a compound hypermetropic astigmatism and prism exercises for an exophoria, she ran an unsatisfactory course for a year until last March, when she had a distinct severe neuralgia of right eye and subconjunctival hemorrhage, with soreness of globe and lachrymation. There was no marked tenderness about the frontal sinus, but she had a watery nasal discharge. No pus was found at any time. The middle and inferior turbinate bodies were very boggy and were reduced with difficulty. Thorough shrinking, however, was sufficient to bring relief at once. Local astringent applications entirely cured the condition without any attempt at probing the frontal sinus. Later she was without her glasses for four or five days without a symptom.

CASE 3.—Mrs. S. gives a history of unilateral neuralgic pain in left eye and back of head for past three or four years; it has been worse lately and now is accompanied by lachrymation and some edema of lids of left eye. She thinks she has noticed occasional yellow discharge from nose; on pressure there is tenderness over anterior wall of left frontal sinus and against its floor. No pus was found in nose, but the turbinals were boggy. Patient could read only twenty minutes when lachrymation would begin, worse in left eye. The sinus was probed and irrigated and a small amount of thick pus found, which probably accounted for a bad odor, of which she had occasionally complained. The sinus was irrigated several times and the patient experienced immediate relief. There was some mucopus flow for about one month, according to the patient, but no return of the symptoms.

CASE 4.—W. A. W. four or five years ago had neuralgic pains about left eye. Four weeks ago he had grippe, with excessive nasal discharge. One week later supraorbital pains began about left eye. Pain begins at 2 a. m., and patient has three separate attacks, usually at 2, 5 and 7 a. m. Boggy turbinates on left side were found, but no pus at any time nor local tenderness about sinus. He was given a suprarenalin spray for home use and local astringents were used twice in office with complete relief at once. There has been no recurrence to date. He had been wearing + 0.25 eyl., ax. 90, for each eye, which, as they have given no relief, he has discarded.

CASE 5.—M. W. B. gave a history of catarrh for four years, accompanied by frontal headache, worse about right eye. With each eye under homatropin, refraction was + 0.50 S.  $\subset$  + 0.25 eyl., ax. 90. No glasses were ordered. Marked tearing and blurred vision occurred after a few minutes' near work. There was some tenderness to pressure about the sinus floor on right side, and the right middle and inferior turbinals were swollen and boggy. No pus was found and shrinking of the middle turbinal gave no relief. Next day the anterior third of this

turbinal was resected and the sinus probed. Free flow of pus was followed with complete relief of pain in half an hour. Irrigation of the sinus was attempted with doubtful results. There was a mucopurulent discharge, gradually getting thinner and less in amount for six weeks, since which time there has been none whatever. He had been having his eyes examined occasionally for eight years, with absolutely no relief, but still thought the eyes were at fault and came to me to have them examined again. He now uses them excessively, as he is a senior medical student. There has been no return of symptoms to date.

CASE 6.—Mrs. L. formerly had typical migraine, but attacks have been infrequent for the past three or four years. Two years ago noticed pain in both globes at night and especially in church or theater. Atropin continued for two or three weeks seemed to relieve her. While in the West she had a severe attack of pain about the left eye. The eye became bloodshot, tears streamed from it and reading was impossible, as it increased the pain. Close questioning developed the fact that there was a nasal discharge at the time. Later she had a similar attack in the same eye and obtained no relief from atropin. At this time she remembers that there was a nasal discharge. She has consulted many ophthalmologists of repute, who changed her glasses, exercised her muscles, etc., without permanent relief. Recently she had two attacks like the above, except that she has not observed any nasal discharge whatever. Atropin was useless. Some tenderness of left sinus floor was found during an acute attack last May. She had been instructed to come in at once if an attack occurred, and she came within half an hour of the onset, with the eyelids red and swollen and tears streaming over her cheek. Suprarenalin applied to region of middle turbinal entirely relieved the pain in ten minutes. The anterior third of left middle turbinate was resected without probing sinus, and she has had no recurrence except once, recently, when she had a slight return of the pain, which was permanently relieved by application of 1 per cent. iodine in glycerin to the region of the hiatus. She has discarded her glasses.

CASE 7.—Mrs. E. J. M. five years ago had a severe attack of "grippe," and for several months had photophobia and fronto-temporal headaches daily and could not use eyes for near. For past three months pain in frontal and temporal region has been almost constant and caused insomnia and extreme nervousness. Three weeks ago vision began to fail and headaches continued, with soreness in the bony margin of the orbit. Right eye first began to fail, followed by same condition in the left eye. Stooping increases pain and causes vertigo. A cold marked the beginning of present attack, accompanied by occasional thick nasal discharge, greenish in color. Pain persists, but discharge is watery now. Middle turbinals on both sides were hypertrophied and on the left boggy and edematous. No pus was found. After shrinking the left middle turbinal a thin, colorless mucus was seen in the middle meatus. There was extreme tenderness about both frontal sinuses on pressure and percussion. L. V. 20/40 and J. 1; R. V. 20/30 and J. 1. Refraction under homatropin in each eye was + 1.00 S.  $\subset$  + 0.25 eyl., ax. 180, which was not ordered.

Maddox rod.....crossed diplopia, one degree  
Parallax test .....exophoria  
Red glass....crossed diplopia with instant fusion

For near there were five degrees of exophoria, as shown by the tangent scale. Resection of the anterior third of her left middle turbinal and probing of her left frontal sinus relieved the condition in one hour's time and has had no headaches since. The right side was similarly treated, as tenderness persisted about the frontal sinus. No pus was found on the right side, but on irrigation portions of a mucous cast were washed out. A large clot of thick yellow pus was washed from the left frontal sinus on the day following the nasal operation. Vision improved by a few letters daily until the fourth day it was 20/15 in each eye. Nose was still discharging one week later, but there was no return of symptoms, and five months later she reported no return.

CASE 8.—H. A. W. two years ago began to have pain in eyes, especially the right eye. Pain is worse since he has worked indoors by artificial light. Pain begins on rising each



morning and continues until noon, with inability to use eyes. In afternoon he uses his eyes indefinitely without symptoms. Has history of nasal catarrh. Right nostril was stuffy from swollen, boggy turbinals. Shrinking turbinals showed mucopus in middle meatus and dropping into throat from right choana. The anterior one-third of his right middle turbinate was resected and mucopus flowed from frontal sinus, with complete relief of all pain and ocular symptoms. His refraction was an irregular compound hypermetropic astigmatism of low degree, and glasses were not prescribed, as the nasal treatment gave complete relief. This case is one of the few in which discharge was actually found, and then only on careful shrinking and probing in the middle meatus.

CASE 9.—H. T., aged 13 years, had headache and pain in eyes, with blurring of print. Her general health was good, except for several indefinite rheumatic attacks. Dr. Frank Allport prescribed  $+0.25$  S.  $\subset 0.25$  cyl., ax. 180 for both eyes for reading. These glasses gave her so much relief that she wore them constantly. For three months patient did well, but began again to have pain in and over eyes. The pain about left eye was then, for the first time, worse than the right. This suggested a nasal examination, and the turbinates of the left nostril were found to be swollen somewhat and to be interfering with breathing. The fact was then brought out that with colds she usually had such headache, which was increased markedly by stooping over and was followed by dizziness. The frontal floors were tender. There was some purulent nasal discharge of slight amount, indicating the last stages of her acute rhinitis, but examination of the sinuses failed to show any discharge. Local astringent treatment cleared the nasal condition and the headache and she now requires glasses only for reading.

CASE 10.—Dr. M. never had headaches until a year ago, although he has worn glasses for twelve years for a mixed astigmatism. A year ago he began to have occasional neuralgia of the left supraorbital region, usually coming on about 12 o'clock. About three months ago he had a very severe attack, which had lasted with varying severity for a week. His nose showed atrophic rhinitis, but there remained sufficient of the middle turbinate on the left side to obstruct the infundibulum.

His pain was markedly increased on stooping, and this fact first drew my attention to his condition, as, during a call on him at his home, I noticed that in hunting for an article in a closet he did not dare bend over on account of the severe pain it caused him, and was obliged to call a servant to help him. A portion of the left middle turbinate at its anterior insertion was punched away and a probe passed into the frontal sinus, resulting in complete cessation of the headache, with no return to date.

In Case 6 of a series reported, Dr. Kate Baldwin<sup>6</sup> attributes the relief from headache and inability to use eyes during attacks to relief of intranasal pressure, following a middle turbinectomy, while the case is to me obviously one of obstruction to the outlets of the frontal and ethmoidal sinuses. The typical symptoms she gives as follows: Marked exophoria, pain since 18 years of age in left temple, eye and teeth, with fullness in left side of nose occurring about 10 a. m., passing away in one or two hours with or without treatment; relief was always accompanied by a small quantity of clear fluid mucus from nose, whereas during the attack the nose had been very dry. The middle turbinate was so swollen and boggy that cocaine was of no avail and chloroform was employed. No reflex neuroses, such as sneezing, cough, etc., were present as should be expected if the case were one of pure pressure against the septum, while the history, taken with the others related in this paper, seems to me to leave no room for doubt as to the real condition.

Also in Case 7 the significant symptoms correspond with those given in my cases. The patient showed marked exophoria with diplopia at times, pain over left eye and in left temple, swelling of upper lid and pain in

eyeball, indistinct vision, improvement of vision and exophoria after middle turbinectomy. No doubt the other typical symptoms could have been found if the sinuses had been suspected.

In none of my cases have I been able to find any fundus changes as Posey<sup>7</sup> has observed several times. I have never seen a case of iritis or uveitis which I could prove to be caused by the accessory sinuses as reported by Fish,<sup>8</sup> but I am constantly on the alert for such cases and have made the examination of the nose and sinuses part of the routine examination of the eyes.

The point which I wish especially to emphasize is the absence of all definite nasal symptoms and the apparently normal nose found. All symptoms point to the eyes, and the patient often objects to having his nose examined, as he is so very sure that he has no nasal trouble. These cases exist in all degrees of severity, from occasional eyechache or browache to acute suppuration in the sinus. It is the more frequent but less obvious nonsuppurative cases that we are overlooking and treating for muscular anomalies. I have relieved the milder unilateral pain at least twenty times in my own case by applying suprarenalin to the middle turbinal of the affected side.

My thanks are due to Dr. Casey Wood, Dr. Frank Allport and Dr. Thomas Woodruff for their courtesy in referring their cases to me for examination and for their assistance in the study of this condition.

#### DISCUSSION.

DR. NELSON M. BLACK, Milwaukee, said that "the more obvious and striking forms of independent diseases have for a long period been recognized and treated," but from a perusal of the literature it is quickly seen that this association or relation has only been recognized by having the presence of the nasal condition forced on the observer, either by the existence of a profuse discharge, the patients calling attention to some existing nasal condition, or the ocular conditions have been reported as complication to some sinus or antrum trouble. The conditions the author bases his paper on have not been recognized and treated as such until recently. The results observed and the relief obtained by the proper treatment of these ocularly manifested nasal conditions is truly wonderful, and it is not surprising that so many look on the reports of these apparently miraculous cures with skepticism and in their outspoken derision seek to hide behind the cover of a multitude of sins—hysteria.

In all probability the symptoms are the result of a combination of factors existing for a long period of time, the extension to the eye being a sort of an overflow, as it were, at first, the ocular symptoms only manifesting themselves at intervals when an exacerbation of the primary cause takes place. If, however, the nasal conditions are allowed to go untreated, pathogenic changes take place in the eye from the constant irritation, and in place of symptoms of disturbed functions there are manifested grave ocular conditions, viz., diseases of the uveal tract, cataract, choroiditis and even glaucoma. There is nothing in the physiology of the accessory sinuses to aid in arriving at a conclusion as to the cause of sinus disease being manifested by ocular symptoms; in fact, very little can be found regarding their physiologic function. The close sympathetic relation between the nose and the eye is well known; by tickling the nasal mucous membrane a copious flow of tears will take place and, vice versa, a sudden flash of bright light will frequently cause sneezing. The constant changes in function of the nasal lining, especially when there exists some pathologic condition, must affect the nervous mechanism of the eye which is so closely related and help bring about vasomotor changes.

Dr. Black did not agree with Dr. Brawley regarding probing

7. Posey: Jour. Eye, Ear, Nose and Throat Diseases, March-April, 1905; THE JOURNAL A. M. A., Sept. 9, 1905.

8. Fish: Amer. Journal Oph., December, 1904.

6. Laryngoscope, Oct., 1905.



and irrigation. He has seen great benefit derived from its being carefully carried out; there is no doubt, however, of the liability of a return of the condition if operative measures are not resorted to. He has reported one case of retrobulbar neuritis of frontal sinus origin. Another case is under treatment at the present time and is making rapid progress, vision having improved from 6/lx to 6/xii in five days time with an enlargement of the visual field and reduction of size in an absolute central scotoma. Further study of the subject will undoubtedly be productive of some radical changes in the now generally accepted etiology of many eye diseases.

DR. S. L. LEDBETTER, Birmingham, Ala., referred to the case of a man who complained of pain in the frontal region and defect of vision in one eye. He gave a history of a severe cold, but no suppuration in the nasal cavities. On examination he found that the eye was apparently perfectly healthy, except for a slight cloudiness in the macular region; vision equalled 20/100. The other eye was perfectly normal. The pains increased for the next two days. He made a diagnosis of posterior ethmoidal and probably sphenoidal engorgement, ordered a Turkish bath, laxatives, a little alterative tonic, and light diet. In a few days the patient was only able to count fingers at two feet with that eye and complained of much more pain, so that opium had to be given. He was put on diaphoretics, pilocarpin and other things, and kept up the laxative treatment and ordered rest. He reported again in two days complaining of the other eye and on examination it was found that both optic discs were swollen, almost obscure, an evidence of retrobulbar neuritis. The pains were so severe that even with opiates he could not sleep. This continued for several days, when the patient became more comfortable. The second eye had never become quite so bad as the other; vision equalled 15/30. The pains subsided and the evidences of engorgement were passing away, but the optic neuritis still persisted. There was no history of specific trouble or rheumatism.

DR. BRAWLEY said that he had probed and irrigated the sinuses only when he discovered pus in the middle meatus, because probing the sinuses complicates the diagnosis. He laid stress on the fact that many of these cases, seen early, do not have pus, and probing may lay one open to the criticism of having caused the suppuration when it occurs.

## TO WHAT EXTENT CAN THE GYNECOLOGIST PREVENT AND CURE INSANITY IN WOMEN?\*

W. O. HENRY, M.D.  
OMAHA.

### REVIEW OF LITERATURE.

The question of the relationship existing between pelvic diseases in women and insanity is one which has occupied the attention of the profession many years, more particularly since 1857, when Loiseau presented a thesis on the subject, "Sympathetic Insanity," which caused considerable discussion, and also since the paper by Hergt, in 1870, on the subject, "Women's Diseases and Disturbances of the Mind." Although from that time to the present the subject has been discussed to some extent in medical societies and through medical journals, even yet great difference of opinion exists among gynecologists and alienists. When I read a paper before the Nebraska State Medical Society in 1898 on the subject, "Relations of Insanity and Pelvic Diseases in Women," there was little sympathy expressed by the members of the society and my conclusions then given, which more extensive experience has served to confirm, were not received with favor. Those important conclusions were as follows:

1. The relations of insanity and pelvic diseases in women have not heretofore received the attention which their importance deserves, nor which they will receive in the near future.

2. Not all insane women who have pelvic disease as a factor can be cured by local treatment or operations, but in the early stages such treatment or operations, in many cases, would have been curative or preventive.

3. Cases not benefited by local and conservative operations might still be cured by more radical operations.

4. All insane or epileptic women should have their pelvic organs most thoroughly examined at once and all diseased conditions should be relieved as quickly as possible by whatever means are necessary.

5. If these things be true, how important for the general practitioner, under whose care all of these cases first come, to see that all pelvic disorders in women are properly treated and cured as soon after their discovery as possible, in order to prevent these mental troubles.

6. Finally, how important for our insane women to have the benefit of what the gynecologist can do at the earliest possible period.

In our text-books on gynecology you will look almost in vain for any encouragement along this line of thought. Pryor, Davenport, Gilliam, Penrose, Garrigues, Byford, Hirst, Ashton, and Dudley give it no consideration. Kelley gives it but scant notice, and one is cautioned against any operative procedures in women who are inclined to mental trouble.

In his edition of 1901 McNaughton-Jones devotes one brief chapter to it and says:

The relation of disordered sexual functions to mental diseases has hardly received the careful attention on the part of the profession generally that it most decidedly demands. Picque has found as high a proportion of affections of the generative organs among the insane as 88 per cent. He reports favorably of the effects of operations on the insane in a fair proportion of those affected. Sherwood Dunn reviews the entire subject and the experience of a number of psychologic and gynecologic authorities and comes to the general conclusion that affections of the pelvic viscera in women are often associated with insanity in the relation of cause and effect; that such lesions predispose to the occurrence of puerperal insanity; that they impede convalescence from mental disorders and operative interference should be advocated in those cases in which pronounced affection of the uterus or adnexa is discovered.

On the other hand, Reed says:

The reader can readily see why it is unnecessary to discuss the relationship between the pelvic disease and epilepsy, chorea and other nervous diseases. The truth can all be summed up in a word. There is no relation. The same truth obtains with regard to the insanities.

In 1896 W. P. Manton said:

We long ago came to the conclusion that the idea of restoring the sick mind to health as the result of gynecologic interference should be abandoned.

Yet, strange to say, he goes on to admit:

I have never operated on an insane woman yet, no matter to what extent dementia has gone, without some relief to the mental condition and a decided improvement in the personal comfort of the patient.

So far as the testimony of gynecologists goes, it seems to be overwhelmingly against the possibility of doing anything either to prevent or to cure these sad complaints. Thurman, of the York Retreat, said:

In round numbers, of ten persons attacked by insanity, five recover and five die sooner or later during the attacks. Of the five who recover, not more than two remain well the rest of their lives; the other three sustain subsequent attacks during which at least two of them die.

\* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.



If this be a generally accepted prognosis, how important for us to determine just what the gynecologist can do to prevent insanity before it occurs or cure it after it occurs.

Chapin's definition is:

Insanity is that mental condition characterized by a prolonged change in the usual manner of thinking, acting and feeling; the result of disease or mental degeneration.

The *Alienist and Neurologist* gives this definition:

Insanity is an expression only of functional and organic disorder; remove the disorder on which the insanity depends and the return to mental soundness is secured.

Charles P. Bancroft says:

Insanity is not a specific entity; it is rather an ever varying symptom complex, corresponding to many diverse underlying disease processes. Insanity may be said to be a prolonged departure from the individual's normal method of thinking, feeling and acting, due to functional or organic disturbances of some portion of the encephalon.

The definition of Bondurant of the Alabama Insane Hospital is:

The facts obtained seem to justify the opinion that many of the patients in whom insanity and nephritis co-exist are insane because of the nephritis; that is, the insanity is one of the mental symptoms of acute or chronic uremic intoxication.

H. A. Tomlinson, Minnesota, says:

The pathologic history of insanity is known to be vague and indefinite and from the standpoint of histology, furnishes very little information to the student in search of specific morbid changes which will explain the clinical manifestations of aberrant cerebral functioning. This apparent absence of definite anatomic change is to be explained by the conditions which give rise to insanity; namely, the precedence of physical disease, shock, overwork, mental strain, infection, or auto-intoxication from some source. Consequently, the insanity can not be said to be dependent on the changes found to be present in the neuron, but rather, the histologic change and the insanity follows the conditions generated by antecedent somatic changes to which they are consecutive.

Kohlberger says:

The source of mental diseases is not only in the brain but in all the organs.

Morrell says:

Although the brain is always the seat of insanity, it is not always the seat of its cause.

From these opinions I think we may say that insanity is that mental condition characterized by a prolonged change in a person's usual manner of thinking, acting and feeling without apparent cause and yet, doubtless, the result of some brain or other bodily disease.

In the report of the New York State Commission of Lunacy for the year ending Sept. 30, 1906, the following were the causes assigned for insanity in 4,819 cases admitted to the New York hospitals for the insane in the preceding twelve months:

Moral Causes: Adverse conditions, loss of friends, business troubles, etc., 354; mental strain, overwork, worry, 384; religious excitement, 65; love affairs, including seduction, 32; fright and nervous shock, 95.

Physical Causes: Alcoholism, 476; sexual excess, 24; venereal diseases, 94; masturbation, 90; sunstroke, 50; accident or injury, 87; pregnancy, 9; parturition and puerperium, 136; lactation, 15; change of life, 100; fevers, 23; privation and overwork, 80; epilepsy, 183; other convulsive disorders, 5; diseases of the skull and brain, 76; old age, 230; exophthalmic goiter, 1; epidemic influenza, 40; abuse of drugs, 44; loss of special sense, 6; uremic poisoning, 2; other autoinfections, 1; heredity, 357; congenital defects, 44; unascertained, 1,413. Of the total number 1,069 had inherited predisposition.

Tomlinson says that of 937 admitted, 212 had a heredity of insanity, while 266 had a heredity of cancer and 170 had a heredity of phthisis, 123 had sexual excitement or perversion, 233 had some menstrual disorder, 443 had leucorrhoea, 408 had uterine displacement, 222 of these last had adhesions, 79 had disease of the ovaries, 337 had laceration of the cervix, 424 had laceration of the perineum, 238 had cystocele, 229 had rectocele. Then he says:

People become insane. Why? Because of defective nervous organization and not because of cardiac or renal disease. The physical disease simply upsets the unstable nervous organization. So far as we have been able to determine from repeated and persistent cross-examination, it is safe to say that there had been periods of confusion, suspicion and dread for at least a year before the untoward conduct or overt acts of the individual made the nature of his conduct manifest to his friends.

J. W. Wherry,<sup>1</sup> Dansville, N. Y., writes a very instructive article in which, among other things, he says:

The evidences of brain pathology, in abnormal intellectual states, as in idiocy, imbecility, dementia and general paralysis are at least sufficiently established to call for further investigation, but in the emotional insanities, I believe it is useless to probe the brain longer for a secret it does not hold.

I can see no good reason why there should be any doubt about the origin of melancholia in visceral conditions rather than in a disease of the brain.

Maudsley said:

It is clear as day that temporary bodily conditions, however they may have been brought about, will play their part and it may be well that future researches will discover the causes of the characteristic features of some varieties of mental derangements in the diathetic states and the actual bodily disorders which are associated with them. There is the most perfect harmony, the most intimate connection or sympathy between the different organs of the body as the expression of its organic life. Unity of the organism beneath consciousness and the brain is quite aware that the body has a liver and a stomach and feels the effects of disorder in any one of the organs.

Ferrier says:

Healthy states of viscera produce pleasurable feelings and morbid states of viscera produce painful or depressing feelings. Visceral derangements are frequently the cause and always the accompaniment of melancholic depressions.

C. C. Hersman,<sup>2</sup> alienist to the South Side Hospital, Pittsburg, also read a paper before the Section, in 1899, in which he said:

It is a well-known fact that the ovaries and testicles have at least three distinct actions; the first, generation; the second, their action through absorption on the central nervous system, which give to men and women their physical, moral and intellectual characteristics; the third is a special tonic action which reinforces in a special way the action of the spinal cord and brain.

In addition to this I am not sure, but we will find eventually that there are nerve centers in the uterus, and possibly also in the tubes, which have an important influence on the mental equilibrium. He cites in his paper two interesting cases from the insane department of the St. Francis Hospital as follows:

A Jewess, married, very excited, was in the hospital for a few months. She also suffered from chronic endometritis, was curetted and went home in three weeks, with no mental symptoms. Again, a Polish girl who had been in the hospital for more than a year with no improvement mentally, on examination was found to be suffering from chronic endometritis. She went home cured in two weeks after curetting the uterus. They have both remained well a period of about five years.

1. Am. Jour. of Insanity, January, 1906.

2. "Uterine Diseases and Insanity," THE JOURNAL A. M. A., vol. xxxiii, p. 709.



I am aware we usually look to the brain when searching for the cause of insanity and many times, I fear, when we should look elsewhere. It is necessarily the immediate seat of the disturbances, but the remote cause may be very foreign to that organ. Many times, if the uterine disturbances were relieved, the insanity would be removed. I have seen, as already stated, in the treatment of insanities the result of uterine disease, the local or surgical treatment of the trouble not only cure the uterine disease, but effectually cure the concomitant disease occurring in the brain, thus showing the mysterious (?) and unaccountable (?) connection between them.

The "Reference Handbook of the Medical Sciences," 1902, in the very able and rather exhaustive article on insanity, says, when speaking of the accessory causes:

It is noticeable that organic diseases of the uterus and its appendages are seldom accompanied by profound nervous storms. On the other hand, the leucorrhœas, amenorrhœas, profuse menses, vaginismus, chronic uterine catarrh, and a host of other comparatively benign affections are now and then followed by mental disturbances. Although it may be said, in general, that the influence of the affections of the generative apparatus as a cause of insanity in woman has been exaggerated, as an accessory factor it is often worthy of consideration.

Thus we see that the general consensus of opinion now among alienists seems to be that various bodily diseases may be the exciting cause of insanity, and hence the importance of curing these diseases as a prerequisite to restoring mental health. Then, too, I think, it is generally conceded that there is a closer and more intimate relationship between the brain and sexual organs than other viscera, so that any disturbance there will more easily affect the mental condition than diseases of any other organs and it is remarkable how large the percentage of pelvic troubles is among insane women and to what extent these women are cured of their mental troubles when the local pelvic irritation is removed. For example, in 1895, Dr. Rohe, of Maryland, said:

The number of my cases is too small (34) to allow me to draw conclusions, but if anything of practical value can be deduced from them, it is that puerperal insanity, melancholia and simple mania offer the best chances of cure from the proper treatment of local lesions in the pelvis. I am convinced that earlier operation in appropriate cases would have largely increased the proportion of recoveries.

And yet of his 34 patients operated on, 14 were cured, 5 improved and none made worse mentally.

Dr. A. T. Hobbs, of the London (Ontario) Asylum, with the gynecologist, Dr. Meek, carefully and systematically examined 220 women who were confined in the asylum, and found 188 of them, or 85 per cent., suffering from some pelvic lesion. They proceeded to operate on 173 of these, and their report is that 42 per cent. of these recovered, 24 per cent. were improved, 32 per cent. remained the same and 2 per cent. died.

LeRoy Broun, of the Manhattan State Hospital, read a very excellent article before the Brooklyn Medical Association in January of the present year, in which, after citing freely from various hospital reports, he says:

Thus it is seen that in all insane asylums a large majority of the women inmates suffer in some form from a disease of the pelvic organs.

Insane patients, being as much subject to physical diseases as their more fortunate sisters have equally as much right to be relieved. Such is now recognized and the majority of the institutions have on their staff consulting surgeons who render such relief as needed. Those unfortunates are now treated as if they were not insane, as far as their physical condition is concerned. As stated, no operations have been undertaken with the direct object of influencing the mental status. The physical status alone has been considered. As a result of adopt-

ing this course, fully three-fourths of the patients operated on were sufferers from forms of mental disease recognized as unfavorable and in whom little permanent progress can be made in ameliorating their mental state. The unfortunates of this class have as much claim for physical relief as those of more amenable forms of mental disease. Two hundred and forty-two patients have been given some form of gynecologic operation, which is a little less than 5 per cent. of the total number of women in the hospital during the period covering the operations. Of those operated on there have been 62 abdominal sections, 51 operations for displaced uteri and 129 minor plastic operations. As a result of all the operations done (242) 112 patients have been physically benefited in a marked degree, 107 have been noticeably improved, though not to such a great extent as in the previous number. Of the remaining patients five died, of which number two deaths were attributable to the operation and three to natural causes. The statement made by some writers that operative measures for diseased conditions at times aggravate the insanity of the patient is not in accord with my experience. No instance of such an occurrence exists among patients I have operated on. The same statement is made by Manton concerning his operations in the East Michigan Asylum covering a period of 20 years and by Picque, who has been operating for 12 years among the insane of Paris. The rare occurrence of true psychosis following gynecologic operations on women not previously insane has been brought out by Rohe.<sup>3</sup> He states that, as a result of communication with all the asylums of the United States and Canada, he found that in the course of ten years prior to 1893 only 25 patients had been registered in all these asylums as having become insane after gynecologic operations. In studying the histories of the patients on whom I have operated, I find that of the 242 patients, 138 still remain in the institution and 104 have been discharged. Of those discharged 43 are recorded as recovered mentally. Twenty of these 43 discharged as cured have had their mental recovery materially hastened as a result of the physical improvement arising from the operation done on them. While in the majority of these patients there had been some mental improvement before the operation was done, yet, in all of the twenty the psychic improvement following the operation was marked, as also was the steady progress toward mental recovery.

While I do not wish to criticise the author of this paper, still I am confident that his small percentage of cures resulted from the fact that he did not entirely remove all pelvic disturbance, or, in other words, his operative work was not radical enough. Of course, simple justice will require us to admit the possibility of another factor, and that is too long duration of the mental disturbance before the pelvic trouble was looked after, but the former seems to me far more likely, because the doctor's point of view was not altogether right, for he should have gone at his pelvic work with the primary object of so thoroughly getting rid of the irritation there as not only to cure the physical ailment, but to be confident that by perfect results here he would reap much greater benefits, namely, a restored mentality and, no doubt, richer and better results would have crowned his labors. To illustrate what I mean, I have selected a few cases from his report read at the sixty-first annual meeting of the American Medico-Psychological Society at San Antonio, April, 1905.

#### SELECTIONS FROM LE ROY BROUN'S CASES.

Mrs. S., age 39. General health: Fair. Disease: Dementia, paralytica ovarian cyst and retroflexed uterus. Operation: Removal of cyst, suspension of uterus. Result: Physical condition satisfactory; no marked mental improvement.

Although the result of this operation was satisfactory as far as the physical condition was concerned, we are not surprised that there was no marked mental improve-

3. New York Med. Jour., 1905.



ment, for here, whatever else may have been wrong, the suspension of the uterus granted a new course of pelvic irritation, being wholly irrational and unreasonable.

Miss G., age 40. Disease: Chronic melancholia, retroflexion of uterus, with fibroids. Duration: Two years. Operation: Myomectomy with Bissell's operation. Result: Not satisfactory; mental state unimproved.

In this case there is no question that there was some ovarian trouble and that a hysterectomy would have given better results.

Mrs. F., age 28. Disease: Chronic melancholia, retroversion and ovarian cyst. Duration: Three years. Operation: Curettage anterior vaginal section, removal right ovarian cyst and shortening of round ligaments. Result: Operation satisfactory; mental condition unimproved.

There can be little doubt that there was left behind sufficient difficulty to maintain the irritation previously existing before the operation.

Mrs. R., age 32. Disease: Acute melancholia, retroversion, laceration of the cervix and perineum. Operation: Curettage hysterorrhaphy. Result: Operation was successful; no improvement mentally.

Here, too, the local irritation was not entirely removed.

Mrs. L., age 28. Disease: Acute melancholia, adherent retroversion with double pyosalpinx. Operation: Excision of cervix and perineorrhaphy with suspension of uterus.

No wonder the patient did not recover, for there must have remained an abnormal amount of pathology in the pelvis.

Mrs. S., age 34. Disease: Chronic melancholia with retroflexion and laceration of cervix and perineum. Duration: Three and one-half years. Operation: Hysterorrhaphy curettage, excision of cervix and perineorrhaphy. Result: No mental improvement.

Mrs. L., age 39. Disease: Chronic mania with multiple fibromyomata and retroversion. Duration: Ten years. Operation: Myomectomy and hysterectomy. Result: Operation successful but no mental improvement.

Here there can be no doubt that a supravaginal amputation, with probable removal of tubes and ovaries, would have given better results, and certainly if done earlier the chances of recovery would have been increased.

Mrs. H., age 35. Disease: Paranoia with adherent retroversion and laceration of cervix and perineum. Duration: One year. Operation: Uterus suspended, left tube and ovary removed, excision of cervix and repair of perineum. Result: Satisfactory but no mental improvement.

Certainly these operations, while they removed part of the pathology, left as much behind to maintain the mental aberration and, therefore, were not adequate.

Mrs. M., age 25. Disease: Acute melancholia of two months' duration, with double adnexa diseases. Operation: Both adnexa were removed and hysterorrhaphy. Result: Mental condition unchanged.

Miss F., age 36. Disease: Chronic melancholia of eight years' duration with endometritis and retroversion. Operation: Curettage. Result: Physical condition improved and mental condition only slightly improved.

Here, with an endometritis and retroversion probably of eight or ten years' duration, there could not have been a healthy condition of the ovaries and tubes. Neither could the retroversion be left alone and the pelvic irritation relieved. Hence, this case did not have the relief which might have been afforded by more thorough treatment, and certainly we could have reasonably expected more had the operation been done earlier.

#### AUTHOR'S CASES.

My own cases now comprise a total of 28. Of this number only one patient has been operated on too recently to tell what the ultimate result will be. The others have been operated on long enough to signify something of the benefit they will receive. The first ones were operated on nine, ten and eleven years ago and remain well to the present time. Sixteen of the patients made a perfect physical and mental recovery. One died soon after the operation. All except this one were temporarily benefited and none made worse. Two have since died of the intercurrent troubles. Eight, although slightly improved, I have not been able to trace and do not know their condition. The one so recently operated on and very much better I can not yet report on, although the improvement is marked, and apparently the recovery will be perfect.

CASE 1.—Woman, aged 34, married ten years, never pregnant, had chronic endometritis with cystic ovaries. Removal of the tubes and ovaries was done in 1895 and she has remained well from that time until now. She had acute mania.

CASE 2.—Woman, aged 34, mother of one child, ten years old. Patient had retroflexed uterus, lacerated cervix and cystic ovaries. Cervix was repaired, tubes and ovaries were removed and patient made a good recovery mentally and physically.

CASE 3.—Woman, aged 42, mother of several children, suffered from a large subinvolved uterus with lacerated cervix, retroflexion and prolapsed ovaries. She had melancholia and dementia for a year and a half. Supravaginal amputation of the uterus, tubes and ovaries was made after which she made a perfect physical and mental recovery.

CASE 4.—Woman, aged 30, mother of one child, had melancholia, subinvolved uterus, degeneration of ovaries. Curettage was done and tubes and ovaries removed. Patient made good recovery from operation and was mentally improved, but I have lost sight of her and can not now trace her.

CASE 5.—Woman, aged 35, mother of two children, had retroflexion of uterus, chronic oöphoritis and melancholia. Removal of tubes and ovaries resulted in perfect physical and mental health.

CASE 6.—Woman, aged 45, mother of two children, suffered from melancholia, had a large retroflexed uterus, prolapsed tubes and ovaries. Supravaginal amputation of the uterus and removal of the tubes and ovaries resulted in perfect physical and mental health.

CASE 7.—Woman, aged 40, had melancholia, large retroflexed uterus, prolapsed tubes and ovaries. Vaginal hysterectomy resulted in immediate improvement, but after she returned home I lost sight of her and have not been able to locate her since.

CASE 8.—Woman, aged 42, mother of five children, suffered from melancholia, chronic oöphoritis and cystic degeneration of the ovaries. Removal of tubes and ovaries resulted in perfect mental and physical health.

CASE 9.—Woman, aged 30, married several years, never pregnant, had retroflexed uterus, degeneration of the ovaries and melancholia for several months. Vaginal hysterectomy resulted in slight improvement, but she finally refused to take food and died in the asylum.

CASE 10.—Woman, aged 50, mother of two children, had passed the change of life. Uterine fibroid with calcareous degeneration was present. Vaginal hysterectomy was done and resulted in physical and mental soundness.

CASE 11.—Woman, aged 36, mother of two children, had bad laceration of the perineum, subinvolved and reflexed uterus and prolapsed ovaries. Repair of lacerations and removal of tubes and ovaries resulted in perfect cure, physical and mental.

CASE 12.—Woman, aged 30, married several years, never pregnant, had retroflexed uterus and periodical mania. After vaginal hysterectomy she made physical and mental recovery.

CASE 13.—Woman, aged 27, married several years, never pregnant, had cystic degeneration of the ovaries and melan-



cholia. Removal of tubes and ovaries resulted in physical and mental health.

CASE 14.—Woman, aged 38, retroflexed adherent uterus and prolapsed tubes and ovaries with melancholia and dementia, had been confined to her bed for several months. Vaginal hysterectomy was done without benefit. The patient died two weeks later.

CASE 15.—Woman, aged 35, married several years, no children, had cystic ovaries and melancholia. Removal of tubes and ovaries resulted in physical and mental health.

CASE 16.—Married woman, aged 35, never pregnant, had cystic degeneration of ovaries with melancholia. Removal of tubes and ovaries resulted in physical improvement and some mental improvement. I lost sight of her and have not been able to locate her since.

CASE 17.—(Details lost.)

CASE 18.—Woman, aged 42, mother of three children, developed puerperal mania with septic condition of the uterus. Supravaginal amputation with removal of tubes and ovaries resulted in physical and mental improvement. I have lost sight of the case and do not know the ultimate result.

CASE 19.—Woman, aged 52, mother of several children, passed the menopause six years, had suffered from hemorrhoids and retroflexed uterus with ulceration of the cervix and developed melancholia of severe type. Vaginal hysterectomy and removal of hemorrhoids resulted in perfect physical and mental health.

CASE 20.—Woman, aged 23, single, had severe dysmenorrhea and periodical attacks of mania, with melancholia and prolapsed cystic right ovary. On removal of ovary patient improved both physically and mentally.

CASE 21.—Woman, aged 40, mother of four children, developed melancholia, after her last child was born. There was retroflexed uterus with prolapsed tubes and ovaries. Vaginal hysterectomy resulted in physical and mental health.

CASE 22.—Woman, aged 36, mother of two children, had multiple uterine fibroid. Abdominal hysterectomy resulted in physical and mental cure.

CASE 23.—Young girl, 19 years of age, with retroflexed uterus, prolapsed tubes and ovaries, developed melancholia with mania. Venetral suspension was done but she made no improvement and the girl is still in the asylum.

CASE 24.—Woman, aged 38, mother of four children, had retroflexed uterus with cystic ovaries and melancholia and was bedfast for several months. Supravaginal amputation and removal of tubes and ovaries resulted in satisfactory physical recovery and some mental improvement, since which time I have not been able to trace the case.

CASE 25.—Married woman, aged 26, mother of two children, developed puerperal mania after her last child was born and after a thorough curettement for septic uterus and wiping-out with carbolic acid she made a rapid recovery both mentally and physically.

CASE 26.—Unmarried woman, aged 28, with pronounced melancholia was confined to her bed with intramural fibroid, the removal of which resulted in some physical and mental improvement, but two years later she died without having fully recovered her normal mentality.

CASE 27.—Young woman, aged 27, severe dysmenorrhea since early girlhood with periodic attacks of mania and melancholia and cystic degeneration of both ovaries. Removal of tubes and ovaries has resulted in marked relief both mentally and physically, but the time is yet too short for a final report in this case.

CASE 28.—Mrs. B. (Dr. S.), aged 30, mother of two children had retroflexed uterus and cystic ovaries which resulted in melancholia. Abdominal hysterectomy was done, tubes and ovaries being removed. She made a good recovery and was mentally improved when she left the hospital, but I have been unable to trace her since and do not know the final outcome.

#### CONCLUSION.

Dr. A. T. Hobbs, now superintendent of a private sanitarium at Guelph, Ont., in a recent letter, sums up his views as follows:

Pelvic diseases interfere with mental health in two ways:

Through reduction of physical well being and through reflex irritation. The removal of disease, the restoration of displacements, the extirpation of tumors and repair of injuries will first restore the physical health and through it the mental condition; and, second, will remove a source of reflex irritation. Granted that a number of cases of puerperal insanity will recover without operation, I know positively, from experience, that two things have occurred and will occur; namely, that good mental health is hastened by surgical interference and that a number of patients would never have recovered without surgical interference and that the recovery is due entirely to the removal of serious diseases interfering with the return to physical and through it to mental health. Lesions of the ovaries are, without doubt, causative factors, and disease of the uterus too, in producing insanity, in cases of nervous heredity.

I would like to emphasize another point, and that is that many insane women who have pelvic trouble do not complain of it. While this also obtains in women who are not insane, yet it is very much more apt to be the case in women who are mentally unbalanced, as is attested by those who have given the subject careful thought and as shown by my own cases, and again I would like to insist on the point that sometimes there is serious ovarian degeneration which is not discoverable by ordinary pelvic examination. So that I am sure some of these patients in asylums who are examined by the most competent gynecologists have serious ovarian disease which could only be detected by opening the abdominal cavity and personally making a macroscopic inspection of the ovary. So that it is not sufficient to say that examination has been made and no pelvic trouble found, for, as every operator knows, a good many times when the abdomen is opened and the ovary is carefully inspected serious disease is found, even when not suspected by bimanual examination.

I wish, then, to conclude my paper by insisting that the gynecologist can prevent the occurrence of insanity in many women with very unstable nervous organization if he will, by treatment or operation, remove all pelvic irritation; and, again, he may cure various forms of insanity in women if such irritation is entirely removed, and it is important not to substitute a lesser form of irritation in getting rid of the more serious one. Conservative treatment and operations are all right, if they really secure complete removal of all pelvic irritation; but to get all the results we have a right to expect from gynecology, and which we can undoubtedly secure in a very large proportion of cases, we must wholly eradicate the pelvic irritation by whatever means are necessary, no matter how radical the work required.

#### DISCUSSION.

DR. W. P. MANTON, Detroit, Mich., said that his experience with this subject extended over many years; that he was the pioneer in this line and the first to take up systematic work among insane women. For seventeen years he has been connected with two large state institutions in Michigan, and has had to do also with two private hospitals for the insane, so that several thousand insane women have passed under his observation. One of the best recent articles on this subject is by Dr. LeRoy Broun in a late number of the *Journal of Medical Sciences*. Dr. Broun has had large opportunities for observation and arrives at the same conclusions as Dr. Manton. He took exception to the first item in Dr. Henry's abstract. When he began work every asylum superintendent in the land, with the exception of Dr. Henry M. Hurd, now of Johns Hopkins University, but then superintendent of the Eastern Michigan Asylum, was utterly opposed to any gynecologic interference with insane women. If the alienist does not now know anything about these conditions it is his own fault, said Dr. Manton, because he and a great many others have brought



this matter up repeatedly. He does not believe this to be true, however, for as the result of work done there is to-day hardly an institution which has not a gynecologist connected with it. While there is unquestionably a relationship between the pelvic organs in woman and the brain, Dr. Manton does not believe that, except in possibly rare instances, disease of the former gives rise to mental alienation. Whenever insanity exists, however, and there is a local point of irritation present in either the pelvis or the abdomen, the mental condition is often made worse, and by removing the irritation, no matter how demented the woman may be, she will be made more comfortable and is more easily taken care of. In a large number of cases he has never seen an instance in which the mental condition was not relieved to some extent as the result of this kind of treatment. In his experience some 81 per cent. of insane women suffer from local disorders; but if 100 women who are walking about in apparent perfect health were examined it will probably be found that as large a percentage are suffering from some abdominal or pelvic disorder also. So that the finding of this percentage of local disease among insane women really means that a large number of women, sane or insane, have this burden to carry. Operations undertaken solely for the cure of mental disorder in insane women are wrong; but every insane woman suffering from abdominal or pelvic disease is as much entitled to relief from the somatic condition as is her sane sister. The late Dr. Rohé, who wrote a good deal regarding the curability of insanity in women through surgical means, appears to have been too sanguine, and Dr. Manton is not altogether certain about Dr. Rohé's cases. Another observer, Dr. Hobbs, was assistant physician at the London (Ont.) asylum under Dr. Buck, when he began his investigations. Hobbs' results and Dr. Manton's do not tally, and Dr. Manton is left to conclude that Dr. Hobbs deals with a different class of cases. Dr. Buck became very enthusiastic regarding the operative cure of insanity.

Dr. F. F. LAWRENCE, Columbus, O., said that this subject was discussed in a symposium in Denver, when Dr. Joseph Price was chairman; also in Atlantic City in 1900. The question among alienists has been pretty thoroughly determined, that back of it all is an unstable nervous organization, and the question of attempting to cure insanity *per se*, by surgery, is somewhat far-fetched. As Dr. Manton said, the insane person is entitled to the same character of surgical relief that the sane person expects. The surgical condition may be causative in a sense in a great many cases. The possibility of a patient recovering her mental balance is greater if all physical suffering can be removed. If she has a bleeding fibroid she has a better chance to recover her health if it is removed. The late Dr. Carpenter and he had examined between 100 and 200 patients. In the neighborhood of 84 per cent. of the total number had some form of intrapelvic trouble. Of that number the history of only about 21 per cent. showed that the abdominal condition preceded the mental. He advocated surgery for all surgical conditions, whether in sane or insane; but in the absence of gross pathology insanity or other neuroses can not be reasonably expected to yield to any form of surgery.

Dr. W. O. HENRY, Omaha, said that he was glad to hear the remarks of Drs. Manton and Lawrence, but that his contention is that these pelvic diseases in women of unstable nervous organization are the particular thing that often upsets the mind, and the curing of these things before they have upset the mind will, in such cases, prevent the breakdown. So long as no one can tell what insanity really is, he thinks that practical experience in cases that are cured counts for more than anything else. When he has operated on cases and five or ten years later the patients are still well, that counts for more than all the theory on earth. Of 28 cases he had 16 patients go home well. This is of real practical value. He does not claim that every insane woman can be cured by operation, but many can, and every insane woman should be given the benefit of all possible aid which can be afforded by the removal of all pelvic irritation. And finally, by curing these pelvic irritations in women of unstable nervous organizations, before insanity occurs, its development may often be wholly prevented.

## THE NOMENCLATURE OF ENDOMETRITIS.\*

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The word endometrium should be used to refer to the mucous membrane which lines the body of the uterus. The mucosa of the cervical canal is anatomically and physiologically a different structure, and although it may properly be called endometrium, usage more or less restricts that term to the mucosa of the body of the uterus.

The endometrium is intimately connected with the musculature of the uterus and its circulation is greatly influenced by changes which occur in the blood vessels of the myometrium and by the tonicity of the uterine muscle. The endometrium is continuous with the lining membrane of the tubes and with the epithelial layer of the cervix, therefore, it follows that the endometrium is influenced by all inflammatory affections, displacements, new growths and congestions of the genital organs.

By some it is held that the term endometritis (inflammation of the endometrium) should be applied only to those lesions of the endometrium which show histologically the products of an active reaction of the tissues to an irritant. According to this view, endometritis is always the result of infection with a micro-organism. By others it is held that there are causes of inflammation other than bacterial; and that a long continued inflammatory process, produced either by bacterial infection, or by mechanical or other forms of irritation, may produce hyperplastic or atrophic changes in the endometrium, without any histologic evidence of an acute inflammatory reaction.

Such a distinction results from a difference in the conception of what constitutes an inflammation and has little practical importance. Thus, what is considered glandular hyperplasia of the endometrium by the adherents to the first view is called glandular endometritis by the adherents to the second. It is our belief that it will lead to less confusion of terms to regard "glandular hypertrophy" of the endometrium and "atrophy" of the endometrium as the end results of a chronic endometritis, or as Sängér has aptly stated it, the residuum of an inflammation.

The classification of endometritis should be purely anatomic. In other words, it should be divided into the acute and the chronic forms. While acute endometritis involves all of the component parts of the endometrium indifferently, the chronic form may affect especially the glands or the stroma. Any classification of endometritis, based on etiologic factors, is faulty, because the etiology of chronic forms can not always be determined, and, therefore, the classification in many cases would be useless. There is also no relation in the chronic form between the cause and the form of the anatomic change in the endometrium.

A classification based on clinical symptoms, as catarrhal, purulent, or hemorrhagic, is also bad, for such terms might be easily applied to different stages of the same process, and a classification based on symptoms leads to an almost endless variety of forms.

The age of the individual also should be given no place in the nomenclature. Senile endometritis conveys no pathologic meaning; the terms juvenile or adolescent endometritis may be employed just as properly.

In conformity with inflammatory lesions elsewhere, we may speak of acute and chronic endometritis. The chronic form may further be divided into glandular and interstitial, when the glands on the one hand or the stroma on the other are especially involved. Pathologists may subdivide the chronic forms in order to indicate anatomic peculiarities, but this is not necessary for the clinician.

Endometritis, except in the acute form, rarely exists alone. It is usually complicated by inflammatory lesions of the cervix or of the pelvic viscera; lacerations of the cervix or of the

\*Report of the Committee on Nomenclature of Endometritis to the Section on Obstetrics and Diseases of Women at the Fifty-seventh Annual Session of the American Medical Association, June, 1906.



pelvic floor; retrodisplacements of the uterus; chronic pelvic congestion; uterine or ovarian tumors.

Except in the acute form, therefore, which is incident to gonorrhea or to infection following labor, abortion or instrumentation of the uterus, it has in itself little clinical importance. It should be considered and treated with the exceptions noted above, only in conjunction with the lesion which produces it. In many text-books this fact is not pointed out, and the student is led astray as to the frequency and the significance of the disease, and as to the necessity of its individual treatment.

## CONJUGATE DEVIATION OF THE EYES AND HEAD AND DISORDERS OF THE ASSOCIATED OCULAR MOVEMENTS

IN TUMORS AND OTHER LESIONS OF THE CEREBRUM.\*

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### VARIOUS VIEWS DISCUSSED.

Within the past two years the causes of conjugate deviation of the eyes and head have repeatedly been the subject of controversy, especially by certain French writers. In 1904, Bard<sup>1</sup> advanced the sensorial theory of conjugate deviation, although this had been spoken of previously by Roux.<sup>2</sup> This theory has since been ably supported, especially by Dufour,<sup>3</sup> and opposed by Grasset,<sup>4</sup> Dejerine and Roussy,<sup>5</sup> and others.

Chiefly through the kindness of Dr. Charles K. Mills and Dr. William G. Spiller I have had the opportunity to study 16 cases of conjugate deviation of the eyes and head, 15 of which are with necropsy, and I have attempted to come to such conclusions as to the causes of conjugate deviation of the eyes and head as the evidence in these cases will permit, together with the aid of cases in the literature.

Disorders of associated ocular movements occurring in lesions of the cerebrum will be discussed only in so far as they occur in association with conjugate deviation of the eyes, and in cases of hemianopsia due to peripheral or central lesions. The importance in clinical diagnosis of paralysis of associated movements of the eyeballs has been discussed only recently by Spiller.<sup>6</sup>

The literature is replete with instances of conjugate deviation of the head and eyes as a result of lesions in almost every part of the brain. Experimental investigations on lower animals confirm what has been said of the pathologic evidence, for it has been shown that electrical excitation of any portion of the brain, if of sufficient intensity, is productive of deviation of the eyes, or of the head, or both.

There is good reason for this. Perhaps no function is more highly specialized than that which is concerned with the movements of the head and of the eyes. These are constantly moved for one reason or another; the auditory and the visual senses probably playing the most important part in the determination of these movements.

Such specialization of function necessarily needs and acquires a most complex cortical representation.

With our present knowledge of cortical representation we should expect a motor center for the movement of the head, a separate center for the eyes, and still another for the combined movements of the head and eyes. Within the past few years the cortical centers for all, or nearly all, motor function have been placed in front of the central fissure. This has been borne out by experimental and pathologic evidence. We should expect, therefore, that there should be but one motor center for each function, and that center anterior to the Rolandic fissure. It has been shown that movements which are performed conjointly by corresponding or correlated muscles on both sides of the body have a cortical representation in each cerebral hemisphere. Therefore we should expect a bilateral cortical representation for the deviation of the eyes and of the head.

Any auditory, visual, or olfactory stimulus will cause conjugate deviation. Touch, pain, or temperature stimuli will also cause deviation. Besides it has been held that reflex or automatic and voluntary impulses initiated independently of these senses may cause such deviation.

Taking up the subject of conjugate deviation of the eyes or of the head, or of both, as the result of anyone of the above-mentioned sensory stimuli, what is the cerebral mechanism of this conjugate deviation? Illustrating by the sensation of hearing, we presume that an auditory impulse is first transmitted to the auditory center in the temporal lobe, from here it is carried by means of association fibers to the motor center, from which motor impulses are transmitted to the nerve cells which supply the muscles concerned with the function to be performed. In like manner a unilateral motor center for the conjugate deviation of the eyes and head should be in intimate connection by means of association fibers, not only with the auditory center in the temporal lobe, but also with the visual center in the occipital lobe and with the olfactory centers in the uncinate gyrus and the gustatory center wherever situated, and with the centers for touch, pain and temperature senses in the parietal lobe. In brief, sensory irritation in any portion of the body will cause deviation of the head and eyes in the direction of the irritation through the correlated activities of the sensory and motor centers concerned. Not only that, but the centripetal fibers which transmit these impulses from the periphery to the cortex must be intact for the proper interpretation of these stimuli; and the centrifugal motor tracts must also be intact for the physiologic performance of their functions. Should any portion of this most complex mechanism be disturbed, the result would be failure in normal deviation of the head and eyes, the deviation depending entirely on the nature and location of the lesion.

The most recent writers on this subject, Cantonnet and Taguet,<sup>7</sup> advance the idea of an automatic or reflex center for ocular movements in the optic thalamus. In support of this they quote cases of cortical lesions in which there was paralysis of voluntary ocular movement, but in which reflex or automatic movements were preserved. We have always regarded reflex movements of the eyes as best illustrated by the fact that the eyes will follow the moving finger or hand in different directions; and that similar deviation will take place in response to various sensory stimuli. It would, perhaps, be advisable if we were to define "reflex" and "auto-

\* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

\* From the Department of Neurology and the Laboratory of Neuropathology, University of Pennsylvania.

1. Bard: *Semaine Médicale*, Jan. 13, 1904.

2. Roux: *Arch. de Neurol.*, September, 1899.

3. Dufour: *Rev. Neurol.*, April 15, 1904.

4. Grasset: *Rev. Neurol.*, July 15, 1904.

5. Dejerine and Roussy: *Rev. Neurol.* No. 3, Sept. 15, 1905.

6. Spiller: *Jour. Nervous and Mental Dis.*, July and August, 1905.

7. Cantonnet and Taguet: *Rev. Neurol.*, No. 7, 1906, p. 308.



matic" movements more clearly. When the eyes deviate in a certain direction because of a noise, that is a reflex action, only in the sense that a movement is performed because of a sensory stimulus. If the sensory part of the reflex arc is disturbed, as in deafness, no amount of noise will cause deviation. Why should this be called an automatic movement?

It has been shown that in lesions of the thalamus, we sometimes have such symptoms as forced or involuntary laughing or crying, and in lesions of the superior cerebellar peduncle there may be incoördinate movements of some of the limbs. These are examples of automatic movements. If we assume that a similar automatic center exists for ocular movements in the thalamus, should not a disturbance of such a center cause forced or incoördinate ocular movements?

In his very able presentation of the subject of associated ocular movement, Spiller<sup>10</sup> agrees with others that paralysis of associated ocular movement laterally is due to lesions of the posterior longitudinal bundle, and asserts that a paralysis of upward and downward movement is probably the result of a lesion near the oculomotor nuclei. He believes that a tract similar to the dorsal longitudinal tract, and possibly a part of this fasciculus, situated near the oculomotor nuclei, connects these nuclei, and that an interruption of the tract causes failure of associated upward or downward ocular movements. He does not admit the need of a basal coördinating center for ocular movements, near the oculomotor nucleus.

When the eyes follow the finger, this is really an associated movement, and the result, not of a pure reflex action, but of a distinct sensory (visual) impression, in the same sense that a noise (auditory impression) will cause deviation of the eyes. If the sensory arc is interfered with as in blindness, the eyes will, of course, not be able to follow the finger as the result of a visual impression.

A voluntary movement is the result of a stimulation of a motor center. The question arises whether in a normal individual a pure voluntary impulse is possible without a previous sensory stimulation, the term sensory stimulation being used here in its broadest sense. When we will to move the eyes independently of any immediate sensory stimulus, as when in meditation, there is at least a psychic stimulus to the cortical oculomotor center (that is, the center for the movements of the eyeballs), this stimulus may come, for example, from the higher psychic areas of the prefrontal lobe, but it is intimately dependent on stored impressions at one time or another received or accumulated by means of sensory mechanism, and moreover in the act of using the eyes in such circumstances as when one wills to read a book or to look at the stars, sensory impression takes part in the lateral and upward movements. It is probable, therefore, that a centrally initiated voluntary impulse is dependent on the functioning of a central reflex arc, and that any interference with this would cause deviation.

Summing up the views so far advanced, it is my opinion that the movements of the head and eyes are dependent on a most complex mechanism; that there is only one true or at least functionally important cortical motor center anterior to the central fissure; that this motor center is in immediate connection with the sensory portions of the brain; that whenever the head and eyes are moved it is the result of a sensory stimulation, and that any interference with the sensory-motor arc will cause impairment of this function. Let us now consider in

order the embryologic, anatomic, physiologic and pathologic evidence in support of these views.

#### EVIDENCE IN SUPPORT OF VIEWS.

The well-known myelogenetic investigations of Flechsig<sup>8</sup> support these views. According to him, in his primordial zones or regions of early development are included exclusively projection fibers, sensory and motor, or, as he terms them, corticopetal and corticofugal. He believes that for every sensory path there is a corresponding motor path. In the primordial zones are included the motor and sensory regions, the visual or occipital lobes, the auditory or upper temporal regions and the olfactory and gustatory centers principally in the anterior temporal region. The myelogenetic differences between the primordial and the intermediate and terminal zones, according to Flechsig, are the result of successive development of different sense organs and their motor or centrifugal paths, and the development of long and short association systems.

In the main these views have received physiologic and pathologic confirmation. What appears to be the view of Flechsig that each primordial area is both sensory and motor can not be altogether agreed with, but it must be recalled that his views are only relative, for in his myelogenetic area No. 1, which corresponds with some closeness to the central convolutions, the tactile radiation is distributed mostly to the postcentral convolution, while the tract which is undoubtedly motor originates from the precentral convolution. This would argue for separate cortical representation for motor and sensory functions, and would accord with our present views.

With the auditory or cochlear myelogenetic area in the first temporal convolution Flechsig finds a corticofugal radiation, which he believes may be motor, although this has not as yet been demonstrated. The cells and fibers which constitute this radiation lie at the lower border of the first temporal and in the furrow which separates it from the second temporal convolution. He assumes that motion of the head and of the body following an auditory impression may be performed through the intermediation of corticofugal fibers which originate in or near this center. Similarly, Flechsig reasons that movements of the eyes and of the head consequent to visual stimulation are due to the intermediation of corticofugal fibers from or near the visual zone. Motion as a consequence to olfactory stimulation can likewise be explained.

According, then, to Flechsig's view, a movement of the eyes or of the head is the result of a sensory stimulation and may be due to an auditory, visual or other sensorial impression coming by way of the corticofugal fibers which originate in these centers. I do not agree, however, with the view that the corticofugal fibers coming from the special sense centers are purely motor projection fibers, as Flechsig appears to believe. Undoubtedly the corticofugal radiations associated with the corticopetal radiations in Flechsig's myelogenetic area No. 1, which corresponds to the sensory and the motor centers around the central fissure, are purely motor. The corticofugal radiations of the primary auditory and visual zones are probably not purely motor projection fibers, but in large part are fibers which connect these special sense areas with the oculomotor centers in the main motor region. A sudden auditory stimulation will, of course, cause immediate turning of the head and

8. Flechsig: "Gehirn und Seele," Leipzig, 1896.



eyes, but this is not because, or at least not usually because, a motor impression is transmitted by the corticofugal fibers directly from the auditory center to the nuclei which are concerned with the muscles necessary to perform that function, but rather because the auditory impression is transmitted by means of association fibers to the motor cortex and thence to the basal nuclei.

When an auditory impulse is received in the temporal convolution it may be stored up in the auditory memory center, it may be transmitted to the visual center and recall visual images associated with the sound produced, it may cause olfactory or gustatory stimulation or it may cause the movement of almost any portion of the body as the person wills. In the performance of all these possible functions it is necessary to have the auditory center in direct communication with the other sensory centers, and this is accomplished by means of associated fibers, the existence of which have been repeatedly demonstrated; similarly the visual centers are likewise in association with other centers.

Mills<sup>9</sup> believes that each sensory area has its motor correlative and that each of these has its separate cortical representation. He speaks of a sensory motor, visual motor, auditory motor, gustatory motor, olfactory motor and a possible equilibratory motor area. According to Mills, this conception does not do away with the importance of our old-time motor area, which still remains the great or main motor region. His view is that at least in the highly developed human being the centers for movements of the head and eyes and for other movements have largely taken the place of the motor projection fibers which exist in, or in close contiguity with, each of the special sense areas; in other words, the visual motor area, auditory motor area, olfactory motor area and gustatory motor area are largely, although probably not altogether, in abeyance in movement, although still retaining their importance to a greater or less degree in the animal scale below man. If this be the case, the arguments brought forward in this paper which are based on the idea of a single active functioning region for movements of the head and eyes are valid; in other words, we can disregard all cortical motor areas except those which lie in front of the central fissure.

Experimental investigations also confirm my views, for it has been shown that electrical excitation of any portion of the brain, if of sufficient intensity, is productive of movements of the head and eyes. Four principal areas have been found in the brain of lower animals in which electrical stimulation will produce these movements: in the frontal lobe, in the so-called neck or head region, in the angular gyrus and in the occipital lobe. Partly because of the fact that stimulation of the posterior portion of the second and third frontal convolutions and the region near the angular gyrus is always productive of movements of the head and eyes, these two areas have been considered by various authors as the motor centers for these functions.

Landouzy<sup>10</sup> and Wernicke<sup>11</sup> were among the first to favor the area near the angular gyrus or the *pli courbi* of the French. The physiologic experiments of Luciani and Tamburini,<sup>12</sup> Ferrier,<sup>13</sup> Munk<sup>14</sup> and Obregia<sup>15</sup> sup-

ported their views, for stimulation of this region constantly caused deviation of the eyes and head. Against this view, however, were the extirpation experiments of Brown and Schäfer<sup>16</sup> on the brains of apes in which conjugate deviation was not obtained. Again Flechsig has shown that this area contains few projection fibers. It is probable that electrical stimulation of the occipital and parietal regions causes deviation of the eyes and head, not because of a motor center in these areas, but because of stimulation of the visual and auditory fibers, respectively. It has been shown that underneath the angular gyrus lie the fibers from the occipital and auditory lobes, and it is because of the combined involvement of these that any stimulation or lesion of this area causes such constant deviation of the head and eyes.

The work of Ferrier,<sup>13</sup> Mott and Schäfer,<sup>17</sup> Beevor and Horsley,<sup>18</sup> and lately of Sherrington,<sup>19</sup> has conclusively proved the existence of an oculomotor center in the posterior portion of the second and third frontal convolutions. The existence of a separate center for the movement of the head, for the eyes and a combined center for the movement of the head and eyes has been repeatedly shown in lower animals, and it is probable that such differentiation also exists in man. Beevor and Horsley<sup>18</sup> in apes (*Macacus sinicus*) found an isolated center for movement of the head, for the eyes and for the head and eyes in the posterior portion of the first, third and second frontal convolutions, respectively. Later these authors found in an orang-outang, in the precentral convolution, underneath the hand region, a center in which irritation caused deviation of the head and eyes, and, on the other side of the brain, deviation of the eyes alone because of irritation of the foot of the second frontal convolution.

A critical study of the evidence furnished by the physiologic experiments in lower animals favors the view that there is a separate center for the movement of the eyes in the foot of the second frontal convolution, that a separate center for the movement of the head exists in the lower part of the precentral convolution along its anterior edge, and that further stimulation of either area may cause a combined deviation of the head and eyes.

Normally, the head and eyes are moved together more often than separately, and the eyes more than the head in separate movement. We should expect, therefore, from developmental and physiologic reasons, that the oculomotor center should be better developed than the head center, and that stimulation of the head center should more often give conjugate movement of the head and eyes than stimulation of the eye center. This is proved by the experiments of Beevor and Horsley,<sup>18</sup> Ferrier<sup>13</sup> and Mott.<sup>17</sup> The experiments of Sterling<sup>20</sup> are of extreme interest in this connection. This author irritated the so-called neck region in young animals and found that he could obtain movements of the head alone in dogs 8 days old, whereas associated movements with the eyes could not be obtained until the twenty-first day. He did not perform the converse experiment by irritating the ocular centers alone, which would be interesting. We can, however, argue from this that separate centers for the eyes and head exist, and that because of association between them irritation of one may cause

9. Mills: "Brain," 1889, and Univ. of Penna. Med. Bulletin, May, 1904.

10. Landouzy: Thèse, de Paris, 1876.

11. Wernicke: Arch. f. Psychiatrie, 1888, vol. xx, p. 243.

12. Luciani and Tamburini: See Klaas' Dissertation, Marburg, 1898.

13. Ferrier: "Hirnlocalisation," 1890, Leipzig and Vienna.

14. Munk: "Sitzungsberichte der Kgl. akad. der Wissenschaften zu Berlin," 1890.

15. Obregia: Archiv. f. Anat. u. Physiol., 1890, p. 260.

16. Brown and Schäfer: Phil. Trans., Royal Society of London, 1888.

17. Mott and Schäfer: "Brain," 1890.

18. Beevor and Horsley: Phil. Trans., Royal Society of London, vol. cxxx, 1890, p. 129.

19. Sherrington: Jour. Phys., 1894.

20. Sterling: Arch. f. Anat. u. Physiol., Phys. Ab., 1903, p. 486.



movement of both. It is also for this reason that irritation of other portions of the brain besides the motor, cause in most instances combined movement of the eyes and head.

Our knowledge of the direction of the movements of the eyes and of the head is chiefly in regard to lateral deviation. Reasoning from analogy, we should expect a separate center for upward and downward movement, as well as for lateral movement. The experiments of Mott<sup>17</sup> proved that this exists in lower animals. By irritating, in apes, the posterior portion of the frontal convolution he obtained movement of the eyes in a horizontal direction, to the opposite side and upwards, and to the opposite side and downwards, the points irritated lying from the median to the lateral side, laterally, on the outer side and in the median portion, respectively. A similar order was present for the movement of the head. Schäfer was enabled to obtain somewhat similar results by stimulating different parts of the occipital lobe.

Permanent paralysis of upward or downward associated ocular movement is only rarely observed clinically, and, as Spiller has shown, is probably due to lesions near the oculomotor nucleus. In pathologic conjugate deviation of the eyes the deviation is sometimes laterally and upward or downward, as in Case 7 of my series; but I know of no reported case in which the conjugate deviation of the eyes was purely either in an upward or downward direction. There are several physiologic reasons for this. In the first place, lateral movements of the eyes are better developed than upward movement, but perhaps no better than downward movement. There is still another important factor: One side of the brain controls movements of the eyes and head in the opposing direction; the tendency for deviation would, therefore, naturally be in a lateral direction. This was well shown in the experiment of Mills,<sup>9</sup> who faradized in man the head center and obtained deviation of the head to the opposite side.

The functions of convergence and divergence are considered by the majority of authors as reflex phenomena with possibly basal centers. This I believe, however, to be an error. I am of the opinion that they are as much muscular movements and dependent on a similar mechanism as either lateral, upward or downward associated ocular movement. In convergence the internal recti muscles of either side are used, while in divergence the external recti are called into action. Should, for instance, an internal rectus be paralyzed, the corresponding eye will not be able to converge. This can be compared to failure of associated lateral movement of one eye, if the external rectus is paralyzed.

If we believe, as no one doubts, that there is a connection between the external rectus muscle of one side with the internal rectus of the other by means of the posterior longitudinal bundle, and if, as Spiller believes, there is a similar tract connecting the nuclei of the superior rectus and inferior oblique muscles of one side with the corresponding nuclei of the other side, and if this bundle is concerned with upward movement, and if there is another tract for downward associated ocular movement, why should not there be a similar tract connecting the internal recti nuclei and another connecting the nuclei of the external recti, these having to do with convergence and divergence?

It is true that the existence of such tracts has not been demonstrated, but neither have the tracts which are supposed to be concerned with upward and downward

movement. There are, however, clinical facts which support this view. In the majority of cases of paralysis of associated ocular movement due to pontile lesions, either convergence or divergence is lost. In the statistics collected by Spiller, of 47 cases, the condition of convergence was noted in 26. Of these, convergence was impaired in 15 cases, and in 9, normal or nearly normal. In most of the cases in which convergence was said to be normal, the observations were made some time before death, and this function might well have been lost later.

It is more than probable that convergence and divergence have also cortical representation and that this is in the posterior portion of the second and third frontal convolutions. This subject will be fully discussed in a subsequent paper on paralysis of associated ocular movements due to basal lesions.

Let us now consider the pathologic evidence. Conjugate deviation of the head and eyes may occur as a result of lesions causing hemiplegia, in tumors of various localities, in areas of softening, in meningitis, in epilepsy; in fact, it can be shown that any lesion in any portion of the brain may cause deviation. Consider, for instance, the statistics collected by Grasset.<sup>21</sup> Of 104 cases, 48 with necropsy, in 2, lesions were shown in the frontal lobe; in 10, in the frontal and other areas; in 25, in the internal capsule and cerebral peduncles, and in 11 the lesions were diffuse.

In the 16 cases with necropsy reported in this paper, lesions were found in almost every portion of the brain. In Case 1 an area of softening was found in the frontal lobe. In Cases 3 and 4 there were diffuse cortical hemorrhages in the frontal, parietal and occipital lobes. In Case 5 a hemorrhage was found directly in the angular gyrus. In Case 6 a hemorrhage was found in the occipital lobe and an area of softening in the precentral convolution. In Case 7 (Fig. 1) a large fibrosarcoma occupied the whole of the occipital lobe. In Case 8 there was a thrombosis of the middle cerebral artery. In Cases 9, 10 and 11 there were hemorrhages in the posterior limb of the internal capsule and the neighboring parts. In Cases 12, 13 and 14 there were lesions in the lenticular nucleus and external capsule. In Case 15 there was a lesion of the lenticular nucleus alone. In Case 16 (Fig. 2) there was an area of softening involving the anterior limb of the internal capsule and lenticular nucleus, with a fresh hemorrhage underneath the angular gyrus. Besides in Cases 14 and 15, in which no fresh hemorrhages were found, there was dilatation of the lateral ventricles.

If we consider more minutely the location of the lesions causing conjugate deviation, we find three principal areas involved: 1. The frontal area. 2. The area of the angular gyrus. 3. The internal capsule. We can still further subdivide these regions. In the frontal areas there are recorded cases of lesions involving the posterior part of the second (Sahli,<sup>22</sup> Drummond<sup>23</sup> and Oppenheim<sup>24</sup>) and others of the posterior part of the second and third frontal convolutions (Klaas,<sup>25</sup> Case 4 of my series, and others). Besides, there are a large number of recorded cases of lesions involving the posterior portion of the second and third frontal convolutions, the adjacent precentral convolutions and other areas, as in the cases collected by Müller<sup>26</sup> and Klaas.<sup>25</sup>

21. Grasset: "Des Localisations dans les Maladies Cérébrales." Montpellier, Paris, 1880, pp. 215 to 238.

22. Sahli: Deutsch. Arch. f. klin. Med., vol. lxxxvi, No. 1-3, p. 1.

23. Drummond: Lancet, 1887.

24. Oppenheim: "Charité Annalen," 1385.

25. Klaas: Inaug. Diss., Marburg, 1898.

26. Müller: Deutsch. Zeitschr. f. Nervenheilk., 1902, vol. xxii, p. 375.



The important factor is that in all of these cases the posterior portion of either the second or third frontal convolutions or the adjacent part of the precentral convolution was involved.

Of the lesions in the region of the angular gyrus may be included any lesion in or near this area. Whatever in this region causes conjugate deviation must cause interruption of the fibers underneath the angular gyrus. If the lesion is posterior to this point, as in Case 6, there is only an interruption of the fibers from the occipital lobe. If the lesion is directly in the angular gyrus or beneath it, as in Cases 5, 12, 13 and 14, there is an interruption of the fibers both from the occipital and temporal lobes. In every one of these cases the lesions extended underneath the cortex and must have involved the fibers coming from both these lobes.

In the lesions involving the internal capsule, a differentiation can be made between those involving the anterior limb and those involving the posterior limb. In the former the projection fibers from the frontal lobes are involved, while in the latter there may be an involvement of the motor, sensory or optic fibers. It is the opinion of some French writers, notably Bard,<sup>1</sup> that to cause deviation there must always be an involvement of the optic radiations. This, however, is not correct, as in most of the recorded cases, also in mine, there was no such involvement.

From the pathologic evidence, therefore, the conclusion must be drawn that lesions involving the posterior portions of the second and third frontal convolutions and the adjacent precentral convolution cause conjugate deviation of the eyes and head, and that when lesions elsewhere in the brain produce conjugate deviation there is an interruption either of the projection fibers in or near the internal capsule or of the association fibers between the occipital and temporal cortex and the frontal lobe.

Consider now the pathologic evidence regarding the oculomotor center in the frontal lobe. It is the opinion of some, as of Sahli,<sup>22</sup> that in man there is no evidence that a separate center for the movement of the head and eyes exists. Müller,<sup>26</sup> on the contrary, believes that there are separate centers for these functions, and he places both in the posterior portion of the second frontal convolution, the center for movement of the head being in the under portion and that for the eyes in the upper portion of this convolution. From the pathologic evidence at hand, no one doubts the existence of the oculomotor center in the posterior portion of the second and probably the third frontal convolution. The principal reason why lesions of this area cause deviation also of the head is because the head center is so intimately associated with the oculomotor center that an irritation or lesion of one will most likely cause involvement of the other.

That a separate center exists for the movement of the head was beautifully shown in the faradization experiment of Mills<sup>9</sup> in man, in which a faradic irritation in the lower precentral convolution caused movement of the head alone to the opposite side. This is proven also in Case 6, in which an area of cortical softening was found in the lower precentral convolution, causing Jacksonian convulsions limited to the face and partly to the hand, and also causing deviation of the head to the other side, but the eyes were not moved. Therefore, the center for movement of the head in the lower part of the precentral convolution should be placed below and probably a little forward of the hand center.

It is more than probable that the cortical oculomotor center in the posterior portion of the second and third frontal convolutions is subdivided for lateral and upward and downward movements. According to Parinaud,<sup>27</sup> the center for upward movement is in the lowest portion of this area; for downward movement in the upper, and for lateral movement in the median portion.

Mills and Frazier<sup>28</sup> obtained forward movement of the head by irritating the anterior portion of the head center in the precentral convolution. In another case in which the records have been lost, Dr. Mills distinctly remembers obtaining upward movement of the eyes alone. This most important evidence proves that cortical centers for upward and downward movements for the head and for the eyes exist. It is also probable that a separate center exists for the combined movements of the head and eyes, and this center is probably between the individual head and eye centers. This center may also be subdivided for lateral and upward and downward movements.

#### DIAGNOSTIC VALUE OF CONJUGATE DEVIATION.

So far we have not considered conjugate deviation in a clinical sense, or its value in diagnosis. Conjugate deviation of the eyes and head occurs most often in hemiplegia, and its occurrence is considered an unfavorable sign, as most such cases end fatally. Also it is most always accompanied by unconsciousness. Indeed, Grasset believes that it always is. The conjugate deviation involves mostly the head and eyes together, but it rarely involves the eyes alone, as in Cases 4, 12, 13, 14, 15, and in exceptional cases the head alone, as in Case 6. More rarely still, the deviation of the head is in one direction and the eyes in the other, as in Case 1. The only similar cases recorded are by Roussy and Gauekler,<sup>29</sup> Dufour (cited by Roussy and Gauekler<sup>29</sup>), one case of Prevost's (cited by Grasset<sup>31</sup>) and a case of Gaussel.<sup>30</sup>

The deviation is never permanent and, as a rule, does not persist longer than two or three weeks and in most cases about a week. The deviation of the head is not so persistent as that of the eyes and is the first to disappear. At times, instead of there being a complete deviation there are jerking movements of the eyes, these being mostly in a lateral direction, but occasionally as in Case 13 they are in a lateral and upward direction. The jerking movements of the eyeballs are always from the median line to the external canthus and never in the whole range of movement. These nystagmoid movements must be differentiated from the violent jerkings seen in the course of a convulsion, these lasting only during the convulsion and always being to the opposite side of the lesion, whereas in the other conditions the jerkings may be to either side, depending on the nature of the lesion.

Prevost<sup>31</sup> first showed that deviation is toward the lesions when the lesion is cerebral and away from the lesion when it is in the isthmus. Some years later Landouzy<sup>10</sup> advanced the view that irritation and paralysis caused deviation in opposite directions when the lesion was in the cerebrum, the patient looking at the lesion when it is a paralyzing one and at the paralyzed limb when it is of an irritating nature. Grasset<sup>21</sup> later showed that the opposite was true in lesions of the brain stem.

27. Parinaud: *Arch. de Neurol.*, vol. v. No. 14. 1883.

28. Mills and Frazier: *Univ. of Penna. Med. Bulletin*, July, August, 1905.

29. Roussy and Gauekler: *Rev. Neurol.*, 1904, p. 763.

30. Gaussel: *Semaine Médicale*, May 18, 1904.

31. Prevost: *Thèse de Paris*, 1868.



The above facts have been repeatedly demonstrated. It must be remembered, however, that the same lesion may at different times cause paralyzing or irritating symptoms.

Wernicke<sup>11</sup> first advanced the view that the rapid disappearance of the conjugate deviation of the head and eyes was owing to the partial control of these movements by the cerebral hemisphere of the sound side and to the action of its oculomotor and head centers. It is also because of the action of the oculomotor center in the unimpaired hemisphere that conjugate deviation can be most readily explained. If one oculomotor center or the fibers in association with it are injured or destroyed they cease to perform their function, at least for a time; therefore, the center in the sound hemisphere causes the deviation to the opposite side, which would cause the eyes to look at the lesion. In irritative lesions as in tumors, this rule is reversed because as in experimental investigations irritation of one side causes movement to the opposite side.

In those cases in which the deviation of the eyes alone, or of the head, occurs, it must be that their respective centers or their associated fibers are separately involved. Similarly, in those rare instances in which the head and the eyes are deviated in separate directions, there must be an irritating lesion acting on one center and a paralyzing one on the other. These clinical facts also argue for separate cortical centers for the eyes and the head.

If we compare the pathologic lesions causing conjugate deviation with others in which no deviation occurs, as, for instance, in a hemorrhage which causes hemiplegia, we may find a most remarkable similarity in their location and extent. Naturally the question arises, why should conjugate deviation occur as a result of one lesion and not of another? As a matter of fact, to a certain extent, this does happen in every case; only in some the symptoms are more marked. The deviation in other words is of minor or partial degree, but nevertheless real. Leichtenstern and Hunnius (cited by Klaas<sup>23</sup>) have shown that in cases of brain apoplexy in which no deviation occurred there was difficulty in looking to the side opposite the lesion, while the patient could easily look to the side of the lesion. This fact has caused Brissaud and Pechin<sup>33</sup> to call this symptom an "ocular hemiplegia," an excellent term. It may be that conjugate deviation only occurs when the lesion is large and the patient unconscious, or it may argue, according to some, that there is a special tract concerned with conjugate deviation, the existence of which, however, has not been demonstrated.

In 1904 Bard<sup>1</sup> gave a new impetus to the study of conjugate deviation of the head and eyes. He then advanced the view that in the greater number of hemiplegics with conjugate deviation we have present a more or less degree of lateral homonymous hemianopsia, and it is because of an active movement subconsciously commanded by the sensory-motor centers of the sound side that the patient turns the head and eyes of the sound side to regard that which he sees. Bard also says:

The exterior excitations produced by reflexes are not indispensable, the fact that because of the suspension of activities of the one hemisphere, the spontaneous evocation of the sensorial images has not always no part there, is capable of causing the lateral deviation and it is without doubt for this reason that these sometimes persist, just as they may appear during sleep.

Bard also elsewhere says that the sense of sight plays the predominating rôle in conjugate deviation of the eyes and head. His view has been supported by Dufour,<sup>29</sup> but denied by Grasset.<sup>4</sup> The case of Dejerine and Roussy<sup>5</sup> effectively disproves the views of Bard,<sup>1</sup> for in this patient in whom conjugate deviation occurred there was blindness from birth, showing that there need not be hemianopsia in association with conjugate deviation, contrary to the views of Dufour<sup>29</sup> and Grasset,<sup>4</sup> who believe that hemianopsia is a most frequent symptom. This I also believe to be an error. In most of the cases here recorded it was not possible to demonstrate hemianopsia; in fact, it was only possible to do this in three.

There is still another source of error. In many instances following an apoplectic attack there seems to be what clinically can be more or less satisfactorily demonstrated as a homonymous hemianopsia, but at necropsy the lesion does not involve the optic radiations. This hemianopsia may be transient, and may be demonstrated only for a day or so, or may remain longer, and can be likened to the temporary hemianesthesia so often seen in capsular lesions. In other words, it is my view that many of the hemianopsias demonstrated in these cases are only temporary symptoms and are due either to shock of the hemorrhage or to a fleeting injury of the optic radiations, and that this hemianopsia is the result of the lesion as much as the conjugate deviation and not the cause of the latter.

This is well demonstrated in Case 16. When the patient was examined by Dr. McConnell and myself she had, besides a right hemiplegia, a deviation of the head and eyes to the left. She could look to the left and upward and downward, but could not look to the right past the median line. In testing her with the hand or with the feeding cup a homonymous right, lateral hemianopsia was repeatedly demonstrated. This was not obtained the following day. At necropsy an area of red softening was found involving the anterior portion of the left lenticular nucleus and the caudate nucleus, and a small hemorrhage was found just underneath the left angular gyrus. The optic radiations or the posterior limb of the internal capsule were in no way affected (Fig. 2). The hemianopsia was undoubtedly the result of shock, although the patient was fairly conscious and could obey commands.

To a certain extent hemianopsia does influence the associated movements of the eyeballs, but it probably has no effect whatever in producing conjugate deviation. It is well known that in cases of hemianopsia, whether of peripheral or central origin, the patients have a tendency to deviate their heads, but here, instead of the head being deviated to the side in which one sees, the patient deviates the head to the hemianopic side because he desires to bring into use the part of the retina which is not diseased.

There is still another factor. If a patient has a hemianopsia of any duration he soon learns that he can not look to that side, and in a short time he will accustom himself not to deviate his eyes in that direction. If such a patient were to be suddenly asked to look in the direction of the hemianopsia, he would not be able to deviate his eyes immediately, or to deviate them so promptly as toward the sound side. This I was able to demonstrate in two cases of hemianopsia due to a basal syphilitic lesion, and in one case was able to judge from this symptom on which side the hemianopsia existed.

In Case 7 paralysis of associated ocular movement



existed to the hemianopic side, and this persisted until almost the time of death, for several months. This patient had a large fibrosarcomatous tumor, as shown in photograph (Fig. 1), which occupied the whole of one occipital lobe. This patient had first scintillating scotoma, then hemianopsia, hemianesthesia and hemiplegia. The paralysis of lateral associated ocular movement was not complete, and in this case was probably due to the hemianopsia.

During the active stage of conjugate movement of the eyes the patient can very easily rotate the eyes toward the side of the lesion, and also upward and downward, but in most cases can not deviate them toward the sound side. This paralysis of associated ocular movement is only relative and depends on the conjugate deviation. It is, of course, only temporary.

Irregular or ataxic movements of the eyeballs have been recorded as a result of lesions of the frontal lobe. Thus in a case of Dercum,<sup>34</sup> of trauma to the frontal lobe, ataxic movements were present, as were also in a similar case of Klien's.<sup>35</sup> These symptoms, however, alone are not diagnostic, but may be valuable when accompanied by other symptoms.

#### CONCLUSIONS.

The following conclusions can be drawn as a result of the studies in this paper:

1. Conjugate deviation of the eyes and of the head is dependent on a most complex mechanism.

2. In the human being there is but one oculomotor center, or at least one active functioning center, situated in the posterior portion of the second and third frontal convolutions, adjacent to the precentral convolutions.

3. A separate center exists for the movements of the head, probably in the lower anterior portion of the precentral convolution.

4. There is probably in man a distinct center for the combined movements of the eyes and head, situated in the area between the head and the eye centers.

5. It is probable that the cortical oculomotor, head and combined head and eye centers are subdivided for lateral as well as for upward and downward movements.

6. The oculomotor and the motor head centers are in connection by means of association fibers with the cortical centers for the special senses, in the temporal, occipital, uncinata and other lobes.

7. Any lesion in the motor centers for the eyes and head or in the related special sense centers or in the association fibers connecting the former with the latter will cause an impairment in voluntary deviation of the eyes or of the head, or of both, this depending on the nature and location of the lesion.

8. Lesions in the angular gyrus cause conjugate deviation because of involvement of visual and auditory fibers which lie underneath this area.

9. The theory of Bard<sup>1</sup> that conjugate deviation of the eyes and head is always or nearly always accompanied by homonymous lateral hemianopsia and dependent on this is an error, for in the majority of instances hemianopsia does not exist.

10. Hemianopsia may be caused by the shock or transient effects of the hemorrhage, this loss of half vision being only a temporary symptom and similar in nature to the temporary hemianesthesias sometimes observed in capsular lesions.

11. The occurrence of conjugate deviation of the eyes or of the head, or of both, is of no value as a focalizing symptom, because it may be the result of a lesion in any portion of the cerebrum. It may be of value, however, in conjunction with other localizing symptoms.

12. Conjugate deviation of the eyes and head probably occurs in every case of large apoplectic lesions, but in some instances it is a partial or minor form and of transient duration.

13. Paralysis or impairment of associated ocular movement may occur as a result of a hemianopsia. This, however, is only temporary.

14. There is at present no evidence of a center or centers for automatic ocular movements, but if such centers exist in the thalamus a lesion of these should cause forced or incoördinate ocular movements.

15. Convergence and divergence are probably not reflex acts, but associated ocular movements similar to lateral and upward movements. They probably have cortical centers in the posterior portion of the second and third frontal convolutions. The movements of convergence and divergence are probably brought about by associating tracts in the pons and cerebral peduncles.

(To be continued.)

#### THE RELATION OF EYE-STRAIN TO CHRONIC HEADACHES.\*

S. W. S. TOMS.

NYACK, N. Y.

There is no one symptom so frequently complained of to the general practitioner as that of headache. It is the burden of suffering of civilized peoples. It is heard in connection with almost every case of impaired health, functional or organic.

The etiology of it we, as physicians, should most persistently endeavor to determine in each case. The late Dr. E. C. Seguin said: "The thorough study of a case of headache is one of the most difficult problems of medicine," and Alfred L. Loomis designated it as a "symptom of exceedingly difficult interpretation."

The reflex headaches or neuralgias due to essential eye-strain comprise the greater percentage of all cases met with. I have the records of over 1,280 eye examinations that justifies me in stating 90 per cent. of all those complaining of this distressing malady had ocular defects.

These examinations—most of which were made as part of routine work—one-half, or over 600, revealed ocular defects that were never surmised by the patients themselves, and many of them were exceedingly skeptical of the suspected cause, inasmuch as they could not directly attribute, subjectively, the cause to their eyes; their vision being apparently good for all distances and conditions of light or work. Over 80 per cent. of the 1,280 cases had some form of headache, periodical and chronic; 15 per cent. had typical migraine. Only 5 per cent. had discoverable organic lesions that possibly intensified or was partly to blame for the head pains. Of these, one-half of 1 per cent. had some form of chronic nephritis (diagnosed or suspected by appearance of the eye grounds). A few cases of diabetes mellitus and three cases of brain tumor were recognized by the ophthalmoscope. One-fourth of 1 per cent. had absolutely emmetropic eyes, but with muscular anomalies. Twenty

34. Dercum: Jour. Nervous and Mental Dis., Feb., 1905.

35. Klien: Deut. Ztschr. f. Nervenheilk., vol. xxvi, 1904, p. 327.

\* This article was prepared to be read before the Section on Practice of Medicine of the American Medical Association, Boston, June, 1906.



per cent. had gastrointestinal or hepatic functional derangements, the resulting toxic anemia being coincidentally relieved or greatly benefited after the ocular reflexes were corrected. Fully 50 per cent. of the sufferers had but slight refractive errors or muscular imbalance contrary to the statements of authorities who teach generally that anything under one diopter of refraction may be ignored and left uncorrected when the vision is 20/20 or better. It is in these cases where ciliary spasm is the direct factor in causing headaches in people whose occupation is for near work—accommodative asthenopia results because of the inability of the ciliary muscle to compensate for the constant and excessive demand for innervation in focusing for near-by objects.

In the "sick" or "bilious headaches" 10 per cent. of the cases met with existed in women at the menopause or were complicated by pelvic disorders, loose kidneys and lax abdominal walls. Ten per cent. had intranasal diseases. Of those who were relieved of their headaches, 75 per cent. had no other treatment than properly adjusted glasses or appropriate treatment for their muscular anomalies. About 20 per cent. partially helped or not relieved refused ocular treatment or disregarded advice in the wearing of glasses or for other personal considerations. Dr. Gould has given sixty-eight reasons why glasses do not relieve.<sup>1</sup>

There are three etiological factors in eye-strain why aches, viz.:

1. Errors of refraction.
2. Errors of accommodation.
3. Errors of muscular balance.

There is nothing especially characteristic in headaches due to eye-strain—except perhaps it is that the subject rarely suspects it being due to that cause. The types mostly met with are the occipito-cervical, fronto-temporal and the hemicranias. Apparently no relationship exists between the severity of the pain and the amount of ocular defect present.

Dr. G. Martin (Paris) reported, in 1888,<sup>1</sup> 352 cases of migraine due to the lower grades of ocular defects, and I have never met a case of migraine in a subject with normal eyes: many of them have been relieved solely by ocular therapeutics. The symptomatology can best be given by relating the history of a typical case.

Mrs. M. T., aged 32, married, father and mother both suffered from headaches up to 40 years of age. A maternal aunt also had headaches. Patient had malaria fever for some months many years ago. No return since. She is married and has had three children and three miscarriages with no history of complications. Her present physical condition seems only fair. She is "run down," anemic, and has a look of distress. Physical examination of chest, negative; abdomen reveals a right floating kidney; pelvic organs, negative. Nose, throat and ears negative. She complains of beating, "sour stomach," pains in the back of head and behind the ears. Bowels and catamenia are both regular. She has been suffering from periodical attacks of sudden blindness, vertigo, palpitation of the heart, dyspnea, extreme nervousness, numbness of the left arm which rapidly involves the entire left side and finally the whole body, with loss of consciousness follows. A severe and blinding headache precedes or accompanies these symptoms. Some times it is ushered in by a chill. There is always coldness of the extremities, a cold sweat, or a rush of blood to the head; nausea occurs usually—rarely vomiting. She suffers from constant pain in the forehead, mostly over the left brow. These attacks recur from one to three times in each month, are worse at the menstrual period, and usually last all day, gradually passing off after lying down and getting to sleep. They often leave the patient weak for two

or three days afterwards. She came to me June 10, 1905. I found she had a moderate degree of compound hyperopic astigmatism which was corrected by glasses. She had been a sufferer since marriage for over ten years. On December 9, last, she reported she has never had a "spell" since she put on the glasses, has gained 25 pounds and "never felt as well before" in her life. Her kidney has not received any mechanical or other treatment.

Frequently eyes with considerable visual defects produce no symptoms of eye-strain, while the normal balance of health is maintained and there is no excessive demand on the nervous reserve, but let a sickness develop or a period of mental stress ensue, then these eyes, or, rather, the nervous system, is no longer capable of sustaining or compensating for the refractive errors, and functional derangements become manifest. It is more so with muscular anomalies. Our brain intends the eyes to perceive and sustain binocular single vision. Images should fall equally on the maculae of both eyes. The brain will not tolerate diplopia, although it frequently will astigmatism for long periods.

One other condition of the eyes that is not uncommon, yet, I am sure, is not recognized as frequently as its importance demands, is that of subnormal accommodation or premature presbyopia in young subjects. It is productive of most alarming nervous symptoms of headache and particularly of insomnia. These subjects often have very acute vision for distance, with a slight muscular trouble of exophoria or esophoria, which is often a misleading condition. They refuse all distance lenses or prisms, but find immediate relief when a presbyopic correction is made.

In conclusion, I can not do better than quote from Dr. Myles Standish's paper,<sup>2</sup> in which he says: "Every ophthalmologist knows full well that eye-strain should be spoken of, not as the sole cause of the various nervous depressions which follow, but as the precipitating cause. . . . The result is entirely dependent on the man behind the eyes: if his nervous equilibrium is such that it is easily disturbed, or if his power of resistance to nervous irritation is diminished, then there follows some functional nervous disturbance which exhibits itself at the point where the individual with the greatest difficulty maintains peaceful activity, so to speak. One man has headaches, another has muscular twitchings, another has dyspeptic symptoms, and so on."

## RESULTS OF THE EXAMINATION OF STUDENTS' EYES

IN THE DEPARTMENT OF PHYSICAL EDUCATION, UNIVERSITY OF PENNSYLVANIA.\*

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AND

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The present report is based on the examinations made of students' eyes during the college year of 1905-06. Eight hundred and eighty-three students were examined, and as the tests were conducted with great care and thor-

2. Read before the Boston Society for Medical Improvement, Dec. 15, 1904; Boston Med. & Surg. Jour., Feb. 23, 1905.

\* Read before the Philadelphia County Medical Society, Oct. 10, 1906.

1. The position of ophthalmologist to the Department of Physical Education at the university was held by Dr. M. W. Zimmerman from 1897 until 1901, the present incumbent, Dr. Posey, being appointed in 1901.

1. Am. Med., July 4, 1903.



oughness, and were supplementary to an equally exhaustive study of the entire physical condition of each student, it was thought that an analysis of the results might be of value, not only to ophthalmologists, but to educators also, and even to the public at large. While some may question the desirability of making exercise and care of the body part of a university course, no one can criticize the endeavor to ascertain the ocular defects of the student and the expediency of correcting any existing errors of refraction.

Such tests have been practiced at the University of Pennsylvania since 1897, but until 1904, when the completion of the gymnasium rendered the examination of a very large body of students practicable, the tests were confined to members of the college department.

Conforming to the plan which has been adopted in the examination of the general physical condition of the students, the tests of the ocular condition were made in the autumn. It is planned, however, to submit students to a second test in the spring just before graduation, for the purpose of ascertaining the effect which four years of university life may have had on the ocular condition. Thus all the students have the privilege of a careful and accurate test of their ocular conditions and advice as to the best means to preserve or improve this faculty—an inestimable advantage to men who depend continually on the normal functioning of the eyes for health, comfort and efficiency.

As the proper examination of the eyes of 800 and more students is a task of great magnitude, the ophthalmologist of the department enlisted the services of nine physicians, all trained ophthalmologists, and his assistants in various hospital services, in the performance of the various tests. The names of these, to whom he is indebted for the zeal and accuracy with which they performed their duties, with their various hospital connections are as follows:

Walton C. Swindells, M.D., Associate in Ophthalmology in the Philadelphia Polyclinic.

Jay C. Knipe, M.D., Chief of the Ophthalmological Clinic of the Howard Hospital.

Frank C. Parker, M.D., Assistant Surgeon of the Wills Eye Hospital.

Frederick Krauss, M.D., Ophthalmologist to St. Christopher's Hospital.

Alfred Cramer, M.D., Clinical Assistant to the Wills Eye Hospital.

John A. Colgan, M.D., Clinical Assistant in the Ophthalmological Department of Howard Hospital.

Aaron Bray, M.D., Clinical Assistant in Wills Eye Hospital and Howard Hospital.

Mortimer Herzberg, M.D., Clinical Assistant to the Ophthalmological Department of the Polyclinic Hospital.

James A. Kearney, M.D., former Resident Physician in the Wills Eye Hospital.

With the various classes divided into squads, these gentlemen prepared a short sketch of the ocular history of each student, questions being asked regarding the existence of any known visual defect, headaches, ocular pain or fatigue after studying, or other symptoms which might be of ocular origin. Special inquiry was made regarding the wearing of glasses, of the date at which the eyes were last examined and the name of the physician or optician who made the tests. After these facts had been recorded on a card, prepared for the purpose and arranged for subsequent filing, the student passed to another assistant, who determined the range of accommodation and the degree of visual acuity in each eye separately, by the Snellen type. Another examiner then noted the external configuration of the eyes and the pres-

ence of any inflammatory condition or anomaly in their movements. On the completion of these tests the student entered a dark room, where the exact degree of muscular insufficiency was recorded by means of the phorometer, while at another light the ophthalmologist to the department carefully estimated, with the ophthalmoscope, the state of the refraction and studied the condition of the interior of each eye.

With the results of all these tests, and the histories carefully recorded on the filing cards just referred to, the ophthalmologist at his leisure carefully considered the ocular condition of each student and mailed to each the result of the test; and, in the event of the eyes being defective, his advice regarding further procedure. Thus, if the vision was discovered to be far below normal in either eye, or headache or other symptoms of eye strain were complained of, an immediate test for glasses by a competent oculist was advised. If, on the other hand, vision was found to be but slightly defective, refraction was advocated to be done during the holidays, so that the college work might not be interrupted. If the tests showed normal vision and healthy eyes, the student was also informed and his ocular condition pronounced to be satisfactory.

In these examinations a very large number of defective eyes were discovered in students who were either ignorant of the true state of their ocular condition or who neglected its correction through indifference or pro-

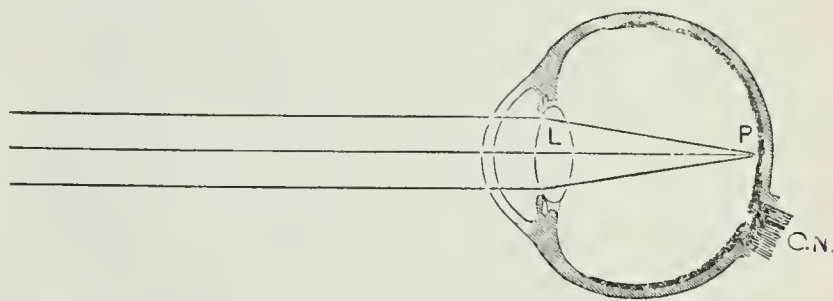


Fig. 1.—Emmetropic or normal eye. Parallel rays of light are brought to a focus on the retina (R).

crastination. The following instances of this may be cited:

CASE 1.—J. E. A., a freshman in architecture, replied, when questioned, that his vision was good, so far as he knew, though his eyes ached at times after prolonged study. When subjected to the tests, it was found that the visual acuity was reduced to  $\frac{1}{2}$  in each eye and that the eye muscles were weak, while the ophthalmoscope revealed progressive myopia. The student was told of his ocular condition and was advised to consult an oculist for its correction at once.

CASE 2.—Another type is illustrated by M. W., a member of the second year medical class, who had never worn glasses and was unaware that he had anything wrong with his eyes, his vision being perfect for both near and far. Toward the end of each week, however, he had suffered daily from constant pain in the head. As his digestion also became impaired, he attributed the headache to a torpid liver and judged it to result from lack of exercise. After Saturday and Sunday's rest, his head symptoms were always relieved, but he became rapidly drowsy after studying but a short time in the evening and had difficulty in concentrating his attention on his books. Examination revealed normal vision in both eyes, but hypermetropia of high degree, conjoined with marked weakness in the extraocular muscles. Glasses were advised and were prescribed under atropin. The head symptoms immediately disappeared, the digestion improved, and the power of application in studying was greatly increased.

CASE 3.—Still another type was that of a law student, a Hebrew, aged 20, who had worn glasses since early childhood to correct myopia. The glasses, however, had always been obtained from an optician, and the man had never before been subjected to a careful ophthalmologic examination. When



tested with the letters it was ascertained that without glasses he could not discern the largest letters in the test type until they were brought to within 2 meters of his eyes and that even with the glasses he was wearing vision equalled but  $\frac{1}{4}$  of normal. The ophthalmoscope showed the eyes to be in a state of rapidly progressing malignant myopia, with structural changes, which would eventually cause serious impairment of vision unless measures were instituted to correct them. It was learned that the patient's family was myopic, and that he had been nearsighted since childhood. He was of small stature, of delicate physique, and used his eyes almost constantly. The serious nature of his ocular defect was at once pointed out to him, the proper glasses were prescribed under atropin, out-door exercise and less prolonged use of the eyes were enjoined, and special gymnastic exercises assigned, with a view to improving the carriage and increasing the resisting power.

The insistence in such cases as the foregoing of the proper ocular treatment has not only saved many students from much future suffering, but has enabled them while in the university to profit far more by their course of study than would have been the case had they been restricted in the use of their eyes. By revealing the origin of their headaches and other obscure symptoms, and by indicating what should be done for their relief, it has been found that these examinations have lessened the number of absences of students under the excuse of "illness" and, in several cases, by calling the attention of the student's family physician to the existence of gen-

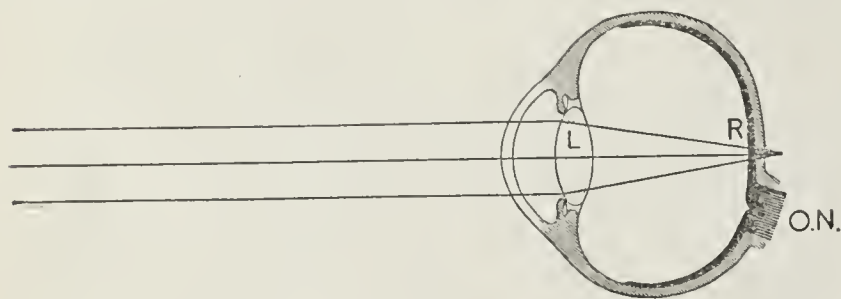


Fig. 2.—Hypermetropic or far-sighted eye. The eye is too short, and parallel rays of light are brought to a focus back of the retina (R).

eral disorders which had not been recognized, serious illness has been averted.

While, therefore, these tests have been found to be of great practical value in enabling the student to continue the university curriculum without interruption, and to profit in the highest degree from its advantages, the results have also been far-reaching, for, by detecting defective vision or disease in all eyes and insisting on proper correction, further deterioration of the eyes in many instances has been prevented and the development of myopia and other degenerative processes checked. In order that what is about to follow may be the more readily understood, it may not be amiss to state, very briefly, of what the refraction of the human eye really consists, and to define the difference between a far-sighted and a near-sighted eye.

The accompanying diagrams are reproductions of a cross-section through the long axis of three different types of eye: normal or emmetropic; far-sighted or hypermetropic, and near-sighted or myopic human eye. The blue line marking the outline of the ellipse indicates the firm external tunic of the eye, which gives it form and consistency. The parallel lines represent rays of light falling on the eyes, and, being focused by the crystalline lens (L) on the retina (R), from whence the impression of the image received by this membrane is conveyed along the optic nerve (O.N.) to the centers of sight in the brain.

It will be seen that in the normal eye (I) the rays, by the action of the crystalline lens, are brought to an exact focus on the retina, while in the far-sighted eye (II) the rays by reason of the short antero-posterior axis of the eye are brought to a focus back of the retina. In Figure III, on the other hand, it may be remarked that the rays fail to reach the retina, by reason of the greater length of the eye.

This, briefly stated, is the optics of far-sightedness and near-sightedness. But a few additional words of explanation are still necessary. As will be presently found, the statistics compiled in our examinations, and which verify observations repeatedly made by others, show that there are but few normal eyes, most eyes being hypermetropic. It will be at once asked: Why is it, then, that there are not more people with poor sight, and why should far-sighted subjects be called such, when in reality the rays of light are focused behind the retina and form a blurred image on it? This may be answered by the explanation that far-sighted people escape the predicament just described because Nature provides them with a mechanism to overcome the deficiency in length, in the form of a muscle which acts on the lens to increase its thickness, whereby the rays are brought to a focus on the retina. The neutralization of its defect by muscular activity, however, is not without strain on the far-sighted eye, and if the strain be long maintained, the eye undergoes change; its tissues become congested and

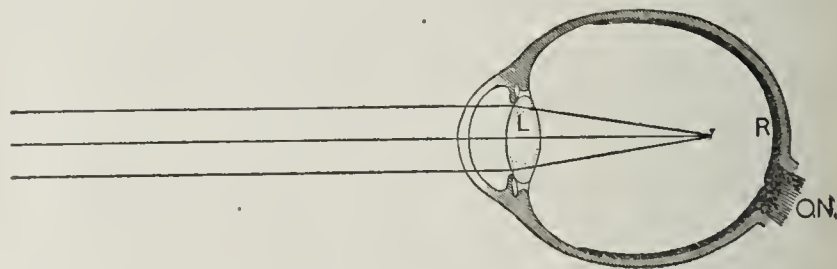


Fig. 3.—Myopic or near-sighted eye. The eye is too long, and parallel rays of light are brought to a focus in front of the retina (R).

softened, and, after a time, in some instances, such eyes stretch and become elongated, and the hypermetropia is converted into myopia.

It might appear from this that a certain amount of stretching in hypermetropic eyes would be of advantage, provided the degenerative process could be arrested when the precise point is attained where the rays are brought exactly to a focus on the retina. Did the elongation of the eyeball proceed equally in all parts, and could the process be in any way regulated, such would be the case. but, unfortunately, the stretching does not occur equally in all meridians; one axis becomes of greater refractive power than the other, and astigmatism results. While the hypermetropic eye can therefore neutralize its refractive deficiency up to a certain degree, this mechanical adaptation reacts on the health of the eye, and degenerative processes set in.

Nor is the near-sighted eye less prone to undergo change than the far-sighted one, for although it can not by any mechanism be made less near-sighted, and the rays of light rendered more divergent and brought thus to a focus on the retina, this type exhibits an even greater tendency to degeneration than the far-sighted eye, and as a consequence of disease, either of the general system or of the eye itself, undergoes still greater elongation.

While there are a few cases of myopia which are congenital, this error in refraction is almost always the result of the prolonged use of the eyes in near vision, and is increased in direct proportion to the amount of strain



placed on the eyes. Ophthalmologists have come to comprehend, too, that near-sightedness, or myopia, is not only a retrograde step in refraction, and an annoyance to those who are near-sighted, from the necessity of wearing glasses to obtain sharp vision, but that it is actually a disease of the eye which frequently induces changes in the tissues of the eyeballs which after a time may render all near use of the eyes impossible and in graver cases lead to partial or even to total blindness.

Numerous statistics have been recorded which show conclusively that if scholars are permitted to continue their near work without regard to some compulsory correction of their ocular defects, or attempts to improve the conditions under which they study, myopia will increase rapidly from the lower to the higher schools. While in the lower classes of primary schools myopia has been recorded as occurring in about 10 per cent. of the pupils, and hypermetropia in 80 per cent.—the remaining 10 per cent. possessing normal eyes—in the advanced classes in high schools and in colleges, it has been found that the myopia has increased to 20 per cent., while the hypermetropia has decreased to 75 per cent.

Statistics also show that if children with defective eyes are weeded out of schools and their eyes carefully corrected by glasses, that the increase of myopia is checked and the retrogression of the eyes is greatly diminished. In view of these facts, a determined effort has been made by ophthalmologists within the past twenty years to make an examination of the eyes of all students obligatory, and in a number of cities in this country all the pupils in the public schools are subjected to some kind of an examination to determine at least the degree of visual acuity of each scholar. A much more careful test is made of the ocular condition of scholars in private schools, especially in this city, but so far as we are aware, the University of Pennsylvania is the only institution conferring a degree in which such examinations are made systematically.

Of the value of such tests there can be no doubt, as statistics will testify, for even though the examinations had demonstrated to but a dozen students that their eyes were defective, the importance of such tests could not be questioned; but when it is appreciated that 30.34 per cent. of the students who were examined had defective vision in one or both eyes, all doubts as to their propriety must be dispelled. Eight hundred and eighty-three students were examined in all. Of these, 640 were students in the college department, 108 in the medical, 81 in the dental, 51 in the law and 3 in the veterinary department. Of this total, 14.70 per cent. were noted as being myopic, while the remaining 85.30 per cent. were either hypermetropic or emmetropic.

In the comparison which was made to ascertain the influence of age and study on the refraction, it was found that among 633 students in the two lower classes, 87.25 per cent. were hypermetropic and 12.75 per cent. were myopic, while of 261 students in the upper classes, 80.25 per cent. were hypermetropic and 19.75 were myopic.

Five per cent. more of myopia was found in the professional department in scholars of a similar age than in the college department, this being doubtless accounted for by the fact that most of the scholars in the college come from private or city schools, where the eyes are properly protected, while the scholars in the professional schools come frequently from rural communities, where accurate refraction is impossible and the care of the eyes neglected. The average age of all the scholars examined was 21.4 years, and the statistics showed an

increase of about 2.5 per cent. of myopia for each year during the four years of college life.

Of the students examined, 609 had full visual acuity in each eye, 94 had full visual acuity in but one eye, while 180 had subnormal vision in both. In this latter class, 180 students, possessing subnormal vision in both eyes, were thus under a decided disadvantage in the performance of certain forms of class-room work, irrespective of any possible ill effects to the eyes from uncorrected strain, while in the 94 students who possessed normal vision in but one eye, the student was perceptibly handicapped in the proper use of all scientific instruments. Three hundred and three students wore glasses; of these, 217 were hypermetropic and 86 myopic. Eighty-seven complained of headache. Of this number, 47 wore glasses and 40 did not. Of those complaining of headache, 7.59 per cent. had subnormal vision, while the remaining 92.41 per cent. had full visual acuity, and on this account did not suspect their eyes of being at fault.

Of the 883 students examined, 58, or 6.68 per cent., had spinal curvature or scoliosis, and this condition was found 48 times among hypermetropes and 10 times among myopes. Of the total number of students with spinal curvature, the vision of one eye was perceptibly lower than its fellow in 13.79 per cent., supporting the inference of many ophthalmologists that ocular errors may be responsible in many cases for this abnormality.

The figures which have just been given are only a few which have been compiled from the statistics deducted from the examinations, but they serve, in our opinion, to indicate the importance of including careful ocular tests as a part of the physical examination of every student, and to show the value of the advice which is offered regarding the correction of existing errors. As weak eyes are often associated with a physical condition which is below par, suitable exercise of a general nature is also insisted on for those who are so handicapped, and a determined effort is made by the department to enable such students to profit as much as is possible by their college careers. Violent exercises are forbidden myopes, and the endeavor is made in this class of subjects particularly to develop the chest and to impart a correct standing posture for the avoidance of scoliosis.

### THE DANGER OF DUST AS A CAUSE OF TUBERCULOSIS

IN DOMESTIC HOUSEHOLDS, CLUBS, HOTELS, SCHOOLS AND  
CERTAIN OTHER ESTABLISHMENTS.\*

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ST. LOUIS.

In a previous paper<sup>1</sup> I traversed to some extent the ground indicated by this contribution, but, as probably few Americans will see that paper in print, I take the liberty of borrowing from it to some extent as affording a text and illustration of what follows.

There is agreement among authorities that the sputum expectorated by consumptives, and becoming dried and powdered, constitutes the principal means by which the tuberculous infection is extended; the precise manner in which the recipient acquires it—whether by inhalation, ingestion or inoculation—being of secondary importance, but that pathogenic lodgment must necessarily

\* Read before the Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 6-8, 1906.

1. Read in the Section on State Medicine of the British Medical Association, Toronto, August, 1906, British Medical Journal, Sept. 15, 1906.



take place in one or more of these several ways. The seriousness of the situation is increased by the fact ascertained by competent observers that the vitality of the infecting germ retained within doors may endure unimpaired for several months.

This particular form of infection, then, being capable of, and adapted to, dissemination by air currents, is liable to be found within the average domestic domicile everywhere that the air-borne sputum can reach, and the methods in vogue for the care and treatment of interiors thus invaded, or those infected from within, instantly assume an aspect of importance for weal or woe that can not be gainsaid or idly set at naught.

The acceptance by the medical world of the truth of the discovery of the bacillus tuberculosis was spontaneous and significant, and on this foundation our practical work and professional faith have been securely builded for more than a decade. But, notwithstanding such acceptance, and the wide teachings that have followed by means of the public press, there still exists among people, presumably intelligent, an amount of ignorance on this subject, an indifference or inertia as to the observance of precaution and prevention that go to show that household customs have changed but little. In larger fields, as hotels, clubs, office buildings and the like, the methods pursued are often as unenlightened and dangerous as they were twenty or more years ago.

For a number of years it has been the lot of the writer to be in a position to observe at close range the practices pursued in the domestic administration of certain large clubs, hotels, etc.; as a result of such observation the conviction has grown that such places constitute a real seeding ground for tuberculosis among their members, guests and employes, chiefly through the inattention or incompetency of those charged with their physical care and business management.

Whether the conduct of household service generally has changed for the better in this respect to any perceptible extent I am unable to say; but the common broom and feather duster seem to be still wielded in residences and to hold sway there as the chosen emblems of that which is, at best, but a farcical performance in the domestic *ménage*.

The word farcical is used deliberately, for not only is the pretense of cleaning by broom and duster of that nature even to ordinary observation, but viewed in the light afforded by special knowledge of the nature of dust the situation changes and becomes most serious, for the tragedies of consumption follow fast on the heels of blind inefficiency or cheerful ignorance in the everyday dealing with what may be termed the "prince of the powers of the air" in its broad relation to human health and life.

In view of what is known of the bacillus tuberculosis, it is no more necessary to prove the reality of danger from flying infected dust than it is to demonstrate the multiplication table—sanitary observation, microscopical findings, laboratory tests and clinical experience are all in agreement here—hence the question of the hour is, How shall the perilous nuisance of dust-making and dust-raising within doors be abated?

One of the vices of American house-furnishing is the lavish spread of carpetings. These being fastened to the floors afford secure lodgment to all kinds of dirt conveyed by human or other agency, and in such position can not be cleaned, in any proper sense, by the ordinary domestic operations. Further harborage for dangerous

mobile matters is found in hangings, curtains, upholstered furniture, etc.

It is through the crude, old-time attempts at so-called cleaning in such places that the chief sanitary offense is given, and direct danger to health and life arises, and in illustration a glance at some experiences, personal to the writer, may perhaps be permitted here.

#### INSANITARY METHODS IN PUBLIC PLACES.

Some years ago in St. Louis an athletic club for men was formed, a special appeal being made to the younger men to join for the sake of their health, the widely announced aim of the organization being the upbuilding, development and strengthening of the body by all manly games, athletic sports and exercises. The response was encouraging and a membership mounting into the thousands was secured.

A large building was hired for a club house and elaborately furnished in the conventional way, even the dining room floor being heavily carpeted, as were also a large number of sleeping rooms intended for members and guests. The institution was well patronized, and carpets, etc., soon began to show evidence of use and wear.

As a member I occasionally found it convenient to take breakfast there, and on such occasions was too often confronted by the unpleasant fact that the domestic ordering of the club had not been completed before it was opened for business. In short, the sweeping of carpets and dusting of furniture went on alongside of tables where meals were being served.

Respectful representation to the management against this practice availed nothing, and this was followed by emphatic protest and vigorous remonstrance, which was received with equal unconcern. This disparity between the loudly trumpeted purposes of the club and this confirmed dangerous feature of its housekeeping, being too glaring for reconciliation, resignation of membership was the only recourse remaining, and this was quickly put into effect.

The paradox was thus presented of an institution catering especially to a younger generation, conducted by average business men, and ostensibly established for the promotion of physical health, employing through dull ignorance or perverse inattention methods of internal management which in disease-producing influence must largely defeat its avowed objects and subject its heedless or unsuspecting patrons to most serious peril—one hand practically undoing the work of the other.

That such a situation is not exceptional, personal experience and observation has confirmed in another club of one thousand members, made up of business and professional men, the women and children of their families being also admitted to its social privileges.

Here the same antiquated and pernicious methods are adhered to, the establishment scarcely ever being opened clean and in order, but confusion, dirt and danger prevailing on the principal floors, sometimes until an advanced hour in the morning. Successful business men compose its board of directors, but the reign of ignorance respecting such a simple health proposition is as absolute as it was in the same institution a quarter of a century ago.

Without specifying particulars, the same conclusion has been reached with respect to hotels, office buildings and business concerns where extensive carpeting is in evidence. The twin scepters of the domicile, broom and duster, seem to be undisputed and securely holding their place.



## INSANITARY METHODS IN THE HOME.

The limitations of time and circumstance do not permit any extended notice of the morbid developments observed among employes in atmospheres of daily domestic dust. In those places, however, in which medical scrutiny has been exercised longest and most closely the confident statement can be made that, while many contributory influences are involved, yet the pleurisy, pneumonia, bronchial catarrhs and cases of tonsillitis and influenza occurring among patrons and help find there a sufficient explanation in the local conditions, and undoubtedly these ailments prepare the way for the tuberculous infection that easily and commonly follows.

This infection is spoken of by some as a disease prone to originate in the poorer quarters of a city, but its presence there, I am persuaded, is due to the fact that many wage-earners in clubs, hotels and like places are drawn from homes in such localities. Medical observation shows that after a time physical deterioration takes place among those employes most exposed to dust, and this is usually evidenced by coughs and other evidence of respiratory ailment.

That insidious peril from such cause can lurk in the often luxurious furnishings of places of the kind mentioned is hardly thought of by those most liable to be affected, but the contention that they are real and formidable seeding places for tuberculosis can, I believe, be established as truth on sufficient examination by any one so disposed.

## MODERN METHODS OF CLEANING.

If so much be conceded, the question then recurs as to the necessary measures of prevention, and it will readily be seen that these require the total banishment of broom and duster or any other implement or device by which dust is set afloat. If carpetings are to be retained, the adoption of mechanical appliances must follow, by the use of which no flying matter will be allowed to escape, this, if necessary, to be supplemented by the wiping of exposed surfaces and furniture with soft cloths.

The use of the vacuum or pneumatic method of cleaning in every hotel, club, office building, theater, church, school and business establishment should be made compulsory by law. This provision as a sanitary adjunct has become just as necessary a part of the house equipment as are those similarly supplied for heating, for ventilation, for fire protection or fire escape.

As to changes needed in ordinary methods in private houses to meet the demands of wholesome living as framed in the light of to-day, that is a domain concerning which others must speak, but it would appear that amendment in this direction is a very necessary part of the movement toward better health. This, however, is a phase of the problem that, first and last, lodges itself with the housekeepers of all civilized lands, and on them must rest the responsibility for its final and rightful determination.

The city mentioned in which are situated the clubs, etc., whose delinquencies in a certain respect have been pointed out, is said to be the most representative of all American municipalities, in the sense that the different races and nationalities composing its population are more evenly blended than in any other place of nearly the same size; hence, sanitary faults existing there would probably be found present in other cities also. The indoor dust problem, therefore, becomes one of more than local importance and must concern peoples and populations everywhere who may be liable to fall under

the influence of similar unwholesome conditions, becoming in fact national, if not international, in scope.

It has been written of ancient peoples that, in times of great public stress or sore calamity, they would seek the altars of their respective religions and anxiously demand of the priests, wherein they had offended the gods, in order that, by suitable sacrifice or offerings, atonement might be made for transgressions, and the offended deity be thus placated and no longer visit on them his wrath. And the people of to-day, here and elsewhere, may well ask wherein they have offended when it is remembered that one-tenth of all deaths occurring in civilized lands are due to tuberculosis, and bestir themselves to the work of expiation for manifold transgressions of the plain laws of health which entail such a heavy punishment.

## SUMMARY.

1. Efforts toward the eradication of human tuberculosis will fail which do not take full account of household dust as a factor in the dissemination of that disease.

2. Scientific tests have shown that the seeds of pulmonary tuberculosis, harbored within doors in the dried state, are capable of retaining their effective vitality for prolonged periods of time.

3. Any method or procedure employed in inhabited buildings which causes dust to be disseminated must be considered as tending to spread the seeds of consumption.

4. Hotels, clubs, theaters, office buildings, schools, churches and business establishments generally should be required by law to introduce and operate dustless methods of cleaning; this part of their mechanical equipment being as necessary as provision similarly made for warming, ventilation and for fire protection and fire escape. The employment of dustless methods in private residences is urged as being equally imperative for the control and suppression of all forms of tuberculous disease.

## THE VALUE OF SULPHATES IN CARBOLIC-ACID POISONING.\*

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## HISTORICAL DATA.

The treatment of phenol poisoning by sulphates dates from the observation of Baumann,<sup>1</sup> in 1876, that a considerable proportion of the phenol is excreted in the urine as the practically harmless phenol-sulphonic (sulpho-carbolic) acid,  $C_6H_4(OH)SO_3H$ , or, rather, as the salts of this acid with the urine bases. Baumann suggested that this constitutes a natural mechanism for the detoxication of phenol. Since only a part of the phenol is excreted in this form, it seems reasonable to suppose that the quantity of sulphate at the disposal of the body was not sufficient to combine with all the phenol, and that the efficiency of the mechanism could, therefore, be increased by the administration of sulphates. Baumann tested this suggestion on two dogs, painting the phenol on the skin. The result was in agreement with the theory, although it was not sufficiently rigorous to be conclusive. Sonnenburg,<sup>2</sup> in 1878, reported favorably

\* This is the second of a series of studies on the treatment of phenol poisoning. The first paper, on the value of alcohol, by T. W. Clarke and E. D. Brown, appeared in THE JOURNAL, March 17, 1906.

\* From the Pharmacological Laboratory of Western Reserve University.

1. Arch. f. d. ges. Physiol., 1876, xiii, 285.

2. Deutsche Ztschr. f. Chir., 1878, ix, 356.



on the clinical use of sulphates in the subacute poisoning resulting from the external application of the phenol.

The next work was done by Cerna<sup>3</sup> in 1879 and by Cafrawy<sup>4</sup> in 1881. Both experimenters worked on animals and formed a favorable judgment, but Tauber<sup>5</sup> rejects their results as absolutely valueless because of errors of technic and interpretation. Tauber, in 1895, published the first reliable experimental data on the reputed antagonism. He injected a just fatal dose of phenol subcutaneously into rabbits, following this by oral, subcutaneous or intravenous injection of sodium sulphate. His three experiments were purely negative: the animals died in from fifteen minutes to one hour, just as they would have done without treatment. He suggests in explanation that the phenol does not combine in the body with sulphates, but only with sulphur in lower stages of oxidation; and in support quotes a somewhat more favorable effect from the administration of sulphites—too small, however, to be of any therapeutic significance.

The subject was taken up independently, at about the same time (1894), by Marfori,<sup>6</sup> who worked with different methods and arrived at different conclusions. Marfori used dogs and injected the solutions intravenously, but so slowly that no acute effects were produced until death resulted, the injections lasting from four and one-half to nine hours. He determined in this way the total lethal dose and the amount of combined sulphate excreted in the urine; the latter as a measure of the amount of phenol which had entered into the harmless combination. Into ten of his animals he injected phenol alone, into seven a mixture of phenol and ammonium sulphate. His results showed that when phenol alone is injected under these conditions from one-fourth to one-half is excreted as the sulphate. When ammonium sulphate is injected at the same time, more phenol can generally be injected and a greater amount (up to three times as much) is excreted as the sulphonate. The tolerance, however, is limited; indeed, two of his animals died with practically the normal fatal dose; in no case was anything like the total injected quantity of phenol excreted as the sulphonate.

The conclusions of Tauber and Marfori, however they differ in other respects, agree in assigning a very small value, if any, to the sulphate treatment. This agreement, however, seems to have been less impressive than the differences, for we find that many of the recent textbooks give prominent favorable mention to the sulphate treatment. We also started our experiments with a favorable bias, based on the superficial impressions of some class experiments and on some reported clinical results.

#### SUMMARY OF THE AUTHORS' RESULTS.

In view of the prevailing contradictory opinions, we shall detail our experiments rather fully; but for those who are not interested in these details we may premise the conclusion that sodium sulphate, however administered, is not a chemical antidote in acute phenol poisoning. This conclusion follows very clearly from our results, namely:

1. Chemical combination between phenol and sulphate does not occur outside of the body, neither in neutral nor in weakly acid nor in weakly alkaline solution. This

excludes at once all possibility of chemical combination in the alimentary canal or in the blood.

2. The blood pressure and convulsive effects of phenol are not modified in the slightest degree by intravenous injection of liberal quantities of sodium sulphate under any of the following conditions:

(a) When phenol, even in sublethal doses, is introduced into the stomach, and is followed within fifteen minutes by intravenous sulphate injection.

(b) When sublethal doses of phenol are injected intravenously, and followed promptly by the sulphate.

(c) When sublethal doses of phenol are injected intravenously after the sulphate injection.

(d) When an incubated mixture of phenol, sodium sulphate and sodium bicarbonate is compared with a solution of phenol in sodium chlorid solution.

(e) When the sulphate is injected immediately after cardiac stoppage from lethal doses of phenol.

#### DETAILS OF THE RESULTS.

To answer the question whether or not phenol sulphonate is formed outside of the body under the conditions which obtain in poisoning, the mixtures were allowed to stand for the specified time, the free sulphate was precipitated with barium chlorid, the mixture filtered, and any combined sulphate sought for by boiling with hydrochloric acid and adding barium chlorid. The result was uniformly negative. The following mixtures were tried:

Five c.c. of 95 per cent. phenol plus 95 c.c. of 1.9 per cent.  $\text{Na}_2\text{SO}_4$ , standing 5 minutes. The same mixture, standing 24 hours.

Five c.c. of 95 per cent. phenol plus 95 c.c. of 2 per cent.  $\text{Na}_2\text{SO}_4$  plus 0.4 per cent.  $\text{HCl}$ , standing 24 hours.

One gm. phenol, 4 gm.  $\text{Na}_2\text{SO}_4$  + 10  $\text{H}_2\text{O}$ , 0.03 gm.  $\text{NaHCO}_3$ , 100 c.c. water, incubated for 24 hours at 38° C., then 6 days at room temperature.

Animal Experiments.—The results of the chemical experiments left open the possibility that the phenol and sulphate might combine in the body as a result of ferment activity, or within the cells. Animal experiments were necessary to decide this question. These we attempted to shape so as to imitate as closely as possible the most favorable conditions for treatment in acute poisoning. In view of the rapid absorption of phenol, the method of Marfori, extending the injection over many hours, appeared to us ill adapted to answer the question. We, therefore, introduced the poison and antidote rapidly. In investigating antagonism, one may either concentrate the attention of the sum total of the deleterious effects culminating in death, i. e., one may determine the minimum lethal dose, or, secondly, one may select one or several easily observable phenomena produced by sublethal doses. The former method is generally the more satisfactory and has been adopted by our predecessors. It is unsatisfactory, however, in the case of phenol, since the fatal dose per kilo of body weight varies, according to Marfori, with the size of the animal, and, according to our observations, acute death with intravenous injection depends altogether on the rapidity with which the drug is introduced. The blood pressure phenomena and the convulsive twitchings, particularly the former, are, on the other hand, perfectly satisfactory.

The experiments were made on anesthetized dogs by the usual technic. The blood pressure tracings were taken from the carotid artery by a mercurial manometer. The intravenous injections were made into the cardiac end of the femoral vein. The phenol when

3. Medical Times, Philadelphia, 1879, ix, 592.

4. Thesis, Paris, 1881.

5. Arch. f. exper. Path. u. Pharm., 1895, xxxvi, 197.

6. Arch. Ital. de Biol., 1894, xxii, 204.



administered by stomach tube was undiluted, but was washed down with a small quantity of water; when injected intravenously it was reduced to a 1 per cent. or 0.5 per cent. solution with 0.9 per cent. sodium chlorid. The latter was also used for control injection. The sodium sulphate solution contained 1.9 per cent. of the anhydrous salt.

#### PHENOL BY STOMACH TUBE, SULPHATE INTRAVENOUSLY.

Dog 11, tracings 30 and 31: Vagi cut, 1 c.c. of 95 per cent. phenol per kg. of body weight into stomach. Blood pressure fell immediately, descending 78 mm. of Hg (from 138 to 60) in 4 minutes. Remained at this level. Fourteen minutes after phenol, injected 15 c.c. of sodium chlorid solution per kg. into femoral vein. Excursions slightly increased, mean pressure unaltered. Between 15 and 25 minutes after the phenol, injected 25 c.c. of sulphate solution per kg. Slight temporary increase of excursions, mean pressure not affected up to 75 minutes, when the experiment was stopped.

Dog 13, tracings 34 and 35: One c.c. of 95 per cent. phenol and 1 c.c. of alcohol per kg. by stomach tube. Blood pressure fell 61 mm. in 6 minutes (from 126 to 65). Three intravenous injections of NaCl, each of 12 c.c. per kg., at one-minute intervals, the first 6 minutes after the phenol. The blood pressure showed a very slight rise (14 mm.), each injection caused some increase of the excursions. Four intravenous injections of  $\text{Na}_2\text{SO}_4$ , each of 12 c.c. per kg., the first 13 minutes after the phenol, the second 16 minutes, the third 20 minutes, the fourth 55 minutes. Each injection caused a slight rise of pressure (6 to 10 mm.) which passed off within a minute after the injection. The mean pressure was 60 mm. at the end of the experiment, 58 minutes after the injections of the phenol.

Dog 14, tracing 36: Phenol and alcohol, each 0.5 c.c. per kg. by stomach. In 7 minutes the pressure had fallen 34 mm. (from 108 to 74). Intravenous NaCl, 11 c.c. per kg., 11 minutes after the phenol. No effect. Two injections of  $\text{Na}_2\text{SO}_4$ , each 11 c.c. per kg., the first 14, the second 15 minutes after the phenol; no effect. The pressure continued to decrease gradually, being 60 mm. at the end of 30 minutes.

These experiments presented the most ideal conditions for the sulphate treatment: Intravenous administration of the sulphate in liberal quantity (from 22 to 48 c.c. of 1.9 per cent. per kg.) within a short time (13 to 15 minutes) after the phenol, the quantity of the latter but slightly exceeding the fatal dose in two of the dogs, and being distinctly less in the third. Notwithstanding these favorable conditions, the immediate effect of the sulphate is practically negative and does not differ in any respect from that of the sodium chlorid by which it was preceded. Nor was there any evidence of any later benefit, for the blood pressure showed no tendency to recover in from 30 to 75 minutes, whereas, after gastric lavage, Clarke and Brown noticed improvement, generally in from 15 to 34 minutes.

#### INTRAVENOUS INJECTION OF SUBLETHAL DOSES OF PHENOL FOLLOWED BY SULPHATE.

Dog 1, tracing 2: Five injections of phenol, each 0.01 gm. per kg., as 1 per cent. solution in 10 per cent. alcohol at one-minute intervals (total, 0.05 gm. per kg.). Each injection caused a slight fall (about 15 mm.). There was complete recovery after the first 2 injections, then this was incomplete, so that the average pressure had fallen 11 mm. (from 83 to 72) after the last injection. Four intravenous injections of 1.25 c.c. per kg. of the sulphate solution, given at short intervals, had no effect to the end of the experiment.

Dog 4, tracings 16 and 17: 0.09 gm. per kg. of phenol as 1 per cent. solution, distributed over 4 injections. Both vagi were divided. The pressure recovered to 90 mm. (original pressure 98 mm.). Twitchings were present after the first injection (0.05 gm. per kg.). Five injections of sulphate, each 5 c.c. per kg. (total, 25 c.c. per kg.) were given within 10 minutes. The pressure rose during the injection, but at the

end returned to the previous level. Marked convulsive movements were noted.

Tracing 18: 0.05 gm. per kg. of phenol as 1 per cent. solution. The pressure fell at once 25 mm. Within one minute 10 c.c. per kg. of the sulphate was injected, followed by 5 c.c. per kg. in one minute and again in 6 minutes. The blood pressure recovered steadily, just as it would do without the sulphate, the injections making no impression on the curve.

Dog 15, tracing 38: 0.025 gm. of phenol per kg. as  $\frac{3}{2}$  per cent. solution. The pressure fell at once 50 mm. (from 140 to 90), then started to recover. The injection of 15.6 of sulphate solution per kg. produced no impression on the curve. Twitching was observed after the first injection. The pressure returned to the original in 7 minutes.

Dog 17, tracing 44: 0.01 gm. of phenol as 1 per cent. solution. Pressure fell 25 mm. and recovered. Eleven minutes later, second injection of phenol, 0.05 gm. per kg., fell 30 mm. and recovered. Twenty c.c. of NaCl solution per kg. caused no change in the curve. Within 30 seconds after the second phenol injection, marked muscular twitching appeared, ceasing again in less than 5 minutes. A third phenol injection, 0.05 gm. per kg., caused marked twitchings in 30 seconds and 40 mm. fall of pressure (from 120 to 80). One and one-half minutes after the phenol, when the pressure had already begun to recover, injected 20 c.c. per kg. of sulphate solution. This did not affect the curve of mean pressure, although the excursions were considerably strengthened and slowed. The twitchings practically ceased within 5 minutes, i. e., about the same time as without sulphate.

These experiments bear out the conclusions derived from the gastric administration: The sulphate has not the slightest influence on the recovery of the blood pressure after sublethal doses of phenol.

#### INTRAVENOUS INJECTION OF PHENOL AFTER SODIUM SULPHATE.

Dog 4, tracing 18: The animal received 0.09 gm. per kg. of phenol in divided doses, then 25 c.c. per kg. of sulphate as described above. The blood pressure returned to the original level. About 45 minutes after the sulphate, injected 0.05 gm. per kg. of phenol as 1 per cent. solution; the pressure fell 25 mm. Sulphate was again injected, 20 c.c. per kg. When the pressure had recovered, 5 minutes after the sulphate, injected 0.05 gm. per kg. of phenol, usual fall of pressure.

Dog 15, tracing 39: The animal received 0.025 gm. per kg. of phenol, followed by 15.6 c.c. per kg. of sulphate solution. The pressure fell 50 mm. and returned to the original level. Eleven minutes after the sulphate, injected phenol 0.025 gm. per kg. The fall of pressure was 60 mm., i. e., somewhat greater than the fall produced by the same dose of phenol before the sulphate injection.

Dog 17, tracing 45: The animal received 0.01 and 11 minutes later, 0.05 gm. per kg. of phenol, and then a third injection of 0.05 gm. per kg., followed by 20 c.c. per kg. of sulphate solution. The first injection caused a fall of 25 mm., the second of 30 mm., the third of 40 mm., with complete recovery of pressure in each instance. Twenty-six minutes after the sulphate, injected phenol, 0.05 gm. per kg.; the pressure fell 45 mm. The convulsions occur as before the sulphate injection.

These experiments show that the presence of sulphate in the blood, before the phenol is injected, do not mitigate in the slightest degree the effects of phenol on the circulation, nor its convulsant action.

#### COMPARISON OF THE PHENOL EFFECTS IN A MEDIUM OF SODIUM CHLORID AND ALKALINIZED SODIUM SULPHATE.

To secure the closest possible approximation of physiologic conditions to the requirements for combination of phenol and sulphate, a mixture of 10 gm. of phenol, 40 gm. of crystallized  $\text{Na}_2\text{SO}_4$ , 0.3 gm. of  $\text{NaHCO}_3$  and 1,000 c.c. of water was incubated at  $38^\circ \text{C}$ . for 25 hours, then set aside at room temperature for another day. In the first experiment this solution was injected alone,



in the second alternately with a solution of phenol in 0.9 per cent. NaCl, containing the same quantity of phenol (1 per cent.).

Dog 28, tracing 67: Vagi divided. Blood pressure 90 mm. Injected 0.03 gm. of phenol per kg. in alkaline sulphate medium. Pressure fell 30 mm., recovered promptly and rose to 95 mm. Six minutes after the first dose, injected 0.02 gm. phenol per kg. in alkaline sulphate; fell 40 mm. and in 15 minutes the pressure had returned to 90 mm. Thirty minutes after the second dose, injected 0.05 gm. per kg. in the sulphate solution; fell 70 mm. with complete recovery. In 33 minutes the pressure had risen to 105 mm. Thirty-seven minutes after the third dose, injected 0.075 gm. per kg. in the sulphate solution. The pressure fell to 20 mm., respiration and heart beat ceased.

Dog 29, tracings 68 and 69: Vagi divided. Blood pressure 135 mm. Injected 0.025 gm. of phenol per kg. in NaCl, intravenously; pressure fell 43 mm. and recovered to 110 mm. Fourteen minutes after the first dose, injected 0.025 gm. per kg. of phenol in alkaline sulphate; pressure fell 48 mm. and recovered to 111 mm. Seventeen minutes after the second dose, injected 0.05 gm. per kg. of phenol in the chlorid; pressure fell 51 mm. and recovered to 110 mm. Fifty minutes after the third dose, injected 0.05 gm. per kg. of phenol in alkaline sulphate; pressure fell 50 mm. and recovered to 110 mm.

These results show that an incubated mixture of phenol with sodium sulphate and alkali produce precisely the same effects as a simple solution of phenol with sodium chlorid, quantitatively as well as qualitatively.

#### SULPHATE INJECTION AFTER LETHAL DOSES OF PHENOL.

Dog 4, tracing 18: The animal received 0.09 gm. of phenol per kg. intravenously, divided into 4 doses; the pressure recovered. In an hour and a half injected 0.15 gm. per kg.; the pressure fell to 30 mm., the heart beats were weak and slow; marked convulsions. Two minutes after the phenol injected 20 c.c. of sulphate solution; no improvement.

Dog 15, tracing 39: The animal received intravenously 0.025 gm. of phenol per kg.; the pressure recovered. Thirteen minutes after this first administration again injected phenol intravenously, 0.025 gm. per kg.; the pressure fell 60 mm. (from 127 to 65). As soon as it showed a tendency to recover, i. e., within one minute, again injected phenol, 0.0125 gm. per kg. Seven such doses were injected in 5 minutes, resulting in a very gradual fall of the mean pressure of 18 mm. (from 65 to 47). Three injections of phenol were now made, 30 seconds apart, the first of 0.025, the second and third, each, of 0.04 gm. per kg. These caused a further gradual fall of 16 mm. (from 47 to 31 mm.) when the heart suddenly stopped. Sulphate was injected at once, 15 c.c. of the solution per kg., and this was followed in one minute by artificial respiration and vigorous cardiac massage. Two further injections of the sulphate solution, of the same dose, were given within 5 minutes. The animal did not revive.

Dog 16, tracing 42: In the course of 20 minutes this animal received, intravenously, 3 injections of phenol, each of 0.025 gm. per kg. The blood pressure returned to the original (125 mm.). Half an hour after the last dose a second series of phenol injections were started, 5 doses of 0.025 gm. per kg. being given within 30 minutes. Ten minutes after the last injection the pressure stood at 85 mm., a permanent fall of 40 mm. The third series of injections was started, the injections being repeated at minute intervals, or as soon as the pressure showed a tendency to rise. The first injection, 0.0275 gm. per kg., lowered the pressure 45 mm. The second, third and fourth injections (0.0275, 0.0275, 0.015 gm. per kg.) caused a gradual further fall of 15 mm. (to 25 mm.). Within 8 minutes, the pressure had returned to 40 mm. An injection of 0.05 gm. per kg. caused it to fall again to 25 mm. Another dose of the same size, injected within one minute, lowered the pressure to 18 mm., at which it remained for 5 minutes, when the last injection of 0.05 gm. per kg. was made. This caused almost immediate sudden stoppage of the heart. Artificial respira-

tion, vigorous cardiac massage and the injection of 33 c.c. per kg. of sulphate solution caused resuscitation of the heart, but the respiration remained paralyzed.

Dog 17, tracing 45: The animal had received intravenously 3 doses of phenol of 0.01, 0.05, 0.05 gm. per kg., distributed over 30 minutes. Half an hour after the last dose the pressure was rather higher than at the start (134 mm.). A fourth dose of phenol, 0.05 gm. per kg., produced the usual fall of pressure (45 mm.) followed by recovery of the pressure. During the recovery, however, there was strong vagus stimulation, and 4 minutes after the injection the heart stopped suddenly, evidently due to excessive vagus stimulation. Immediately injected 25 c.c. of sulphate solution, practiced cardiac massage; no recovery.

The results show that sulphate injection after stoppage of the heart is no more effective than sodium chlorid injection.

#### DISCUSSION.

Our results as sketched in the preceding summary are conclusive in showing that sulphate injections do not influence the course of acute phenol poisoning appreciably under the conditions of our experiments. When the phenol was injected intravenously, the animals promptly recovered from the severe fall of blood pressure and from the convulsive twitchings, but the recovery was equally prompt without any treatment. When the clinical conditions were imitated by giving larger doses of phenol by stomach and the sulphate intravenously, the latter caused no marked permanent improvement, no tendency to recovery. There was in some cases an increase of the cardiac excursions and sometimes a slight temporary improvement of blood pressure, but these effects were insignificant in degree and duration and were obtained equally by corresponding injections of sodium chlorid; they were, therefore, expressions of saline stimulation and not of chemical antagonism.

We are forced to accept the same explanation for certain clinical cases which have been communicated to us informally from various sources. Of these we have no exact records, but they appear to agree in the essentials. In advanced cases of phenol poisoning the intravenous or subcutaneous sulphate injections produced no effect. In less severe cases, on the other hand, the improvement seemed very striking, the patient often recovering consciousness while the injection was being made. The very success in these instances excludes the possibility of a chemical combination, for all investigators agree that the combination of the phenol could not be effected in so short a time. The improvement must have been due to saline stimulation.

Our negative results agree with those of Tauber, who also worked with acutely fatal doses; their apparent contradiction to the conclusions of Marfori is doubtless to be referred to the slower introduction of the poison adopted by this investigator. He succeeded in demonstrating some increase of the combined phenol in the urine; but, as he emphasizes, this combination occurs so slowly that he was obliged to inject the phenol so gradually that it produced no symptoms for from 6 to 9 hours. This resembles the conditions of chronic phenol poisoning rather than those of the acute form, in which the symptoms set in with startling rapidity, and which practically runs its course, as a rule, within two or three hours.

The compilation of Clarke shows that, with gastric lavage, six out of seven patients had recovered consciousness within this time. With this in mind, it appears quite useless to administer an antidote which be-



comes effective only after four hours or later. In a limited number of cases, death occurs from phenol after a longer period, with intervening partial recovery; but, considering the usual rapid course of the poisoning, we are inclined to refer this to indirect effects of the acute action, such as the local effects or the profound nervous shock, rather than to a delayed action of the retained phenol. Even in these cases, therefore, we would expect little benefit from the chemic antagonism. Whether or not it is of any use in genuine chronic poisoning, our experiments do not answer.

On the other hand, we would emphasize the fact that the saline stimulation from intravenous or subcutaneous injections appears to be of distinct value clinically, although it was not very striking in our animal experiments. Since this is a harmless procedure, it deserves trial in conjunction with the lavage. The sulphate has generally been used in the quantity of from 0.5 to 1 liter of a solution containing 2.3 per cent. of the anhydrous or 4.6 per cent. of the crystalline salt, employing the usual technic of saline injection. We know of no data showing whether it possesses any advantage over ordinary saline (sodium chlorid) solution. The administration of sodium or magnesium sulphate by the alimentary canal would, of course, be useless for this purpose, especially as these salts are scarcely at all absorbed.

## SIMPLE ULCER OF THE BLADDER.

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Relatively few well-described instances of simple ulcer of the bladder have been recorded, but these are sufficient to establish the existence of such a condition.

It may be defined as a single non-inflammatory ulcer located in the mucous membrane of the bladder, which occasionally penetrates the entire wall.

The condition is probably caused by a local disturbance in, or complete blocking of, the terminal arteries or by an interference with the trophic nerves. Infection of the bladder never produces it. It resembles in appearance a gastric ulcer and probably has a somewhat similar etiology.

I have observed two cases, the histories of which are as follows:

CASE 1.—A man, aged 54, previous health excellent; had a mild attack of gonorrhea 8 years ago, no complications.

*Present Illness.*—For eight months he has suffered from a slightly increased frequency of micturition, attended by burning and discomfort. Very frequently during the day, independently of micturition, he has felt an uneasy painful sensation deep in the perineum. At the present time he urinates every two or three hours during the day and occasionally at night; the pain and burning during urination have increased and the local discomfort has become greater, occasionally being felt for days at a time. He describes it now as a burning or tickling sensation which is felt mainly in the dependent urethra. Other than this there is no disturbance.

*Examination.*—Large, well-built, well-developed man. Heart and lungs negative, abdominal organs negative; external genitalia normal. No material can be expressed from the meatus on pressure; the prostate gland on palpation is practically normal; the seminal vesicles are normal.

*Urinalysis.*—Pale straw color, slightly turbid; a number of fine granular particles and small shreds; acid; specific gravity 1.020; no albumin, no sugar. Microscopic examination showed numerous pus cells, some bladder epithelium, no casts, a few bacilli and cocci, no tubercle bacilli.

*Cystoscopic Examination.*—Endoscopic examination disclosed a normal urethra. With the cystoscope there was found a small round ulcer on the left lateral wall of the bladder about 2 cm. behind the orifice of the left ureter. It was sharply punched out; the immediate edges were smooth and regular; the base was made up of a red, fairly firm-looking, granulation tissue, over which was a thin coating of a fibrinous exudate. The ulcer extends to the submucous tissue, but not beyond it. The adjacent mucous membrane was slightly injected, but otherwise presented no change. The remaining mucosa was entirely normal; there was not the slightest evidence of a tuberculous process. The ureteral orifices looked healthy and emitted a clear urine. The capacity of the bladder was normal.

*Treatment.*—The patient was put on nitrate of silver irrigations, 1 to 10,000, twice a week. His condition is improving.

In the following case the patient was seen in consultation only once and probably presented an example of a simple ulcer which was well advanced toward healing.

CASE 2.—Male, aged 27; previous history, except for a remote attack of gonorrhea, entirely negative. Three years ago the patient began to notice blood in the urine occasionally, and later suffered from increased frequency in micturition and some pain. At the same time he had some discomfort and a burning sensation in the perineal and suprapubic regions. These symptoms gradually became worse and the bleeding more pronounced. During the last six months micturition has been compulsory every two or three hours during the day and from three to four hours during the night, although in the last two or three months this symptom has begun to improve and the bleeding is less frequent. The general health has not suffered.

*Examination.*—The patient has the appearance of being in excellent health. Heart, lungs and abdominal organs negative. Prostate and urethra negative.

*Urinalysis.*—Pale lemon, slightly clouded urine; acid, specific gravity 1.018; no albumin, no sugar. Microscopic examination showed leucocytes, some mucus and bladder epithelium.

*Cystoscopic Examination.*—On the right side of the lateral surface of the bladder, slightly behind the ureteral orifice, there was an irregular, ulcerated surface about the size of a ten-cent piece; the edges formed a somewhat irregular outline and extended here and there as fine projections into the ulcer. The edge in the main was smooth and sloped gradually to the granulating surface, so that it might be said to be almost on a level with it. It was of a bluish color, and appeared to be covered by an overgrowing epithelium. The base was smooth; in spots here and there the granulation tissue projected above the surface. In other words, the ulcer presented the ordinary picture seen in a healing process. The remaining mucous membrane was slightly injected but otherwise appeared to be normal.

While the above case may not be an example of a simple ulcer, I found no evidence of the ordinary causes (tuberculosis, for example) to explain its presence. The patient had been using and continued to use silver nitrate irrigations. Some months later he wrote that he was well.

Simple ulcer of the bladder has been very carefully observed and described by Fenwick, Le Fur, Castaigne and others.

## PATHOLOGY.

Two types are described: 1, The simple, chronic and solitary ulcer; 2, the acute, perforating ulcer. The first type is usually found as a single ulcer, situated, as a rule, on the posterior wall of the bladder. It varies in size from 2 mm. to 3 cm. in diameter. It is usually circular with clean-cut edges. The base is covered with a red, not exuberant, granulation tissue over which there are scattered small particles of fibrin. The edges are only slightly indurated, and the immediately surround-



ing mucosa is slightly injected; otherwise the mucous membrane is entirely normal.

*Microscopic Examination.*—According to a very careful histologic examination of such an ulcer made by Castaigne, it shows, first, a layer of complete necrosis which forms a thin coating over the surface of the ulcer. Under this there is a zone of ordinary granulation tissue made up of lymphoid cells, dilated blood vessels, leucocytes and connective tissue. Immediately outside of this zone, in the specimen examined, there was definite thrombosis in the small blood vessels. The epithelium of the mucous membrane immediately next to the ulcer showed degenerative changes. Outside of this the cells were normal, but there was some injection of the underlying blood vessels. Castaigne made very careful bacteriologic examinations, both in smears and in stained sections, but found no organisms of any kind.

In the second period the ulcer becomes larger and there is an infection with pyogenic organisms which gives rise to a more or less acute cystitis. According to Fenwick, there is a tendency toward the disposition of lime salts over the surface of the ulcer which is sometimes so extensive that it produces a secondary traumatic ulceration on the opposite bladder wall.

In the third stage there is an increase in the degree of cystitis and a deep infiltration of the inflammatory process into the musculature which produces a widespread fibrous change and a contraction of the whole organ, thus interfering with its contractile power.

Microscopically, in both the second and third stages, there is seen the ordinary inflammatory process which is brought about by pyogenic organisms.

The second type, or perforating ulcer, is relatively rare, but a number of instances have been observed and accurately described. In this form there is a marked tendency toward deep erosion, and as a consequence the whole wall and the immediately adjacent structures are perforated. This type does not go on to the production of cystitis, for the reason that the perforation usually occurs very early and produces death or calls for an operation.

In Castaigne's case the autopsy disclosed a perforation through the posterior wall of the bladder, 2 cm. in width, and through the base of the ulcer. There were three liters of blood in the peritoneum; the genito-urinary tract was otherwise normal. Bartlett, in 1876, at autopsy, found a perforating bladder ulcer which was very similar in appearance to a gastric ulcer. In Johnson's patient there was a simple ulcer, three inches in diameter, from which a rupture of the bladder had occurred. Cannon (1900) reports a death from perforation of the bladder. The ulcer was situated in the upper posterior wall and was similar to a gastric ulcer.

#### ETIOLOGY.

The etiology of simple ulcer of the bladder is obscure. The lesion is probably dependent on a local disturbance in the blood vessels or trophic nerves and bears no relationship to any form of cystitis. Le Fur, in an exhaustive research, succeeded in producing a localized ulcer of the bladder by injecting organisms into the blood of rabbits and then injuring the bladder wall, but this condition would hardly correspond to a simple ulcer. He speaks of three causes: vascular, trophic and infective. The vascular type, according to him, is produced by a local thrombosis in the vessels of the bladder, which is induced by some general systemic infection such as scarlet fever, diphtheria, typhoid fever and mercurial

poisoning. The trophic ulcers are occasionally seen in some form of tabes and paralysis.

#### SYMPTOMATOLOGY.

The three prominent symptoms, as mentioned by Fenwick, are increased frequency of micturition, pain in the penile portion of the urethra and hemorrhage. For the sake of clearness the symptoms will be discussed according to the different stages.

In the first stage there is usually some disturbance in micturition; the act is more frequent and the passage of the water is attended by a burning sensation, particularly marked toward the end. Not infrequently more or less discomfort is felt in the penis. The urine does not show any very marked change, but close examination will show some pus, necrotic debris and exfoliated epithelium.

In the second stage a cystitis begins and there is an exaggeration of all the symptoms. Micturition is more often demanded and is painful, the sensation not being relieved until several minutes after the act is finished. Local discomfort in the suprapubic and perineal regions is more or less continuous; the pain in the penile urethra becomes much greater and is sometimes extremely severe. The urine is more purulent and contains more epithelium and debris; the blood, too, is in larger amount.

The bladder in the third stage loses its expulsive power and is unable to empty itself entirely, not infrequently calculi are formed and these, together with a putrid urine, greatly aggravate all the symptoms. If the condition is not relieved, the patient is gradually worn out by exhaustion or dies from an ascending renal infection.

In the second type, the acute perforating ulcer, there are no symptoms whatever until perforation has taken place. In such instances blood usually appears in the urine in either small or large amounts and in a few hours signs of perforation are present. Chauffard reports the case of a man of 26, who suddenly complained of a severe and colicky pain in the left lumbar region. There was hematuria, which increased in spite of treatment; signs of internal hemorrhage developed and the patient died after five days. At the autopsy a large quantity of blood was found in the peritoneum, but there was no peritonitis. In the posterior wall of the bladder was an elliptical perforation through the base of an ulcer; the ulcerated surface resembled that of a gastric ulcer. Bartlett, in 1876, reported a similar instance in a man, aged 53. Reeves, in 1885, observed a fatal perforation of a simple vesical ulcer in a young woman. Pousson speaks of a previously healthy woman, aged 36, who was taken suddenly ill and died in 36 hours. The autopsy showed a perforation of an ulcer in the summit of the bladder.

Burgess cites the case of a man, aged 25, whose previous health had been excellent. Suddenly, without previous symptoms, while urinating, he experienced a violent pain in the right groin and perineum; in a short time blood appeared in the urine and the bleeding kept up until the patient became very anemic. A suprapubic opening disclosed a circular ulcer, three-fourths of an inch in diameter on the posterior wall, close to the trigone. This was curetted and touched with a 1 to 20 carbolic-acid solution. Five months later the patient was well.

Castaigne's case is the most undoubted example on record of an acute perforating ulcer of the bladder. A



man, aged 36, apparently in perfect health, was attacked one morning with a very acute pain in the right lumbar region, which extended to the glans penis; this was so intense that he could not walk. Micturition from the first was very difficult, and after 48 hours the urine became bloody. The pain and the blood continued, the abdomen became very much distended and tender and death occurred after six days. Autopsy showed a perforation through the posterior wall of the bladder into the peritoneum, causing hemorrhage and peritonitis.

#### DIAGNOSIS.

In the earlier stage we have no means of diagnosis other than cystoscopic examination. This shows a simple ulcer which has a punched-out appearance, with clean, smoothly cut and slightly indurated edges. The remaining mucosa is normal.

From a tuberculous ulcer it is differentiated by the regularity of its edges, the appearance of its base, the absence of undermining of the margins, of surrounding tubercles, and of tuberculosis in other organs.

From the ulceration belonging to various forms of cystitis, it can be differentiated only in the stage before the development of the inflammation. In the second stage of the simple ulcer, when the cystitis has been cleared up, it is impossible to say whether the ulcer has been caused by the cystitis or the cystitis by the ulcer. In the third stage, in which the bladder wall has become infiltrated and a calculus has probably formed, no diagnosis can be made as to the primary condition.

In the middle and terminal stages, the local symptom-complex of simple ulcer is very similar to that of tuberculous cystitis, and I feel sure that a number of so-called healed cases of bladder tuberculosis have been instances of simple ulcer. The differential diagnosis can be made by cystoscopic examination, aided by the presence or absence of tubercle bacilli in the urine.

#### PROGNOSIS.

In the early stage of simple ulcer the prognosis is good; with proper treatment, practically, it will heal. In the second stage, when lime salts have been deposited, and the ulcerations are exaggerated, curetting and drainage will usually effect a cure. In the third stage, in which there is a great interstitial change, the prognosis is grave; the majority of these cases are not curable, and a number of patients die from exhaustion, ascending infection or other complications. The acute perforating type is usually fatal, practically always so when the peritoneum is implicated. Harrison recognized a very early perforation and saved the patient by an operation. I have found no other similar case reported.

#### TREATMENT.

Irrigations with silver nitrate, from 1 in 10,000 up to 1 in 5000 every second day, will usually effect a cure in the first stage. Le Fur reports nine cures in ten cases brought about by the use of this remedy. If, after a sufficient trial, this does not succeed, the ulcer may be cauterized with the cauterizing cystoscope, or a suprapubic opening made and the ulcer curetted and cauterized with the Paquelin instrument.

In the second stage, a curetting and cauterization with a prolonged drainage through a suprapubic opening are necessary to effect a cure.

In the third stage, drainage, irrigation and gradual distension of the bladder are all that can be done. The change that has occurred in the bladder wall renders it very unlikely that a complete healing will take place.

## ETIOLOGY AND PATHOLOGY OF TRAUMATIC RUPTURE OF THE ABDOMINAL VISCERA.\*

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The abdominal viscera, while not exposed to such infrequent injury as the extremities, are of far greater importance as regards the life of the patient. The diagnosis of such injuries is often difficult, and time is of such great importance that a quick decision, followed by aggressive surgery in the proper cases, has in recent years made the prognosis much more hopeful. The etiology has an important bearing in making at least a probable diagnosis, such an important factor in meeting this grave pathologic condition. Either hemorrhage, shock or peritonitis is apt to follow, as a natural course, rupture of any of the abdominal organs.

#### SPLEEN.

The spleen is a ductless gland situated in the left hypochondriac region at the tail of the pancreas and behind the peritoneum. It weighs five to eight ounces and is of about the same size at birth, not increasing in proportion to the body. It has an intimate connection with the stomach and the left kidney. The tissue of this organ is soft, brittle and highly vascular, being supplied by the splenic artery directly from the abdominal aorta. The gland is enveloped by a serosa and underneath by a fibrous capsule, sheaths of which ramify through the parenchyma. This organ is in a protected position and is practically suspended by two folds of peritoneum, thus offering two means guarding against frequent subcutaneous trauma.

Cases have been described by Vanselow in 1696, Scheid in 1725, Zopff in 1740, Sporing in 1775, Pyle and Wunder in 1789, and Chisholm in 1811. Andoward, in 1827, considered intermittent fever as a cause of rupture. The excessive use of alcohol was ascribed by Thompson, in 1829, as the reason for rupture in a case reported by him. There are numerous individual cases in the literature which I will not dwell on, but will mention collective statistics. Edler reported 160 cases of injury, of which 51.8 were subcutaneous. Berger collected 300 cases in the male sex and 60 in women. In 1901 Fevrier presented instances of 56 ruptures. Statistics show that, comparatively speaking, rupture of the spleen is not of frequent occurrence. Of 131 cases collected by Lewerenz, 82 occurred in pathologic organs.

A healthy spleen is seldom injured. Enlarged spleen due to malaria, tuberculosis, syphilis in the newborn, and typhoid fever is a predisposing factor. It has even been ruptured through violent muscular action during sneezing and vomiting. Abdominal palpation in a cachectic patient is said to have been followed by this accident. There is record of several cases in which it ruptured during pregnancy and childbirth. Lamarchia says that the hilus is especially prone to yield. The capsule has an intimate relation with the parenchyma; so that both are usually torn together. Slight injury may cause hemorrhagic foci in the spleen substance; or the parenchyma may be injured while the capsule remains intact, causing an intracapsular hematoma. In time this may become absorbed; or if infection takes

\* Read at a symposium on "Traumatic Rupture of the Abdominal Viscera," before the Chicago Medical Society, Oct. 31, 1906.



place it may become adherent to adjacent hollow organs and discharge its contents. This favorable termination, however, is exceptional. The tear is usually through the envelop, rapid hemorrhage occurs, and only speedy surgical intervention will save the patient's life.

#### PANCREAS.

This organ is the best sheltered of all the abdominal viscera and the least often implicated. Mikulicz reported 24 cases of this injury, the three principal causes of which were: Passage of a wagon wheel over the abdomen, crushing between cars, and the kick of a horse. The injury may be so great as to crush the pancreas against the vertebral column and divide it into two parts. Mikulicz reports such a case.

Reasoning from an anatomic standpoint, rupture of the pancreas alone without injury to adjacent organs must be one of the rarest pathologic conditions.

The relation of trauma to pancreatic cysts is most probably intimate. In slight injury of the organ blood collects in the tissues of the organ and beneath the peritoneum, causing cystic degeneration. This process should not be mistaken for hemorrhagic pancreatitis. Experimental research has shown that blood effusion in the pancreas is not readily absorbed; but will give rise to cyst formation if resorption is unfavorable, as by the application of iodine to the injured parts. Hemorrhagic cysts may follow injuries of the upper portion of the abdomen with effusion into the lesser peritoneal cavity. Moynihan thinks that so-called pancreatic cysts are in reality peripancreatic or pseudocystic effusions into the lesser peritoneal cavity. Hagenbach distinguishes between hematoma in which bleeding occurs into pre-existing cysts and apoplectic cysts resulting from hemorrhage into the softened degenerated gland substance. Injury to the pancreas can cause a discharge of pancreatic secretion, giving to the contents digestive power, and may even lead to a pancreatic fistula. Jordan Lloyd claims that when fluid in the lesser peritoneal cavity is found to have the property of converting starch into sugar we may assume that the pancreas has been injured. Mikulicz says that the pancreatic juice mixed with blood has a very toxic effect and can result fatally without bacterial infection.

#### LIVER.

This, the largest gland in the abdomen, is situated, comparatively speaking, superficially. Its location under the right costal margin and the juxtaposition to the abdominal parietes, together with its relation to the ribs, vertebral column and diaphragm, exposes it to injury, and as a consequence it is ruptured more frequently than any other gland structure in the abdomen. Moreover, it is not compressible and its supply of elastic fibers is few. As probable predisposing causes we must mention tuberculosis, syphilis and amyloid degeneration. Close proximity of the lower ribs accounts for rupture six times as frequently on the right side as on the left and twice as often on the convex as on the concave surface. Terrier and Auvray reported 46 cases, collected from the literature, of which 33 patients recovered and 13 died. Edler, in 1887, published statistics of 543 cases, the mortality being 67 per cent.

There are three forms of subcutaneous injury: 1, Rupture of the hepatic tissue, as well as the capsule; 2, subcapsular hematoma underneath the capsule; 3, central hematoma which may undergo cystic or abscess formation. When the parenchyma is opened there is usually severe hemorrhage, because the organ is very

vascular and because the vein walls are held open by the liver tissue. The patency of the veins may also facilitate the entrance of hepatic cells into the blood current and set up pulmonary embolism. When there is superficial laceration, bile flows after a few days, when the layer of coagulation necrosis is cast off.

The gall bladder, especially when distended, as in hydrops, is prone to rupture under a very slight force. The ducts may also be implicated in certain instances. Courvoisier mentions 34 cases of subcutaneous rupture of the bile tracts, with death in 22. Experiments on animals show that extravasated bile gives rise to violent symptoms, but not necessarily to a fatal peritonitis. Bile from healthy ducts is sterile; but serves as a most excellent culture medium for bacteria which may pass down from the duodenum. If there is a pre-existing infection of the gall bladder or ducts, an immediate septic peritonitis is inevitable. Cholemic intoxication due to resorption of bile by the peritoneum is also a danger of no small moment.

#### STOMACH AND INTESTINES.

While the stomach gives rise frequently to peritonitis due to a perforating gastric ulcer or carcinoma, in comparison with the intestinal tract it is rarely damaged by blunt force. Petry collected 219 cases of subcutaneous injuries of the alimentary canal, of which the stomach was involved only 21 times, while the small intestine was injured 172 times. In 111 cases Coull Mackenzie found the stomach injured only once, and then there was an accompanying wound of the spleen, showing that great force had been exercised. For obvious reasons the stomach is well provided for against damage by external contusion, and I will describe in detail the more frequent injuries of the intestinal tube.

#### FREQUENCY OF SEGMENT OF INTESTINE INVOLVED.

These injuries are found most often in men and young adults by reason of their greater exposure to injury. In a study of the statistics of the relative frequency of rupture of the different portions of the intestinal tract, no mention is made in many instances of the exact anatomic location of the lesion. Jalaguier claims that in all contusions of the abdominal wall in which the viscera are injured the digestive tract is involved in one-eleventh of the cases. The statistics are based on those of Thomas Morton, 234, and those of Coull Mackenzie, 111, making a total of 345, of which 31 concerned the gastrointestinal tract. Chavasse found the ileum and jejunum injured 106 times, large intestine 19, duodenum 7, small and large intestine, together, 7, and the rectum 1. Curtis, in 113 cases, found the large intestine injured only 4 times. Bryant, in a series of cases, gives the duodenum 2, jejunum 7, and the ileum 10. In 10 cases collected between 1873 and 1890, Croft states there were 7 of the ileum and 3 of the jejunum. Maylard recorded 10 cases, of which 6 were injuries of the ileum and 4 of the jejunum. Poland discovered 5 cases of rupture of the large bowel out of 64 injuries to some portion of the intestinal tract. In 40 cases of rupture of the small intestine, only 4 occurred in the duodenum.

It will be seen that while the duodenum is firmly fixed in its position, it is, comparatively speaking, rarely injured. It is protected by its thick walls and also by its deep position. As we proceed in a downward direction to the ileocecal valve, traumatic rupture becomes correspondingly more frequent. This condition is explained by the greater exposure, especially of the ileum;



the mobility of the intestinal coils, and by the gradual attenuation of the tunics of the small intestine. The large bowel is protected in the loin and hypochondriac region. Its contents, which are usually of a semi-solid or solid consistency, militate against injury, while we know that the fluid contents of the small intestine play an important rôle in rupture.

#### MECHANISM OF INJURY.

Speaking in a general sense, blows directed above the level of the umbilicus are unlikely to cause intestinal injuries. There are certain accidents which should invite suspicion of rupture. Thomas Bryant has well said:

When an individual has been run over, the wheel passing over the abdomen or back, or has had a kick from a horse, a fall from a height, or a crush between two obtuse bodies, there is a great probability of injury to some solid viscus or laceration of the intestine.

The usual nature of injuries which produce rupture is shown by the 149 cases of gastrointestinal involvement collected by Chavasse; 36 were due to kick of a horse; 13 were due to kick of man, blows by clubs, etc.; 23 were due to crushing of wagon wheels. It is obvious that we must first consider the force applied in consideration of the mechanism of injury.

We may classify such force into, first, direct; second, indirect. By direct force I mean that the vulnerating body has been applied in the nearest line to the exposed intestines, that is, against the abdominal parietes. By indirect force I have reference to an impulse conveyed to the intestines by an impact directed on the buttock or the lumbar region. Again, we can classify such injuries in regard to the nature of the applied force into, 1, percussion; 2, compression. Strictly speaking, the great majority of cases of traumatic rupture of the intestine are due to compression, although there is only one vulnerating body. A blow is administered on the abdominal wall, but the rupture is due to the compression between two solid bodies; that is, the vulnerating force and the vertebral column behind or the bony pelvis. This is substantiated by Makin's observation that intestinal ruptures are found most often in that portion of the intestine which is low in the pelvis. There are undoubtedly ruptures produced in the true sense of percussion, that is, the impulse of the blow might cause violent momentary vibrations in a coil of intestine over-distended with fluid contents, and thus cause a rupture. This supposition is supported by the fact that in the great majority of cases the rent in the bowel is at the convex surface, diametrically opposite the mesenteric border. All cases of rupture produced by indirect force would be effected in this manner.

In a careful search of the literature several years ago, I found only 2 well authenticated cases of rupture produced in this manner, both of which were published in 1902. Dr. J. F. Bottomly reports a case in which a patient was struck in the back below the left shoulder blade by an approaching wagon. Operation showed a perforation of the first portion of the jejunum. Westbrook describes a case in which a wagon-pole struck a man in the lumbar region. Autopsy revealed a rupture at the junction of the duodenum and jejunum large enough to admit two fingers. In my practice I had a case illustrative of an injury to the intestine, which was produced in a unique way, and shows the possibility of a force of small degree directed on the buttocks, capable of producing intra-abdominal laceration.

The patient, a young woman, aged 26, of previous good health, while hurrying into her house to escape a thunderstorm, slipped and fell, striking the ground on the right buttock. She had partaken of a hearty supper. No immediate alarming symptoms were noticed, and the patient retired as usual. Several hours later she awoke with severe abdominal pains, and the usual symptoms of a perforative peritonitis. Operation revealed a small perforation, about the size of the little fingernail, on the convex surface of what appeared to be the lower portion of the jejunum. The patient made a perfect recovery.

The state of the abdominal muscles at the time of injury plays an important rôle in intestinal injuries. A blow delivered on a rigid abdomen loses considerable of its force; while an impact directed against the same structure in a relaxed state is transmitted directly to the underlying intestinal coils, and enhances the liability of a rupture.

This assertion has been demonstrated beyond a doubt by the beautiful experiments of Eichel. He first made a series of experiments on dogs, profoundly etherized. The animals were placed on the back, the extremities being tied and extended. A forcible blow was struck on the abdomen with a heavy club. The experiments were all negative, laparotomy showing the intestines intact and only slight extravasation in the tissues of the abdominal wall. The same experiments were performed on dogs which had been over-fed for two days in advance, but the results were also negative. In another series of experiments the hind legs were loosened before the stroke. In the first experiment the blow was delivered too high, producing a rupture of the liver. The stomach wall was also the seat of suggillation. In other experiments a hammer was used instead of a stick to produce the trauma and rupture was almost invariably produced. Experiments were also made by striking the lumbar region, the intestines having previously been insufflated with air through the rectum, but no rupture of the intestines was produced. Chauveau maintains that the reverse is the rule. He claims that contraction of the abdominal muscles diminishes the abdominal cavity, and also immobilizes the intestinal coils, and thus favors rupture. This argument, however, should bear no weight, as it stands simply as a personal conviction, or, rather, an hypothesis, while Eichel's opinion rests on the firm basis of experimental research.

Other conditions may predispose to injury, such as adhesions, alteration of intestinal walls, old reducible hernia, in which the intestinal walls have been weakened by pressure. There has been much discussion as regards gaseous distension facilitating rupture. In 1875, Longuet claimed that the elasticity of the gas was unfavorable to rupture, while liquid distension favored it. This theory was accepted by Mugnier. The hydrostatic pressure of intestinal fluids is evidently the cause of rupture in cases produced by indirect force. That gaseous distension would act as an elastic cushion seems plausible.

#### PATHOLOGY.

From a pathologic standpoint, we can divide these injuries into, 1, contusion; 2, rupture; incomplete and complete. Contusions may be of all degrees, either a simple interstitial ecchymosis, or a submucous infiltration; or else there may be an infiltration through the entire thickness of the intestinal coats. The contused surface is more or less rounded or oval, and the long diameter is usually in the long axis of the bowel. The color of the ecchymotic area depends on the amount of



infiltration, and is usually white or yellow. The surface is denuded and covered by an exudate. Sometimes different areas of contusion are found in the same intestinal loop, or in different loops in the same region. Contusion probably is often produced and causes no untoward symptoms. There are, however, cases on record in which, after an injury, the patient progressed well for days or even weeks, when suddenly symptoms of a perforative peritonitis arose, and the autopsy revealed a perforation. At the time of the accident a contusion was produced, which in time became the seat of an infection; or else by reason of an interference with circulation a necrosis resulted which compromised the integrity of the intestine.

Thomas Bryant reports two cases of delayed rupture. One progressed favorably after the accident until the nineteenth day, when the patient died. Necropsy showed perforation of the duodenum, and an ulcer on the posterior wall of the stomach. In the other case there was a perforation on the fifth day. Autopsy demonstrated a perforation of the ileum 4 inches above the cecum.

Incomplete ruptures, when one or two of the tunics are torn, in all probability are frequent; as far as pathologic investigation can be pursued, however, they are supposed to be rare. In a case observed by Jobert, in 1825, ecchymotic spots were found in the small intestine, and a rupture of the longitudinal fibers of the colon discovered. Poland reports 2 cases of such ruptures in the stomach, in one the mucous membrane, and in the other the peritoneal coat. Complete ruptures, in which all the tunics are ruptured, are more often brought to view on the operating table and in the post-mortem room. Chavasse, in 149 cases, found this condition 14 times, duodenum 1, junction of duodenum and jejunum 3, jejunum and ileum 10.

Complete ruptures are usually single, but may be multiple, especially following the kick of a horse. Moty claims that there are often two perforations corresponding to the two lateral extremities of the horseshoe. It is a marvelous fact that a contusion of sufficient intensity to cause a complete rupture does not often injure other viscera, for Coull Mackenzie, in 111 cases, only found 2 with accompanying injury to the spleen and liver. The rent in the intestine always occupies the point diametrically opposite the point of the mesenteric insertion. It is sometimes a clean-cut wound, and sometimes the border is ragged and irregular. Leakage after rupture can be entirely prevented by means of two factors.

We must remember there is no abdominal cavity in reality, the whole of the visceral contents being so closely and equably brought into contact by the pressure of the abdominal muscles and diaphragm that considerable force is required of the intestinal contents to overcome this. The influence of the pressure of the abdominal muscles on the intestinal contents is well-known clinically, because if an injured coil of intestine protrudes from the abdomen devoid of the intra-abdominal influence, extravasation takes place much more readily. The intrinsic contractility of the intestinal tunics is another inhibitory agent against extravasation. Travers, long ago, pointed out that in a puncture of the gut, or even an incision, two or three lines in length, an eversion or prolapsus of the mucous membrane takes place, and hermetically seals the opening. If the aperture is more than four lines in extent, the protuberant mucous membrane is incapable of protect-

ing the perforation. The protrusion of mucous membrane is due to the retraction of the longitudinal fibers. There is also contraction of the circular muscular fibers around the protruded mucous membrane, according to Jobert; thus, temporarily at least, preventing extravasation. Even in extensive complete rupture there is little likelihood of visible fecal extravasation, for Makins, in an exhaustive report of 20 cases, in St. Thomas' Hospital, London, found no appreciable escape of fecal matter.

#### KIDNEYS.

The kidney will next be considered, although, in the true anatomic sense, it is not an abdominal viscus, as it is extraperitoneal. It is a loosely suspended organ, and is fairly well protected. Herzog found 16 spontaneous injuries in 7,805 autopsies. Maas, in 1878, was able to collect only 71 cases. In 1896 Küster presented 306 cases, of which 241 were free from other complications. Keen studied 118 cases since 1878. Güterbock, in 1895, reported 326 cases (males, 262; females, 64).

In view of the foregoing statistics, it is at once apparent that this injury is fairly frequent. These injuries are of most frequent occurrence during the second and third decade of life, and 94 per cent. occur in the male sex. The greater exposure which men must meet in their daily vocation accounts in a great degree for this marked difference in frequency between the sexes; but Küster, who has given this subject such great study, offers an explanation by reason of anatomic difference between the two sexes. The broader iliac crests and the thick layers of panniculus adiposus, characteristic of the female, Küster thinks gives protection to the kidney. The female mode of dress, to my mind, is also an additional safeguard, especially the corset, which must make this organ secure against trauma.

The right kidney is most frequently injured. Küster, in 272 cases, found right kidney, 142; left kidney, 118; bilateral, 12. The usual mode of violence is a blow from the side or behind, or a crushing injury between two resisting bodies. Edler, in 90 cases, gives the following causes: Crushing injury, 30; falls, 28; run over, 13; blows, 9; shell contusions, 4; unknown, 6. Rarely the kidney may be damaged by a force, administered at a distance; such as lifting heavy weights, or a fall on the buttocks. These latter injuries are supposed to be due to jamming. Le Dentu ascribes it to contrecoup, as in the brain.

The mechanism of injury in most cases is due to bending, or fracture of the lower ribs, and the kidney is forced against the transverse processes of the vertebræ. Fracture of the ribs occurs occasionally. Küster found this complication 14 times. Küster speaks of the hydraulic force and he has made some experiments which make his assertions plausible. Kidneys removed from animals were thrown to the floor and the injury produced was slight, but where the renal vein and artery were ligated and the pelvis of the kidney and ureter distended and tied off, and the kidney then allowed to fall to the floor, there was a far greater degree of injury. Hydraulic pressure causes bursting, therefore, a rent from the pelvis outwards.

Güterbock believed the force applied caused pressure at the poles of the kidney and thus produced a transverse rupture. The majority of rents are found in the direction of the transverse axis, and are most marked near the middle of the organ, which is the narrowest and weakest. The tubules run in a lateral direction, the kidney substance would therefore give away in the line



of least resistance. Francis S. Watson, who analyzed 650 cases of subparietal injury of the kidney, maintained that when a single intraperitoneal organ was injured in association with laceration of the kidney it was always on the same side. The pathologic condition produced is in direct ratio to the degree of the vulnerating force applied. There may be a tear of the fatty capsule with an infiltrating hematoma around the gland, or, moreover, the peritoneum may be torn. Küster, in 251 cases, found the peritoneum injured 14 times. This is most likely to occur in children under ten years of age, because the perinephric fat is not developed and the anterior surface of the kidney is separated from the peritonæum by only a delicate fascia. Death occurred in 6 out of 7 cases in the Maas statistics.

Confusion may cause effusion of blood underneath the capsule and which, of course, is very limited. There may be laceration of the kidney substance without implicating the pelvis. A tear into the pelvis of greater or less degree is an injury of serious aspect. There is hemorrhage into the fatty capsule; thence into the retroperitoneal space along the large intestine, mesentery, spermatic cord, to the inguinal ring, scrotum, labiæ, pelvis or abdominal wall. Urine follows and leads to a gangrenous inflammation or a perinephritic abscess; especially is this the case if a blood clot occludes the ureter. If the kidney is crushed into fragments, gangrene must surely follow, and if the integrity of the renal vessels is interfered with, the patient succumbs, unless immediate surgical measures are adopted.

Morris asserts that there may be extensive effusion around the kidney, with little evidence of injury to the kidney itself; while, on the other hand, the kidney may be almost reduced to a pulp, with little or no extravasation into the surrounding structures. The ability of the kidney to maintain functional capacity and also remarkable regenerative power has been shown experimentally and clinically. A hematoma in the renal region is very prone to become infected, causing a pyonephrosis, perinephritic or paranephritic abscess. Subparietal injury of the ureter is rare. Le Dentu found record of only 20 cases in 10 years. There are only a few authenticated injuries of the ureter. Cases have been reported by Barker, Stanley and Poland. The most frequent cause is the passage of a vehicle across the body. The mechanism of the injury is probably produced by the forcible stretching of the ureter over the transverse process of the first lumbar vertebra, as the injury is most frequently situated near the kidney. There would be retroperitoneal effusion of both blood and urine and septic peritonitis if the peritoneum is injured. A remote result may be hydronephrosis due to cicatricial contraction at the seat of injury.

#### BLADDER.

This subject has been treated in a masterly manner many decades ago by Dr. Harrison, of Dublin; Houel, of Paris, and Stephen Smith, of New York, and more recently, in 1884, an exhaustive monograph was published by Walter Rivington. In studying rupture of the bladder, two conditions must be taken into account, the state of the bladder wall, whether normal, or the seat of previous disease or degeneration; and also whether empty or distended.

This accident is most frequent during young adult life, and it is astonishing when we consider how much more frequently this accident occurs in males. Stephen Smith collected 78 cases, in 67 of which the patients were men. This difference in ratio is not probably due

to greater exposure altogether, but was anatomically explained by Dr. Harrison in the following manner:

1. Greater size of female pelvis. 2. The bladder inclines more forward and enlarges transversely. 3. The uterus and its folds break the shock of violence, and prevent direct concussion against the sacral promontory. It is a popular anatomic notion that the bladder is more capacious in the female than the male, but, according to Quain, made on the authority of Henle and Luschka, the female bladder is decidedly smaller, but of different shape, being wider transversely and shorter from apex to base. In Smith's 78 cases, 48 were due to direct violence; 15 concussion of body; 4 parturition; 1 retroversion of uterus; 4 stricture of urethra, and cause not specified in the rest.

Alcohol has a double influence in the etiology of this injury. It causes an increased secretion of urine and a quick distension of the bladder. It blunts the sensitiveness of the mucous membrane and the call to micturate is so feeble that it is disregarded by the individual and the distension is allowed to increase. Secondly, the abdominal muscles are so relaxed that they offer no resistance to a blow. Houel, in 41 out of 107 cases of intraperitoneal rupture, distinctly specified or implied that the patient had been drinking alcoholic liquors freely or was actually drunk at the time of the accident. Strictures and enlarged prostate extending over a long period of time have caused such a morbid condition of the bladder that rupture is greatly facilitated. When laceration takes place in consequence of inordinate accumulation of urine, due to prostatic hypertrophy or obstruction of the urethra, there is degeneration of the muscular coats, and under such circumstances a trivial exertion, such as vomiting, sneezing or micturating, may cause rupture.

Assmuth reports two cases in which the bladder was ruptured, owing to lifting heavy weights. This may also happen during labor. Sasie, Mercier, Liston, Howship and Field report cases of rupture due to hypertrophied prostate. The pressure of the diaphragm and abdominal muscles under such circumstances on the overdistended viscus, is equivalent to a severe blow on the hypogastric region. Houel describes a condition applicable to a small group of so-called spontaneous ruptures. It is the presence of pouches of mucous membrane passing out through intervals between the muscle fibers. The supplementary pouches were studied by Cruveilhier, who called them tunicated or tunicary herniæ. When large, the pouches have been taken for multiple bladders.

Distension is one of the main factors. It is doubtful if the empty bladder is ever injured, except in case of fractures of the pelvis. Rivington, in 110 intraperitoneal ruptures, had distinct evidence that the bladder was full in 55. In some of the others, the patient is described as drunk; while in the rest no mention is made. A slight blow on the anterior abdominal wall, when the bladder is full, makes pressure on the posterior pelvic brim. As regards the actual mechanical force, Bartels gives three possible causes: 1, blows received in the region of the bladder; 2, fall from a height; 3, pressure of some heavy body over the pelvis. Autal mentions a fourth class due to artificial distension. The first is the most usual, however, that is, a direct blow.

Guyon claims that ruptures which are caused by artificial distension take place by reason of the hypertrophic muscles, contracting in conjunction with distension,



thus causing rupture. Dittel showed that in artificial inflation with air in the cadaver rupture was almost always intraperitoneal. If the bladder was distended with water, 50 per cent. were intraperitoneal. Of 8 cases reported in actual practice, 7 were extraperitoneal and 1 intraperitoneal. Of 78 cases due to all causes, reported by Stephen Smith, 50 were intraperitoneal. In 169 cases of Bartels, only 49 were extraperitoneal. Because of the intimate relation of the bladder to the pelvis, naturally the former is often ruptured in fracture of that part. According to Bartels, in 179 cases of rupture, fracture of the pelvis was present 109 times; os pubis, 27; ischium, 12; ilium, 9; sacrum and pubes, 5; symphysis pubis loosened, 22; sacroiliac synchondrosis loosened, 10; fracture not determined, 11; fracture multiple, 30. King, Howship and Malgaigne each published a case occurring in a fetus.

The majority of tears of the bladder are intraperitoneal and situated in the posterior wall, which is in accordance with the physical principles of the resolution of forces. Morbid anatomy teaches that the rent may pursue a vertical, transverse or oblique course. In the majority of instances the aperture has been found to extend from the attachment of the urachus through the posterior wall of the organ, involving not only its proper tissues, but the peritoneal covering as well. The extraperitoneal ruptures are situated in the anterior wall. In the so-called idiopathic cases the rent is small and often circular, coinciding with pathologic tissue; while in genuine traumatic cases it is generally an inch or more in length. Hemorrhage is not as profuse in trauma of this structure, as it is not as vascular as the glandular organs, but sepsis of the most virulent type will follow extraperitoneal wounds and rapid progressive peritonitis is the termination of the intraperitoneal laceration, unless radical surgery follows immediately after the accident.

### *Clinical Notes*

#### CASES PRESENTING SYMPTOMS OF BRAIN DISEASE.\*

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The following cases, illustrating different phases of cerebellar disease, are considered worthy of record:

##### I. A CASE OF HYSTERIA PRESENTING SYMPTOMS OF CEREBELLAR DISEASE.

*Patient.*—A tailor, aged 42, presented himself on account of difficulty in walking a few weeks after the removal of several teeth, one of which was carious, for the relief of swelling of the face. In addition he had suffered fright two weeks previously from having remained for a short time alone in a house in which a close friend had died. The man walked like a drunken person, with a tendency to fall to the right in consequence of a sense of weakness of the entire right side of the body. He had a feeling as though he would fall, and he had difficulty in arising from the sitting posture. The right chest felt as though it were grasped in a vice, and there was pain in the right side of the head. There was tinnitus in the right ear, with impaired hearing.

*Examination.*—The gait was found to be awkward and clumsy, though undistinctive. Station was steady at first, but after a while it became uncertain and finally swaying. The knee-jerks were preserved. Sensibility was less acute on the entire right side of the body, including the face, than on the left.

The dynamometric record was 75 and 77 on the right, 70 and 75 on the left. The pupillary reactions were normal and there was no limitation of the fields of vision, nor any lesion of the eyegrounds. The right ear-drum was retracted, but freely movable. The hearing distance on this side was 3/12, and air-conduction was better than bone-conduction. The left ear-drum also was freely movable. Hearing distance with this ear was 4/12, and air-conduction was greater than bone-conduction. The Weber test was in favor of this ear. There was no sign of inflammatory trouble in connection with the auditory apparatus. The action of the heart was rhythmic and its sounds were clear. The radial artery was somewhat resistant.

*Symptoms.*—The appetite was variable, though mostly poor. Nausea was present, but there was no vomiting. The bowels were moved with difficulty twice or thrice daily, and the stools were sepybalous.

*Diagnosis and Treatment.*—I concluded that the case was probably one of hysteria, and, in addition to prescribing a mixture of aloin, cascara and assafetida, I instituted a course of hypnotic suggestion. Sittings were held every second day and the patient was dismissed well at the end of three weeks.

In this case the disorder of gait, in conjunction with the feeling of unilateral weakness—of which, however, there was no objective evidence—suggested the existence of cerebellar disease, and the tinnitus and impaired hearing an aural origin. There was, however, that about the patient which suggested hysteria, and this suspicion was strengthened by the absence of evidence of organic disease and it was established by the results of treatment.

##### II. A CASE PRESENTING SYMPTOMS OF INTRACRANIAL TUMOR, WITH RECOVERY.

*Patient.*—A huckster, aged 30, married, first seen January 15, 1906, complained of having been sick for one week, with vomiting, anorexia, bad taste, headache and vertigo. The patient drank tea and coffee sparingly, while of beer he took several glasses and of whisky one drink daily. He had never indulged excessively in alcohol, although he was a large eater. He had never used more than small amounts of tobacco. He gave no history of traumatism, and he denied venereal infection. He had had scarlet fever at the age of 12. The family history presented nothing noteworthy.

*Examination.*—Gait and station were ataxic, and the man was unable to get about. Knee-jerks, Achilles tendon jerks, and plantar reflexes were all preserved. The grasp of the hands was fairly good. The patient thought his vision impaired, but no objective evidence of ocular disturbance could be obtained. The action of the sphincters was unaltered, and the bowels moved regularly. The tongue was heavily coated. There was no cough, and heart, lungs, liver and spleen presented no abnormality. There had been loss of weight to the extent of fifteen pounds. The pulse was 68 and the temperature was 98°. There had been bleeding from the nose two weeks previously. On further inquiry the patient stated that he had vomited every morning for a year until one week before I saw him. He had, however, not suffered from headache previously, nor from vertigo. The headache was diffuse in distribution, and there were no mental changes.

*Treatment.*—The existence of a tumor of the brain was suspected, and laxatives, together with sodium bromid (gr. xv every three hours) and potassium iodid (gr. xv thrice daily, gradually increased), were prescribed.

*Subsequent Examination.*—Two days later tenderness of the scalp in the right parietal region was elicited on percussion. The knee-jerks were preserved. Station was unsteady. The patient leaned toward the right, and felt a tendency to fall in this direction, although occasionally he would fall also to the left. He had great difficulty in walking, although there was no steppage gait. The patient now attributed to vertigo the impairment of vision previously complained of. He felt better generally and he was somewhat drowsy. Headache and vertigo persisted in unchanged degree, but vomiting was less. There had never been loss of consciousness or convulsion.

\* Patients demonstrated and paper read before the Philadelphia Neurological Society, Dec. 21, 1906.



On January 19 the dynamometric record was 115 and 105 on the right and 65 and 60 on the left. It was now noted that the knee-jerk was less active on the left than on the right, and the patient stated that he had been aware for three or four days that the left side of his body was weaker than the right. Three days later he was seen with me by Dr. C. K. Mills and Dr. W. W. Keen. He now spoke definitely of weakness of the left upper and lower extremities. On examination no paralysis of any ocular muscle or of the associated movements of the eyes or of the facial, temporal, pterygoid or masseter muscles, or of those of the tongue or the mouth could be discovered. Nearly all of the movements of the left upper extremity were preserved, and they were executed almost as well as on the right, except perhaps for some weakness of movement in distal parts. There was distinct ataxia in the left upper extremity, as tested by approximation of the finger to the nose and to objects of small size. In the left lower extremity also all movements were preserved, although those of the foot were a little awkward. The test of bringing the heel to the knee was well executed. The knee-jerks were preserved, that on the left being the more marked. Slight ankle-clonus also was present on the left, soon, however, disappearing. The entire left lower extremity was ataxic. Station was good. The patient was able to stand on the right foot only with great difficulty and on the left foot with even greater difficulty. There was no Babinski phenomenon on either side, and plantar flexion of the toes was observed once on the right. There was no metatarso-phalangeal response, but marked dorsal flexion of the feet on both sides. The stereognostic sense was preserved and there was no loss of sense of posture or of touch or of pain or of localization. There was no hemianopsia on either side. There was some mental sluggishness. The patient stated that his condition was unchanged, the headache and vertigo being as bad as they had been, although there had been no vomiting for six or seven days. He was constantly drowsy and he slept well. In addition to the treatment already mentioned mercuric chlorid (gr. 1/24 thrice daily) was now prescribed.

On January 26 the patient thought his headache less, and that the left hand was not so weak as it had been, but he still walked with difficulty. He was constantly sleepy. The knee-jerk was distinctly more marked on the left than on the right, but there was no ankle-clonus and no Babinski reflex.

On February 2 the patient reported that he was still better than he had been. He walked better. His head felt better, and his headache was less, the pain now being referred to the vertex and varying in situation. There was less vertigo and the eyesight was thought to be improved. There was, however, no improvement in the power of the left upper extremity. The knee-jerk at this time was increased on the right, and even more so on the left. Slight ankle-clonus could be elicited on the left, but none on the right. The Achilles tendon jerk also was more pronounced on the left than on the right, but no plantar reflex could be elicited. The dynamometric record was 145 and 122 on the right, and 100 and 75 on the left. In standing the patient held his feet some distance apart, and his station was merely a little uncertain with the feet in apposition and the eyes open or closed. The gait was clumsy and uncertain, the feet being held some distance apart. The patient was now able to stand fairly well on his right foot and somewhat less well on the left foot. He exhibited a tendency to turn his head toward the left. The pupils were full, equal, regular, reactive to light and in accommodation. Ophthalmoscopic examination disclosed only some distension of the retinal veins.

On February 9, the dynamometric record was 137 on the right and 102 on the left. Station and gait were improved. The pupils were normal. Coördination was not so good in the left upper extremity as in the right. The plantar reflex was normal on the right, increased on the left. There was no Babinski reflex. The ankle-jerk was increased on the left, but there was no ankle-clonus. Vertigo was still present, though in much slighter degree than it had been. There was no headache, and drowsiness was less marked, while sleep was good. The upper and lower extremities on the left side were still slightly enfeebled.

On February 16, the patient was walking better. He still

held his feet some distance apart, but he walked with a sense of greater security. He stood well, with feet together and eyes open or closed. He had no headache and less vertigo. Drowsiness had disappeared, and he was gaining power in the left arm and leg. The pupils were normal. The knee-jerk was still increased on the left and normal on the right. The Achilles tendon jerk was slightly more marked on the left than on the right. A slight plantar reflex was present on both sides. The patient was now able to walk about the distance of a block, when he was compelled to desist on account of vertigo, which, however, was absent in the sitting posture.

On February 23 the vertigo was practically gone. There had been headache for three days at the vertex. The upper and lower extremities were still weaker on the left than on the right. The left hand felt heavy. There was no undue drowsiness. Memory, eyesight and hearing all were good. The dynamometric record was 147 on the right, 130 on the left. The knee-jerk was normal on the right, enfeebled on the left. The Achilles tendon jerk was normal on both sides. Station was still a little swaying.

The patient continued to improve, although some weakness on the left side of the body persisted and he suffered from headache now and again. In June he began to do some work and he gradually increased the amount up to three days a week. During most of the time he took mercuric chlorid (from gr. 1/24 to gr. 1/12 thrice daily) and potassium iodid (from gr. xv to gr. 1/50 thrice daily).

The early symptoms in this case—namely, vomiting, headache, vertigo and ataxia—at once suggested the possibility of a new growth involving the cerebellum. The subsequent development of left hemiparesis, with increase in the reflexes on the affected side, bespoke invasion of the motor tract on the right side. The absence of convulsions, of perturbation of consciousness, of sensory disturbance, of astereognosis, of mental derangement, pointed to freedom of the cerebral cortex, while the absence of changes in the eyegrounds and of palsy of ocular muscles and the escape of other cranial nerves indicated that the lesion must have been one of small dimensions. The afebrile course of the illness seemed to exclude an inflammatory process. The results of treatment raised the question of a possible syphilitic infection, while the drowsiness—which seemed greater than could have been due to the bromids administered for the relief of the intense headache—pointed in the direction of meningitis or arterial disease.

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## RUBBER TUBING AS A PERCUSSION HAMMER.

A NEW METHOD OF PERCUSSION.

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It may seem presumptuous to offer anything new in a field which has been so thoroughly tried as that of percussion, yet I offer what I believe to be a new method and one that possesses superior advantage over methods in common use.

Instead of a percussion hammer or finger with which to percuss the chest, I use a piece of rubber tubing, four or five inches long, and deliver the stroke directly on the surface of the chest. It makes a difference in the sound elicited whether a soft elastic tube or one with rigid walls is used; the former gives more or less of a dead sound, while the latter emits a note. The tubes which I have found most useful are a soft flexible tube with a lumen of 3/16 inch and walls 1/16 inch and a piece of ordinary tubing such as is used on douche



bags, with firm walls, not too thick, and a lumen of  $\frac{3}{16}$  inch.

The great difficulty with ordinary methods of percussion is that we rarely elicit the simple tone which should be produced by the underlying tissues, but obtain this tone plus that emitted by the vibrations of the bony thorax. With the use of the rubber tubing there is no noticeable thoracic resonance. The density of the underlying tissue can be determined readily both by the ear and by the sensation of resistance which is transmitted to the hand. When tubes with firm walls are used a tone is transmitted which changes with the density of the underlying part.

This is a valuable method of outlining the heart, the



Fig. 1.—New method of percussion by rubber tubing.

relative and absolute dulness being easily differentiated. Different degrees of infiltration and density in the chest are also easily detected, making this method of value in examining tuberculous chests.

One advantage is that the stroke may be made across the ribs as well as parallel to them, because it does not set the chest wall into vibration. Like all forms of percussion, it is most valuable where the least tissue intervenes between the skin and the part percussed, and is less satisfactory over the fleshy parts.

Perhaps a smaller, more definite area can be examined by the old method in which the finger or other pleximeter is used, and yet when we consider that we can use



Fig. 2.—Soft flexible tubing, with dimensions shown.

this method across the ribs as well as parallel to them and can percuss the parts immediately under a rib or under the sternum without setting the bony thorax into vibration, it is doubtful whether the supposed advantage is not more apparent than real. I find also that with practice one becomes expert with this method.

I have been using the method for over six months and have checked it with ordinary percussion, auscultatory percussion, auscultatory strokings and Ebstein's touch percussion. I find it very accurate; in fact, I can often elicit differences by this method that have been passed unnoticed by others.

While the old argument in favor of finger percussion, that one always has his fingers with him, still holds good, yet I believe this method is one of greater precision and believe it will pay one who appreciates exact methods to try it.

## ABSCESS FOLLOWING ABORTION.

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This case is reported as illustrating both the serious results that may follow an abortion and the surgical importance of the omentum.

*History.*—Mrs. H., Mexican, age unknown, mother of five children. Family and personal history negative. I first saw the woman June 22, 1906, when she complained of severe pain in hypogastrium. She had had a spontaneous abortion, following a family fight, six weeks before, and had been more or less sick since. She had had no movement of the bowels for four days; temperature was 102.5 F., pulse 110. Her tongue was badly coated and breath fetid. Urination was frequent and she had vomited once just before my arrival, but the vomitus was not saved. I found the patient on the floor on a blanket.

*Examination.*—There was no abdominal rigidity and only slight tenderness just above the pubes. Bimanual examination disclosed a slightly enlarged uterus, in normal position with the cervix soft and the os not patulous. Ovaries and tubes were negative. There was a slight yellowish discharge, but no bad odor.

*Diagnosis.*—Endometritis, following abortion.

*Treatment.*—A saturated solution of magnesium sulphate every hour in two dram doses until the bowels moved freely. Codein sulphate, gr.  $\frac{1}{4}$ , every three hours for pain.

The following day the patient was much better; there was free catharsis, temperature 99.5 F., and the pain was almost gone. There was no tenderness.

*Second Examination.*—I was discharged, but four days later was recalled and found the patient very sick with a temperature of 103.8 F. and a pulse of 130. There was severe general abdominal pain with the facies abdominalis. A large tumor mass was seen in the left half of the abdomen, apparently rising out of the pelvis, hard, non-movable, rounded, and the size of an adult head. There was dulness over the tumor. The left rectus was rigid over the tumor and lax above it. There was a smaller irregular tumor mass on the right side; also apparently from the pelvis; it was hard to outline and gave a flat note on percussion. The right rectus was very rigid. Bimanual examination revealed a fixed uterus with slight enlargement. There was bulging of the cul-de-sac of Douglas. Blood count showed leucocytes, 28,000. The patient was ordered removed to the Calumet Hospital.

*Operation.*—This was performed the same afternoon, with the assistance of Drs. Hickman, Tuttle and Lund. A median incision was made extending from the pubes to above the umbilicus. Immediately on opening the peritoneum there was a gush of pus and fecal material, of which about three quarts were removed. After thoroughly sponging out the cavity the following condition was found: The uterus was bright yellow in color, slightly enlarged, and in normal position. The tubes were apparently healthy, except for the peritoneal coat which shared in the surrounding peritonitis. The sigmoid was the only gut in the cavity. The upper wall of this large cavity was formed by the omentum. The large tumor mass to the left was the small intestines, held up by the omentum, which had curled around and below them, and attached itself to the posterior abdominal wall, holding them up and away from the infected cavity. The cecum and appendix were also covered. The rupture in the gut was evidently in the sigmoid, as this was the only gut in the cavity. However, the opening could not be easily found and as the woman's condition was serious we did not search long. A puncture wound was hurriedly made through Douglas' pouch and a long fenestrated rubber tube carried through, allowing the lower end to project from



the vagina. The upper end was brought out of the lower end of the abdominal wound. The cavity was packed lightly with gauze strips and the wound closed from above downward with "through and through" stitches of silkworm gut, leaving the last stitches untied. The tube and gauze projected through the opening thus left. The patient was put to bed in the Fowler position. The wound healed nicely and the patient made an uninterrupted recovery, leaving the hospital at the end of the fourth week. At the present time her health is perfect and she is now six months' pregnant.

The remarkable and fortunate feature of the case was the excellent protection given by the omentum. It is my belief that the sigmoid was at first adherent to the uterus and the point of adhesion sloughed, thus causing the perforation.

## SPINAL INJURIES.

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Four cases of severe spinal injury have come under my observation in recent years, with about the usual result. Of this number two patients sustained a fracture in the middorsal region causing a complete crushing of the cord and as a consequence proved rapidly fatal in twenty-four and thirty-six hours, respectively. The third case (Case 1) presents some points of interest.

CASE 1.—A miner, aged 45, was working on a platform which gave way, precipitating him some distance. His spinal column was forced into a position of extreme flexion, being wedged in a narrow space during the 20 minutes required to free him from the débris.

*Symptoms.*—There was considerable shock and also pain on pressure at the dorso-lumbar junction, though no evidence of displacement or of fracture of the vertebræ was found. Both sensory and motor tracts of the cord were implicated, there being complete paralysis below the point of the lesion. Reflexes were absent; sensation, however, was not entirely lost, the girdle symptom being the only expression of distress manifested by the patient.

*Treatment.*—Laminectomy was suggested but not urged, its utility being a matter of doubt from the extent of the injury and its probable results. The patient preferred to take the chances of expectant treatment rather than to submit to an operation. A plaster jacket was applied, which served to relieve some of the minor symptoms. The usual complications, namely, retention of urine and decubitus, fortunately, were not encountered, an immunity rarely observed in similar conditions. The patient was under treatment for one year, when he removed to a distant state and was lost sight of. His general health was good, but the paralysis of the lower extremities remained as complete as when first noted, absolutely uninfluenced by treatment or time. It would be interesting to know whether an early operation would have added anything to his chances of recovery or the reverse.

Case 2 is an example of injuries to the dorsal region.

CASE 2.—A laborer, aged 25, fell backward from a trestle 25 feet in height, the upper and posterior part of the trunk coming in violent contact with the ground.

*Symptoms.*—There was no loss of consciousness but immediate and complete paralysis of the lower half of the body was noted by the patient on his first attempt to move. Pain over the epigastrium accompanied with nausea was marked and was rendered more intense by digital pressure over the sixth dorsal vertebra, where a slight ecchymosis existed. An ecchymosed and sensitive area over the posterior angles of the ninth and tenth ribs on the right side, together with bloody expectoration, led to the inference that there had been a fracture of these ribs, with contusion or wounding of the lung. The full extent of the injury could not be determined by a hasty and superficial examination. All movements being pain-

ful, further manipulation was avoided. The patient was transported three miles in a wagon, causing him extreme suffering. Treatment was first directed to the relief of pain and shock; later a leather splint was molded to the back and retained in place by a broad canvas board. Retention of urine necessitated the use of a catheter. The man was subsequently removed to a hospital and placed on a water bed. A gangrenous spot appeared over the sacrum as early as the fourth day, increasing in extent until that bone was laid bare after separation of the slough. Repeated trials were made to obtain a radiograph of the injured portion of the spinal column, but with indifferent success, owing to the impossibility of securing a favorable position for the exposure. Enough was gained, however, to exclude fracture or dislocation of the vertebræ. Examination of the reflexes at this time showed entire absence of sensation in all parts below the distribution of the tenth dorsal nerve. There was also partial anesthesia in parts supplied by both ulnar nerves without impairment of motion, indicating that the lower part of the cervical enlargement of the cord had been interfered with to some extent. An acute cystitis and a large, sloughing sore contributed to lessen the chances of recovery by the tendency of the former to induce kidney complication, and the latter furnishing an open door to infection.

*Operation.*—On the eleventh day succeeding the injury a linear incision was made from the sixth to the ninth dorsal vertebra and the laminae of the intervening vertebræ were removed. A large clot of blood was found in the spinal canal, the result of profuse extradural hemorrhage. About 4 inches of the cord was exposed, its membranes were found intact and presenting a normal appearance. Mechanical irritation of the exposed portion of the cord caused jerking of the limbs, more pronounced in the left, thus demonstrating that motor conduction was possible through the part supposed to be injured.

*Post-operative History.*—The operation did not seriously affect the patient; on the contrary, he stated that he felt much relieved, the girdle sensation was eliminated and the anesthetic area diminished. The passage of the catheter now caused some pain for the first time. Twenty-four hours later he could feel the hand placed on the abdomen and along both thighs, and could even distinguish the different toes when forcibly grasped. These encouraging signs, so promptly manifested, were considered favorable to the ultimate restoration of the functions of the cord. Contrary to expectation, no further improvement was noted, the limbs became atrophied and a gradual and progressive emaciation of the whole body, so commonly observed in spinal lesions, followed. The case went on for a month without anything worthy of record, the operative wound healed and the parts over the sacrum showed evidence of healing. Retention of urine had not been relieved. At the beginning of the fifth week there was a rise in temperature, preceded by a chill, with pain at base of right lung. These symptoms were thought to be due to a hypostatic or traumatic pneumonia. The patient's condition was critical for three weeks, when improvement was noted; the cough abated, appetite returned and there was a decided gain in flesh. This respite proved to be but temporary; the lung symptoms returned with greater severity, finally terminating in gangrene of the affected lung. Death occurred three months after the injury.

There was nothing to prove or disprove the wisdom of surgical interference in this case. Perhaps something was gained by the removal of the extradural clot, but so far as the cord itself was concerned enough time had not elapsed to demonstrate any permanent benefit.

*Peritoneal Tuberculosis.*—Dr. Lewis S. McMurtry asserts, in the *Cleveland Medical Journal*, that the symptomatology of peritoneal tuberculosis is so varied that, in its several stages and with diverse local and systemic manifestations, the diagnosis is most difficult, and in some instances impossible. This is especially true of cases other than those associated with pulmonary tuberculosis; and other than those seen late in which the clinical history is available, and in which advanced lesions afford characteristic clinical significance.



## PANCREATIC TREATMENT OF CANCER, WITH REPORT OF A CURE.

RICHARD A. GOETH, M.D.

SAN ANTONIO, TEXAS.

When the first reports of the treatment of cancer with trypsin appeared I was greatly interested, as I had a patient with a large, rapidly growing tumor on the side of the neck. The condition was inoperable.

At first I used solutions of the trypsin powder, making sterile solutions of it and injecting them, but abandoned them as soon as I got the injectio trypsin, put up by Fairchild Brothers. I found that the directions for the treatment as published in *THE JOURNAL*<sup>1</sup> by Dr. John Beard, the discoverer, cover every detail. Though the injections of trypsin were rather painful, I used injections of cocain in a few instances, but found that they did not diminish the pain materially.

**CASE 1.**—This patient was a man with a large vascular tumor, undoubtedly a sarcoma, on the side of the neck. Although the trypsin treatment is supposed to give good results in these cases I failed to check the growth of this tumor, and the patient discharged me to be operated on by another physician. I have learned since that he bled to death the same day he was operated on.

**CASE 2.**—This patient was an elderly woman with cancer in both breasts and secondary cancers in the glands on one side of her neck, preventing her turning her neck. She was too feeble to walk when I started to treat her and she showed no improvement under the treatment. In this case I discontinued the treatment for some time before her death.

**CASE 3.**—This patient was a woman a little over 70 years of age. She had a cancer in the face which had destroyed one eye and extended into the antrum of Highmore and one side of the nose. At first the use of the lotio pancreatis and trypsin increased the size of the lesion in her face to an alarming extent. However, at the end of one month when I began to use the injectio amylopsini alternately with the injectio trypsin she began to improve at once and the lesion in the face began to heal rapidly until the eye cavity and the rest of the wound had a healthy skin over it. I began to treat this patient on Nov. 1, 1906, and continued the treatment until the middle of January, 1907. Her general health has improved markedly and the cancerous cachexia has given way to a healthy color at least as healthy as may be expected for a woman of this age. She is now able to do light housework all day.

**CASE 4.**—This woman, whom I am treating at present, has a cancer in one breast with secondary nodules in both axillæ and around the diseased breast. I began the treatment in this case about the beginning of January, 1907, and have had the same experience as in the previous case, i. e., there has been considerable sloughing of the cancerous tissue, producing a wound a little larger than a hen's egg. Every gland that was infected with the cancer has become intensely inflamed and painful and the entire tumor mass is sloughing away rapidly. I am now using the injectio amylopsini on alternate days with the injectio trypsin and the pain has been greatly relieved.

**Microscopic Findings.**—I had an opportunity to obtain a small piece of the tumor, and sections of this were most interesting microscopic studies. While I am not an enthusiast or a crank on the subject, I have had some experience as a pathologist, and I saw plainly that the cancer cells were broken up so that it was hard to find an entire cancer cell and the stroma of connective tissue was as intact and uninjured as any sound sections of cancer might show it. Therefore, I have reached the conclusion that the pancreatic treatment attacks the cancer cells only, which accounts for the shriveling and contraction of the tumor under this treatment.

**Result.**—This patient is recovering from all the bad symptoms, and I feel sure that it will be my second cure in a short time. Even now I consider her cured, as her general health is improving daily. The patient told me to-day

that she felt much better all the time. However, up to this time she has had no faith in the treatment, and only came to me because the Roentgen-ray treatment had failed completely and her case had progressed until it was entirely inoperable on account of the secondary deposits of cancer.

In every case I have treated the tumor became inflamed as a result of the injections, although I kept the injections as far away from the tumor as possible. I believe the remedy will be used in much larger doses in future, as the trypsin itself is not poisonous and can be injected in indefinite doses into a healthy person. The size of the dose would then only be regulated by the amount of pain it produced in the tumor and the fever and weakness resulting from the reaction and the absorption of disintegrated cancer.

## A CASE OF PRIMARY CARCINOMA OF THE BILE DUCTS, WITH AUTOPSY.

B. O. LE BLANC, M.PH., M.D.

ST. GABRIEL, LA.

**Patient.**—Mrs. H. B., aged 71, a rather spare person, active and energetic.

**History.**—The patient had scarcely ever had a day's sickness in her life up to the present illness. The family history was excellent, except that one sister died of carcinoma of the uterus some years previously. The present illness began with malaise, slight jaundice, and an evening rise of temperature, about 100-101 F. This was treated as an ordinary catarrhal jaundice of malarial origin, but the symptoms gradually grew worse. Dr. A. A. Allain, of Bayou Goula, saw the patient at this time and recognized some serious trouble. I first saw her in consultation with him, then together throughout the case.

**Examination.**—The skin was deeply jaundiced. Heart, lungs and kidneys were normal, but analysis revealed an abundance of bile in the urine. Microscopic examination of the urine showed only bile pigments, no blood. Liver dulness was not much increased in the mammary line and there was but slight tenderness. A distinct, movable mass could be felt in the right hypochondrium which was made out to be a dilated gall bladder. There was another small mass to the left of the umbilicus resembling an enlarged gland. The stools were almost white, showing there was complete obstruction to the flow of bile. The patient became rapidly emaciated, the temperature ran a steady course ranging from 99 to 102 F., and resisted all treatment. A microscopic examination of the blood was made with negative results.

**Diagnosis.**—A diagnosis of cancer of the bile ducts was made. Dr. P. E. Archinard of New Orleans, concurring. The patient gradually sank into coma and died from cholemia. There was no pain at any time, either during or before the illness, that in any way suggested the presence of gallstones. Except for the particular site of the cancer the patient would probably have had a few months' lease of life, but as there was complete obstruction and the cancer was small, the patient had all the symptoms of cholemia. She died within eight weeks of the onset.

**Autopsy.**—The body was emaciated and intensely jaundiced. All the intestinal organs were bile-stained, the gall bladder was much enlarged; a tongue from the liver came down and partly covered the gall bladder. The liver was a little enlarged and colored dark green; it was smooth, showed no metastatic abscesses nor nodular masses. The spleen was very small and shriveled. The contents of the gall bladder were examined. The first fluid escaping was clear, then, as the contents drained, it became dark brown in color and mushy in consistence. The hepatic duct was found to be as large as the middle finger. A mass was found at the entrance of the common bile duct into the duodenum and involving the head of the pancreas and the ampulla of Vater. A piece of the mass examined microscopically proved to be carcinomatous.

1. *THE JOURNAL A. M. A.*, Feb. 17, 1907, p. 544.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(A list of all accepted articles is published on one of the advertising pages of *The Journal* in the first issue of each month.)

(Continued from page 948.)

### iodo-MANGAN.

#### LIQUOR FERRO-MANGANI IODOPEPTONATI "DIETERICH."

Iodo-mangan is Ferro-mangan Dieterich with the addition of 0.45 per cent. of iodopeptone. Iodopeptone contains 15 per cent. of iodine.

The process of preparation is the same as that given under Ferro-mangan "Dieterich," with the addition of a solution of iodopeptone.

Iodo-mangan is a clear dark brown liquid of agreeable odor and taste, and a slight acid reaction.

Method of Valuation: After determination of the percentage of iron and manganese a test method should be employed, as described by Dr. Karl Dieterich in *Helfenberg Annals*, 1901, pages 162-165, to ascertain the percentage of halogens in Iodopeptone: About 0.5 iodopeptone to be thoroughly mixed with a few grammes of a mixture of 1 part potassium nitrate and 2 parts sodium carbonate either in a porcelain or platinum crucible. The mixture is then covered with a light layer of sodium carbonate, covered and carefully heated until reaction sets in. When finished a little potassium nitrate is added to obtain a smooth flux, then the molten mass is exposed to glowheat for about 15 minutes. After cooling it is dissolved in hot water, rinsed into a beaker, filtered, if necessary, acidulated with diluted acetic acid and any iodate reduced with sulphurous acid. The excess of acid is driven off by heat, the liquid strongly acidulated with nitric acid, again heated, until the gas formation ceases, then precipitated while hot with silver nitrate. The silver iodide is collected on a weighed filter, washed with very dilute ammonia water, as the preparation contains hydrochloric acid, dried and weighed.

**Actions and Uses.**—It is claimed to be a reconstructive tonic and blood making adjuvant, with favorable action in all affections of the glandular system.

Iodo-mangan is said to be useful in serofulosis, rheumatism, etc.

**Dosage.**—4 to 16 Cc. (1 to 4 fluidrams), according to age, three times a day.

Manufactured by Chemische Fabrik Helfenberg A. G., near Dresden, Germany. (Reinschild Chemical Co., New York.) No patents. U. S. trademark applied for.

### QUININE LYGOSINATE.

#### CHININUM LYGOSINATUM.

Quinine lygosinate,  $\text{CO}(\text{CH}:\text{CH}.\text{C}_6\text{H}_4.\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2)_2 = \text{C}_{57}\text{H}_{60}\text{N}_4\text{O}_5$ , is a quinine compound of dioxy-dibenzal-acetone.

It is prepared by the reaction of quinine hydrochloride with sodium lygosinate.

Quinine lygosinate is a fine, orange yellow, amorphous powder, melting at  $114^\circ \text{C}$ . ( $237.2^\circ \text{F}$ .), having a faintly aromatic odor and a bitter taste, which is gradually developed on account of its sparing solubility in water. It is slightly soluble in water, soluble in 6 parts of alcohol, in 20 parts of hot oil and readily soluble in chloroform and benzene. It is decomposed by acids and alkalis. It contains 70.8 per cent. of quinine.

Burned on platinum foil quinine lygosinate develops the odor of bitter almonds and leaves no residue. Its alcoholic solution dyes cotton gauze a bright yellow color, which becomes red-brown on drying.

If 1 Gm. quinine lygosinate is shaken with 20 Gm. of 20 per cent. sodium hydroxide solution and extracted twice with 10 Gm. of ether the quinine remaining after evaporation of the ether should not weigh less than 0.7 Gm. If the alkaline solution thus obtained be acidified, lygosin separates as a thick yellow precipitate.

It is incompatible with acids and alkalis.

**Actions and Uses.**—It is stated that this preparation is capable of preventing completely the development of

cultures of staphylococcus. Given to rabbits by mouth in doses of 1 Gm. pro kilo of the body weight it is said to be entirely harmless. It is a styptic claimed to be useful in parenchymatous hemorrhages and free from unfavorable side effects, such as cauterization of the wound surfaces.

**Dosage.**—It is employed as a dusting powder, in bandages, gauzes, suppositories, in the form of court plaster and in glycerin suspensions.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany. (C. Bischoff & Co., New York.)

### SODIUM LYGOSINATE.

#### LYGOSIN SODIUM.

Sodium lygosinate,  $\text{CO}:(\text{CH}:\text{CH}.\text{C}_6\text{H}_4.\text{ONa})_2 + 7\text{H}_2\text{O} = \text{C}_{17}\text{H}_{12}\text{O}_3\text{Na}_2 + 7\text{H}_2\text{O}$ , is the sodium salt of dioxy-dibenzal acetone.

It is prepared by condensation of 2 molecules of salicylic aldehyde with 1 molecule of acetone and combining the product with sodium.

Sodium lygosinate occurs in glossy greenish prisms, soluble in 16 parts of water at  $18.4^\circ \text{C}$ . ( $67.12^\circ \text{F}$ .), or in about 9.5 parts at  $37^\circ \text{C}$ . ( $98.6^\circ \text{F}$ .). It is soluble to the extent of 1 per cent. in cold alcohol, easily soluble in hot alcohol and in glycerin. Its aqueous solution has a ruby-red color and is alkaline in reaction.

On ignition 1 Gm. of sodium lygosinate leaves a residue of sodium carbonate weighing 0.243 Gm. From the aqueous solution acids precipitate a thick yellow precipitate of diortho-cumaketone. The solution is fairly stable when kept in a cool place, protected from the air, and is not decomposed on boiling, but is decomposed by weak acids, even the carbonic acid of the air.

**Actions and Uses.**—The powder causes sneezing. Sodium lygosinate is said to possess a germicidal power similar to that of the silver salts, slightly weaker, but practically non-irritant.

It is claimed to be useful in gonorrhea, especially of the uterus.

**Dosage.**—Injections of a 3 to 8 per cent. solution daily or every second or third day.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M., Germany. (C. Bischoff & Co., New York.) German patent No. 110,521, U. S. trademark No. 40,177.

### VERA DIASTASE.

A ferment of high diastase power obtained from the pancreatic gland of the pig.

Vera diastase is a light yellowish white powder having a faint odor and a somewhat mucilaginous taste, not entirely soluble in water owing to the presence of a small amount of proteid matter. The diastasic principle, however, is completely soluble, so that its solutions may be filtered without loss of activity.

It is incompatible with strong alcohol, alkalis, acids, and other substances generally incompatible with ferments.

It is claimed to digest 150 times its weight of starch when tested according to the method of Blome (*Pharm. Rev.*, 1906, vol. 24, p. 260), substantially as follows:

A definite quantity of a 0.1 per cent. solution of vera diastase in water containing 25 per cent. of glycerin is added to 50 Cc. of a 2 per cent. solution of potato starch in water and kept at  $40^\circ \text{C}$ . for three hours, the mixture being thoroughly stirred with a spiral glass rod once in ten minutes. At the end of the digestion period the mixture is poured into a boiling mixture of 50 Cc. of water and an equal volume of Fehling's solution. The container and stirring rod are washed at once several times with boiling water and the washings added to the mixture and boiled. The cuprous oxide is then filtered by suction through asbestos in a Gooch crucible, dissolved in hot dilute sulphuric acid containing 1 or 2 Cc. of nitric acid and electrodeposited, the metallic copper being deposited on platinum electrodes. The maltose and dextrose equivalents of copper are taken from F. Allihn's tables.

**Actions and Uses.**—Vera diastase is recommended by the manufacturers as a digestant of starchy food in amyloseous dyspepsia and derived complaints.

**Dosage.**—0.130 Gm. (2 grains) or more.

Manufactured by Frederick Stearns & Co., Detroit, Mich. Not patented. Registration of trademark pending.

(To be continued.)

**Naming of Carbon Compounds.**—Ethylidene is the divalent radicle  $\text{CH}_3.\text{CH}''$ , thus 1,1-dichlorethane is also called ethylidene chlorid or ethidene chlorid. The term has also been used to indicate the radicle  $\text{CH}_3.\text{C}'''$  thus chloral,  $\text{CCl}_3\text{CHO}$ , has been called trichlor ethidene aldehyd.—*Pharm. Rev.*, August, 1906.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, MARCH 23, 1907.

## THE "ALKALINITY" OF THE BLOOD.

Until recently our knowledge of the character of the chemical reaction of the blood was very imperfect and inexact, and at present the more precise information which has been obtained through physicochemical studies seems to be possessed by few except those engaged particularly in physiologic research and teaching. The ideas of too many physicians regarding this vital question are limited largely to reminiscences of statements in the older text-books of physiology, to the effect that the blood is "amphoteric" in reaction, because with some indicators it reacts as if alkaline, whereas with others it reacts as if very faintly acid. It is not unusual to see statements in current literature to the effect that in certain diseases the alkalinity of the blood has been found to be reduced, and that it is important for the maintenance of resistance to infection that the alkalinity of the blood be kept at a certain normal figure.

As a matter of fact, however, the blood is not appreciably alkaline at all, strictly speaking. The real alkalinity of a fluid depends on the number of hydroxyl ions (OH ions) free in it, and the number of free hydroxyl ions in the blood is so small that the most exact methods of physical chemistry fail to demonstrate that blood serum contains more of these ions than does the purest specimen of distilled water. Indeed, it is absolutely essential for the animal organism that the blood serum always remain at very near the neutral point, for animal cells seem to be extremely sensitive to the influence of free ions, whether positive (H) ions or negative (OH) ions. The most minute quantities of free ions of either kind cause profound alterations in the function and morphology of all animal cells with which they come in contact, always with fatal effects if the ions are at all numerous. Consequently, we find that although the blood plasma is constantly exposed to possibilities of change of reaction through the addition of various sorts of products of cellular metabolism, yet under all conditions the number of free H and OH ions is kept at a most minute point and always nearly balancing one another. This property of the blood to preserve almost exact neutrality under all conditions depends on an elaborate mechanism of defense, consisting on the one hand of the eliminatory organs which modify the composition of the blood according to the nature of the

fluid they excrete, and on the other of the proteids, the phosphates and the carbonates of the plasma. The latter have the property of forming, in the case of proteids, compounds with the free ions which do not readily dissociate, and hence reduce the number of ions; in the case of the carbonates and phosphates, dissociation results in the liberation of both H and OH ions, and hence the tendency of either variety to accumulate in excess is depressed.

The puzzling phenomenon that with some indicators the blood appears to be alkaline and with others acid, does not mean that the blood is either acid or alkaline, much less that it is both. It depends, rather, on the nature of the indicators employed, for some indicators change their color when in the presence of a minute quantity of free hydrogen ions (e. g., phenolphthalein), while others change color in the presence of minute quantities of hydroxyl ions, although relatively little affected by free hydrogen ions. It thus happens that some indicators will show evidence of the presence of free hydrogen ions even where bases may be present at the same time to which they do not react; e. g., phenolphthalein reacts to the acidity of the dilute solution of carbonic acid present in the blood, whereas other indicators (e. g., litmus) are not affected by the small number of free hydrogen ions in the blood, but react to the weak bases there present and suggest that the blood is of alkaline reaction. Consequently, if we titrate the blood against a very dilute acid until one of the latter class of indicators shows a neutral or beginning acid reaction we find approximately how much basic material the blood contains with which to defend itself against actually becoming acid. Conversely, we can learn something as to how much defense against alkalis the blood possesses by titrating against alkalis with phenolphthalein for an indicator. As can be seen, this is a very different matter from determining the acidity or alkalinity of a simple solution of acids or bases, and the distinction must be understood by anyone wishing to consider for any purpose the reaction of the blood or other body fluids that contain proteids, phosphates and carbonates.

The theories of the action of indicators and the principles of the chemical reaction of the blood are both concisely discussed in their relation to one another in a recent article by Moore and Wilson,<sup>1</sup> to which the reader seeking further information is referred. These authors have devised what seems to be a practical clinical method for studying the power of the blood to maintain its normal neutrality, or, as they call it, the "reactivity" of the blood. This method is based on the principles outlined above, and while not attempting to measure the almost negligible degree of free alkalinity, it does indicate clearly the exact range of reactivity possessed by the blood and shows how much of this property depends on the blood proteids and how much on the inorganic con-

1. Biochemical Jour., 1906, vol. 1, p. 297.



stituents. This method should afford some interesting information if applied to large series of cases of different diseases. The chief result so far obtained by Moore and Wilson is that in cancer the basic reactivity (i. e., the power to neutralize acids) is constantly increased, apparently depending on an increased power of the blood proteids to bind acids. It will be interesting to learn if the older ideas of the deficiency of the blood in alkalinity in patients with infectious diseases, nephritis and wasting diseases are substantiated by this new method.

#### THE INDUSTRIAL DEATH ROLL.

In a recent number of a magazine<sup>1</sup> devoted to sociological questions there is an interesting discussion on the subject of industrial accidents in the United States, their increasing frequency, and the almost total lack of legislation for their prevention and for compensation of the victims. Nowhere is the contrast between this country and Europe more striking than in this matter of industrial accidents. While England, Germany, France and Holland have all lowered their death rate from this cause we have not even begun to count ours. We have no data which can be regarded as even approximately complete, for the majority of non-fatal accidents are never reported at all and the fatal ones are reported only in part. There are only ten states which attempt to secure statistics of industrial accidents, and their figures are of little value, for in one state only<sup>2</sup> is the reporting of accidents compulsory. There is no agreement as to what constitutes an accident and there are no statistics as to the number of men employed in each individual industry. We are dependent, therefore, chiefly on the reports of insurance companies and workmen's societies, from which sources, unsatisfactory as they are, we can gather confirmation of the universal impression throughout the country that these accidents are not diminishing but increasing in numbers, and that the public is forced each year to assume the expense of a greater number of killed or incapacitated workmen.

In the one field of industry in which accidents are recorded, railroading, the death rate apparently has gone up to a startling degree. While the number of men employed by the railroads has not doubled since 1889 the number of employes killed by them has trebled. In mining and in the great iron and steel mills two factors have tended to increase the danger to life and limb, namely, the increased use of machinery and the employment of foreigners who can not understand the orders given by English-speaking foremen. John Mitchell estimated that 11,986 men were injured or killed in mines in 1904. A coroner in Allegheny county said recently that the number of deaths by accident in the Pittsburg mills is appalling. "The life of a for-

eigner employed in the mills is given less consideration than is the life of a horse or mule."

Governor Hughes of New York recently stated<sup>1</sup> that the number of industrial accidents in the United States has been estimated at over 500,000 annually and much of this sacrifice of life and productive efficiency is both useless and preventable. The preventable accidents are said to be due to carelessness in the use of explosives, unguarded or defective machinery, "speeding up" and exhausting hours of work. In Chicago last year 156 out of the 1,358 men in the Bridge and Structural Iron Workers Union were killed or disabled, most of the casualties being due to insecure scaffolds and flooring or to falling beams. We have ten times as many deaths from boiler explosions as England has among an equal number of workmen.

It is undoubtedly true that the American workman is more ready to take risks and to chafe under restrictions than is his European brother, but this is not enough to account for the fact that the United States alone of the civilized nations has an increasing death rate from accidents. As the magazine previously mentioned says: The cause may be found partly in the lack of a proper insurance system. We are the only nation of industrial importance which leaves the question of proper compensation for accidents to be fought out between employers' insurance associations and personal injury lawyers. If the former win the community must assume the support of the maimed workman or of his family if he is killed. If the workman wins a lump sum is handed over to him, most of which goes to his lawyers, and the remainder is seldom of lasting benefit to a man unused to handling sums larger than his weekly wage. In the end he, too, is apt to become a burden on the community.

Every physician who has worked in the public hospitals or dispensaries of our larger cities, to say nothing of the physicians employed by railways and factories, knows that the death roll of industry is terribly high and the number of disabled still higher. In one way or another, through private charity, hospitals, orphanages, asylums and poorhouses, the community finally assumes the charge of those who fall in the industrial conflict. It seems only reasonable to demand that the industries in which these calamities occur should help to bear their cost, a demand which has been crystallized into law in every industrial nation save our own. Germany has a compulsory insurance system the cost of which is divided between the state, the employer and the workman. The British prefer a law which compels the employer to indemnify an injured workman for loss of wages due to an accident unless it can be shown that the workman was clearly to blame. They assume that the cost of used-up human bodies—like the cost of used-up machinery—should be borne by the employer.

1. *Charities and the Commons*, Feb. 2, 1907.

2. Wisconsin requires that every accident be reported which temporarily or permanently incapacitates the recipient for work.

1. At the opening of the first International Exposition of Safety Devices and Industrial Hygiene, New York City, Jan. 28, 1907.



## ORIGINS OF TUBERCULOSIS.

Twenty-five years ago nearly all physicians believed tuberculosis a hereditary disease. Now nearly everyone considers that heredity plays at most a minor rôle and that the disease is acquired in the great majority of cases. The problem now at issue is how it is acquired. Koch declares that it is practically always due to the inhalation of germs from other human beings who have tuberculosis, while von Behring proclaims quite as confidently that it is due to milk infection.

In a recent article<sup>1</sup> von Behring reiterates this statement and insists that practically only such individuals acquire tuberculosis as have had the germs of the disease brought into their bodies with the milk in childhood. These milk bacilli work their way through the digestive organs and lymphatics into the blood and finally, he asserts, the lungs become infected from the blood. "Even such tubercle bacilli as are inhaled with the air through the larynx into the lungs, or such as produce infection in the mouth and nostrils, do not act directly on the lungs nor find their way into them by any continuance of process, but always go around by way of the lymphatics or blood vessels before reaching the lung." The report of the British Royal Commission on Tuberculosis does not use such strong terms, but it expresses the opinion that cows' milk is responsible for tuberculous infection in a large number of cases.

While Koch regards infection in adults as the most potent cause for the origin of phthisis, von Behring maintains that the infection occurs in childhood. Even in cases in which tuberculosis occurs at a much later period in life, he asserts that it is the result of germs acquired in infancy through the medium of mother's milk, the nurses' milk, and, most frequently of all, through cows' milk. This is not so different from previous opinions as might be thought if it is remembered that the Germans have a proverb that we are all a little tuberculous, and statistics have shown that considerably more than one-half of all those who die from other diseases present a tuberculous lesion in their lungs at autopsy, though they have never shown any signs of the disease. This would seem to indicate that most people had acquired the disease at an early susceptible period, but had been saved from its severe ravages by that tendency to cure which exists in most human beings, if Nature is only given a proper chance, and which constitutes the most encouraging feature in the present crusade against this disease. Cornet<sup>2</sup> in the second edition of his book on "Tuberculosis," just issued, adheres to the old view that germs are inhaled directly into the lungs. The principal reason for this contention on his part is that since coal, marble and various other dust particles gain entrance by the respiratory tract, why should we assume a different, round-about, and at present, at least, a more problematical, route for the tubercle bacillus. In some cases infection may occur by way of the digestive tract,

tonsils, or lymph paths, but by far the great majority of cases occur from inhalation.

The fact that authorities like these quoted are divided is the best proof that we do not yet know the exact mode of infection in this disease, and emphasizes the necessity for even greater care with regard to the food, habits and environment of children. In the meantime there is plenty of room for study and abundant opportunity for the gaining of prestige by any progress that may be made in solving this problem. There is here an excellent chance for young American physicians to accomplish original work of high order that will be rewarded by fame and will redound gloriously to the honor of American medicine.

## ADDITIONAL BUILDING FOR THE HYGIENIC LABORATORY.

The Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service is an institution that is doing splendid work in the interest of public health. Started in New York in 1887, it was moved to Washington in 1891, and in 1901 Congress appropriated for it five acres of ground on the site of the old Naval Observatory, overlooking the Potomac river and adjoining the Naval Medical School. Since these facilities were secured for the laboratory its work has been broadened, and to-day it is the most important of any work undertaken by the Government as far as the health of the people is concerned. When the present building was erected in 1902 the work of the laboratory was confined to pathology and bacteriology. Since that time zoology, pharmacology and chemistry have been added by law. Naturally, with the broadening out of the work there has come the need of larger and better buildings, since the growth of the laboratory during the last five years has greatly overcrowded the present facilities. All persons interested in the maintenance of public health will rejoice, therefore, that the last Congress made an appropriation of \$75,000 for a new building, which will be a replica of the first, in accordance with the plan looking to a harmonious group of buildings as the institution may develop.

## WISCONSIN'S MEDICAL LAW IN OPERATION.

The last legislature of Wisconsin, thanks to the club wielded by a subsidized press, failed to pass the bill controlling the sale of "patent medicines" in that state. It did, however, so modify its medical practice law as to grant to the State Board of Medical Examiners the power to bring about the repression of fraudulent and indecent advertising by fake medical concerns and quacks. We have read<sup>1</sup> with much satisfaction that a notorious concern of Milwaukee, which for years has polluted the city and country press of Wisconsin with its flamboyant and indecent advertisements, has at last been brought to time. The "Wisconsin Medical Institute," *alias* the "Milwaukee Medical Institute," *alias*

1. The Independent, New York, March 7, 1907.

2. Die Tuberculose, Vienna, Hölder, 1907.

1. Wisconsin Medical Journal, January, 1907.



"The Master Specialist" has been enjoined from pursuing its questionable business and warrants have been issued for the arrest of its president and its secretary-treasurer. As our contemporary says, it is to be hoped that the prosecution of this concern will be as successful as its importance demands and that the "Institute," in spite of the support which it will doubtless receive from the newspapers, will be put permanently out of commission. Wisconsin is to be congratulated on having men on its medical board who are alive to the best interests of the public and the profession.

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#### THE PHYSICIAN AS TEACHER.

Physicians are acknowledging a duty to contribute whatever there is in the science and art of medicine for the general welfare; and this in a way apart from the customary office and consultation practice. Such among them as have the aptitude are lecturing and writing on the prevention of disease, hygienic and physiologic laws, the influence of heredity, the essential facts concerning tuberculosis—by far the most death-dealing of all agencies—and many other topics concerning individual and communal health. Such lectures are being given by members of the faculty of Harvard Medical College, and under the auspices of the New York Academy of Medicine, Chicago Medical Society and other county medical societies, as well as the New York Board of Education and other organizations that could well be mentioned. That these contributions to the common weal are very valuable indeed, no one can question who reflects that there is really nothing in the whole range of human possession so precious to a man as his health. No nation can rest secure which has not some regard for the sanitary essentials by which the public health must be safeguarded. One of the most salutary ways in which our profession can help the community is in demonstrating the application of scientific principles to the ordinary humdrum affairs of everyday life. Science is only another term for trained and orderly common sense; and there is probably nothing more needed by the people of the United States to-day than the application of such science to their affairs, both personal and communal. Never perhaps has any nation possessed so much knowledge and so little wisdom. Never has there been such riotous jumping to false conclusions from unfounded, or half-examined, ridiculous, irrelevant or untruthful data; never so much false reasoning from absurd and ill-related analogies. Let him who considers this statement far-fetched observe the many "faith cures" and other charlatanries so rampant at the present day.

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#### RELATIONS OF MATERNAL AND FETAL CIRCULATIONS.

The case reported by Corrigan last week,<sup>1</sup> in which methylene blue was given to a woman during the last six months of her pregnancy, is of interest both in regard to the composition of the liquor amnii and the action of the kidneys of the fetus *in utero*. In the amniotic

fluid no coloring matter was noticed, while the urine passed after birth by the infant contained methylene blue. Similar observations have been made by others. Thus Gusserow administered benzoate of soda to the mother and it appeared as hippuric acid in the urine of the newborn child. Schaller in 1899 gave phloridzin and examined the fetal urine and amniotic fluid at various periods of pregnancy. He found that there is no regular secretion and periodic excretion of fetal urine even near to term, but that fetal renal activity usually begins when the process of labor induces changes in the fetal circulation, though urination is rare during labor. Such observations have been responsible for the prevailing belief that the amniotic fluid is mainly derived from the mother. Additional support is derived from the analysis of the fluid itself, it being found to contain an infinitesimal proportion of the constituent salts of the fetal urine. Moreover, cases of imperforate urethra are not necessarily associated with deficient liquor amnii, nor even with distension of the bladder, for though this may be found, Joulin has shown that in the majority of cases it does not exist. It is highly probable that fetal waste products escape through the placenta into the maternal circulation, and it may be that variations in the activity of the fetal kidneys depend on the manner in which the placenta performs its function. The chorionic epithelium is probably concerned with the performance of various vital processes, e. g., selection, elaboration, excretion and even digestion, which are all the more complex, because it determines transmission from mother to fetus and from fetus to mother. It is this double rôle which makes the placenta one of the most remarkable structures in the human organism.

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#### LET THE PRESCRIBER KNOW.

The specious argument has been advanced by the nostrum defenders that if the ingredients of "patent medicines" must be declared to the laity the prescriptions of physicians should also be given in English so that the patient may know what he is taking. This is a most ingenious sophistry. The medical profession has never suggested that "patent medicines" should be labeled so that the *patient* may know what he is taking. The whole basis of this agitation against secrecy is that the *prescriber* must know what he is giving. When a person employs a physician the latter is the prescriber, and he should know the composition of every medicine he uses; but if this person prescribes for himself he is the prescriber and should know what he prescribes. Now, if a physician's prescription is to be passed about among the laity we agree that it should have the English equivalents in order—we repeat—that the prescriber may know what he is using. If the public decides that it will take in its own hands a certain portion of the prescribing that is done, then the public owes it to itself to be better informed as to the contents of the remedies used and not to depend on false statements made in advertisements and on wrappers simply to sell the goods.

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1. THE JOURNAL A. M. A., March 16, 1907, p. 946.



## Medical News

### ALABAMA.

**Money for Medical Department.**—The lower branch of the legislature on February 20 passed a bill appropriating \$1,673,000 to further the interests of education. Of this the Medical College of Alabama, Mobile, is to receive \$65,000.

### ARIZONA.

**Personal.**—Dr. Charles H. Jones, Tempe, has been seriously ill with influenza.—Dr. Charles F. Hawley, Mesa, has removed to Bisbee.—Dr. D. D. Whedon, Tucson, has been appointed physician of Pima County.

**Election.**—At a meeting of the Cochise County Medical Society, held at Bisbee, March 2, the following officers were elected: President, Dr. Fenn J. Hart, Bisbee; vice-presidents, Drs. Charles L. Caven, Bisbee, John E. Bacon, Tombstone, and James J. P. Armstrong, Douglas; secretary-treasurer, Dr. Edward S. Godfrey, Jr., Lowell, and censor, Dr. George A. Bridge, Bisbee.

### ARKANSAS.

**Do Not Want Names Published.**—At a recent meeting of the Jefferson County Medical Society, the members of the society were urged to refrain from having their names published in connection with cases in which they are interested.

**Nostrum Law.**—The Patterson bill, which requires every proprietary remedy sold in the state to have its formula printed on the label, was so amended by the committee on public health as to extend the provisions of the bill to physicians' prescriptions, the only requirement being that prescriptions must be written in English.

**Society Meeting.**—The physicians of Walnut Ridge and Hoxie recently organized an association at the former place and elected the following officers: President, Dr. John E. Pringle, Hoxie; vice-president, Dr. Ed. T. Ponder; secretary, Dr. John C. Land, and treasurer, Dr. John C. Hughes, all of Walnut Ridge.

**Epidemic Diseases.**—Smallpox is reported to be prevalent in Fort Smith.—There are several cases of smallpox of mild type at Piggott.—Scarlet fever is prevalent at Pine Bluff. Most of the cases are of a mild type and no fatalities have been reported. An order was issued by the board of health instructing the city officials more rigidly to enforce the scarlet fever quarantine.

### CALIFORNIA.

**Hospital News.**—Drs. John H. Mailery and Edward J. Hill, Eureka, and Charles W. Mills, Arcata, have opened a hospital for women and children in Eureka.—The executive board of the San Francisco Relief Corporation, March 8, made an appropriation of \$10,000 to St. Mary's Hospital.—Oakland Central Hospital has been incorporated by a number of physicians who plan to erect a building to cost about \$60,000.

**Personal.**—Dr. Albert C. Winn, Tomales, who has been seriously ill with septicemia, is convalescent.—Dr. I. M. Dudley Fulton, Los Angeles, has returned from Germany.—Dr. Harris Garcelon has been appointed city health officer, and Dr. Ethel L. Leonard, city bacteriologist of Los Angeles.—Dr. Charles F. Millar, for seven years chief of staff of the Emergency Hospital, San Francisco, has resigned on account of ill health, to take effect April 1.—Dr. Reuben C. Hill of the Emergency Hospital service, San Francisco, narrowly escaped death by suffocation at the Harbor Hospital, March 3.

### CONNECTICUT.

**Asks Provision for Epileptics.**—Among the important recommendations made to the General Assembly by the State Board of Charities is one asking that special provision be made for the care of sane epileptics of any age.

**Tuberculosis Hospital.**—Two bills have been introduced in the legislature regarding the Hartford Tuberculosis Hospital. One appropriates \$50,000 for the two years ending Sept. 30, 1909, and the other provides that \$6 per week shall be paid by the state for each patient under treatment.

**Personal.**—Dr. Henry F. Stoll, Hartford, has been appointed medical director of the Hartford Life Insurance Company.—Dr. Thomas G. Alcorn, Thompsonville, has been appointed a member of the medical staff of the Springfield Hospital.—Dr. Frederick G. Graves, Waterbury, was seriously injured in a recent collision between his carriage and that of Dr. Joseph N. Bellmare.—Dr. Mark S. Bradley, Hartford, has been appointed assistant medical director of the Connecticut Mutual Life Insurance Company.

**Vital Statistics.**—During January 1,679 deaths occurred in the state, equivalent to an annual mortality of 20.2 per 1,000. The deaths numbered 198 more than in December, 339 more than in January of last year, and 322 more than the average number of deaths for the five years preceding. Infectious diseases caused 307 deaths, or 18.2 per cent. of the total mortality. The chief causes of death were: Pneumonia, 276; nervous diseases, 168; heart disease, 166; consumption, 153, and influenza, 136. Infectious diseases were reported as follows: Smallpox, one case; measles, 219 cases in 38 towns; scarlet fever, 193 cases in 40 towns; cerebrospinal meningitis, 2 cases in one town; diphtheria, 185 cases in 37 towns; whooping-cough, 145 cases in 23 towns; typhoid fever, 41 cases in 18 towns, and consumption, 47 cases in 17 towns.

**Society Elections.**—At a meeting of the New Haven Medical Society the following officers were elected: President, Dr. Henry W. Ring; vice-presidents, Drs. Edward M. McCabe and Louis M. Gompertz; secretary, Dr. Edward R. Whittemore, and treasurer, Dr. Robert E. Peck.—At the annual meeting of the Waterbury Medical Association Dr. John D. Freney was elected president; Dr. Charles W. S. Frost, vice-president, and Dr. Edward W. Goodenough, secretary-treasurer (re-elected).—At the annual meeting of the Norwalk Medical Association Dr. Frederick B. Baker, South Norwalk, was elected president; Dr. William J. Tracey, Norwalk, vice-president, and Dr. Henry C. Sherer, South Norwalk, secretary-treasurer.—At the annual meeting of the Celtic Medical Society, held at Waterbury, Dr. Edward W. McDonald was elected president; Dr. Bernard A. O'Hara, vice-president; Dr. John D. Freney, secretary, and Dr. John F. Hayes, treasurer, all of Waterbury.

### DELAWARE.

**Medical Practice Act.**—The state senate, on March 12, considered the new medical practice act which had already been passed by the house. This act takes the place of the medical practice act passed April 18, 1895, and amended in 1899. It provides that all persons desiring to practice medicine and surgery in the state shall be examined and licensed by the State Board of Medical Examiners and that no person not so licensed shall attend the sick in any way for compensation. This clause of the bill was strenuously opposed by the Christian Scientists of Delaware, a number of whom presented arguments against the bill before the senate. After hearing them, as well as the representatives of the State Board, and of the medical profession, the bill was unanimously adopted.

### DISTRICT OF COLUMBIA.

**Registration of Consumptives.**—The House District committee has voted to report favorably on the bill requiring registration of all cases of tuberculosis. The Senate District Committee is also said to favor the passage of the measure.

**Tuberculosis Hospital.**—Bids have been received by the commissioners of the District for the construction of the tuberculosis hospital, for which \$100,000 has been appropriated, \$80,000 of which is to be used for purposes of actual construction.

**Dispensary Moved.**—The Free Dispensary for Consumptives has been moved to the new building of the Associated Charities Commission at 923 Eighth St., N.-W. Clinics are held on the first four afternoons of the week from 2 to 3 and on Friday evening from 7:30 to 8:30.

**Personal.**—Dr. Francis B. Loring has been appointed local oculist for the Baltimore & Ohio Railroad, vice Dr. E. Oliver Belt, deceased. Dr. Loring was selected on account of previous valuable work in the examination of the eyesight of railroad employes.—Dr. J. Mortimer Lynch, Washington, has been appointed assistant surgeon at the National Soldiers' Home, Hampton, W. Va.

### GEORGIA.

**Nostrum Distribution Barred.**—The Atlanta Board of Health has adopted a resolution forbidding the free distribution of medical samples in the city.

**Personal.**—Dr. Marcus F. Carson, Griffin, has been elected physician of Spalding County.—Dr. John W. Gillespie, Albany, slipped and fell from the loft of his barn, spraining his thigh and ankle.

**Alumni to Meet.**—Preparations are being made by the medical faculty to entertain the Alumni Association of the Medical Department of the University of Georgia, Augusta, which is to meet in that city May 1.

**Medical Society Meetings.**—The Clarke County Medical Society held its annual meeting at Athens and elected the following officers: President, Dr. Isham H. Goss; vice-president, Dr.



Henry M. Fullilove; secretary-treasurer, Dr. B. O. Quillian, and censors, Drs. William B. Conway and Samuel C. Benedict, all of Athens. The question of life-insurance fees was discussed and it was decided by the society that a minimum fee of \$5 should be charged. A committee consisting of Drs. Isham H. Goss, Samuel C. Benedict and William B. Conway, was appointed to draft resolutions setting forth the action of the society.—The Laurens County Medical Society met at Dublin and elected the following officers: President, Dr. Robert H. Stanley; vice-president, Dr. Ezra New, and secretary-treasurer, Dr. Joseph M. Page, all of Dublin.—The Houston County Medical Society was recently organized at Perry and the following officers were elected: President, Dr. Oscar G. Singleton, Fort Valley, and secretary-treasurer, Dr. Robert L. Cater, Perry.—At a meeting of the Thomas County Medical Society, held in Thomasville, March 7, the following officers were elected: President, Dr. Henry A. Vann, Boston; vice-president, Dr. James N. Isler, Meigs; secretary-treasurer, Dr. Joseph B. Palmer, Thomasville, and Drs. Augustus P. Taylor and Joseph B. Palmer, Thomasville, delegates to the state association.

#### ILLINOIS.

**Smallpox.**—Dr. Charles E. Crawford, Rockford, made an inspection of the smallpox epidemic at East Aurora. He found six cases, all of a mild type.

**Hospital Open for Inspection.**—The new Oak Park Hospital, which is nearing completion, after five years endeavor on the part of Dr. John W. Tope, was opened to visitors March 16. The hospital is in charge of the Sisters of Misericordia, Montreal, Quebec, and is to be formally dedicated April 3.

**Inspection of Medical Colleges.**—At a meeting of the State Board of Health, March 15, arrangements were made for the annual inspection of the medical colleges of Chicago and Cook County. These examinations are held by the board to ascertain whether or not all the provisions under which they are operating under the state law are being observed.

**Personal.**—Dr. James N. Kearney, Lamont, has been appointed a member of the staff of the Illinois Northern Hospital for the Insane, Hospital, vice Dr. Claude F. Shrouts, resigned.—Dr. Charles E. Ericson has been appointed assistant surgeon at the Soldiers' Home, Quincy, vice Dr. George E. Rosenthal, deceased.—Dr. Ralph T. Hinton, Quincy, has been elected secretary of the Adams County Medical Society, to fill the unexpired term of the late Dr. George E. Rosenthal.

**Senate Approves Nostrum Vendors.**—Senate bill 341, introduced by Senator McKenzie of Joe Daviess County, which repeals the itinerant-vendor section of the medical practice act, and permits the unrestricted practice of all "proprietary" medicine men who pay a tax of \$5 a year, passed the senate March 19, and is under consideration in the house of representatives, with house bill 474, introduced by Speaker Krape of Stephenson County, which is of the same purport.

#### Chicago.

**Smallpox.**—During the week ended March 18, eight cases of smallpox were found and the patients sent to the Isolation Hospital. An unvaccinated Pullman car porter on the Rock Island System is said to have been responsible for at least three of these cases.

**Emergency Hospital in the Loop.**—The Iroquois Memorial Emergency Hospital Association has offered to erect an emergency hospital at a cost of not less than \$25,000, in or near the loop, if a site be provided and if the maintenance of the institution be undertaken.

**Deaths of the Week.**—During the week ended March 16, there were 684 deaths reported, 34 more than for the previous week and 103 more than for the corresponding week of 1906. The mortality is equal to an annual death-rate of 16.92 per 1,000. Pneumonia led death-causes with 158, followed by consumption with 77; heart disease, with 52; violence, including suicide, with 47; nephritis, with 40, and cancer with 34. Scarlet fever caused 18 deaths; diphtheria and influenza each 9; whooping cough 7; measles 3, and typhoid fever 2.

**Hospital Notes.**—In the contest for the most popular hospital, which the Children's Hospital Society has been conducting for the last month, the Presbyterian Hospital was declared to be the victor, receiving an elaborate set of linen. By this contest \$2,500 was added to the funds of the society. The benefit performance of "Peter Pan" at the Illinois Theater, March 10, also realized \$4,500 for the Children's Hospital Society.—An appropriation of \$10,000 has been voted by the Chicago Board of Underwriters to endow a room in the Presbyterian Hospital in memory of the late Edward M. Teall, formerly president of the board.—Subscriptions are being solicited for the

work of the Chicago Tuberculosis Institute, which wishes to raise \$25,000 for a tuberculosis dispensary, a day camp, and a tuberculosis hospital; for the investigation of hygienic conditions of factories, stores and schools and for a lecture course.

#### INDIANA.

**License Revoked.**—The State Board of Medical Examination and Registration is reported to have revoked the license of Dr. John W. Arnold, Columbus, on the charge that he had performed a criminal operation.

**Unlicensed Practitioner Fined.**—William DeHoff, a "cancer doctor" who has been operating in Hartford City for some time and who was charged with practicing medicine and surgery without a license, is said to have pleaded guilty and to have been fined \$20 and costs, amounting in all to \$35.40.

**Malpractice Suit Dismissed.**—In the case of Mrs. Etta Hopkinson against Dr. Samuel C. Wilson, Anderson, in which \$5,000 damages was demanded on account of alleged improper treatment of a fractured wrist, the case was dismissed on account of the variance between the evidence adduced, and the allegations contained in the complaint.

**Hold Annual Meetings.**—The second annual meeting of the Twelfth Councilor District Medical Society was held at Fort Wayne, February 12, and the following officers were elected: President, Dr. Samuel H. Havice, Fort Wayne; vice-presidents, Drs. Dwight W. Dryer, La Grange, and James S. Boyers, Decatur; secretary, Dr. Edmund M. Van Buskirk, Fort Wayne, and treasurer, Dr. David C. Wybourn, Sheldon.—The Sullivan County Medical Society held its annual meeting in December and elected officers for the coming year. The membership of this society now amounts to 33. An auxiliary society has been organized for the purpose of holding monthly meetings.

#### IOWA.

**Society Elections.**—Muscatine County Medical Society elected the following officers at a recent meeting: President, Dr. Frederick H. Little, Muscatine; vice-president, Dr. Channing B. Kimball, West Liberty; secretary-treasurer, Dr. Thomas F. Beveridge, Muscatine, and delegate to the state society, Dr. Elbridge H. King, Muscatine.—At the annual meeting of the Southwestern Iowa Medical Society, held in Creston, February 21, the following officers were elected: President, Dr. Franklin W. Sells, Oseeola; vice-president, Dr. John A. Rawls, Creston; secretary, Dr. John W. Reynolds, Creston, and treasurer, Dr. Joseph P. Claybaugh, Creston. It was decided to hold the midsummer meeting of the society at Red Oak in August.

#### KANSAS.

**Increase Secretary's Salary.**—The House of Representatives has voted to increase the salary of the secretary of the State Board of Health from \$1,800 to \$2,500 a year.

**License Medicine Vendors.**—The Senate, in committee of the whole, has recommended for passage the house bill which fixes a license fee of \$50 for each itinerant medicine peddler in each county in the state in which he operates.

**Election.**—Lyon County Medical Society, at its annual election and banquet, held in Emporia, March 5, elected the following officers: President, Dr. David L. Morgan; vice-president, Dr. Howell E. Davis, and secretary-treasurer, Dr. Clarence A. Neighbors, all of Emporia.

**Measles Epidemic.**—In Topeka 69 cases of measles were under quarantine March 13.—Armourdale is said to have 75 cases of measles.—Measles is reported to be epidemic at Leavenworth, where more than 100 cases have been reported.

**New Editor for State Journal.**—At the February meeting of the Council of the Kansas Medical Society Dr. George H. Hoxie, editor of the *Journal*, presented his resignation, to take effect May 1. Dr. Charles S. Huffman, Columbus, secretary of the Kansas State Society, was elected editor.

**Personal.**—Dr. Ralph A. Light, Chanute, has been appointed a member of the State Board of Medical Examination and Registration.—Dr. Clement E. Grigsby, Lansing, who has been physician at the state penitentiary for eight years, is reported to have been dismissed by Warden Haskell because of disagreement over the conduct of the prison.—Dr. Joseph B. Carver, Fort Scott, sustained severe sprains of the hip and the left wrist in a runaway accident recently.—Dr. Cassius M. H. McGown, Chanute, who was seriously injured by a fall about four months ago, is now reported convalescent.

#### KENTUCKY.

**Next State Board Examination.**—The next examination by the Kentucky State Board of Medical Examiners will be held



April 23 and not April 2-3, as was erroneously announced in THE JOURNAL last week.

**Faculty of Combined Medical Colleges.**—The names of those who will probably compose the faculty of the combined Hospital College of Medicine and Louisville Medical College, will be selected, so far as the Hospital College of Medicine is concerned, from the following list of names: Drs. Philip R. Taylor and Samuel G. Dabney, diseases of the eye, ear and throat; Drs. Frank C. Wilson and Walter F. Boggess, medicine; Dr. Samuel G. Dabney, physiology; Dr. Philip F. Barbour, pediatrics and chemistry; Dr. Edward Speidel, obstetrics and gynecology; Drs. H. Horace Grant and George A. Hendon, surgery, and Dr. John E. Hays, anatomy.

#### MAINE.

**New Member of State Board.**—Franklin C. Robinson, Brunswick, has been appointed by the governor a member of the State Board of Health.

**Tuberculosis Exhibit.**—The tuberculosis exhibition at Portland began February 28 and continued until March 5. The object was to teach the people the nature of tuberculosis and the proper methods of combating it.

**Epidemic Diseases.**—Rockland is suffering from an epidemic of diphtheria which threatens to assume serious proportions. The cases are reported to be widely scattered throughout the city.—A number of cases of epidemic cerebrospinal meningitis have been reported to the State Board of Health from Rumford Falls and two deaths have occurred.

**Tribute to Dr. Garcelon.**—At a meeting of the Androscoggin Medical Association resolutions were passed regarding the death of the venerable Dr. Alonzo Garcelon, Lewiston, cherishing his memory, bearing witness to his untiring industry, self-reliance, well matured, positive and outspoken convictions and other attributes of personal leadership, acknowledging the indebtedness of the cities of the county to him for influence both before and after their incorporation, taking pride in the thought that Dr. Garcelon shed luster on the then neglected branch of major surgery for many years.

**Proposed Laws.**—The Maine Veterinary Medical Association is attempting to have some legal provision made for the inspection of meats consumed in the state. Under the new pure food law, all meat shipped out of the state must be inspected, but no inspection is required for meat for home consumption.—The president of the Massachusetts Society of Optometry appeared before a committee of the Maine legislature March 7, to support a bill to regulate the practice of optometry in the state. The bill was strongly opposed by many physicians headed by Dr. Frederick H. Gerrish of the Maine Medical School and Dr. William L. Cousins, Portland.

**Society Meeting.**—At a meeting, held in Houlton, January 16, the northern and southern Aroostook medical societies amalgamated, forming the Aroostook County Medical Society. The following officers were elected: President, Dr. Alfred D. Sawyer, Fort Fairfield; vice-president, Dr. Harry L. Putnam, Houlton; secretary, Dr. Frank H. Jackson, Houlton; treasurer, Dr. Wiley E. Sinecock, Caribou, and censors, Drs. Harry L. Putnam, Houlton; Frank Kilburn Presque Isle; Herbert F. Kalloch, Fort Fairfield; William W. White, Bridgewater, and Charles E. Thomas, Caribou.—At a meeting of the Androscoggin Medical Association, held in Lewiston, the following officers were elected: President, Dr. Charles E. Norton, Lewiston; vice-presidents, Drs. Herbert H. Purinton, Lewiston, and Edson S. Cummings, Lewiston; secretary, Dr. Daniel A. Barrell, Auburn, and treasurer, Dr. Benjamin M. Sturgis, Auburn.

**Medical Staff Appointed.**—The directors of the Webber Hospital Association, Biddeford, have selected the following officers for the institution: Senior surgeons—Drs. M. Hubbard Ferguson, Biddeford; Jasper D. Cochrane, Saco; John S. Fogg, Biddeford, and James O. Chenevert, Biddeford; junior surgeons—Drs. Clarence F. Kendall, Biddeford; Clarence E. Thompson, Saco; Joseph M. O'Connor, Biddeford, and P. S. Hill, Saco; senior physicians—Drs. Caleb J. Emory, Biddeford; Walter T. Goodale, Saco; Jovite A. Lapointe, Biddeford, and J. D. Haley, Saco; junior physicians—Drs. Fitz E. Small, Biddeford; L. E. Willard, Saco; Thomas F. Moran, Biddeford, and Willis Hurd, Biddeford; ophthalmologist and otologist, Dr. Frederick L. Davis, Biddeford; obstetrician, Dr. Eugene D. O'Neil, Biddeford; gynecologist and pediatrician, Drs. Albert C. Maynard, Biddeford, and Laura M. Black, Saco; pathologist, Dr. L. L. Powell, Saco; consulting staff—Drs. Stephen H. Weeks, Seth C. Gordon, Alfred King, William L. Cousins, John F. Thompson, Henry H. Brock, Herbert F. Twitchell, William H. Bradford, Augustus S. Thayer, Addison S. Thayer and Samuel J. Bassford, Portland, and Dr. Charles W. Pillsbury, Saco.

#### MARYLAND.

**Personal.**—Dr. B. F. Price, Mt. Carmel, health officer of the district, celebrated his fiftieth wedding anniversary March 10. —Dr. Armfield F. Van Bibber, Belair, has been appointed almshouse physician by the Hartford County Commissioners.

**Destructive Fire.**—The residence of Dr. Joseph T. Rothrock, former commissioner of forestry, at Mountinside Sanitarium, on the top of South Mountain, was destroyed by fire March 10, with a loss of \$10,000.—The residence of Dr. Addison M. Rothrock, who is in charge of the White Pine Sanitarium, the Pennsylvania Institution for Tuberculosis, was saved by the strenuous work of a bucket brigade of consumptive patients and students of the state forestry academy.

#### Baltimore.

**Müller in Baltimore.**—Prof. Friedrich Müller, Munich, addressed the Johns Hopkins Hospital Medical Society March 21 on "Newer Studies in Percussion."

**Personal.**—Dr. H. Barton Jacobs expects to sail for Europe May 8.—Dr. William S. Halsted has been visiting in Rochester, Minn., where he was the guest of Dr. William J. Mayo. —Dr. Thomas H. Buckler will spend several months in Europe.—Dr. Tilghman B. Marden is a candidate for election to the city council.

**Railroad Surgeons Meet.**—At the annual meeting of the medical officers of the Baltimore & Ohio Railroad Relief Department, held in Baltimore, March 9, the following officers were elected: Superintendent, S. R. Barr; assistant superintendent, H. A. Bateman; chief medical examiner, Dr. Summerfield B. Bond, and chief surgeon, Dr. Isaac R. Trimble.

**College Union Advised.**—When Dr. William Osler left Baltimore he gave as his parting advice an admonition that the University of Maryland School of Medicine, the Baltimore Medical College and the College of Physicians and Surgeons unite. An attempt was recently made by the two former institutions to follow this advice and committees were appointed. The matter was discussed very thoroughly and the advantages of union pointed out. A certain sentiment in its favor was manifested, but the conflicting interests preponderated, and for the present, at least, the matter has been dropped.

#### MASSACHUSETTS.

**New Hospital.**—The new Vincent Memorial Hospital, now being built on South Huntington Avenue, Roxbury, will be a three-story terra-cotta and granite building, to cost about \$65,000. It will be "L" shaped, designed for future enlargement, and will have 24 beds, in wards of eight and four beds, and private rooms. Special attention will be given to sun, air and the fine points of modern hospital construction. This is the hospital in which so many of Boston's wealthiest young ladies are so actively interested and is located on Chambers Street in the west end of the city.

**Sanatorium Report.**—The report of the trustees of the State Sanatorium for Tuberculosis at Rutland shows several changes made during the last year among the medical men connected with the institution. Dr. James F. A. Adams, Pittsfield, has become chairman of the board; Dr. Edward O. Otis, Boston, has succeeded Dr. Vincent Y. Bowditch, Boston, as visiting physician; the superintendent, Dr. Walter J. Mareley, has resigned; the office of pathologist has been abolished and three junior assistants have been appointed, Drs. Elmer H. Copeland and Justus G. Hanson, Northampton; Dr. Charles F. Canedy, Greenfield, and Dr. R. Allen Woodruff, Pittsfield, have been appointed examining physicians in addition to those already serving in the eastern part of the state. The expense during the year was \$161,741, an average cost per capita, weekly, of \$9.38, or 55 cents more than last year, an increase due to enlarged diet. The average number of patients was 338; average age, 27; applications for admission were received from 2,102 patients, of whom only 897 could be accepted. Of those admitted 36 per cent. were incipient cases, 41 per cent. were moderately advanced, and 21 per cent. advanced. Because of the lessening percentage of incipient cases the percentage of recoveries is less. Such patients are always admitted at once, for the institution was designed for them. In more advanced cases the patients often must await their turn.

#### MICHIGAN.

**Tuberculosis Sanatorium Opened.**—The board of control of the Michigan State Sanatorium for Tuberculosis, Howell, at a meeting held in Lansing, announced that the sanatorium would be open about April 1, with an accommodation for about 100 patients.

**Infectious Diseases.**—The schools of Skanee, Mich., have been



closed owing to the prevalence of scarlet fever and diphtheria in the neighborhood.—A house in River Rouge, in which five cases of smallpox were discovered, has been put under quarantine, and ten boarders who had been going and coming at will, have been vaccinated.—Two new cases of smallpox have been discovered in Kalamazoo.

**Personal.**—Dr. Nelson R. Gilbert, Bay City, has been reappointed for the sixth time a member of the board of control of the Home of Epileptics and Feeble-Minded, Lapeer. For the last five years Dr. Gilbert has been president of the board.—Dr. Herbert A. Eades, Bay City, received severe abdominal injuries in a street car accident recently.—Dr. Joseph H. Ball, Bay City, is taking Pasteur treatment for hydrophobia at Ann Arbor.—Dr. Ernest W. Haas has been appointed a member of the Detroit Board of Health, vice Dr. Charles G. Jennings, term expired.—Dr. Ignatz Mayer, Detroit, has returned after three months abroad.

#### MISSISSIPPI.

**Hospital Open.**—The Kings' Daughters Hospital, Gulfport, was opened March 1, with fitting ceremonies.

**Houses Must be Screened.**—Dr. George Y. Hicks, city physician of Vicksburg, has announced that all houses subject to the ordinance must be screened by March 15.

**Graduation Exercises.**—Mississippi Medical College, Meridian, graduated a class of 22, March 9. Dr. W. A. Williamson, Battlefield, was valedictorian, and Dr. W. B. Williams of South Mississippi, salutatorian.

**State Society Meeting.**—The United States Public Health and Marine-Hospital Service has given permission for the delegates to the Mississippi State Medical Association, which meets at Gulfport, April 10-14, to visit and thoroughly inspect the government quarantine station at Ship Island.

**Improvements at State Hospital.**—Plans are being made for the additions and improvements to the State Hospital for the Insane, Jackson, including a new hospital building. The trustees have decided to undertake the construction of the building themselves, employing competent superintendents and utilizing the labor of such male patients as are fit for the performance of the work required.

**Personal.**—Dr. John W. Dicks, Natchez, has been elected house surgeon of the Natchez Charity Hospital, vice Dr. E. Floyd Brown, resigned.—Dr. George W. Luster, Learned, has been elected physician at the Oakley convict farm; Dr. S. Pivey at the Sunflower convict farm; Dr. P. Fairley at the Rankin convict farm, and Dr. Henry Christmas, Tchula, at the Belmont convict farm (re-elected).—Dr. George W. Land, Louin, had a narrow escape from death by the accidental drinking of carbolic acid recently.

**Elections.**—At the annual meeting of the Harrison County Medical Society, Dr. Walter H. Rowan, Wiggins, was elected president; Dr. Robert A. Anderson, Gulfport, vice-president; Dr. Heard H. West, Gulfport, secretary-treasurer; Dr. Edward C. Parker, Gulfport, delegate to the State Medical Association, and Dr. Charles A. Sheeley, Gulfport, alternate.—The Newton County Medical Association, at its annual meeting, changed its name to the Newton-Neshoba Medical Association, and elected the following officers: President, Dr. J. B. Bailey, Conehatta; vice-president for Newton County, Dr. Samuel B. Henton, Decatur; vice-president, for Neshoba County, Dr. Daniel J. Rush, Philadelphia; secretary-treasurer, Dr. W. Jesse Chapman, Newton; censors, Drs. George H. McNeill, Newton, and Sidney A. Majure, Dixon. Philadelphia, Miss., was selected as the next meeting place.—At the annual meeting of the Perry-Greene County Medical Society the following officers were elected: President, Dr. Isham H. C. Cook, Hattiesburg; vice-president, Dr. W. R. Thames, Hattiesburg; secretary-treasurer Dr. S. Lewis Knight, Hattiesburg; censor, Dr. George M. Lackey, McLean; delegate to the state medical association, Dr. Theophilus E. Ross, Hattiesburg, and Dr. J. J. Stevens, alternate.—The Jackson County Medical Society, at its annual meeting, elected the following officers: President, Dr. William A. Cox, Pascagoula; vice-president, Dr. Fritz E. Rehfeld, Moss Point, and delegate to the state medical association, Dr. Henry B. Powell, Ocean Springs.

#### MISSOURI.

**New Home for Maternity Hospital.**—The new home of the St. Anthony's Maternity Hospital and Home for Infants at Twenty-third Street and College Avenue, Kansas City, will be ready for occupancy April 1. The building will contain about 60 rooms.

**In the Hands of the Law.**—In the case of Dr. Edwin J. Hogan, St. Louis, who was convicted nearly a year ago of having

performed a criminal operation and ordered to pay a fine of \$250 and serve six months in the workhouse, and who was released on bonds, the St. Louis Court of Criminal Correction, which is the court of last resort, confirmed the sentence on March 5.—“Dr.” Charles S. DeMyer, also known as Charles H. Myers, St. Louis, charged with practicing medicine and surgery without a license, is reported to have been fined \$100 and costs in the Court of Criminal Correction, February 21. A motion for a new trial was filed and he was released on appeal bond.

#### NEW HAMPSHIRE.

**Diphtheria.**—Diphtheria is reported to be prevalent at Warren. It has been decided to examine all students and school children daily. Entertainments have been postponed and evening church service has been omitted.

**Pure-Food Bill.**—The public health committee has reported a bill to the legislature which is in accord with the national food and drugs act, but which goes even farther in its provisions, in the direction of safeguarding the public health.

**Society Meeting.**—At the second annual meeting of the Hillsborough County Medical Society, held at Nashua, February 7, the following officers were elected: President, Dr. George D. Towne, Manchester; vice-president, Dr. Alonzo S. Wallace, Nashua; secretary-treasurer, Dr. Ella B. Atherton, Nashua; delegates to the state society, Drs. Frank E. Kittredge, Nashua; George C. Wilkins, Manchester, and Charles A. Weaver, New Boston, and executive committee, Drs. Arthur F. Wheat, Manchester; Charles A. Weaver, New Boston; Herbert S. Hutchinson, Milford; Byron D. Pease, Greenville, and Isaiah G. Anthoine, Nashua.

**Personal.**—Dr. George L. Bastian, recently elected city physician of Manchester, was thrown from his sleigh and had several ribs broken. He was afterward taken ill with diphtheria and removed to the Isolation Hospital.—Dr. George M. Kimball, Concord, has been appointed surgeon general of the state.—Dr. John H. Gleason has resigned from the medical staff of the Elliot Hospital, Manchester.—Dr. Frederick L. Hills, Concord, has been elected superintendent of the Massachusetts State Sanatorium for Tuberculosis, Rutland.—Dr. George V. Fiske, Northwood Ridge, has been awarded a verdict of \$600 by the Superior Court, in a personal injury suit against the Boston & Maine Railroad for \$3,000.

#### NEW JERSEY.

**Personal.**—Dr. Leslie L. Hand, Millville, expects to give up the practice of medicine and enter the Methodist ministry this month.—Dr. Nathaniel S. Hires, Salem, has gone to Italy.

**“Voodoo Doctor” Convicted.**—In the Camden Criminal Court, March 8, Lafayette Powell, a “Voodoo Doctor,” was convicted of obtaining money under false pretenses and sentenced to 18 months imprisonment.

**Society Meetings.**—At the annual meeting of the Medical Library Association, held in Newark, the following officers were elected: President, Dr. Henry L. Coit, Newark; vice-president, Dr. Richard C. Newton, Montclair; secretary-treasurer, Dr. Frank W. Pinneo, Newark, and directors, Drs. William S. Disbrow, Samuel E. Robertson, Charles J. Kipp and Chauncey B. Griffiths, all of Newark.—At the annual meeting of the Camden City Medical Society Dr. Ahab H. Lippincott was elected president; Dr. Edward A. Y. Schellenger, vice-president; Dr. Joseph W. Martindale, recording secretary; Dr. William H. Pratt, treasurer, and Dr. William I. Kelchner, historian.—The Orange Mountain Medical Society held its annual meeting in the rooms of the William Pierson Medical Library Association, Orange, and elected the following officers: President, Dr. David Van Gieson, Bloomfield; vice-president, Dr. Harrie E. Matthews, Orange; secretary, Dr. Richard D. Freeman, South Orange; treasurer, Dr. James M. Maghee, West Orange; reporter, Dr. William Dodge, Orange, and censors, Drs. David E. English, Millburn; Thomas W. Harvey, Orange, and John H. Bradshaw, Orange.—The following officers were elected at a meeting of the Burlington County Medical Society: President, Dr. Joseph Stokes, Moorestown; vice-president, Dr. J. Edward Blair, Burlington; secretary, Dr. George T. Tracy, Beverly; treasurer, Enoch Hollingshead, Pemberton; reporter, Dr. William P. Meleher, Mount Holly, and member of the legislative committee, Dr. Richard H. Parsons, Mount Holly.

#### NEW YORK.

**Lecture on Opsonins.**—Dr. Thomas D. Archibald, Toronto, delivered an address before the junior and senior classes of the University of Buffalo Medical Department, February 28, on opsonins. On the next day he gave a demonstration of the technic of opsonic work at the same place.



**Typhoid at Katonah.**—There are five cases of typhoid fever at Katonah, which is located on the Croton watershed. The Water Department and the Health Department of New York City have made a rigorous inspection of the entire locality and are taking every precaution to prevent the contamination of the water supply of New York City.

**Hearing on Milk Bill.**—The Reece bill compelling New York City to establish plants for the pasteurizing of milk was attacked before the Assembly Cities Committee on March 12 by Commissioner Darlington and Dr. C. D. Morris, an expert on milk. Dr. Darlington opposed the bill because it is mandatory in its provisions, and Dr. Morris declared that pasteurization destroys the wholesomeness of milk. He said it would cost \$7,000,000 a year to operate the plants for New York City, and that this would more than pay for all the cows affected with tuberculosis in the state. Both Drs. Darlington and Morris admitted that pasteurization would be a good thing sometimes.

**Society Meeting.**—The Blackwell Medical Society, Rochester, Physicians' League, Buffalo; Women's Medical Association, New York; and the Dr. Cordelia A. Greene Society, Castile, joined in a banquet in honor of Dr. Sarah Adamson Dolley at Rochester, March 11. At the election of the Women's Medical Association of New York, which took place at this time, the following officers were elected: Honorary president, Dr. Elizabeth Blackwell, Hastings, England; president, Dr. Sarah R. Adamson Dolley, Rochester; vice-presidents, Drs. Electa B. Whipple, Buffalo; Mary Theresa Greene, Castile, and Mary H. Cotton, New York City; secretary, Dr. Eveline P. Ballentine, Rochester, and treasurer, Dr. M. May Allen, Rochester.

**New Bills in Legislature.**—Mr. Wainwright has introduced an act to amend the penal code in relation to the sale of certain drugs without prescription, and the prescribing of certain drugs for habitual users of drugs. This act provides that no person shall sell opium, its alkaloids or derivatives; chloral, its derivatives; cocaine or its salts; eucain or its salts; acetanilid or any preparation containing the before-mentioned drugs except on the written order or prescription of an authorized physician, dentist or veterinarian. A bill introduced by Mr. Reese would forbid the importation, manufacture for sale, sale, offer for sale or having in possession with intent to sell within the state, of adulterated, misbranded, poisonous or deleterious foods, drugs, medicines, liquors, beverages and confections, regulates the enforcement and provides a penalty for the violation thereof.

#### New York City.

**Personal.**—Dr. Harry M. Archer has been appointed honorary medical officer of the fire department, with the rank of battalion chief.—Dr. William B. Cook is reported to be in a serious condition as the result of being beaten by a highwayman, March 8.

**Defective Eyesight.**—The school census just completed shows that of the 688,427 children attending school in Greater New York, more than 18 per cent. are foreign born; and that out of 58,948 whose eyes were tested, 17,928 were found to be suffering from visual defects.

**Lectures on Health Topics.**—The Eastern Branch of the Y. M. C. A. of Brooklyn is giving a course of lectures on subjects pertaining to health. The first was on "Who Brings Up Your Child?" by Dr. William H. Allen. The next will be by Dr. Ira S. Wile on "Vaccination." Another will be by Dr. John S. Huber on "Prevention of Consumption," and the last will be by Dr. Jerome Walker on "Foods."

**Law and Medicine Dine.**—The Society of Medical Jurisprudence commemorated its twenty-fifth anniversary by a dinner at the Hotel Savoy. The first speaker was Dr. Joseph D. Bryant, who reviewed the organization of the association and took occasion to criticize those who are giving endowments favoring the clerical profession, to the detriment of the medical fraternity. Dr. Harvey W. Wiley of the United States Department of Agriculture spoke on "The Law and the Fact," and Rev. James E. Freeman gave "A Pulpit View of Physicians and Lawyers."

**Lodging Houses Must Be Improved.**—The sanitary code governing lodging houses has been revised by the health department with a view to securing better ventilation, improved sanitation, greater cleanliness and other improvements. The new rules call for an increase of one-half the cubic air space at present provided per lodger and insist on adequate ventilation at night. They also require that from 10 o'clock in the morning until 2 in the afternoon the windows of sleeping rooms and dormitories shall be open sufficiently to admit plenty of fresh air. A larger supply of hot and cold water,

available at all hours for baths, is also to be provided. Clean sheets and pillow cases must be provided daily for all beds. It is estimated that between six and seven million night's lodgings are sold in Manhattan and Brooklyn annually. One half the male applicants for aid and the larger number of homeless patients in the city hospitals come directly from the lodging houses and it is claimed that a long stay in these places has a debilitating effect physically.

**Hospital News.**—The Anna Ottendorfer Dispensary was dedicated by Governor Hughes, March 16. This dispensary is connected with the German Hospital, and has been erected by the children of Mrs. Anna Ottendorfer as a memorial.—The annual report of the Manhattan Eye, Ear and Throat Hospital for the year ended Sept. 30, 1906, shows that during that year 18,246 cases of eye disease were treated and 3,718 operations on the eye performed; 6,283 cases of ear disease were treated and 1,899 operations performed; 6,465 cases of disease of the nose, throat and allied organs were treated and 1,365 operations performed.—The fortieth annual report of St. John's Guild for the year ended Sept. 30, 1906, shows that during the existence of the guild, 1,253,597 mothers and children have been cared for for periods ranging from one day to two months. During 1906, 38,392 persons were carried on the Floating Hospital. The cost of maintaining the Floating and Seaside Hospital was \$77,235. There was a balance left over at the end of the season of \$8,835 available for the summer of 1907. The city contributed \$20,000 to the work.—The Board of Estimate has adopted tentatively, as a site for the proposed seaside sanatorium, a tract of land at Rockaway Point which will cost about \$1,000,000, and comprises about 350 acres.

#### NORTH CAROLINA.

**Sanatorium Incorporated.**—The Asheville-Biltmore Sanatorium Company has been chartered, with Dr. Paul Paquin, Asheville, as chief incorporator, with a capital stock of \$50,000.

**New Infirmary.**—The trustees of the state university, Chapel Hill, have let the contract for the erection of a new infirmary for the care of sick students at the university. The building is to cost \$20,000 and will be ready for occupancy December 1.

**Class Withdraws from College.**—Twenty-seven students, constituting the entire sophomore class of Shaw University (colored), Raleigh, have withdrawn from the university, their action being based on their resentment of the suspension of a fellow-student.

**Medical Officers Commissioned.**—The following medical officers of the State Guard have recently been commissioned: Capt. Andrew H. Harriss, Wilmington, assistant surgeon; Lieut. Albert De K. Parrott, Kinston, assistant surgeon; Lieut. J. Lewis Hanes, Winston-Salem, assistant surgeon, and Lieutenant Commander R. Duval Jones, New Bern, surgeon to the naval brigade.

**Milk Tested.**—The city of Raleigh is having regular tests made each week by the city bacteriologist, Dr. F. L. Stevens, of samples of milk from each of the eight dairies which supply the city. The most recent tests show that five of the eight were fully up to the standard set by the commission, that two showed an excess of bacteria above the standard of the board, and that one showed a deficiency of fat.

**State Hospital for Tuberculosis.**—A bill is pending in the legislature which provides for the establishment of a state hospital for the treatment of tuberculosis, to be under the control of nine directors, elected by the legislature and appropriating \$15,000 for the establishment, with an annual allowance of \$5,000 for running expenses. Drs. M. Eugene Street, Glendon, and James E. Brooks, Greensboro, are the medical men named as directors.

**Personal.**—Among the medical members of the county boards of education throughout the state are the following: Bertie, Dr. Henry V. Dunstan, Windsor; Carteret, Dr. C. N. Mason, Harlowe; Granville, Drs. Benjamin K. Hayes, Oxford, and Elijah B. Meadows, Oxford; Haywood, Dr. J. E. Wilson, Canton; Lenoir, Dr. Richard H. Lewis, Raleigh; Scotland, Dr. Walter L. Pate, Gibson; Stanly, Dr. Daniel P. Whitley, Millington; Stokes, Dr. Elias Fulp, Walnut Cove; Swain, Dr. James H. Teague, Whittier; Union, Dr. John E. Ashcraft, Monroe; Vance, Dr. Robert J. Gill, Henderson, and Yadkin, Dr. M. Luther Matthews, East Bend.—Dr. Charles J. Sawyer, Salisbury, has removed to his former home at Windsor.—Dr. C. A. Woodward, Wilson, has removed to Durham.—Dr. Frank Roberts, Marshall, has been appointed postmaster at that place.—Governor Glenn has appointed Dr. James W.



McNeill, Hope Mills, who was a member of the last legislature, the medical member of the new State Hospital Commission. —The nomination of Drs. L. Julian Picot, Littleton, and William H. Whitehead, Rockymount, for directors of the State Hospital for the Insane, have been confirmed by the Senate.

#### NORTH DAKOTA.

**Epidemic Diseases.**—The schools of Bowbells have been closed on account of the prevalence of smallpox. —Hemorrhagic measles is reported to be epidemic in Ellendale. —More than 100 cases of measles are reported from Fargo. —Scarlet fever is reported to be prevalent in Grand Forks. Several cases have occurred at Grand Forks College and quarantine has been established over the institution.

**Personal.**—Dr. Patrick M. Walker, St. Thomas, has removed to Everett, Wash. —Dr. Thor O. Moeller, Devil's Lake, has located in Minot. —Dr. Thomas G. Devitt, Grand Forks, has returned from the Pacific Coast, where he spent several weeks. —Dr. Hamilton P. Boardmann and family, Oakes, have removed to Southern California. —Drs. Gudmund J. Gislason and Thomas Mulligan, both of Grand Forks, are spending a year in Europe.

**Society Meetings.**—At the annual meeting of the Traill County Medical Society, held in Mayville, Dr. George W. McIntyre, Mayville, was elected president; Dr. Edward C. Haagensen, Hillsboro, vice-president; Dr. Arnt G. Anderson, Hillsboro, secretary, and Dr. Henrik S. Schanche, Portland, treasurer. —At the annual meeting of the Cass County Medical Association, held in Fargo, Dr. Henry A. Beaudoux was elected president and Dr. Ralph E. Weible, vice-president, both of Fargo. —At the annual meeting of the Devil's Lake Medical Association the following officers were elected: President, Dr. William F. Sihler, Devil's Lake; vice-president, Dr. George F. Drew, Crary; secretary-treasurer, Dr. Gustav J. McIntosh, Webster; delegate to the state society, Dr. Arthur T. Horsman; censors, Drs. Thor O. Moeller, Devil's Lake; William C. Fawcett, Starkweather, and Joseph W. Warren, Leeds, and committee on public health, Drs. Arthur T. Horsman, Devil's Lake; Gustav J. McIntosh, Webster, and Roy V. Rogers, Penn.

#### OKLAHOMA.

**Epidemic Diseases.**—An epidemic of measles is reported from Duncan. —Four cases of cerebrospinal meningitis, with two deaths, have been reported from Oklahoma City. —Several cases of smallpox are reported from Grand County.

**Medical Colleges Incorporated.**—The Oklahoma State Medical College has been incorporated at Oklahoma City by Dr. William J. Darnell, Mountain View; Dr. Willis F. Westmoreland, Atlanta, Ga.; Dr. Henricus H. Battey, Rome, Ga., and J. P. Eckers and Dr. Joseph R. Phelan of Oklahoma City. —The Epworth College of Medicine has been chartered at Oklahoma City with a capital stock of \$20,000 by Drs. L. Haynes Buxton, Ulbus L. Russell, Edmund S. Ferguson and others.

**Society Meetings.**—At the annual meeting of the Kiowa County Medical Association, held at Harrison, the following officers were elected: President, Dr. Herbert E. Colby, Gotebo; vice-presidents, Drs. Alexander Barkley, Hobart, and Marshall E. Chambers, Gotebo; secretary, Dr. James M. Bonham, Hobart, and treasurer, Dr. William L. York, Hobart. —The Comanche County Medical Society, at its annual meeting, held in Lawton, elected the following officers: President, Dr. Alexander X. Campbell, Lawton; vice-president, Dr. M. A. Jones, Walter; secretary-treasurer, Dr. James L. Lewis, Lawton; censor, Dr. William M. Turner, Lawton, and delegate to the state association, Dr. David A. Myers, Lawton. —At the annual meeting of the Central Oklahoma Medical Association, held at Enid, the following officers were elected: President, Dr. H. Coulter Todd, Oklahoma City; vice-president, Dr. Newton Rector, Hennessey; secretary-treasurer, Dr. George A. Boyle, Enid, and censors, Drs. Thomas A. Rhodes, Goltry; Franklin P. Hulin, Pond Creek, and Edmund S. Ferguson, Oklahoma City. —At the annual meeting of the Pottawatomie County Medical Society, held at Shawnee, Dr. J. Asa Walker was elected president; Dr. Joseph M. Trigg, vice-president; Dr. Walter C. Bradford, secretary-treasurer (re-elected), all of Shawnee, and Dr. Charles H. Blickenderfer, Tecumseh, censor.

#### OREGON.

**Personal.**—Dr. E. Barton Pickel, Medford, has been elected president and Dr. Edward A. Pierce, Portland, vice-president of the State Board of Health. —Dr. Fred V. Mohn has been elected city physician of Astoria.

**Hospital Notes.**—Articles of incorporation have been filed for the building of an institution at La Grande, to be known as the Grande Ronde Hospital, with a capital stock of \$16,000. The building will cover a ground space of 80 by 32 feet and will have accomodation for about 30 patients. —A bill introduced by Senator Beach provides for a state commission on tubercenlosis and for the establishment and maintenance of two state sanatoria for consumptives, one in Eastern Oregon and one in Western Oregon, with an appropriation of \$25,000 to establish and maintain the institutions for two years.

**Society Meeting.**—At the annual meeting of the Clatsop County Medical Society the following officers were elected: President, Dr. Orrin B. Estes, Astoria; vice-president, Dr. Arthur A. Finch, Astoria; treasurer, Dr. Robert J. Pilkington, Astoria; secretary, Dr. John M. Holt, U. S. P. II. and M.-H. Service, and delegate to the state association, Dr. Henry L. Heuderson, Astoria. —The Portland Academy of Medicine has been organized with the following officers: President, Dr. Simeon E. Josephi; vice-presidents, Drs. Andrew J. Giesy and Otto S. Bingswanger; secretary, Dr. Albert E. Mackey, and treasurer, Dr. James F. Bell.

#### PENNSYLVANIA.

**Election.**—At the annual meeting of the Association of the Free Hospital for Poor Consumptives, White Haven Sanatorium, held March 11, the following officers were elected: President, Dr. Lawrence F. Flick; vice-presidents, Louis Gerstley and M. S. Kemmerer; secretary, Charles W. Welsh; treasurer, Edward A. Miller, and managers, James M. Wilcox, Talcott Williams, Frank Graham Thomson, Dr. Charles J. Hatfield, John K. Mitchell, Dr. D. J. McCarthy, Dr. Joseph Walsh, and Dr. William B. Stanton. During the first six years of the association, \$30,000 was spent for the maintenance of tubercular subjects in institutions over which the association had no control. In 1901 the White Haven Sanatorium was started with a capital of \$2,500. A few beds were placed in a barn and, from this humble beginning, the establishment has grown to an institution capable of treating and quartering 196 patients. The entire cost of the plant so far has been \$174,000. About \$100,000 more is needed to complete the original plans. When finished the buildings and equipment will have cost approximately \$900 a bed, and the institution will be one of the most economically built and equipped of its kind in the world. In Europe similar establishments rarely cost less than \$1,500 a bed. The average cost of caring for a patient is \$7.00 a week, this low rate being due in part, to the practice of paying the invalid for a certain amount of work for the institution as exercise.

**Society Elections.**—Mifflin County Medical Society has elected the following officers: President, Dr. Henry W. Sweigart, Lewistown; vice-presidents, Drs. Robert F. Barnett, Lewistown, and H. S. Rothrock; secretary, Dr. James A. C. Clarkson, Lewistown; treasurer, Dr. Alexander S. Harshberger, Lewistown, and reporter, Dr. Walter H. Parcels, Lewistown. —Montgomery County Medical Society has elected the following officers: President, Dr. Oliver C. Heffner, Pottstown; vice-presidents, Drs. William G. Miller and George W. Stein, Norristown; secretary, Dr. Harry H. Whitecomb, Norristown; corresponding secretary and reporter, Dr. Edgar S. Buyers, Norristown, and treasurer, Dr. Frank C. Parker, Norristown. —Schuylkill County Medical Society has elected the following officers: President, Dr. George H. Moore, Schuylkill Haven; vice-president, Dr. Arthur B. Fleming, Tamaqua; secretary and reporter, Dr. George O. O. Santee; treasurer, Dr. Jacob Taggart, and censor, Dr. J. Spencer Callen, Shenandoah. —Lebanon County Medical Society has elected the following officers: President, Dr. William M. Guilford; vice-presidents, Drs. Alfred S. Weiss and Seth A. Light; treasurer, Dr. Warren F. Klein; secretary, Dr. Charles M. Strickler, and medical and surgical reporter, Dr. John J. Light, all of Lebanon. —Huntingdon County Medical Society has elected the following officers: President, Dr. Charles A. R. McClain, Mount Union; vice-president, Dr. Alvin R. McCarthy, Mount Union; secretary and reporter, Dr. Howard C. Frontz, Huntingdon; treasurer, Dr. George G. Harman, Huntingdon, and censors, Drs. Rudolph Myers, Huntingdon, Charles Campbell, Petersburg, and Charles B. Bush, Orbisonia. —Dauphin County Medical Society has elected the following officers: President, Dr. Charles E. L. Keene; vice-presidents, Drs. J. Warren Roop and John C. DeVenney; secretary, Dr. Clarence R. Phillips; treasurer, Dr. Frank D. Kilgore; reporter, Dr. Charles M. Riekert; censors, Drs. J. Wesley Ellenberger and Paul A. Hartman; delegate to executive council, Dr. David S. Funk, all of Harrisburg, and alternates, Drs. William H. Seibert, Steelton, and Charles S. Rebuck, Harrisburg.



## Philadelphia.

**Donation Day.**—The first annual donation day of the Roosevelt Hospital was observed March 20. The hospital had especial need for twenty new beds. At present there are only twenty-four beds in the institution. The hospital opened Nov. 9, 1905, and since its opening 1,000 patients have received treatment.

**Keen Leaves College.**—Dr. William W. Keen finished his service at the Jefferson Medical College March 11 and left the institution with which he has been connected so long. He tendered his resignation as professor of principles of surgery at the last meeting of the directors. There was no formality about his going. He will sail March 27 for Europe, where he will spend about two years.

**Presentation to Dr. Coplin.**—The tenth anniversary of his professorship in Jefferson Medical College was made the occasion, March 15, by the Coplin Pathological Society at its annual dinner of the presentation to Dr. W. M. Late Coplin, director of the Department of Public Health and Charities, of a silver service as a mark of the appreciation of pathologists for his services to this branch of the profession. Dr. Randa C. Rosenberger acted as toastmaster.

**Charity Ball.**—A meeting of the executive committee of the twenty-seventh annual charity ball, held January 30, took place March 14. The net proceeds for distribution among the beneficiaries was found to be \$9,600. Each of the following institutions received \$2,400: Children's Surgical Ward of the Hospital of the University of Pennsylvania, Maternity Department of the Jefferson Medical College Hospital, the Children's Aid Society, and the Polyclinic Hospital.

**Health Certificate Before Marriage.**—At its regular meeting March 14, the Philadelphia County Medical Society adopted a resolution urging the legislature to pass a bill requiring certificates to the effect that both parties to a proposed marriage are, in the opinion of a qualified physician, free from disease transmissible to progeny, before a license shall be issued to such persons to wed. The society affirms the principle involved and endorses the efforts of the community to secure the adoption of the measure.

**Hospital Report.**—The report of the Mount Sinai Hospital for February shows that 47 patients were admitted which, with the 28 patients under treatment at the beginning of the month, made a total of 75 treated. Of this number, 36 were discharged cured, 5 improved, 5 unimproved, and 3 died, leaving 26 patients under treatment at the end of the month. In the out-patient department 2,613 visits were paid. Of the total visits 916 were new patients. In the emergency ward there were 292 patients treated, 46 of which were patrol cases. There are at present 16 typhoid fever patients in the hospital. At an executive committee meeting held March 2, Dr. Alexander Marcy, Riverton, N. J., was elected governor to fill the unexpired term of one year of Dr. L. Webster Fox.

**Objections to Hospital.**—A petition signed by nearly all the property owners in the vicinity of the Rush Hospital for Consumptives at Thirty-third Street and Lancaster Avenue, protesting against further appropriations for the extension of the building, was forwarded March 11 to both branches of the Legislature at Harrisburg. The reasons set forth in the protest are these: 1. The soft coal smoke from the yards of the Pennsylvania Railroad, which constantly permeates the atmosphere surrounding the hospital, is prejudicial to lung diseases. 2. The operation of the hospital and the occurrences in and about it are a nuisance to the residential neighborhood in which it is located. 3. Any addition to the hospital whereby its capacity will be increased will further depreciate the value of property in the neighborhood, which has already been seriously prejudiced by it. Ineffectual protest was made at the time this hospital bought the property it occupies. This building still stands in an unfinished condition and supporters of the institution have asked for more funds to complete it. A request for the appropriation of \$140,000 to complete the hospital will come before the Legislature now in session.

## GENERAL.

**Yellow Fever.**—Yellow fever is reported at Paraje Neuvo, near Cordoba, Mexico, and precautionary steps have been taken.

**Hospital Board Meets.**—The first meeting of the medical board of the American Hospital, Mexico City, Mexico, which is composed of Drs. Gustavo Pagenstecher, Ernesto P. Fichtner, Alberto R. Goodman, P. W. Monroe and H. Y. Spence, was

held March 6. Dr. Pagenstecher was elected chairman of the board.

**Dr. Osler's Mother Dies a Centenarian.**—Dr. William Osler's mother died in Toronto March 18 at the advanced age of 100 years and 3 months. Few mothers had a family of such distinguished sons. Besides Professor Osler, now regius professor of medicine, Oxford, England, there is E. B. Osler, a wealthy financier and a member of Parliament for Toronto; another is Justice of the Ontario Supreme Court, and the fourth was one of the most famous criminal lawyers of Canada.

**Inebriety Association at Atlantic City.**—The American Association for the Study of Alcohol and Narcotic Drugs will hold its annual meeting in the parlors of the Hotel Marlborough-Blenheim at Atlantic City, N. J., June 4 to 6 from 9 to 10:30 a. m. An interesting program is being prepared, with reports on different phases of the progress of the study of this subject at home and abroad. All physicians who would like to know something of this new field of spirit and drug psychosis are invited to be present. For further particulars and programs address the secretary, Dr. T. D. Crothers, Hartford, Conn. One feature of the session that is being planned is a temperance lunch, at which prominent men will speak.

**Health of the Philippines.**—Dr. Heiser, chief quarantine officer reports the state of the public health is more satisfactory than at any time since the American occupation. The sanitary work of a permanent character, which has steadily been carried on during the past few years, is gradually beginning to be felt. During 1906 the population of the provinces of Cebu, Cavite and Batangas have been systematically vaccinated with the result that, instead of a death list of over 2,000 in Cebu from smallpox and of from 600 to 700 in Cavite and an equal number in Batangas, the number has been reduced to a scattered few, none having come to the attention of the bureau of health during the past six months. It is believed that the artesian wells, which are being systematically installed in a number of provinces, will be another important step in reducing the mortality of the islands. Bacteriologic examinations made of 600 persons selected at random showed uncinariasis present in more than 50 per cent. of those examined.

## CANADA.

**Vital Statistics.**—In February there were 351 cases of infectious diseases reported in Montreal. Of this number 82 were tuberculosis. The death rate in Montreal for 1906 was just a fraction under 22 per 1,000 of population, an increase of 2 per 1,000 over 1905.

**Work for Consumptives.**—The committee conducting a campaign in British Columbia in aid of a provincial sanatorium for consumptives, has recently sent out 6,000 circulars and collectors are making a house-to-house canvass throughout the province soliciting subscriptions. The St. John, N. B., Medical Society has appointed a special committee to urge on the government of New Brunswick the advisability of building a provincial sanatorium for the treatment of consumptives in that province.—The annual meeting of the Canadian Association for the Prevention of Tuberculosis was held in Ottawa March 13 and 14. The following officers were elected. Honorary president, Earl Grey; honorary vice-presidents, the Lieutenant Governors of the different provinces of Canada; president, Hon. Senator Edwards; secretary, Rev. W. Moore, and treasurer, Mr. J. M. Courtenay. A resolution was adopted asking for a more stringent inspection of immigrants on the part of the federal officers.

**Personal.**—Dr. William Black, Winnipeg, is making his annual visit to Rochester and New York.—Dr. Charles Morrison, Montreal, has sailed from Boston for the Mediterranean.—Dr. Campbell Howard, Montreal, is returning from abroad.—Dr. Gordon T. Alley, Charlottetown, P. E. I., who has been ill at the Royal Victoria Hospital, Montreal, has gone to Palm Beach, Fla.—Drs. John Stewart and C. Dickie Murray, Halifax, are in Bermuda for their health. Dr. Harry J. Watson, U. S. Medical Immigration officer at Winnipeg, has recovered from his recent severe illness and resumed practice.—Dr. John Hardie, Morden, Man., has gone to study at Edinburgh.—Dr. Francis J. Ball, Singhampton, Ont., has accepted a surgeoncy on a steamship line to Egypt.—Dr. William Stevenson, Virden, Man., is doing graduate work in Chicago.—Dr. William R. Nichols, Winnipeg, has been appointed examiner in physiology for the University of Manitoba.—Dr. David Low, Regina, Sask., has gone to the West Indies for a visit.



**Osteopaths in Quebec.**—The whole of the afternoon of March 6 was devoted to the consideration of the new medical bill before the Quebec provincial legislature. The bill was in charge of Dr. A. Albert Jobin and was proposed in the interests of the College of Physicians and Surgeons of Quebec. The bulk of the debate was on the clause relating to the advance to five instead of four years' study. All the medical men, members of the legislature took part in the debate, and all with one exception supported the proposal, but all in vain, for the clause was struck out and the four-year course in medicine will still obtain in Quebec. The osteopaths then sent a delegation to wait on the premier, protesting against certain clauses of the bill; and in this connection one of their leaders—there are five osteopaths doing business in Montreal—gave out some information which Canadians in the medical profession can scarcely credit, namely, that since 1901 osteopathy had been recognized and legalized in 34 states of the United States, and that the Supreme Court of the United States had ruled in their favor in other states.

**Hospital News.**—The St. John (N. B.) hospital commissioners are sending to each practitioner of New Brunswick a copy of the scale of fees of the hospital, as many medical men have been in the past in the habit of sending in patients without telling them that there is such a thing as a scale of fees.—Dr. Rowley has been appointed medical superintendent of the St. John (N. B.) Hospital, and will assume his duties some time during the present month.—Dr. Thomas Walker, St. John, N. B., has been inspecting various hospitals in the United States to obtain information for use in the new operating room in connection with the St. John General Hospital.—It is proposed to erect a 60-bed hospital in Regina, Sask., under the care of the Grey Nuns, at a cost of \$100,000.—A new general hospital has been opened at Wingham, Ont.—A new wing containing 30 beds has been completed for the General Hospital at Walkerton, Ont.—Dr. John N. E. Brown, medical superintendent of the Toronto General Hospital, Prof. A. B. Macallum, F.R.S., Toronto University, Dr. R. W. Bruce Smith, Ontario Hospital Inspector, and Mr. M. J. Haney, chairman of the building committee in charge of the erection of the new hospital, have been in New York, Philadelphia and Baltimore and other cities in the United States gathering information and making observations of hospitals.—Mr. William Southam, Hamilton, Ont., has donated to the Hamilton City Hospital, \$15,000 to build a wing for incurable consumptives.—The Alberta legislature has set apart \$34,500 for hospital purposes in that province for the current year.—The Lady Minto Hospital at New Liskeard, Ont., will soon be ready for occupation. It is being built at a cost of \$20,000, will have thirty-five beds, and will be in charge of three nurses of the Victorian Order.—The annual meeting of the Winnipeg General Hospital was held in Winnipeg last week. During the past year there were treated in the institution 4,741 patients and 5,078 consultations were held in the out-door departments. The number of deaths was 317. The work of this hospital has grown enormously within the past five years, as in 1901 the number of patients treated was only 2,773. The total ordinary receipts amounted to \$144,823.94 and the expenditures to \$131,178.78.

#### FOREIGN.

**Hospital to be Erected on Mount of Olives, Jerusalem.**—An exchange states that a new hospital is to be erected on the Mount of Olives by evangelical residents of Jerusalem. The corner-stone will be laid on Easter day.

**Treatment of Incipient Mental Disorders in Scotland.**—The managers of the Western Infirmary, Glasgow, have decided to undertake the treatment of incipient mental disorders in the dispensary attached to the infirmary. The advantages of such clinics are obvious, says the *Lancet*, and students should receive considerable benefit from them.

**Proposed Camillo Golgi Scholarship at Pavia.**—A subscription has been opened in Italy to collect funds to establish a perpetual medical scholarship at the university of Pavia in honor of Golgi. Professor M. Mariani of Pavia has been appointed treasurer of the fund. The students of the university opened the subscription with the sum of \$200.

**Death of Bacteriologist Studying the Bubonic Plague.**—The fortress of Cronstadt, near St. Petersburg, has a laboratory specially equipped for research on the bubonic plague, and a number of scientists have been busily at work there for some time. One of them, Dr. Schreiber, became accidentally inoculated with the plague and his death has just been reported.

**Personal.**—Dr. Donald MacAllister has been appointed principal of Glasgow University to succeed the late Principal Story.

For more than three centuries a divine has been at the head.—Dr. Robert Kennedy has been appointed lecturer in applied anatomy at Glasgow University.—Agnes Cameron, M.B., Ch.B., has been appointed extra assistant gynecologist to the Royal Infirmary, Glasgow.

**Suppression of Opium Smoking in Australia.**—The *Australasian Medical Gazette* states that the Opium Suppression Bill has almost completely annihilated the vice in Melbourne, while reports show the same desirable end has been attained in other parts of the country. The various police officials who have sent in reports state that the multitude of obstacles to opium smoking raised by the measure has resulted in the practice having diminished until the evidences of its existence are scarcely apparent.

**Streets Named After Physicians.**—The *British Medical Journal* has recently been publishing a list of streets named after physicians in various towns of England, with brief biographical sketches of the physicians in question when they belonged to a preceding generation. The list is proving longer than was at first anticipated. One of the ways in which the Spanish propose to honor Cajal since his receipt of one of the Nobel prizes is to change the name of one of the streets of Madrid to name it after him. It might be interesting to know what streets in American towns are named after physicians.

**Centennial Celebration of the Surgical Clinics at Vienna.**—The hundredth anniversary of the founding of the "Operateur-Institut" at Vienna was celebrated March 15 with great ceremony. Hoehenegg and von Eiselsberg are the present chiefs of the first and second surgical clinics, and special demonstrations and inspection of the premises were the order of the day. In the evening the annual meeting of the local medical society resolved itself into an advance celebration in honor of the eightieth birthday of Lord Lister, extolled as the "founder of modern surgery." A. Fraenkel delivered the main address of the evening, and the festivities closed with a social gathering in the Riedhof restaurant. Lister was born April 5, 1827.

**First Congress of German Urological Society.**—This newly organized association\* of German-speaking urologists will hold its first annual meeting at Vienna, Oct. 2-5, 1907. Küster and von Eiselsberg will lead the discussion on the diagnosis and treatment of tumors of the kidney, and Kümmel and Holzknecht, the Vienna Roentgen expert, on the diagnosis and treatment of stone in the kidney. The third topic announced for discussion, "Albuminuria," will be presented by von Noorden and Posner. An exhibition of instruments, etc., will be held in connection with the congress. Address all communications to the general secretary, Dr. Kapsammer, Maria Theresienstrasse 3, Vienna, IX, Austria. The subscription fee of 10 marks (\$2.50) should be forwarded to the treasurer, Dr. F. Löwenhardt, Karlstrasse 1, Vienna. Posner of Berlin and von Frisch of Vienna will preside.

**Repeal of Recent French Law Creating New Certificate for Advanced Medical Education.**—THE JOURNAL commented editorially on page 587 of the last volume on the decree issued last July in France creating a new certificate to be awarded to physicians who could pass certain examinations. On receipt of this certificate they would be eligible for any university or other medical position at any time thereafter without the necessity for further examinations. The profession throughout the country did not approve of the measure, as it was liable to create invidious distinctions between physicians by establishing two grades of physicians—those who had the certificate and those who had not, suggesting the superiority of the former. The authorities have now repealed the law concerning the certificate, although the requirements for examinations are retained, and those physicians who pass the examinations with honor will be given the preference in appointments to medical positions without re-examination. The *Semaine Médicale* for March 6 gives the full text of the official documents relating to these changes in the mode of appointments to medical positions. They free physicians from the dread of impending re-examination and allow them to pursue their researches and work with a quiet mind.

**The Famine in China.**—Acting Assistant Surgeon Ransom of the Public Health and Marine-Hospital Service reports that smallpox has broken out in the camps along the Yangtze River, China, in which many thousands of starving refugees from the famine area are now concentrated. There are more than a million and a half of starving people in the camps within a few hours' travel of Shanghai, and these represent only a



fraction of the mass affected by the famine. These people are herded together without regard to sanitation. They are living in temporary huts of matting, 4 feet in height by about 6 feet wide and 8 feet deep, one end of which is open and the other closed with sod. Such a structure contains 8 or 10 individuals clothed in rags, filthy beyond description, and the huts are packed together in the closest possible manner. The food of these sufferers consists of a small cup of rice each per day or the equivalent of about 2 cents American money with which to buy food, this relief being supplied by the Chinese officials. As there is no food to buy, the financial relief offered is of little avail. It is reported that the country over which these people have traveled to the concentration camps resembles that which has been swept over by a swarm of locusts. There is not a living thing to be seen, either vegetable or animal, and even the bark of trees and roots and refuse of all kinds are being consumed for food. The extreme suffering in the famine area continues unabated, notwithstanding the fact that there have been sent from Shanghai, through voluntary contributions of its citizens, tons of provisions for the stricken people. These provisions are accumulating at the various ports along the Yangtze, for various reasons, chief among which are bad roads or no roads, the silting up of the waterways and lack of transportation into the country. Severely cold weather adds to the suffering. One of the results of this condition is that many beggars are finding their way into Shanghai, bringing with them the diseases which prevail in the concentration camps whence they come.

**Congress for Medical Economics in Belgium.**—The third annual conference of Belgian physicians to discuss organization, contract practice, insurance fees, medical legislation and the like, will convene at Antwerp in July. The subjects to be especially discussed this year are the needed reforms in the present system of insurance against industrial accidents; the free choice of a physician by the injured workman (known abroad as "the American plan"), and the advisability of organizing special postgraduate courses in medical hygiene and medical jurisprudence, with diplomas. The two preceding congresses were very successful. They are all organized by the officers of the general medical association, the *Fédération Médicale Belge*, which has its central offices in the *Maison des Médecins* at Brussels, the special building erected a year or so ago for a central gathering place for physicians and medical societies.

**Repression of Ankylostomiasis in Belgium.**—According to reports from Belgium, much success has attended the recent researches made there in regard to ankylostomiasis, "miner's anemia," and it is stated that by putting into execution the knowledge thus gained, the disease has been virtually controlled. The fact has been made perfectly clear, as already mentioned in *THE JOURNAL* some time ago, that the disease is caused either by the parasitic worm entering by the mouth or by penetration through the skin, and that personal cleanliness and careful attention to sanitation are the most effectual means of combating it. Dr. Herman, director of the Institute of Bacteriology of the province of Hainaut, has verified in a practical manner the conclusions reached by Looss in Egypt, namely, that the larval germs of the disease, coming in contact with the flesh, will penetrate the skin. The worms either penetrating through the skin or entering the mouth, of course reach the intestines, and after a time reduce their victims to a condition of acute anemia. A feature of the disease is that the miner, although himself infected, is unable to infect other members of his family. Without the necessary warm atmospheric conditions the germs of the disease can not be transmitted. This point plainly demonstrates the fact that good sanitation is essential if the disease is to be stamped out. The steps taken by the Belgian government appear to have been effectual in bringing about this result. It is satisfactory to be well assured that by observing strictly the laws of personal cleanliness and sanitation, as has been done in Belgium, the disease can be eradicated.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, March 2, 1907.

#### The Epidemic of Cerebrospinal Meningitis.

The epidemic of cerebrospinal meningitis in Ireland and Scotland is increasing in an alarming manner, and several cases have occurred in London and other parts of England. Up to February 27 there have been 123 cases, with 72 deaths, in Belfast; 8 other cases have been reported from various other towns in the north of Ireland. In Dublin 11 cases and 8 deaths have occurred. The disease has been made notifiable for six months. In London 3 cases and 2 deaths have occurred. Cases

are also reported from Chelmsford, Hull, Handsworth and Eccles. In Glasgow the death roll amounts to 125 and there are now 101 cases under treatment. The total number of cases in the United Kingdom now amounts to 483 and the deaths to 364. In London ample provision has been made for an epidemic.

In Edinburgh the medical officer of public health states that during January there were 25 cases and 21 deaths. However, from postmortem bacteriologic investigations it was decided that a third of the deaths attributed to meningitis in epidemic form were due to other diseases, principally to tuberculous and acute meningitis. Mistaken diagnoses undoubtedly not infrequently happen when epidemic meningitis is prevalent, but it is certain that meningitis in its different forms has been unusually common in Great Britain during the past winter.

#### Sanitary Education in the Army.

The war office has at last been stirred up to make proper provision for the teaching of hygiene in the army. A course of lectures on sanitation will be given to officers at least once annually by the commanding sanitary officer or by a selected member of the Royal Army Medical Corps. A manual of sanitation has been prepared and will be issued to all concerned. Instructions and examinations will be based primarily on this manual. After March 1, 1908, lieutenants will be required to pass an examination in sanitation before promotion to the rank of captain. Officers who obtain 50 per cent. of marks will be recorded as passed. Those who gain 75 per cent. will receive a special certificate in sanitation. Officers of companies, squadrons, etc., will give instruction to their non-commissioned officers and men in sanitation. Instruction will be given to fit them for the performance of sanitary police duties, the sterilization of water on active service, etc. In other respects the War Office has also awakened to the necessity of sanitary preparations. On mobilization being ordered a sanitary inspection committee is to be formed for service in the field. Its duties will be to see that sanitary appliances and materials of all kinds are available and that an adequate reserve is maintained; to assist general officers and the medical service in maintaining the health of the army; to initiate schemes of general sanitation and to serve as a board of reference for the solution of sanitary questions; to visit and inspect stations occupied by troops, to advise local authorities regarding necessary sanitary measures, and to promote in every way the maintenance of sanitary conditions.

#### Rearing of Children.

An interesting lecture on rearing of children was delivered at the Institute of Hygiene, London, February 20, by Dr. George Carpenter, a well-known British authority on pediatrics. He maintained that the future prosperity and position of Great Britain depend on this subject receiving the serious attention due it. The best point made by Dr. Carpenter was the severe indictment brought against the lethargy and negligence of the authorities in allowing the British milk supply to continue in its present unsatisfactory condition. He said that great indignation was expressed when "The Jungle" revealed the horrors of American packing houses, but it seems, said the lecturer, difficult to arouse the public about an equally scandalous state of affairs in regard to our own dairy operations. Untold infant lives, he asserted, are sacrificed to the demon "Dirt," and the health and physique of innumerable others are seriously undermined by this and by the wholesale supply of tuberculous milk.

LONDON, March 9, 1907.

#### Malta Fever.

The commission appointed to investigate Malta fever reports that the rapid disappearance of Malta fever from Gibraltar which commenced in 1885, is intimately associated with the greatly lessened importation of goats from Malta. At present Spanish goats are introduced, and it is recommended that these be quarantined until examination of the blood has shown them to be free from infection.

#### A Middle-Class Hospital.

A project has been started to found a middle-class hospital to be called the Knollys Memorial Hospital and to supply a long-felt want in London—a hospital for the benefit of persons unable to pay the high fees of nursing homes and yet willing to pay according to their means. Many nursing homes are established in houses never intended for the purpose, with awkward staircases, badly ventilated rooms and other drawbacks. The proposed hospital will be situated on a site near Regent's Park, opposite the Zoological Gardens, and will start with between 60 and 100 beds. There will be a graduated scale of fees, and it is hoped that the institution will be self-supporting.



## VIENNA LETTER.

(From Our Regular Correspondent.)

**Exaggeration of the Unhealthfulness of the Air of Towns.**

VIENNA, Feb. 25, 1907.

Statistical data are now obtainable in regard to risks to which country-born immigrants to the industrial centers are exposed from the change in their mode of life and the different quality of air. According to these figures, the dangers are greatly exaggerated. The only significant difference between the health statistics of rural districts and cities is that deaths from phthisis are slightly (3 per cent.) more frequent in towns, while cancer and bone diseases (osteomyelitis, caries and fractures), seem to be more frequent in the country. The main point of interest is that diseases of the upper air passages and the exanthematous infectious fevers (air-borne diseases), are not more common in cities than in the country. As the country is less densely populated the absolute figures are different from those of the towns, but the relative figures are nearly the same. The effects of smoke, dust and overcrowding have been overestimated, or, perhaps, the country air has been underestimated in its impurity from a medical point of view; but apart from this fact, it has been proved that nervous diseases (hysteria and neurasthenia) are more common in certain rural districts than in many cities.

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**Correspondence**

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**Alcohol in the Navy.**

SAN JUAN, PORTO RICO, March 6, 1907.

*To the Editor:*—The substance of your editorial on this subject in *THE JOURNAL*, February 16, 1907, is so at variance with my experience that I can not let it go unchallenged, even though your deductions are drawn from the paper of my friend, Dr. Lovering.

After a service of nearly twenty years, comprising duty on all stations and in many ships, I feel safe in saying that I know of no more generally abstemious class of men than naval officers, no type more keenly appreciative of their responsibilities, no type better qualified for their duties. Conscientiousness in the matter of duty is a characteristic of the service. When you see a naval officer, no matter what the conditions he is under, nor where he may be placed, you will find that he will ring true ninety-nine times out of a hundred. There may be startling exceptions to all this at times, but when they are analyzed it will generally be found that they will not detract from the force of what I have said.

Many officers and all enlisted men are total abstainers while on board ship. The varied complicated technical problems with which they are confronted and the almost incessant drilling make this advisable in the one case and necessary in the other. Let such abstainers go on shore and meet the entanglements with which the navy is beset and they are likely to get into trouble. For example, an officer goes to a hospitable club and takes one or two drinks with insistent acquaintances. These drinks to the club habitués have little more effect than a like amount of water, while to the abstainer or moderate drinker, on the other hand, they may act as a demoralizing poison, completely upsetting him, when he at once becomes conspicuous and is pointed to as another example of a drunken naval officer, often, too, by the promoters of his undoing. The case is much the same with the men. There is no drinking among the men on board ship and comparatively little among the officers, as I have said. By being in the navy we are more or less conspicuous and are often targets for cruel shafts.

You do not know, nor do I, what goes on after dark in the homes about us in a civil community. How could we know of the extent to which drunkenness exists there? We can not judge of them, as they are beyond our reach. On the other hand, on board ship, the conduct of every officer and man is known every hour of the twenty-four, and nothing can be concealed.

The number of officers who are intemperate is rapidly growing less and the same may be said of the men. Conditions are decidedly better to-day than when I entered the service. Drunkenness is certainly on the decrease.

A word about the statistics quoted by Dr. Lovering. They are misleading. The common tipples of the British and German sailors is beer or ale. Uncle Sam's tars have a liking for

whiskey. Hard drinks contain eight times as much alcohol as malt liquors and are probably eight times as disastrous to those who over-indulge. If eight men unused to liquor go on a debauch drinking whisky, with eight men, accustomed to beer, who drink beer only, it is probable that many, if not all, of the whisky drinkers will be unfit for duty afterward, and few, if any, of the beer habitués. The statistical differences quoted are due to two factors, viz., abstention on the one hand and vicious drinks on the other. The greater number of admissions for alcoholism in our navy by no means shows that there is eight times as much drunkenness as in the other services. The beer sot is quite as unfit for duty as any other, but he is probably eight times as likely to pull out of it, without seeking the sick list, as is his whisky-drinking pal.

Our navy could not be in better hands, nor under clearer heads, than those that command it to-day. As a total abstainer, naturally, I believe that total abstinence would be ideal; that being impossible, moderate indulgence in malt liquors would be a second choice, but, as the drinkers have something to say about it, and they appear to like hard drinks, over-indulgence will be followed by admissions to the sick-list.

C. F. STOKES,  
Surgeon U. S. Navy.

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**Diphtheria Antitoxin in the Treatment of Bronchial Asthma.**

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PIQUA, OHIO, Feb. 26, 1907.

*To the Editor:*—After an experience of more than twenty-five years in the practice of medicine, the most interesting case I ever saw was one of bronchial asthma. The reason this case was of such interest is that I was the patient.

It may be taken for granted that I patiently and persistently tried every means for the relief of this condition, but still suffered nightly with from one to three attacks, and for six years never escaped a night. It is true that I received temporary relief from various remedies, but there was always a return of the attack within three or four hours after retiring. During these attacks I tried and wore out one remedy after another, and I am sure I overlooked nothing that has ever been used by the medical profession for this condition. I used inhalations, from stramonium leaves to chloroform; also stimulants one after another, with but temporary relief. After my attention had been called to adrenin or adrenalin, I used the solution 1 to 1,000 in 5 to 10 minim doses hypodermically, and while I must say that these remedies never failed to relieve an attack, yet the condition would return in three or four hours if I went back to bed. During all these years of suffering and experimenting I had been looking for some preventive—something that would free me from those nightly attacks. At last I arrived at the conclusion that a change of climate would be my only relief. Late in October, 1906, I heard of a physician who had had asthma, and while attending a case of diphtheria had given himself a prophylactic injection of 2,000 units of diphtheria antitoxin. Strange to say, his asthma cleared up. It not only protected him against diphtheria but completely relieved his asthma.

After some correspondence, and knowing from experience it could do no harm, on Nov. 14, 1906, I injected 4,000 units of Mulford's diphtheria antitoxin. For five days I experienced no result, when I had a slight chill, followed by a temperature of 102 F., urticaria and slight rheumatic pains of joints. Since this time I have entirely escaped asthmatic attacks.

I have now passed three months without a single attack of asthma, and am in better general health than for many years, and feel that the profession should know the results in my case. How diphtheria antitoxin prevents asthma I do not know. For how long it prevents it I am waiting to find out. One thing I do know and that is that it has proved a Godsend to me. I have used the antitoxin in two cases besides my own, with good results, but too recently to make a report. Dr. W. S. Dick of Columbus has used it in several cases, and will no doubt soon report it.

From experience I believe diphtheria antitoxin will give relief in all cases of bronchial or catarrhal asthma, while in cardiac asthma I would expect it to do no good.

F. E. KITZMILLER, M.D.



## Pharmacology

### ANTIDYSPEPTICS AND VEHICLES.

#### Comments on Some of the Official Preparations Available for These Uses.

The proprietary mixtures which are claimed to supply the system with digestive ferments, and which the Council on Pharmacy and Chemistry has shown to be impossible combinations, have attained wide popularity entirely through persistent advertising. However, since they are largely used, they must serve some purpose. What is it? Simply that they make excellent vehicles and occasionally are effective as antidyspeptics.

#### AS VEHICLES.

The choice of a proper vehicle for nauseous drugs prescribed in solution has received too little attention in the education of physicians. In consequence, many physicians have accepted eagerly the solution of the problem offered by the proprietary manufacturer and have fallen into the habit of using these preparations simply as vehicles without reference to their value as digestive agents. Apparently physicians forget or do not know that both the Pharmacopeia and the National Formulary furnish us with preparations just as serviceable as vehicles as the proprietary digestives like elixir of lactopeptine, pan-peptic elixir, peptenzyme elixir, etc.

The subject of vehicles, etc., was treated somewhat extensively in one of the series of special articles on the Pharmacopeia and the Physician (THE JOURNAL, June 23, 1906), but it may be worth while again to refer to some of these which should replace the impossible proprietaries.

When the attention of a very intelligent physician was called to the impossibility of a mixture containing the substances which the manufacturers of the Elixir of Lactopeptine claim that their preparation contains, he said that he used it simply as a vehicle, and laughingly acknowledged that its pretty color had something to do with its popularity so far as he was concerned, and undoubtedly he represented many others. The appearance of medicines is well worth the physician's attention, not only from the desire to make himself popular with his patients, but because of the effect produced by psychic impressions.

The addition of some coloring matter is frequently desirable to improve the appearance of medicines, and without doubt much of the popularity of some nostrums is due to their pretty color. An attractive bright red color can be communicated to mixtures by the use of about 1 per cent. (5 minims to the ounce) of tincture of cudbear (tinctura persionis, N. F.). Carmine will produce a red color in alkaline solutions. For brown colors, addition of the compound tincture of cudbear (tinctura persionis eo, N. F.), will give the desired result, and for neutral or alkaline solutions glycyrrhizin may be used. For yellow coloring 1 per cent. (5 minims to the ounce) of tincture of hydrastis, U. S. P., may be used.

Medicines should be made as palatable as possible, and the Pharmacopeia and National Formulary contain some excellent vehicles, especially certain elixirs, which may properly supersede the proprietary vehicles. For instance we have elixir aromaticum, U. S. P., elixir adjuvans, U. S. P., elixir eriodictyi aromaticum, N. F., elixir taraxaci compositum, N. F., and the two elixirs of glycyrrhiza. The vehicle should be chosen to fit the remedy to be administered, so far as practicable, and in this respect a selection from the variety of official preparations has decided advantages over the use of a single proprietary elixir whose exact composition is not known. For salts like potassium bromid the elixir aromaticum, U. S. P., forms an excellent vehicle. Thus we may direct:

R. Potassii bromidi ..... 3iiss 10|  
Elixir aromatici ..... 3ij 60|

M.

This mixture contains 10 grains of the bromid to the fluidrachm and is of the same composition as elixir potassii bromidi, N. F.

Sodium salicylate can also be disguised by the use of aromatic elixir. If we wish to secure the effect of color at the same time we can add five drops to the ounce of tincture of cudbear (tinctura persionis, N. F.). Thus:

R. Sodii salicylatis ..... 3iiss 10|  
Tinctura persionis ..... m. xv 1|  
Elixir aromatici, q. s. ad ..... 3iv 120|

M. Sig.: Each teaspoonful contains approximately  $4\frac{3}{4}$  grains of salicylate of soda.

The taste of potassium iodid can be disguised by aromatic elixir in the same way and this vehicle is not surpassed for this purpose by any proprietary digestives.

The National Formulary contains a number of other elixirs of special salts which may be used by those who wish to prescribe elegant and palatable mixtures. Among these are elixirs of calcium, lithium, and sodium bromids, potassium acetate, salicylic acid and the various salts of iron, for which orange flower water or the syrup of orange flower are acceptable. When prolonged use of a remedy such as syrup of hypophosphites is necessary the flavor should be changed from time to time; for example, tincture of vanilla may be substituted for the syrup of orange or lemon.

For the purpose of disguising the taste of quinin the preparations of licorice are very suitable. Elixir adjuvans, U. S. P., consists of a mixture of 12 parts of fluid extract of glycyrrhiza with 88 parts of aromatic elixir. One may prescribe

R. Quininæ sulphatis ..... 3ss 2|  
Elixir adjuvantis ..... 3ij 60|

M.

This is to be triturated in a mortar and directed to be shaken before taken. No acid should be used to dissolve the quinin sulphate, since this would precipitate the glycyrrhizin, the active principle of licorice. A drachm of this preparation contains 2 grains of quinin sulphate.

Instead of the elixir adjuvans the syrup of glycyrrhiza N. F. may be used and sometimes may be preferable, as it contains no alcohol. Ammonium chlorid is a nauseous salt which is best disguised by syrup of glycyrrhiza.

The bitters used as appetizers and as stomachics owe their therapeutic effects to their bitter taste, so that concealment of this taste tends to defeat the purpose for which the medicine is given. Still if it is thought best to disguise the taste the syrups form appropriate vehicles. Thus we may give nuxvomica with syrup of orange, improving the appearance by the use of cudbear if desired.

R. Tincturae nucis vomicæ ..... 3iiss 10|  
Tinctura persionis ..... m. xv 1|  
Syrupi aurantii ..... 3iv 120|

M.

#### AS ANTIDYSPEPTICS.

All the proprietary antidyspeptic remedies contain alcohol and aromatics, to which, undoubtedly, what therapeutic virtue they really possess, is due. In cases of distress after meals the physician, as well as the patient, naturally seeks something to allay the present discomfort while waiting for the result of investigation into the cause of the symptoms and the slow improvement that is apt to attend strictly rational treatment. And there are many official remedies that will answer the purpose fully as well as the much-vaunted proprietaries.

Alcohol has a stimulating action on the functions of the stomach and especially in the form of wine will often relieve the uncomfortable feelings that come on after eating, and herein lies one of the principal reasons for the popularity of mixtures containing alcohol. The carminatives, such as cardamom, cinnamon, allspice and ginger will give relief in most cases. Peppermint, chamomile, anise, etc., have a well-deserved reputation for relieving flatulence, colic, and similar conditions. Chloroform is both anodyne and antiseptic and is a valuable remedy in the milder forms of gastralgia. Alkalies are often beneficial and especially in hyperacidity, but are frequently given in insufficient doses.



While a physician should attempt to individualize in the use of these remedies, sometimes it may be advisable to give them in combination, and the Pharmacopeia and National Formulary present a number of excellent combinations which may be used in such cases. As a combination of alcohol and aromatic carminatives, the compound tincture of cardamom, U. S. P., is superior in safety and efficiency to any nostrum on the market. It contains cardamom, cinnamon, caraway, cochineal, glycerin and alcohol. In addition to its therapeutic properties it has a pleasing red color, which may serve the purpose of suggestion. The tinctura aromatica N. F. is a similar preparation. The average dose of the former is one teaspoonful, of the latter 30 minims. Mistura carminativa contains carminatives and alkalies, but it also contains opium, and, therefore, should be used with the presence of that drug in mind, especially when given to infants. For adults the amount of opium is so small that a drachm contains only one and a half minims of laudanum. Pulvis cretæ aromaticus combines carminatives with an alkali and may be used for hyperacidity. The average dose of 2 Gm. (30 grains) contains enough alkali to neutralize the free acid in 250 c.c. (8 ounces) of normal stomach contents, so that probably twice this dose should be used for full effect.

Incidentally it may be said that most proprietary digestive remedies contain acid, while the majority of cases of dyspepsia require an alkali. In cases in which an acid is indicated, however, the dose should be much larger than those afforded by the proprietary mixtures. If it has been ascertained that a digestive agent is really needed the simplest way is to prescribe pepsin with large doses of hydrochloric acid, which should be well diluted in administration, but if a ready-made digestive mixture is desired the liquor pepsini N. F. may be used, although it also contains an insufficient amount of hydrochloric acid. The elixir, essence, and wine of pepsin of the National Formulary are better suited for use as aromatics and stomachics than as digestive agents, but are worthy of consideration as substitutes for the proprietary digestive mixtures.

In conclusion, the use of these remedies should be regarded merely as palliative and should not be allowed to obscure the need of thorough investigation and treatment of the disease which underlies the symptoms.

The chief value of the digestive ferments should be as pharmaceutical or biologic reagents rather than as true therapeutic agents, namely, for the preparation and predigestion of food articles as indicated in the peptonization of milk.

#### EXAMINATION OF DIGESTIVE FERMENTS.

##### A Further Report on the Digestive Power of Lactopeptine.

Dr. Charles H. Miller, assistant professor of pharmacology, Northwestern University Medical School, has voluntarily conducted some experiments for the purpose of learning whether or not Lactopeptine Powder is effective either as an amylolytic or a proteolytic ferment. The following is Professor Miller's report of his experiments, which should be read in connection with the report of the Council on Pharmacy and Chemistry, published last week:

Herewith I send report of tests made by myself relative to the digestive powers of Lactopeptine Powder—obtained from an original sealed package. Being interested in the examination of digestive ferments, I was prompted to take up Lactopeptine Powder because it is a preparation widely advertised. The observations are in accord with the report of your Council, published in THE JOURNAL, March 16.

##### A. AMYLOLYTIC POWER: ACTION OF PANCREATIN AND DIASTASE.

1. Gelatinized starch paste. Subjected to action of Lactopeptine in amount equal to 50 per cent. by weight of starch (before cooking) at 100 degrees F. for a total of 12 hours. Tested hourly for disappearance or modification of starch reaction.

No change was observed in mucilaginous consistence of the starch paste or purity of the starch reaction with iodine.

Control: The same quantity (30 c.c.) of the same starch paste was practically instantaneously changed to a thin liquid, in which the starch reaction was completely lost within five minutes, after the addition of 2 c.c. saliva; in other words, 2 c.c. of saliva within five minutes converted 1.5 gms. of starch

into dextrin and sugar, while 0.66 gm. Lactopeptine was without action on the same quantity after 12 hours.

2. A second test was made in the same way, except that an alkaline reaction was given with  $\text{NaHCO}_3$ .

The result was identical. No action could be detected.

Control: A similar mixture plus 2 c.c. of saliva was converted within five minutes, with disappearance of the starch reaction.

Conclusion: It is therefore evident that the preparation contains neither pancreatin nor diastase.

##### B. PROTEOLYTIC POWER: ACTION OF PEPSIN.

Coagulated egg albumin in glass tubes of 2 cm. in length and 5 mm. diameter, open at either end and completely filled, was subjected to digestion for a total of 24 hours, at a temperature of 100 F., as follows:

Digestant	Quantity	Medium	Results	
			12 hours	24 hours
Lactopeptine	0.33 Gm.	0.2% HCl	1/20 digested	1/10 digested
Lactopeptine	0.33 Gm.	$\text{H}_2\text{O}$	inactive	inactive
Lactopeptine	0.33 Gm.	Alk. $\text{H}_2\text{O}$	inactive	inactive
Blank	Blank	0.2% HCl	inactive	inactive
Scale pepsin	0.3 Gm.	0.2% HCl	1/2 digested	All digested
Pancreatin	0.3 Gm.	Alk. $\text{H}_2\text{O}$	1/8 digested	1/4 digested
5 yr. old specimen	0.3 Gm.	Alk. $\text{H}_2\text{O}$	1/8 digested	1/4 digested
Wampole's papain digestant*	4 Cc.	$\text{H}_2\text{O}$	inactive	inactive

Conclusion: Lactopeptine is apparently equivalent in proteolytic power to the Pepsinum Saccharatum of the U. S. P. 1890, which was a 10 per cent. preparation and, like it, Lactopeptine is only active in acid media. It is devoid of active enzymes other than the pepsin, and while the powder is feebly acid in reaction, no activity could be shown when water was the medium employed.

CHARLES H. MILLER.

## Miscellany

### Campaign Against Malaria in Italy.

Passed Assistant Surgeon McLaughlin, of the Public Health and Marine-Hospital Service, makes a further report on the measures taken to preserve health in malarial regions in Italy. A summary of his previous report appeared in THE JOURNAL, Dec. 22, 1906, page 2113. In Italy, from time immemorial the rural population has been stricken by the disease, while the inhabitants of the cities have generally escaped. At present the majority of cases, both of acute and chronic malaria, are found in the country, but railway employes and soldiers suffer greatly from malaria. The longest lines of Italian railroads extend along the littorals of the Mediterranean and Adriatic on flat land which is often below sea level. The mountains rising above the flat land were formerly covered with forest, but are now perfectly nude. Similar conditions exist where the railroads, as is often the case, follow the course of a river through a wide valley. The railroads pass through many sections devoted to the cultivation of rice and the maceration of hemp, and it is not surprising that railroad employes should suffer greatly from malaria. So far as the army is concerned, there are fortifications and posts in the very worst of these malarial zones. The Guardie di Finanza, who are considered part of the army, are required to patrol every foot of this malarial coast line.

A law of Nov. 2, 1901, with the object of combating malaria, imposed certain duties on proprietors of land, on the employers of labor, and, in a word, on all persons who had workmen or laborers dependent on them in malarial zones. These persons are charged with the duty of diffusing the knowledge of malaria and the means of combating it among the country people and others employed by or dependent on them. As the country people are generally unable to read, it is necessary for the proprietors to explain verbally the contents of the government publications issued with this object in view. One of the most complete is that of the Royal School of Agriculture, at Portici (near Naples), entitled "Popular Points on the Relation Between Malaria and Agriculture."

Until July 1, 1905, all the Italian railways, although the property of the state, were operated by private companies.

\* Said to contain pepsin, pancreatin, papain and diastase.



Each of these companies had its own special rules regarding malarial zones and the extra compensation allowed workmen employed therein. These companies were among the first to conduct experiments on the mechanical protection against mosquitoes by means of wire netting. The famous experiments of Professor Grassi, made from March to October, 1905, in the plain of Capaccio, near Salerno, one of the most virulent malarial zones in Italy, placed the theory of mechanical protection against mosquitoes on a firm, practical basis, and the larger part of the expenses of these experiments was paid by the company operating the Mediterranean Railway system. When the Italian government took charge of the operation of the railways it became necessary to have uniform regulations regarding all matters, including malaria.

All the employes who serve or who have residence in a malarial locality are allowed an increased daily compensation. Temporary employes in these districts have no such rights. The right to this indemnity is not extended to employes receiving more than 3,000 lire (\$570) per annum, or to laborers who receive more than 8.50 lire (\$1.62) per diem.

The mechanical protection against mosquitoes and the administration of quinin are obligatory under the laws. The results as regards the railroads are not yet in evidence, too short a time having elapsed since the government assumed actual control of the railroad system.

In April, 1905, the head of the army medical department issued a circular to the directors of health of the various army corps of the kingdom, in which he prescribed the prophylactic and therapeutic measures to be employed against malaria. In another circular of the same month he added some important details with regard to registration of cases. It is now obligatory in the army to maintain special registers of malarial cases, noting the manner and variety of the infection, the technic of the scientific researches made, and the method of administering the quinin. This system has been in practice too short a time to draw conclusions as to results in the army.

#### Eradication of Malaria from an Egyptian City.

Some interesting information regarding the eradication of malaria from the city of Ismalia is given in the *Oesterreichische Sanitätswesen*, Vienna.

The city of Ismalia was founded in 1862, and now has 8,000 inhabitants. It is situated in the government district of the canal on the north shore of Lake Timsah, which is intersected by the canal at about an equal distance between the Red Sea and the Mediterranean. The health conditions of Ismalia were considered favorable, but in 1877 malaria broke out in the city with such intensity that by 1886 nearly every inhabitant had been attacked. After many unsuccessful attempts to overcome the disease the Suez Canal Company, in 1901, undertook to put into effect active measures for the destruction of mosquitoes, which were beginning to be recognized as agents in the diffusion of malaria. These measures were carried out during a period of two years with the result of completely eradicating malaria from the city.

Three theoretical methods for the local campaign against malaria were considered: 1. Cure by quinin or removal of all fever patients. 2. Protection of inhabitants against the bite of mosquitoes. 3. Extirpation of mosquitoes (winged insects and larvæ). The canal company adopted two methods. The sick and a large number of the unaffected inhabitants were treated with quinin. Simultaneously with this treatment a search was begun for anopheles in the vicinity of Ismalia in the adult and larval forms and for the ordinary stinging flies. This search was followed by an endeavor to sanitize the ground and standing water and refuse.

The first discovery of anopheles was made about the beginning of August, 1901, at a time when the city generally was free from mosquitoes. A few days later they were found to be generally diffused. The captured mosquitoes were found for the most part to belong to the variety *Anopheles pharonensis*, which are universally present in North Africa, and the *Anopheles chaudoyei*, known in Algeria. It was found that the critical season began about July and that a breeding place of the anopheles existed in the eastern part of the city. All the stagnant water in the vicinity of Ismalia was examined for

anopheles larvæ. These were found in every pool and puddle formed in the cultivated land near the town, in the irrigation and drainage canals, and in deposits of water formed by infiltration from the fresh-water canal.

No larvæ were found on the reeds or water plants along the shore of the canal, and none in the large marshes or in canal water. Experiment in the life duration of larvæ after partial drying showed that they recovered their vitality after several hours' exposure on dry sand when placed again in water. These conclusions indicated that for the destruction of the anopheles mosquito it was necessary to eliminate all the deposits of water in which the larvæ were found. Numerous observations showed further that the culex and stegomyia mosquitoes existed in great numbers throughout the entire year, in ditches, drains, kitchen and laundry waste water and water containers in houses. The larvæ of the stinging flies were also found in pools, puddles and drainage canals.

On December 27, at a conference of the canal company, it was determined to lay down a definite program for the work of extirpation. It was decided to increase the flow of water in the canals. New drainage canals were provided, larger water basins were allowed to dry, small depressions were filled with earth or sand, the drainage canals were deepened, and reeds and water plants were cut down or uprooted.

Since the completion of this work no mosquito larvæ have been found in the water in the sanitated area, although some isolated anopheles have been found at the beginning of summer in the city itself. The place of origin of these isolated mosquitoes is believed to be Nefiche lagoon, which is very irregular in shape and has a shore line covered with small pools. The work of drying out part of the marsh and filling in the remainder was begun in the spring of 1906.

In order to destroy any mosquitoes that might harbor in houses, a service was organized for the purpose of visiting each house weekly and emptying all standing water or, when that was impossible, oiling the water and treating all sinks and drains with a mixture of crude and refined petroleum.

The results of the sanitary work may be stated as follows: Since the beginning of 1903, mosquitoes and all varieties of stinging flies, which were previously present at Ismalia, have disappeared, and the inhabitants have been able to dispense with mosquito nets. Since the autumn of 1903, no larvæ of the anopheles have been found in the area of sanitation which surrounds the town at a distance of about 1,800 meters from the last house. Since 1902, a marked decrease in the prevalence of intermittent fevers has been observed, and since 1903 not one case of malaria has been reported in Ismalia. The number of the malarial patients, which in 1877 was 300, rose in 1886 to more than 2,500, in 1902 to more than 1,500, in 1903 was only a little over 200, and in 1905 amounted to only about 50 cases.

Isolated anopheles continue to be found in the autumn of each year. They are probably conveyed to Ismalia by the wind or by railway or ship travel, and constitute no source of danger to the city. The original importation of malaria into Ismalia is referred to the numerous Italian laborers employed on the Ismalian Canal. These laborers probably brought the disease with them.

**Crusade Against Yellow Fever in Mexico.**—E. Liceaga is president of the national public health service in Mexico, and at the recent meeting of the American Public Health Association at Mexico City in December, he described the methods in vogue for extermination of yellow fever in Mexico. They differ to some extent from those employed elsewhere, although based on mosquito transmission. In Vera Cruz, for instance, where yellow fever had been endemic for three centuries, the city is divided into districts proportional to the number of resident non-immunes. Each district is in charge of a physician with a force under him which keeps a record of all the non-immunes and visits them daily, in order to discover at once the first appearance of the disease. This force also attends to petrolizing and draining away the deposits of water and disinfecting the contaminated houses. The sick are placed in previously fumigated, thoroughly screened rooms. In order



to be sure that disinfection is complete mosquitoes are introduced into the rooms and placed in conditions unfavorable for the action of the disinfectant. Disinfection is not considered complete until all these mosquitoes are killed. The service also has means to prevent the escape of mosquitoes from the contaminated house, even when it is a mere shack (by covering the house with sheets of duck, etc.). The service also keeps sanitary agents on the trains entering or leaving contaminated places, in order to detect cases among the passengers. Liceaga pays a high tribute to the states of the republic which placed at once the entire matter of repression of yellow fever in the hands of the central government, thus facilitating concerted action at various points. Besides the mosquito brigades in nine different cities, flying brigades are sent to various points on suspicion. At the date of his address, December, 1906, not a case of yellow fever had been known throughout the whole land for several months.

**Improved Technic for Taking Temperature of Body from the Urine.**—M. Engländer has revived the method of taking temperature from the urine, and believes that he has eliminated and overcome the previous objections to this method. With his technic he states that the findings of the temperature are more constant than with any other method, while slight fluctuations are more accurately registered. His aim was to take the temperature in the flowing stream, in a vessel that did not have to be previously warmed, and he thus uses a funnel made of strong filtering paper. As this absorbs the urine at once, there is no need to heat it beforehand. The sheet of filtering paper, 15x12 cm., is folded once, and again to make a funnel, and the tip is cut off, leaving an opening 9 mm. in diameter. Two slits are cut in the paper, the diameter of the thermometer, which is slipped through the slits and is thus held in place, the mercury bulb near the opening in the tip of the funnel. It is thus laved in the urine passing over it and filling the funnel, and in his countless tests with the method he never found the temperature in the axilla quite so high as the temperature of the urine. The most constant parallelism was noted in patients in bed or in closed, warm rooms. The difference may amount to nearly a degree centigrade under other conditions, even when the thermometer is kept in the axilla for half an hour. After long walks, hot baths or the like, the temperature of the urine was from one to one and a half degrees higher than the temperature in the axilla, demonstrating the greater precision of the urine technic. The thermometer registers the maximal temperature in from 7 to 12 seconds, even with only 100 to 150 c.c. of urine. His communication was summarized in the *Wien klin. Wochschr.*, xx, 117, 1907.

**The Barlow Medical Library.**—The Barlow Medical Library of Los Angeles, Cal., was dedicated and formally turned over to the trustees, February 7. The program of the exercises and the various addresses and speeches delivered at that time are given in full in the *Southern California Practitioner*, February, 1907. As was mentioned in THE JOURNAL, March 2, 1907, page 804, the library building, which cost over \$30,000, was the gift of Dr. W. Jarvis Barlow. It is situated near the College of Medicine of the University of Southern California, but the relationship between the two institutions is geographical only. In return for having the building erected so close to the college, the latter institution donated nearly 10,000 volumes and publications from its own shelves to the new library. The building is a handsome structure, monolithic in character, being constructed largely of re-enforced concrete, making it both fireproof and earthquake-proof. The library is to be managed entirely by its patron members, this membership being open to any physician who pays annual dues of \$25. The use of the books is free to all members of the medical profession and to all medical students. The profession in southern California is to be congratulated not only on having a substantial nucleus to the formation of a library, but in being the recipient of a handsome and modern building devoted exclusively to library purposes.

**Fatal Postoperative Myxedema After Thyroidectomy.**—Garbini relates in the *Riv. di pat. nerv. e ment.*, 1906, page 553, a case of severe tetany preceding and accompanying postoperative myxedema in a woman of 36. She presented symptoms

of pellagra and brief tetanic spasms at times, with difficulty in swallowing from pressure of a large goiter on the pharynx. After total removal of the thyroid gland the previous irritable disposition became a delirium of persecution, but the tetany became attenuated. The patient succumbed to progressive postoperative myxedema and debility. He reviews the literature on the subject and ascribes the tetany to functional insufficiency of the parathyroids, injured or compressed by the enlarged thyroid. Thyroid treatment was instituted too late for it to have much influence on the course of the affection. The lesions noted in the nervous system he believes were the result of the action of the toxins circulating in the blood after the total removal of the thyroid and parathyroids; the pathologic anatomic findings explain the symptoms observed. The case further shows amply that the hypophysis and thyroid are incapable of vicarious action, and that the products of the hypophysis include both granules and plasmosomes. The suppression of one or the other causes a different train of symptoms which explains the variability in the findings of various authors in the clinic and in experimental work.

**Forty years of Enteric Fever in Philadelphia.**—The weekly reports of the United States Public Health and Marine-Hospital Service give statistics regarding the occurrence of enteric fever in Philadelphia since 1862, which show that the disease has been endemic in that city for the last forty years. Study of the conditions present indicates that the disease is water borne, and the distribution of the water supply in the city enables an instructive comparison to be drawn between the effect of filtered and unfiltered water. Parts of Philadelphia are supplied with unfiltered water from the Schuylkill and part from the Delaware, while other parts are supplied with filtered water. The parts supplied with filtered water show decidedly less prevalence of typhoid than those where the water is unfiltered. The banks of the Schuylkill are inhabited by an increasing population which pours its sewage into the river to be later drunk by the people of Philadelphia. The same is true of the Delaware, which drains another state. Legislation to prevent this contamination of the water supply does not seem feasible, so that the only resource of Philadelphia is to filter the water. An extensive system of water filtration is now in process of construction at this city.

**The Ideal Medical Journal.**—Leartus Connor, in the *Bulletin of the American Academy of Medicine*, gives what he considers the most important factors in the make-up of a good medical journal. It should be one, he writes, that has something to say, says it and then stops. Such a journal, while expressing views to which we may take exception and giving reasons which we can not accept, is read with pleasure because there is neither ambiguity nor superfluity in the style. He believes, further, that a journal should avoid repeating the same facts in the same relations in successive issues; that is, should religiously abstain from rehashing facts stored away in ancient text-books; that it should have no place for matter that has not been fully digested by the writer. In addition, Connor would have his journal give its advertisers their due, but he objects to feeding them with food that the subscriber pays for—in short, the reading pages should be held exclusively for the subscriber. Finally, he wants his journal to do what it can to free from their shackles physicians who are bondsmen to commercial greed. Such a journal he believes to be a possibility, and that the time is not distant when medical journals will satisfy the requirements of those even more exacting than he.

**Peril of the Strong Man.**—Staff Surgeon A. Gaskell, F. R. C. S., of the British navy, in an appendix to the annual statistical report of the health of the navy for 1905, just issued, makes a severe indictment of the methods of physical training in vogue with British sailors. He contends that it is not the man of giant physique and great muscular development who is the really strong man, but the man who is constitutionally sound and who has all parts of his body working in perfect union. He deprecates the excessive use of gymnastic exercises which, while they may enormously develop certain muscles and may give the appearance of robust health, are often rather a source of weakness.



## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

### A Course in Medical Economics.

J. N. MC CORMACK.

I was much interested in the communication from my friend, Dr. Ingals, in *THE JOURNAL*, February 9, page 535, in regard to the course in Economics recommended to be established in all medical colleges by the Council on Medical Education. I have given much careful thought to this subject on account of its pressing importance to both the profession and the people of this country, and am convinced that the fear of Dr. Ingals that there will be difficulty in finding men qualified to fill this chair is more imaginary than real. Even if the character and scope of the instruction to be given had not been so fully outlined by the Council, it is such a practical, common-sense work, there would be so much in the experience of either the successful or the unsuccessful man from which pertinent object lessons could be constantly drawn, that anyone at all endowed with the teaching faculty could readily take it up.

For instance, the ordinary principles of honesty and probity, of earning what is demanded by competent, faithful service, which should govern in all business affairs, could be easily elaborated and adapted to the special needs of medical men in such a way as to make them most valuable and impressive. The students should have it urged on them until it becomes a conviction and habit of thought and life, that if they do not at the outset, and always, make of themselves the most competent physicians of which their brains are capable, it is criminal for them to practice medicine, and that this criminality is not in the least lessened by the fact that a diploma and license legalizes the sin of omission or commission, or that the grave covers the victims. It should be just as impressively urged that if, after qualifying themselves, they consent to practice for a rate of fees so small as to deprive them and their professional neighbors of the literature, equipment and postgraduate facilities essential for constant, up-to-date service to the people, they are equally criminal. The downright dishonesty of a division of fees without the full knowledge of the payor, or of accepting commissions from druggists, should be taught them instead of, as in the past, turning them adrift at graduation without a word to guide them and then criticise them because they go wrong.

The responsibility involved in testifying as experts, in accepting positions as pension and insurance examiners, and all similar professional and semi-professional duties, the importance of telling the truth, of dealing out fair and even-handed justice, regardless of the source of employment or appointment, should not be difficult to teach. Justice is being perverted and the profession is being brought into reproach every day, and men high in the ranks of the profession, some of them great teachers, are setting a bad example in these matters, for the lack of such training, and it might be well after the course is well under way to invite many of the faculties to take it. In the same way a correct system of medical bookkeeping, the advantages of card index accounts over the old day-book and ledger methods, the importance of systematic monthly collections, and the actual benefaction of this plan in the case of wage-earners and other people of small means, while the accounts are small, while they remember and are grateful for the services, could be readily and most profitably taught. The importance of, and the reasons for, better business methods, of exacting compensation from ministers and all others who are able to pay for services, to enable the profession to do a far better and more discriminating charity for the real poor, could be easily made plain. And all the time it should be insisted on that whenever they stop studying, cease to keep abreast of the times, as honest men, they ought to quit practicing.

The Principles of Medical Ethics, the combined and crystallized experience and wisdom of all the centuries, should be read, section by section, and so explained and expounded as to adapt them to all of the complex conditions incident to the life of a physician, indoctrinating them with their real spirit,

and making them the chart and compass of all future life. The majority of men want to do right. The majority of those who go wrong in our profession do so for the lack of instruction rather than from bad intention at the outset. The curse and blight of jealousy and evil speaking, confined always to those practicing in the same community, and the universal experience that no one has ever permanently profited by yielding to the temptation to take part in these things, or by the practice of any of the "Black Arts," should be iterated and reiterated until the faces of young men are set against these besetting sins. The advantages of partnerships, or other methods of converting ours from a competitive into a cooperative profession, and of thus immeasurably increasing its usefulness and power, especially in small towns and country districts, should be made plain and practical.

Our system of medical organization, what it means, what it stands for, the value of membership, especially in the county society, the importance of securing this at the first meeting after being licensed, and of acquiring the habit of attending the society and of taking part in every meeting, the possibility of developing the society into a real postgraduate school, would all be things easy and pleasant to explain, and could usually be made to determine the success and to double the usefulness of a majority of the students.

The very fact that men like Dr. Ingals look on the inauguration of this work as difficult only emphasizes the importance of starting it without further delay. Next to a proper entrance requirement for all students, this is now by far the most important feature of the reorganization movement. For the lack of such training in the past a large part of our profession is now in poverty, and the profession as a whole is constantly crippled in its effectiveness. As soon as the necessity for the course is fully realized, it will be easy for any college worthy of the name to develop a competent teacher. Those not willing to take the trouble to do this, and thus start their graduates in the right direction, instead of turning them adrift when it is known that a majority of them will make practical shipwreck of their lives, as has been done in the past, should close their doors and let better schools occupy the field. I am satisfied that Dr. Ingals could teach such a course admirably, after reading the announcement of the Council, and I take pleasure in nominating him for the position in one of the best of the Chicago schools.

### Urges Illinois Physicians to Favor Legislation.

The Public Policy Committee of the Illinois State Medical Society has issued a circular to the members of the state society, asking their cooperation and assistance in obtaining the passage of bills now in the state legislature, providing for the improvement and enlargement of the public institutions of the state, as well as the establishment of a state epileptic colony and a state sanitarium for the treatment of tuberculosis. These projects have been endorsed by the State Board of Charities and have the support of Governor Charles S. Deneen. It is also proposed to authorize the State Board of Health to distribute free antitoxin and to provide funds for this purpose.

### Societies Agree on Insurance Fees.

The following additional societies have recently adopted resolutions opposing the lowering of insurance examination fees:

CABELL COUNTY (WEST VIRGINIA) MEDICAL SOCIETY.  
MORGAN COUNTY (ALABAMA) MEDICAL SOCIETY.  
LORAIN COUNTY (OHIO) MEDICAL SOCIETY.  
CONECUH COUNTY (ALABAMA) MEDICAL SOCIETY.  
HARRISON COUNTY (MISSISSIPPI) MEDICAL SOCIETY.  
HEMPSTEAD ACADEMY OF MEDICINE, PORTSMOUTH, OHIO.  
FRANKLIN COUNTY (PENNSYLVANIA) MEDICAL SOCIETY.  
HOUGHTON COUNTY (MICHIGAN) MEDICAL SOCIETY.  
TIPPECANOE COUNTY (INDIANA) MEDICAL SOCIETY.

### Pays Full Fee Schedule.

Dr. W. S. Kendrick, Atlanta, Ga., Medical Director of the Southern States Life Insurance Company, announces that this company pays medical examiners for all manner of examinations, even the smallest, a fee of \$5., and that it will be the policy of the company to continue this as its minimum fee.

### County Societies Organized.

The physicians of Mercer County, W. Va., met at Bluefield and organized the Mercer County Medical Society, electing Dr.



J. Bee, Princeton, president; Dr. D. P. Crockett, Goodville, and Dr. Charles A. Easley, Bluefield, vice-presidents; Dr. W. C. Shusher, Bluefield, secretary.

The Medical Society of the Twenty-fifth Recording District of Indian Territory, formerly known as The Medico-Clinical Society, has reorganized and become the Bryan County Medical Society. The following officers have been elected for the coming year: Dr. Albert S. Hagood, Durant, president; Dr. James L. Shuler, Durant, secretary and treasurer. The new organization begins work with 18 members.

Dr. C. A. Coffelt, councilor for the Twenty-fifth District of Missouri, has organized the Webster County Medical Society. At a meeting held at Marshfield, February 27, the following officers were elected: President, Dr. M. Highfiell, Marshfield; vice-president, Dr. J. A. Rabenau, Fordland; secretary, Dr. W. R. Beatie, Rogersville; treasurer, Dr. E. M. Bailey, Elkland.

#### Discourage Contract Practice.

The Tippecanoe County (Ind.) Medical Society considered the question of contract practice at a recent meeting. A committee appointed to investigate the matter reported that a limited amount of contract practice was being done by physicians of the county not members of the society. The society voted that it was the duty of all members to use all honorable means to discourage contract practice.

#### McCormack in Arkansas.

In a communication just received, Dr. J. N. McCormack states that he spoke before a joint session of the houses of the Arkansas Legislature at Little Rock, March 14, to a most enthusiastic audience. Of course he spoke on the "patent-medicine" question. He called the attention of the legislators to the fact that the newspapers were subsidized by the "patent-medicine" men, and warned them that his talk would not appear in the newspapers the next morning. It did not, nor was any reference made to the meeting. Several members interrupted him to say that what he said regarding the newspapers was true, as they (the members of the Legislature) had received letters from the papers in the interest of "patent medicines" and against the proposed legislation. The Senate had already defeated the Bok bill, otherwise things might have turned out differently in Arkansas.

#### Resolutions for the Year.

The Warren County (Pa.) Medical Society has issued a program for the year, which contains the following excellent pledge:

*Resolved*, That during the coming year I will do all in my power to assist in the uplifting of my profession and the upbuilding of my county medical society. I will devote the necessary two or three hours each month to attend the meetings and will endeavor to prove myself an active and willing member.

I desire and resolve to be more kindly tolerant of the opinions of my confrères, and to extend to every worthy colleague the degree of courtesy which I would have him extend to me; I resolve to stand for true friendship, confraternity, and the highest type of professional honor, believing this to exemplify the only real types of success worthy of attainment.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

#### THE SPRAGUE MERCANTILE AGENCY.

Following the publication of a letter and comments on this firm in THE JOURNAL last week, page 967, we have received a number of letters reporting unpleasant experiences with this agency. They give us the decided impression that the writers consider this agency one which it will be well for physicians to leave alone.

#### WHERE MOSQUITOES BREED.

HAINES CITY, FLA., March 12, 1907.

*To the Editor:*—Can mosquitoes breed in water that does not contain some admixture of rainwater? L. B. OHLINGER, M.D.

ANSWER.—Yes. Most mosquitoes prefer water that is stagnant or contaminated with sewage or otherwise. You will find an interesting article by Dr. A. H. Doty in THE JOURNAL, April 26, 1905. He says that the different varieties of mosquito have various preferences. All need water for the development of their eggs, and all varieties except *Culex sollicitans*, the mosquito of the salty marshes,

lay their eggs in water. *Culex sollicitans* lays them on the ground, where they develop when the ground is flooded. *Culex pungens*, the ordinary mosquito, lays its eggs in water near dwellings, preferring contaminated water, and the same appears to be true of the *Stegomyia*; while *Anopheles* lays its eggs in cleaner water, in shallow pools along the banks of streams, etc. As pure rain water contains no peculiar ingredients there is no evident reason why the mosquito eggs could not develop with a supply of water from another source.

#### EFFECTS OF LIGATION OF THE VASA DEFERENTIA.

OWENSBORO, KY., March 2, 1907.

*To the Editor:*—Will you please tell me what effect ligation of the vasa deferentia has on the sexual life and organs of the subject. O. W. RASH.

ANSWER.—The normal testicle possesses two functions: 1, the production of spermatozoa for the reproduction of the species, and 2, an internal secretion which endows the individual with those qualities known as masculine. The escape of the spermatozoa may be prevented without influencing the functions of the testicle, as spermatozoa have been aspirated from the testicle many years after division of the vas deferens. The only effect, therefore, of obstruction of the vasa deferentia, as not infrequently happens in bilateral epididymitis or following ligation or resection, is to render the individual sterile, but not impotent.

#### BAD ENGLISH.

CANON CITY, COLO., Feb. 25, 1907.

*To the Editor:*—Dr. Baldwin, in THE JOURNAL, Dec. 22, 1906, p. 2108, writing concerning the letter of Dr. Keen on "Bad English," p. 1579 of THE JOURNAL, Nov. 10, 1906, appears to me to base his criticism on the assumption that what Dr. Keen calls "an atrocious misuse of the language," in the second instance cited, consists in the use of the word "case" instead of "patient." My impression was, and still is, that Dr. Keen intended to condemn the use of the word "operated" instead of the words "operated on." The use of the word "case" for "patient" is in a degree excusable, but to say the patient or case was "operated," instead of "operated on," is surely "an atrocious misuse of the language" for which there is no excuse. I can not believe that Dr. Keen "strained at a gnat and swallowed a camel." T. B. MOORE, M.D.

#### POTENCY OF DIASTASE IN MALT EXTRACTS.

BAD AXE, Mich., March 13, 1907.

*To the Editor:*—Landois and Sterling's "Physiology," vol. 1, p. 256, 4th edition ("Text-book of Human Physiology," Landois, 10th edition, p. 266), states that "ptyalin differs from diastase—the ferment in germinating grain—insofar that the latter first begins to act at 66 degrees C." If that is the case the diastase sold by the manufacturers to the profession either in digesting mixtures or malt extracts is useless. D. CONBOY.

ANSWER.—This statement of Landois is certainly incorrect and probably is an error which arose from the temperature at which the maximum effect occurs, being taken for that of the possible action. As has been frequently proved by experiment, the ferment of malt will convert starch into dextrin and malt sugar through a wide range of temperature and very readily at the temperature of the body 37 C. (98.6 F.). William H. Howell, "Amer. Text-book of Physiology," vol. 1, p. 286, 2d edition, says: "Diastase shows a maximum action at 50 degrees C. and is destroyed at 80 degrees C. The National Dispensatory quotes J. F. C. Jungk (Amer. Pharm. Jour., June, 1883, p. 289), as stating that "properly prepared extract of malt should convert its own weight of starch into dextrose at 16.6 degrees C. (62 F.) in 40 minutes, or at 37.8 C. (100 F.) in 10 minutes. The usefulness of malt extract is much restricted by the fact that salivary and intestinal ferments are almost always present in sufficient amount to dispose of the starch taken as food."

## The Public Service

#### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 16, 1907:

Davis, Wm. B., deputy surgeon general, is relieved from station at Governor's Island, New York, and will take station in New York City, in connection with his duties as chief surgeon, Department of the East.

Edger, Benjamin J., Jr., asst.-surgeon, ordered to proceed from Fort Reno, Okla., to Washington, D. C., on March 11, as a witness for the Senate Committee on Military Affairs, in the investigation of the Brownsville affair.

Kiersted, H. S., asst.-surgeon, granted 3 months and 15 days' leave of absence to take effect on the date of his arrival in the United States from Alaska.

Woodruff, Charles E., surgeon, is appointed chief surgeon and chief sanitary officer of the Camp of U. S. troops and militia to be established at the Jamestown Ter-Centennial Exposition, and he will proceed to Norfolk, Va., and there take station, establishing an office at the Exposition grounds in connection with his said duties.

Crampton, Louis W., deputy surgeon-general, leave of absence extended 7 days.



Marshall, John S., examining and supervising dental surgeon, granted an extension of fifteen days to his sick leave of absence.

Holmes, Thomas G., contract surgeon, granted an extension of one month to his leave of absence.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 16, 1907.

Urie, J. F., surgeon, ordered to the Bureau of Medicine and Surgery, Navy Department.

Smith, F. W., asst.-surgeon, ordered to the Naval Hospital, New York, N. Y.

Hayden, R., asst.-surgeon, ordered to the Naval Medical School Hospital, Washington, D. C.

Valz, E. V., asst.-surgeon, ordered to the Naval Medical School Hospital, Washington, D. C.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 13, 1907:

Kalloch, P. C., surgeon, granted leave of absence for 2 days.

Amesse, J. W., P. A. surgeon, granted leave of absence for 14 days from May 4, 1907.

Glover, M. W., P. A. surgeon, granted leave of absence for 6 days from Feb. 23, 1907.

Bogges, J. S., P. A. surgeon, granted leave of absence for 7 days from March 17, 1907.

Ashford, F. A., asst.-surgeon, relieved from duty at Ellis Island, New York, and directed to proceed to San Juan, Porto Rico, reporting to the Commanding Officer of the Revenue Cutter *Algonquin* for duty and assignment to quarters.

Goldsborough, B. W., acting asst.-surgeon, granted extension of leave of absence for 2 days from March 4, 1907.

Nute, A. J., acting asst.-surgeon, granted leave of absence for 2 days on account of sickness, from March 3, 1907.

### APPOINTMENTS.

Dr. Henry Goldthwaite was appointed an acting asst.-surgeon effective from date of oath.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 15, 1907:

#### SMALLPOX—UNITED STATES.

Florida: Anthony, Feb. 18-24, 1 case; Jacksonville, Feb. 24-March 2, 1 case; Tampa, March 2-9, 1 case.

Georgia: Augusta, March 5-12, 7 cases.

Illinois: Belleville, Feb. 22-March 1, 1 case; Chicago, March 2-9, 1 case; Galesburg, Feb. 23-March 9, 9 cases; Springfield, Feb. 21-28, 1 case.

Indiana: Elkhart, March 2-9, 1 case; Lafayette, Feb. 25-March 11, 3 cases; Michigan City, Feb. 1-28, 1 case; South Bend, Feb. 23-March 9, 2 cases.

Iowa: Burlington, Feb. 1-28, 1 case.

Kansas: Kansas City, March 2-9, 1 case (imported).

Louisiana: New Orleans, Feb. 23-March 9, 40 cases, 1 death (11 cases imported).

Massachusetts: Chelsea, March 2-9, 1 case.

Michigan: Kalamazoo, Feb. 23-March 9, 3 cases.

Mississippi: Natchez, March 2-9, 2 cases.

Missouri: Jefferson City, Jan. 20-March 4, 46 cases; St. Joseph, Feb. 23-March 2, 20 cases; St. Louis, Feb. 23-March 9, 3 cases.

New York: New York, Feb. 23-March 2, 4 cases.

North Carolina: Charlotte, Feb. 23-March 2, 1 case.

Ohio: Columbus, Feb. 1-28, 1 case.

South Dakota: Sioux Falls, Feb. 23-March 9, 5 cases.

Texas: Galveston, March 1-8, 1 case; Hunt County, Jan. 1-March 8, 25 cases.

Washington: Spokane, Feb. 23-March 2, 18 cases.

Wisconsin: La Crosse, Feb. 23-March 2, 1 case; Milwaukee, Feb. 23-March 2, 8 cases.

#### SMALLPOX—INSULAR.

Philippine Islands: Manila, Jan. 12-19, 4 cases (mild).

#### SMALLPOX—FOREIGN.

Algeria: Algiers, Feb. 16-23, 2 deaths.

Belgium: Brussels, Feb. 9-16, 2 deaths.

Ecuador: Guayaquil, Feb. 9-16, 3 deaths.

Egypt: Cairo, Jan. 14-28, 3 cases, 1 death.

France: Paris, Feb. 9-16, 13 cases.

Great Britain: Bristol, Feb. 9-23, 1 case, 1 death; Cardiff, Feb. 16-23, 2 cases; Dundee, 1 case; Glasgow, Feb. 22-March 1, 1 case; Manchester, Feb. 16-23, 1 case.

India: Bombay, Jan. 29-Feb. 12, 3 deaths; Calcutta, Jan. 19-26, 25 deaths; Madras, Feb. 2-9, 1 death.

Mexico: Aguas Calientes, Feb. 16-March 2, 8 deaths; Monterey, Feb. 17-24, 2 deaths; Nogales, Feb. 23-March 2, 1 case; Veracruz, Feb. 9-23, 3 cases, 2 deaths.

Russia: Moscow, Feb. 2-9, 4 cases, 2 deaths; Odessa, Feb. 9-16, 17 cases, 5 deaths; St. Petersburg, Feb. 2-9, 2 cases.

Spain: Madrid, Jan. 1-31, 1 death.

### YELLOW FEVER.

Brazil: Rio de Janeiro, Jan. 27-Feb. 3, 1 case, 1 death.

Ecuador: Guayaquil, Feb. 9-16, 10 deaths.

### CHOLERA—INSULAR.

Philippine Islands: Provinces: Capiz and Negros Occidental, Jan. 12-19, present.

### CHOLERA—FOREIGN.

India: Bombay, Jan. 29-Feb. 5, 1 death; Calcutta, Jan. 19-26, 361 deaths; Madras, Jan. 26-Feb. 8, 4 deaths; Rangoon, Jan. 19-Feb. 2, 17 deaths.

### PLAGUE.

Australia: Sydney, Jan. 5-12, 1 case.

Brazil: Rio de Janeiro, Jan. 20-Feb. 3, 34 cases, 14 deaths.

Chile: Antofagasta, Feb. 2-9, 12 cases, 4 deaths.

China: Hongkong, Jan. 19-26, 1 case, 1 death.

India: Bombay, Jan. 29-Feb. 12, 166 deaths; Calcutta, Jan. 19-26, 24 deaths; Rangoon, Jan. 19-Feb. 2, 80 deaths.

Peru: Catacaos, Jan. 27, 4 cases, 3 deaths; Chiclayo, 14 cases, 11 deaths; Lima, 6 cases, 3 deaths; Malabrigo, 20 cases; Pacasmayo and San Pedro, 12 cases, 4 deaths; Trujillo, 11 cases, 9 deaths; Viru, 9 deaths.

## Marriages

BENJAMIN HOYT, M.D., Mellen, Wis., to Miss Maude Roethinger, formerly of Janesville, Wis., at Baraboo, Wis., March 2.

EDWARD QUARLES, M.D., Mount Savage, Md., to Mrs. Mary Downey Sheridan of Cumberland, Md., in Chicago, March 12.

VAL E. MILTENBERGER, M.D., St. Louis, to Miss Jean S. Rickey of Callaway County, Mo., at Jefferson City, March 6.

CHARLES E. STAFFORD, M.D., to Miss Mabel Sellon, both of Kemmerer, Wyo., recently.

FRANK E. ESTES, M.D., Denver, Colo., to Miss Ella Stogsdill of Golden, Colo., March 6.

## Deaths

John Hill Brinton, M.D. Jefferson Medical College, Philadelphia, 1852; A.M. University of Pennsylvania, 1853, and LL.D. 1901; professor of practice of surgery and clinical surgery in Jefferson Medical College; brigade surgeon of volunteers throughout the Civil War; a member past or present of the Academy of Natural Science, Philadelphia; Philadelphia Pathological Society, American Medical Association, Philadelphia Academy of Surgery, American Surgical Society, and American Philosophical Society; the Mütter lecturer on surgery and pathology in 1869; surgeon to St. Joseph's Hospital, Philadelphia Hospital, and Jefferson Medical College Hospital; consulting surgeon to the Philadelphia Hospital, an eminent surgeon and teacher, died at his home in Philadelphia, March 18, aged 75.

Charles H. Jones, M.D. University of Minnesota, College of Medicine and Surgery, Minneapolis, 1890; a member of the American Medical Association; secretary and treasurer of the Territorial Medical Society of Arizona, and a member and later chairman of the Board of Medical Examiners; major and surgeon in the National Guard of the territory; for two terms secretary of the Tempe Normal School board, and one of the most esteemed practitioners and citizens of Arizona, died at his home in Tempe, March 7, from pneumonia, after an illness of one week, aged 41.

Henry Carroll Sutton, M.D. University of Maryland School of Medicine, Baltimore, 1880; of Rome, N. Y.; a member of the state and county medical societies; health officer of Rome for 20 years, and for three years a coroner of Oneida County, died at the De Soto Sanitarium, Jacksonville, Fla., March 5, from heart disease, after an illness of a year, aged 50. At a meeting of the physicians of Rome, March 6, resolutions laudatory of Dr. Sutton and regretting his death were unanimously adopted, and the physicians of the city decided to attend the funeral in a body.

Andrew Jackson Willard, M.D. Yale University, Medical Department, New Haven, 1877; for two years superintendent of public schools in Burlington, Vt.; instructor in chemistry and special professor of hygiene and sanitary science in the Medical Department of the University of Vermont until 1890, and for many years superintendent and resident physician of the Mary Fletcher Hospital in that city, died at the home of his son in Swanton, Vt., March 5, after an illness of three years, aged 74.

William B. Thomas, M.D. University of Buffalo (N. Y.) Medical Department, 1857; for nearly 50 years a practitioner of Ionia, Mich.; a veteran of the Civil War, in which he served as surgeon of the Twenty-first Michigan Volunteer Infantry; United States marshal for the Western District of Michigan in 1866, and five years later superintendent of schools for Ionia County, died at his home, March 5, after an invalidism of several years, due to a fall, aged 75.

George A. Peters, M.D. University of Toronto, Faculty of Medicine, 1886; F.R.C.S., Eng., 1890; professor of surgery and



clinical surgery in his alma mater; surgeon to the Toronto General Hospital and consulting surgeon to the Hospital for Sick Children; lieutenant-colonel in command of the Toronto Light Horse, which he organized; distinguished as a surgeon and teacher; died suddenly at his home in Toronto, March 13, from heart disease, aged 47.

**Brigadier General John Moore, M.D.,** Surgeon General, U. S. Army, retired; who entered the army as lieutenant and assistant surgeon in 1853, was made captain and assistant surgeon five years later, promoted to major and surgeon in 1862, to colonel and medical director of volunteers in 1865, to lieutenant colonel and assistant medical purveyor in 1883, and made surgeon general in 1886, and who was retired Aug. 16, 1890, by reason of age, died at his home in Washington, D. C., March 18, aged 81.

**William Baker Crain, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1860; assistant surgeon of the Twenty-second Pennsylvania Volunteer Cavalry and afterward major and surgeon of the Second Maryland Volunteer Infantry, and in charge of the United States military hospitals at Washington, D. C., and New Creek, Va., died at his home in Richfield Springs, N. Y., from heart disease, March 9, after a brief illness, aged 69.

**David Bell Kerr, M.D.** University of Virginia, Medical Department, Charlottesville, 1893; who entered the medical department of the United States Navy June 1, 1898, and was commissioned surgeon April 5, 1905; examining surgeon for the Naval Recruiting Station, Chicago; who had had a total sea service of 6 years and 5 months, died at his home in Chicago, March 19, from cirrhosis of the liver, after an illness of three months, aged 35.

**Edward W. McDonald, M.D.** New York University Medical College, New York City, 1871; a member of the state and county medical societies; the oldest practitioner on the staff of the Waterbury (Conn.) Hospital and first president of the Waterbury Celtic Medical Society, died at his home in Waterbury, March 12, from heart disease, after an illness of two weeks, aged 61.

**William J. Butler, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1885; resident physician of the Philadelphia City Hospital for five years and a member of the staff of Mercy Hospital, Wilkes Barre, died at his home in that city, March 4, two days after a railway accident, in which he was run down by a freight train, while making a professional call, aged 44.

**Joseph C. B. Ray, M.D.** University of Maryland School of Medicine, Baltimore, 1888; a member of the American Medical Association, and for a number of years a prominent practitioner of Owensboro, Ky., died March 5, from pneumonia, aged 50, at his home in Denver, where he had moved six years ago on account of ill health.

**Van Lear Perry, M.D.** Jefferson Medical College, Philadelphia, 1892; a member of the American Medical Association, and one of the best known practitioners of Prince George's County, Md., died at his home in Hyattville, March 8, from acute gastritis, after an illness of only a few hours, aged 38.

**Charles S. Helman, M.D.** Miami Medical College, Cincinnati, 1874; a member of the Kentucky State Medical Society, and treasurer of the Kenton and Campbell County Medical Association; local surgeon of the Queen & Crescent Route in Ludlow, Ky., died at his home, March 7, aged 54.

**Alexander Hill, M.D.** University of Maryland School of Medicine, Baltimore, 1874; formerly coroner of Baltimore County and physician to the Baltimore Fire Department, died at his home in that city March 15, three years after an operation for carcinoma of the tongue, aged 51.

**George Taylor Church, M.D.** Dartmouth Medical School, Hanover, N. H., 1894; sometime principal of the high school at Saratoga Springs, N. Y., and later superintendent of schools in that village, died suddenly at his office in Brooklyn, N. Y., March 10, from angina pectoris, aged 49.

**Percival R. Pine, M.D.** Bellevue Hospital Medical College, New York City, 1879; of Tipton, Iowa, who had been suffering from insomnia and despondency for about two years, died in his office in Tipton, March 1, as the result of a self-inflicted gunshot wound of the head.

**Marshall H. Waples, M.D.** Jefferson Medical College, Philadelphia, 1865; formerly physician of Dubuque County, Iowa, and a lifelong resident of Dubuque, died at the Stewart farm, near that city, March 6, after a prolonged illness, from cerebral hemorrhage, aged 65.

**Joseph Wellington Mann, M.D.** Cincinnati College of Medicine and Surgery, 1896; formerly a practitioner at Newtonville, Ohio, but for the last seven years a member of the staff of the Long View Hospital, Cincinnati, died at that institution February 23, aged 42.

**Cass F. Chiler, M.D.** College of Medicine, Syracuse (N. Y.) University, 1900; a member of the state and county medical societies, died suddenly at his home in Montezuma, N. Y., March 5, from morphin and atropin, self-administered, with suicidal intent, aged 33.

**Robert M. Huntington, M.D.** University of Missouri, Medical Department, Columbia, 1861; assistant surgeon in the United States service during the Civil War, died at his home in Hot Springs, Ark., March 7, from pneumonia, after an illness of one week, aged 75.

**John S. Ormiston, M.D.** University of Iowa College of Medicine, Iowa City, 1876; formerly a practitioner of Hartwick, Iowa, where he was postmaster until the spring of 1906, when he moved to Purell, Mo., died at the latter place, February 24, aged 59.

**Blair Hagerty, Jr., M.D.** Bennett College of Eclectic Medicine and Surgery, Chicago, 1879; a member of the Ohio legislature in 1890, died at his home in Montpelier, Ohio, March 7, from cerebral hemorrhage, after a brief illness, aged 66.

**David H. Shenk, M.D.** Long Island College Hospital, Brooklyn, N. Y., 1874; a member of the state and county medical societies; for many years a practitioner of Lancaster, Pa., died at his home in that place, March 10, aged 55.

**John Ward Steele, M.D.** Jefferson Medical College, Philadelphia, 1902; of Dover, Del., died at St. Agnes' Hospital, Philadelphia, March 4, from peritonitis, three days after an operation for appendicitis, aged 30.

**Frederick E. Schacht, M.D.** College of Medicine and Surgery of the University of Minnesota, Minneapolis, 1903; of Burlington, Wash., died in Providence Hospital, Seattle, March 1, from acute nephritis, aged 30.

**Benjamin F. Spencer, M.D.** Medical College of Ohio, Medical Department, University of Cincinnati, 1860; died at his home in Newark, Ohio, March 10, after a short illness, from senile debility, aged 86.

**Henry Clay Smith, M.D.** University of Wooster, Medical Department, Cleveland, 1881; died at his home in Kent, Wash., February 22, from pneumonia, aged 50.

**Daniel W. Cushman, M.D.** Kentucky School of Medicine, Louisville, 1881; formerly of Cloverland, Ind., died at his home in Terre Haute, Ind., March 9, aged 52.

**John D. Bryan, M.D.** St. Louis (Mo.) Medical College, 1870; died at his home in Louisburg, Kan., February 19, after a short illness, aged 63.

**Joseph E. Sansom, M.D.** Rush Medical College, Chicago, 1878; died at his home in Tipton, Iowa, February 25, from diabetes, aged 55.

**James J. Keane, M.D.** Long Island College Hospital, Brooklyn, 1882; died at his home in New York City, March 2.

**Edwin Smith, M.D.** Pulte Medical College, Cincinnati, 1877; died at his home in Aurora, Ind., March 6, aged 74.

#### Deaths Abroad.

**Allan Macfadyen, M.D.** University of Edinburgh, 1886; an eminent bacteriologist, died at the age of 46, as the result of accidental infection with Malta fever. After graduation he studied abroad and worked in the laboratories of Berne, Göttingen and Munich. He played an active part in the foundation of the Lister Institute of Preventive Medicine and became its director in 1891. His most important scientific work was on the intracellular toxins. He developed an improved method for obtaining the cell plasma of pathogenic organisms, which consisted in triturating them while frozen to a brittle condition by means of liquid air. In this way he was able to obtain the contents of the ruptured cells unaffected by heat or other modifying agents, and was led to the conclusion that there are two kinds of bacterial toxins—those such as diphtheria and tetanus, which are extracellular and are secreted by the bacteria, and those which, like the toxins of typhoid and plague, are intracellular and are contained within the bacteria. Another interesting investigation made by him was on the resistance of bacteria to extreme cold. He exposed a series of bacteria to the temperature of liquid air. After twenty hours he could detect no impairment in their vitality; they grew and became active when restored to the ordinary temperature. The same result was obtained when the period of exposure was increased to seven days.



## Book Notices

VOICE PRODUCTION IN SINGING AND SPEAKING. Based on Scientific Principles. By W. Mills, M.A., M.D., F.R.C.S., Professor of Physiology in McGill University and Lecturer on Vocal Physiology. Cloth. Pp. 282. Price, \$2.00 net. Philadelphia: J. B. Lippincott Company, 1906.

This work contains many facts interesting to voice users. It is divided into nineteen methodically arranged chapters. The first chapters are devoted to educative methods in voice culture and their results, and to general physiologic considerations. It is stated that the "neuro-muscular system is of great moment to the voice user;" theoretically, it may be useful to recognize certain neuro-muscular mechanisms, but practically its application is questionable.

The anatomy of the air passages and the physiology of respiration are considered, and the action of the respiratory muscles and diaphragm is clearly detailed and illustrated. A few excellent practical rules are given regarding the use of the breath; for example: "All breath that does not become sound is wasted," and again, "all breath must produce effective vibration of the vocal cords, in right production of tone."

The author inveighs against the wearing of corsets and any compression of waist, chest and neck as being detrimental to proper breathing. A most sensible and practical hint is given for the proper use of the breath in the rule: "One should breathe through the nose when not using the voice, and through the mouth when one does."

There are also good hints as to methods of practice in right breathing. The author intimates that the undue emphasis some writers have laid on diaphragmatic breathing may be due to an effort to counteract the compressive effect of woman's dress. Since the voice user should have control of his whole breathing mechanism, a general adoption of vocal training, Mills asserts, might do much toward banishing the corset.

In considering the larynx or "voice box," the pupil is urged to become an intelligent student of his own vocal apparatus and to understand and manage it in the most physiologic and artistic manner. The physiology and anatomy of the larynx are described, but to the non-medical student the description is difficult of understanding, and possibly less detail might have been better.

A short comment on sound is followed by a study of the registers of the singing voice, and this is a most important chapter for singers. Changes in mechanism of the voice in different parts of the musical scale must be mastered by the vocalist, as it is dangerous to vocal welfare to carry a lower register too high, although a higher register may be carried lower without harm.

The resonance chambers are briefly described as a part of the vocal apparatus, and their influence in determining quality of tone is shown. The author believes that a respect for the beautiful in the speaking voice should be acquired young and notes the early age at which a large percentage of great singers began their training. He calls attention to the important changes which occur in voices at puberty and states at this time great damage may be done, especially to male voices, by improper use. Voice production, he declares, should begin with vowel sounds and not words; consonants are too complicated vocally. The best language to sing is Italian, because of abundance of vowels. English and German are relatively unmusical on account of the prevalence of consonants.

NERVOUS DISEASES, ORGANIC AND FUNCTIONAL. M. A. Starr, M.D., Ph.D., LL.D., Sc.D., Professor of Neurology, Medical Department of Columbia University in the City of New York. Second Edition. Thoroughly Revised. Cloth. Pp. 816. Illustrations, 308. Price, \$6.00 net. Philadelphia: Lea Bros. & Co.

The first edition of this work was limited to organic diseases, while the present volume includes the neuroses. However, some affections ordinarily embraced in text-books on nervous diseases are omitted; thus diseases of the ductless glands and the so-called trophic disorders are not included. The parts of this work devoted to the anatomy and physiology of the nervous system are, as they should be, brief. The volume is a practical work by a practical, well-informed man. It is a trustworthy instructor for the student and a reliable and

clearly written guide for the practitioner. Hypothesis and theory are never confused with fact nor the uncertain with the known.

The great bulk of the volume is devoted to organic diseases and this is the better part of the work. There are only 85 pages devoted to functional disease, and with 790 pages in the text, this means less than 11 per cent. assigned to all of the neuroses combined. Naturally, this limitation of space makes itself felt in the different chapters. For instance, less than five pages on such a common and distressing affection as migraine do not compare very well with the sixty pages on multiple neuritis. Those familiar with Starr's previous work will not be disappointed in the chapter on tumors of the brain. It consists of thirty-seven pages, and is a model of its kind. We can make but three trifling criticisms: According to the first table the percentage of operable tumors is 8 and not 10, as stated in the text; it seems that anosmia might have been mentioned as a localizing sign of frontal tumor; and the statement in the final paragraph that Horsley advocates passage of a drainage tube into the subdural space or ventricle for the palliative treatment of tumor is not accurate at this time.

One of the best chapters is that on the diagnosis and location of brain diseases. The idea of embracing these subjects in one chapter rather than under the head of the various affections of the brain, is an excellent one. This chapter is well illustrated and will be of great practical assistance to those not familiar with the subject. On the other hand, we doubt the wisdom of omitting a systematic consideration of syphilis of the nervous system. The chapter on this subject comprises only about two pages, simply enough to refer the reader to other parts of the book; for instance, that on brain tumor, the spastic paraplegias, bulbar paralysis, etc. It is true that the symptoms of no syphilitic disease of the nervous system are pathognomonic of its etiology, but none the less are there distinctive features of brain syphilis and cord syphilis. Besides, the frequency as well as the very diversity of the cases makes it imperative that they be well understood and early recognized. Tabes occupies forty-four pages, eight of these on treatment, and the chapter is satisfactory in every way. The suggestions regarding treatment are excellent, for, although the disease may be incurable, much may be done for those who suffer from it. Chapter XXIX is on general paresis, or dementia paralytica. While it properly ranks as a mental disease, it has much in common with other organic affections of the brain. Furthermore, it is not sufficiently well known to the general practitioner. On the whole, this work can be heartily recommended to both student and practitioner.

THE PRACTICE OF OBSTETRICS. By Eminent Authorities. Edited by Reuben Peterson, A.B., M.D., Professor of Obstetrics and Diseases of Women in the University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich. Octavo, about 1087 pages, with 553 illustrations, including 30 full-page colored plates. Cloth, \$6.00 net. Philadelphia: Lea Brothers & Co., 1907.

This is the final volume of the Practitioners' Library. The profession now has at command in convenient form an authoritative exposition of the latest and best knowledge on three closely interrelated and important specialties. The basic subjects of applied pathology and etiology are considered with sufficient fulness to lay the foundation necessary for a fruitful understanding of the practical aspects to which major space is devoted. Each author has woven in his own observations of disease and the therapeutic measures which have resulted in the greatest success. This adds to each chapter a personal element of obvious value. In view of their particular importance in obstetrics, the series of illustrations has been made exceptionally rich, and it is likewise notable for being largely from original photographs taken from life, and a large proportion of them from Dr. Peterson's own service in the University of Michigan Maternity.

Like its companions, the volume on obstetrics is designed above all to be practical, but theory when it is the key to practice has not been neglected. Each contributor has developed his subject in accordance with his own experience, following, of course, a plan carefully designed to ensure completeness and uniformity of successive chapters and to cover the whole



domain of obstetrics adequately. The disadvantages of repetition and contradiction, which obtain in all text-books that are written by several authors, are less conspicuous than usual in the volume before us. The work on the breasts and nipples has been repeated three or four times and that on the bladder three times, and in one or two places contradictions are noted which will doubtless disappear in the next edition, an event that undoubtedly will soon be necessary. The advantages of the multiple authorship are conspicuous in the beautiful and masterly work which has been done by Huber, Warthin, Dorland, Lewis and Senenk on physiology and pathology, extruterine pregnancy and monstrosities. These chapters have never been excelled hitherto in similar works. Physiology of the puerperium has been excellently covered by Bacon and Lewis.

In the operative work, exception might be taken to the reference to the use of forceps in breech cases, since it is well established, as a rule of practice, that the forceps should not be applied to the breech of the living child. Mention of the use of reversed forceps could be omitted also, in our opinion, as a practice too unsettled and questionable to be advocated. The technique of vaginal Cesarean section has not been given in sufficient detail for an operation so comparatively recent.

In the pathology of pregnancy Nicholson is given credit for Lange's work on the thyroid, but the chapter as a whole is very satisfactory. There are some errors in proofreading, which will doubtless disappear in subsequent issues.

The work is well designed, well executed and undoubtedly will be appreciated. It is hardly necessary to say that the mechanical work has been done in the publishers' best style.

**THE INTEGRATIVE ACTION OF THE NERVOUS SYSTEM.** By C. S. Sherrington, D.Sc., Hon. LL.D., F.R.S., Holt Professor of Physiology in the University of Liverpool, etc. With Illustrations. Cloth. Pp. 411. Price, \$3.50. New York: Charles Scribner's Sons, 1906.

The problem discussed in these lectures is the integrative action of the nervous system in building up the complex animal organism. The unit mechanism in integration by the nervous system, according to Dr. Sherrington, is the reflex, the conception of which embraces that of at least three separable structures—an effector organ, e. g., gland cells or muscle cells; a conducting nervous path or conductor leading to that organ; an initiating organ or receptor whence the reaction starts. It is by such structures and their combination and coördination, that the multicellular organism is built up from its component parts and becomes an individual instead of a mere jumble of commensal organs. The book is therefore a study of reflex action from this special point of view; the titles of the subject treated in the simple reflex, interaction between reflexes, compound reflexes and their simultaneous and successive combinations, reflexes as adapted reactions, some aspects of the reactions of the motor cortex, the physiological position and dominance of the brain, sensual fusion—give a slight idea of the line of argument followed, the details of which, however, must be followed out in the book itself. It is one that calls for careful reading, containing as it does a vast amount of physiologic information, and one also that deserves the attention of the physiologic student, as it contains much matter bearing more or less directly on psychologic questions, especially in the latter part of the book where the subject of volitional control of the reflexes is discussed. The author also touches directly on psychologic theory elsewhere, e. g., in his remarks on the Lange-Sergi-James theories of the emotions. The volume forms an excellent work of reference, not only as regards the physiology of the reflexes, but also as to certain questions taken up in the newer psychology. A bibliography of authorities referred to in the text, including over 300 titles and a very satisfactory index, complete the work.

**A VICTORIOUS DEFEAT.** The Story of a Franchise. By Charles Frederic Gilliam. Illustrated by Ted Ireland. Cloth. Pp. 371. Boston: The Roxburgh Publishing Company.

Although this is a story by a practicing physician of Columbus, Ohio, the author has avoided talking shop, as does the average doctor who for the first time essays light literature. There is nothing medical in the story, and the only thing in

it of special interest to the doctor is the fact that a doctor wrote it. The hero is a young attorney, highminded, honorable, courageous, etc. He becomes interested in politics, takes up the people's side in some franchise question, and leads in a fight against a grasping street-car company. Love becomes sadly mixed with politics. The hero is in love with the only daughter of the leading lawyer of the town, whose enmity he gets first by opposing him for Congress and afterward by appearing on the other side in some important lawsuits. All this, however, because he can not do otherwise and remain true to his convictions. Most serious of all, however, is the fact that the old gentleman, secretly at first, but openly later, is working for the street-car company, in which he has invested all his savings. The young man wins out every time and finally is elected to Congress, with the help of the old gentleman, who, of course, becomes his father-in-law. The main interest of the story centers around the fight for civic righteousness, the hero being the leader in the reform movement. The story is captivating and with enough action and plot to hold one's interest without flagging. Above all, it is elevating and stimulating to better citizenship.

**PULMONARY PHTHISIS; Its Diagnosis, Prognosis and Treatment.** By H. H. Thomson, M.D., Visiting Physician to the Consumption Sanatorium of Scotland Bridge of Weir, N. B. Cloth. Pp. 188. Price, \$2.00 net. New York: William Wood & Company.

In dedicating his book on "Pulmonary Phthisis" to the practicing physician, Thomson evidently recognized that it is not adapted to undergraduates. The facts apparently are all in, but lack systematic arrangement, the author failing to recognize the limitations of the various divisions of his subject with the consequence that one finds diagnosis, prognosis and treatment rather mixed. The book shows a wide and comprehensive view of the subject. The points made in diagnosis, prognosis and treatment are such as may be found in any comprehensive article on tuberculosis; there is a good chapter on specific treatment. Dr. Thomson finds himself rather at variance with the prevailing ideas of super-alimentation and does not recommend more nourishment than for a healthy individual of the same weight; otherwise he is orthodox. An appendix on "Tuberculosis in Childhood" is out of the ordinary and worth careful reading. The general tone of the work is good, the ideas being conservative and commanding respect on account of the author's extensive experience. Mechanically the book is good, the type and paper being especially easy on the eyes.

**DISEASES OF THE STOMACH.** A Text-Book for Practitioners and Students. By M. Einhorn, M.D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital, etc. Fourth edition, revised. Cloth. Pp. 559. Price, \$3.50 net. New York: William Wood & Company.

This edition, while retaining the original plan of the work, has been revised and brought down to date. The opening chapter deals briefly with the anatomy and physiology of the stomach. Methods of examination are gone over, a hundred pages of the book being devoted to this subject. The various test meals are given and their value and significance stated. A chapter is devoted to diet in diseases of the stomach and the great and growing importance attached to this means of treatment, both prophylactic and curative, is dwelt on. After dealing with the general means of local treatment in stomach diseases the various affections, both organic and functional, are taken up. The author speaks in no uncertain tone of the valuelessness of the so-called digestants and digestive ferments, for which so much is claimed by their manufacturers. "I have entirely abandoned the use of pepsin," he says, "and greatly restricted the administration of hydrochloric acid." In the final chapter the condition of the stomach in diseases of other organs is briefly considered. The work is to be commended to both students and practitioners.

**HYGIENE AND PUBLIC HEALTH.** By B. A. Whitelegge, C.B., and G. Newman. Illustrated. Cloth. Pp. 606. Price, \$1.75 net. Chicago: W. T. Keener & Co., 1905.

This manual for health officers has been a standard for many years in Great Britain. It presents a concise summary of the present position of public-health administration with a full description of the duties of municipal health officers.



## Society Proceedings

### COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, June 4-7.

American Association of Anatomists, Madison, Wis., March 27-29.  
Med. Assn. of District of Columbia, Washington, April 2.  
Tennessee State Medical Assn., Nashville, April 9.  
Mississippi State Medical Association, Gulfport, April 10.  
South Carolina Medical Association, Bennettsville, April 10.  
Medical Assn. of State of Alabama, Mobile, April 16.  
Florida Medical Association, Tampa, April 17.  
Med. Soc. of the State of California, Del Monte, April 16-18.  
Medical Association of Georgia, Savannah, April 17.  
Medical and Chir. Faculty of Maryland, Baltimore, April 23-25.  
Association of American Medical Colleges, Washington, May 6.  
American Therapeutic Society, Washington, May 4-7.  
Amer. Assn. of Genito-Urinary Surgeons, Washington, May 7-9.  
Am. Assn. of Pathologists and Bacteriologists, Washington, May 7-9.  
American Climatological Association, Washington, May 7-9.  
American Gynecological Society, Washington, May 7-9.  
Amer. Laryngological Association, Washington, May 7-9.  
Amer. Medico-Psychological Association, Washington, May 7-9.  
American Ophthalmological Society, Washington, May 7-9.  
American Orthopedic Society, Washington, May 7-9.  
American Pediatric Society, Washington, May 7-9.  
American Assn. of Physicians, Washington, May 7-9.  
American Surgical Association, Washington, May 7-9.  
Nebraska State Medical Association, Lincoln, May 7-9.  
New Mexico Medical Association, Las Cruces, May 8-9.  
Texas State Medical Association, Mineral Wells, May 7.  
Utah State Medical Association, Salt Lake City, May 7-8.  
Kansas Medical Society, Kansas City, May 8-10.

### NEW YORK ACADEMY OF MEDICINE.

*Regular Meeting, held Feb. 21, 1907.*

DR. ROBERT ABBE in the Chair.

#### Nitrogenous Metabolism in Typhoid Fever.

DR. JAMES EWING presented the analysis of 17 cases, and the most obvious interest is in the relation of the urinary nitrogen and its partition to the clinical symptoms. The records show a total urinary nitrogen excretion reaching 27.40 grms. on the thirteenth day of a moderately severe case, but averaging considerably below 20 grms. With a restricted milk diet, this large percentage of nitrogen must signify consumption of tissue proteids and a marked loss of nitrogen on balance. The total nitrogen varied with the temperature and diminished with defervescence when nitrogen retention began. The more favorable the condition, the higher the percentage of urea nitrogen. A ratio below 70 per cent. seems to indicate a grave condition; sharp increase in this ratio is a very favorable sign; a rapid decrease is followed shortly by the death of some patients. In some instances the urea ratio seemed to be a better index of the patient's condition than were the temperature and pulse. In two fatal cases the ammonia ratio reached 9 per cent. and 10 per cent., and in one fleshy woman it was found at 11 per cent. The present indications are not that acidosis is a prominent feature of typhoid fever. The acetone bodies are not estimated in this series. A fall in the urea nitrogen is regularly accompanied by a corresponding rise in the rest-nitrogen. In two cases a sudden rise in the rest-nitrogen with a fall in the urea preceded albuminuria.

Among the interesting clinical points are the following: Urea ratios below 70 per cent. and rest-nitrogen above 15 per cent. belong to the severer stages and types of the disease. Rapid falls in urea with rises in rest-nitrogen occur at unfavorable times in the disease. The ammonia nitrogen tends to run comparatively low, but in fatty subjects, severe cases, or before death, it may rise to 10 per cent. or more of the total nitrogen. The character of the nitrogen partition in typhoid fever seems to show some dependence on or relation to the lesions in the liver. In typhoid fever the liver, as a rule, shows some intense granular degeneration and usually focal necroses. Fatty degeneration is not prominent. If the final synthesis of urea is largely a function of the liver, the severe damage to the liver may be expected to yield for a time a low percentage of urea in a high total nitrogen output. The absence of extreme acidosis in typhoid fever accords with the usual condition of the typhoid liver. The changes in the urine in fatal typhoid fever are very similar to those in acute yellow atrophy, and the occurrence of acute yellow atrophy as a

termination of typhoid fever is not extremely rare. The results show that the disturbance of nitrogenous metabolism is very similar to that of other infections, and in some intoxications which are not of bacterial origin.

The conclusion is reached that in typhoid fever and other infectious diseases, an important part of the morbid process consists in a disturbance of nitrogenous metabolism, which is very similar in type to that seen in pure autointoxications, and which, therefore, is not directly connected with the toxins of the invading bacteria. What is seen in typhoid fever is not merely the entrance and destructive effect of the typhoid endotoxins, but the burning of 30 pounds of tissue proteid in three weeks. Hence, in studying the nitrogenous metabolism, they are obtaining information about one of the fundamental processes going on in the diseased organism.

#### DISCUSSION.

DR. C. G. L. WOLF emphasized the importance of having a complete twenty-four-hour specimen of urine, and insisted that the patient should be placed on an accurate standard diet, of which the nitrogen content and the calorific value are accurately known. The diet should be free from purin compounds. A very careful clinical daily report would help to clear up many of the metabolic vagaries which are encountered in the examination of urines of this type.

#### The Management of the Intestinal Tract in Typhoid Fever.

DR. WALTER B. JAMES considered a few principles underlying the general treatment of the digestive tract in typhoid fever. He said that the intelligent energy of the physician finds ample opportunity for exercise in these fields, in the feeding, the nursing, the general management and the treatment of complications of this disease, and they are little able to shorten the course, or even to modify its character.

#### DISCUSSION.

DR. GEORGE L. PEABODY said that it has often happened to him to have brought under his care patients who have been under no medical care at all, but only under that of relatives or friends, and the stomachs of these patients had been rendered irritable by bad feeding, obstinate vomiting being an early symptom. Under these circumstances he insists on rest, with counter-irritation to the epigastrium. If vomiting persists, he advises against temporizing longer, but resorts to lavage. A patient weighing 120 pounds should receive 1,925 calories a day during health; but when there is increased activity and increased metabolism, more should be given. Milk alone is not a suitable diet, because too much would be required, five or six pints a day. The number of calories can be greatly increased by giving alcohol in some form. Eggs are of material aid. He uses various modifications of milk, such as kumis or matzoon. Clear soups are given throughout the disease. Water should be given in abundance. Whenever the patient becomes hungry, he gives him solid food. He gives ice cream in all stages of the disease. Constipation is not evidence of absence of ulceration, nor is diarrhea evidence of the presence of it. He has never known a case of perforation to be caused by the giving of cathartics. He disregards diarrhea, unless the movements exceed two or three a day. If necessary to check it, he gives bismuth or the aqueous extract of opium. Meteorism he treats with the rectal tube of small size; he also believes in the use of turpentine, 10 minims every three hours. Turpentine stupes are not of much value. Surgery is of no avail in intestinal hemorrhage; but in intestinal perforation, nothing but surgery will avail.

DR. W. GILMAN THOMPSON said that the earlier text-books have spoken so much of "gurgling and tenderness in the right iliac fossa," and it is a very striking fact that this pair of symptoms has practically gone out of date, probably due to improved methods of feeding. The more one sees of typhoid fever the more he becomes convinced that a great deal of latitude should be allowed in its treatment. It is wonderful what a high degree of toleration the human subject has for typhoid fever. Of late years he has been treating patients more liberally in regard to diet. He gives a milk diet so long as it agrees. He gives liberally beef and orange juices. There is



nothing in the name "intestinal antiseptics," but there is in intestinal antifermentatives. He gives salol and creosote in coated pills, which dissolve only in the intestine, and this aids greatly in keeping down meteorism. If the stools become foul and offensive, and there is a tendency to tympanitis, the lower bowel should be cleansed. He believes in giving turpentine externally as well as internally. Ten per cent. of typhoid fever patients would have relapses no matter what the diet is.

#### Treatment of Typhoid Spine.

DR. VIRGIL P. GIBNEY said that the term typhoid spine carries with it no pathologic commitment. For a long time certain spinal phenomena have been observed in connection with typhoid fever, but no attempt has been made to embody these phenomena in an entity. A periostitis of the vertebræ naturally suggests involvement of the articular borders and the foramina of exit of the nerves, and the many cases already on record of bony enlargement are confirmatory of the theory first advanced as the primary pathologic lesion. It seems pretty well established by the number of cases recorded that trauma plays a very important factor in the etiology.

Dr. Gibney claims to have had fairly good results in a reasonable length of time by resorting to fixation of the column, the avoidance of trauma, the free use of the Paquelin cautery, and the subsequent employment of well-directed massage and graded exercises. The cautery as a counter-irritant has proved so valuable in his hands that he feels justified in recommending it above all other counter-irritants. The simple Knight spinal brace or the posterior spinal assistant of Taylor has proved of more value than the plaster-of-Paris jacket or corset. The criss-cross strapping with zinc-oxid adhesive plaster has been a valuable adjunct, especially in the milder forms of the disease. Potassium iodid has been given in certain cases, but not with any definite results. Where deformity exists it is necessary to wear apparatus for longer periods. In spinal lesions it is important to immobilize not only the parts involved, but those contiguous, and to get an accurate adjustment of the immobilizing apparatus. In the very acute cases it is sometimes necessary to supplement this fixation by means of rubber adhesive plaster, criss-cross strips, from one inch to two inches in width, and half encircling the body. It is important to remember that the apparatus must be worn for months in the average case. The object of the apparatus is to prevent trauma. The Paquelin cautery is insisted on as a regular line of treatment as long as tenderness and pain on movement exist. Even after all tenderness has subsided, it is a good plan to employ the cautery occasionally, say once a week or once in a fortnight.

It has been shown that even these deformities and areas of infiltration, bony or muscular, disappear after a while, and fortified by this assurance, the surgeon should decide when to begin the convalescing part of the treatment, namely, douches, hot baths and systematic, graded exercises, the object of which is to correct the stiffness developed in the muscles which have been for a time out of commission and to restore the tone generally to the spinal column. Anodynes and hypnotics are often necessary, and even at times the administration of chloroform. He could not recall an instance of a drug habit having been acquired. The administration of hypnotics must be left to the individual practitioner, with the suggestion that if the aforesaid treatment by fixation and cauterization is carried out, that hypnotics will not be in great demand.

#### DISCUSSION.

DR. HALSTED MYERS found that out of 500 cases of typhoid fever at St. Luke's Hospital, not one case of typhoid spine has been recorded. There have been cases of periostitis, but in other situations.

DR. LEONARD W. ELY said that typhoid spine always ends in absolute recovery, and he invariably tells his patients that they will be well in from one year to eighteen months. Nobody now agrees with Dr. Osler's statement that the disease is a neurosis. There is almost always a history of trauma. Rest in bed, counter-irritation and later on the jacket or brace make up the treatment. The pain sometimes is so acute as to demand the use of morphin, and even anesthetics.

#### BOSTON MEDICAL LIBRARY MEETING.

*Held Feb. 6, 1907.*

DR. RICHARD C. CABOT in the Chair.

#### Epidemic Uncinariasis in Porto Rico.

DR. BAILEY K. ASHFORD, assistant surgeon, U. S. A., spoke on the campaign now in progress against this disease. It is a social and economic problem and not merely a medical one, for more than 750,000 of the Porto Ricans are infected and 70 per cent. of the inhabitants are suffering from its effects. Of 600 blood examination made none gave a hemoglobin percentage of over 40 to 45 per cent. From 5,000 to 7,000 deaths result there from this disease each year, or, in other words, it is responsible for 20 to 25 per cent. of all the deaths on the island. Its mode of entrance into the system and progress and development therein are well defined. The larvæ, present in the mud, penetrate the skin of the bare feet of the laborers, enter the veins, pass to the heart and through the pulmonary artery to the lungs. Here they break through the walls of the alveoli, enter the bronchioles, pass up the bronchi and trachea, are coughed up and swallowed, pass through the esophagus and stomach and arrive finally at their proper habitat, the jejunum, where they become attached and develop. This is practically the only way of infection. Almost no case studied could be traced to ingestion, and inhalation is not possible for the larvæ die when dried. Ninety-six per cent. of the thousands of cases treated have acknowledged previous or present suffering from ground itch, which is uncinarial dermatitis. This is almost unknown among those who wear shoes, hence a sure though slow way of eliminating the disease is found in wearing shoes. The guinea-pig is susceptible and experiments made with this animal substantiate many of the above statements.

The anemia is due probably to hemolysis, the cause for this being some substance not yet determined, secreted by the hook-worms. It certainly is not due to blood abstracted by the worm, for a bloody stool is almost unknown in these cases. In only five cases in 10,000 can blood be detected in the stools microscopically. Of all the cases examined postmortem only one showed a small ecchymosis in the jejunum, this same case showing minute red points when held in the proper light, and was not treated by an anthelmintic. Moreover, the worm is not a blood sucker and, therefore, could not thus cause the anemia. His food is epithelial cells and not red blood corpuscles. This comes from the superficial layers. The submucosa is not eroded. Some 80,000 worms have been counted by this U. S. A. commission, of which Dr. Ashford was a member, and none of them appeared to contain blood; but, on the contrary, they were grayish white, easily picked out as they were washed over a black background. This same truth has been proven by Leichenstern in regard to the ankylostomata, long considered blood suckers.

Much study has been given to the kidneys and the urine, but rarely has it been complete, because patients when somewhat relieved of their symptoms, wished to leave the hospital and return to work. Moreover, 24-hour movements were impracticable when active purging formed part of the treatment. However, 24 cases were pretty thoroughly studied both before and after the administration of the anthelmintic. Albumin was sought by three tests; boiling with acetic acid, the ferrocyanid test and Heller's nitric acid test. Sediment was allowed to settle and not centrifugated. Reaction was acid always; specific gravity low; sugar absent; no diazo, except after B-naphthol, when it was always present; rarely any biliary acids; indican increased; urobilin present; 20 of the 24 before the administration of the anthelmintic showed a small trace of albumin. In 16 it was very small. Fifteen of these showed an increase in the amount of albumin after treatment was begun. Those who expelled most unciniaria had least increase in this albumin. The sediment showed casts, mostly small hyaline and granular. No blood casts. Few epithelial casts; 18 of the 24 had casts. The average hemoglobin content of these 24 cases were 46 per cent. Hence, he believes that albumin and casts must be considered a common event in this dis-



case. They are evidences of degeneration rather than inflammation. Thymol and B-naphthol are irritants to the kidneys and cause a temporary but not at all serious increase of these evidences in the urine. Both these drugs may, however, set up a severe nephritis. B-naphthol is more irritant to the kidneys, but less depressant to the heart than thymol. The albumin is not dependent on the anemia, probably. Uremia is very rare in Porto Rico. B-naphthol should be given only to selected cases and few doses.

The insular government is doing everything possible, but must continue its work for a long time. The physicians of the island are equipping themselves with microscopes and laboratory materials and are doing good work. There should be more public laboratory privileges.

## THE MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA.

*Regular Meeting, held Feb. 18, 1907.*

The President, ADOLPH EICHHOLZ, Esq., in the Chair.

### Some Medicolegal Aspects of Abortion.

DR. HENRY W. CATTELL referred first to the historical side of abortion and quoted interesting data in regard to the Code of Hammurabi, and the opinions of the ancient law-givers in regard to this subject. He then discussed the present views held on the permissibility of ever performing the operation, and cited the extreme views taken by certain members of the Roman Catholic Church that under no circumstances, even when the case is due to the rupture of an extrauterine sac, should an operation be performed in order to save the life of the mother. Dr. Cattell said that there is no law in the State of Pennsylvania which prevents anyone from offering to perform and making all the arrangements for such a criminal operation. It is only when an individual is arrested in the act, or had performed the operation that legal proceedings can be instituted. At the present time there is a bill before the Pennsylvania legislature authorizing the medical examining board to revoke the license of any physician by due process of law for performing a criminal operation.

### DISCUSSION.

WILLIAM DRAYTON, Esq., inquired whether it would not be possible in every case of necessary abortion to have present at least three of the medical profession. This would remove from miscarriage the element of secrecy which the two professions are anxious to avoid.

DR. HENRY BEATES, JR., said that when in his practice it was necessary to bring on premature birth he notified the coroner and summoned for conference three reputable physicians.

DR. THOMAS H. FENTON thought that if there could be a more clearly expressed statute on abortion than that at present in vogue and which would include the giving of testimony, it would be of great value not only in saving misrepresentation, but in uncovering the men really at fault.

WILLIAM W. SMITHERS, Esq., said that the language of a penal statute is taken for the greatest benefit to the man accused, and that the burden is on the state to prove that he comes within it; therefore, if the language is vague, the accused escapes. The clause in the statute regarding abortion is verbose and confusing, and could well be displaced by some such wording as the following: Whoever shall by any means whatsoever commit, bring about or attempt to commit or bring about an unlawful abortion, or whoever may aid or abet in such abortion, or bringing about of such an abortion, shall be guilty of a felony.

### Laws of the Ancient Hebrews Concerning Medical Subjects.

DR. W. S. WADSWORTH confined his paper to the Mosaic code as found in the Bible, claiming that the code deserved the most careful study, not only because of its historic interest, but because of its provisions which in not a few particulars are ahead of the most advanced practice in sanitary matters at the present time. An attempt was made to grasp the conditions existing at the time the code was made with a biologist's grasp of the significance of the regulations. The

idea was strongly brought out that the laws were taught for the express purpose of keeping the camp clean and the people clean in the sight of their God and that the ceremonialism was only a late degeneration when principles had been confused or had disappeared.

The law taught three great groups of duties (a) to God; (b) to the family; (c) to the brethren. The following seven groups of sanitary rules the author said could be found: 1. The family and all sexual matters. 2. Eating; what is clean and what is unclean. 3. Diseases. Chiefly leprosy and issues. 4. Purifications; isolations, examinations and washings. 5. The dead and other unclean matter. 6. Priestcraft, the only profession recognized. 7. The seventh day for rest and recovery of normal.

Almost every one of the rules would work directly for the physical betterment of the race. The food regulations would probably improve the health of any community, though intended specially for dwellers in a warm country. The subject of leprosy in persons, houses, clothing, etc., was shown to be somewhat vague, but was extremely radical race surgery and probably most beneficial. Concerning issues, the old law of isolation was said to be still ahead of most modern practice. The physical, sexual and moral cleanness enjoined, with the other rules, account for the physical endurance of the race. The regulation regarding the Sabbath is in large measure responsible for the retention of that mental elasticity throughout the ages that has enabled the Jews of all times to be citizens of the world in a way not known to any other race.

### DISCUSSION.

DR. HENRY LEFFMANN accepted Dr. Wadsworth's views on many of the points, although he had often thought that the value and practical results of the Levitical laws had been overrated. He asked for further authority for two statements made by Dr. Wadsworth: (1) Regarding the author's cavalier condemnation of the wine of the Jews. It might, perhaps, be assumed, he thought, that they did not possess the variety of quality that is now available; but he finds no reason in the recollection of his own reading that would justify the decision that their wines were unusually bad. In the second place, he was unaware of any basis for Dr. Wadsworth's statement that the birth of a female child is evidence of a debilitated condition of the mother. Though not having read much recently in this department of biology, he thinks that the trend of opinion among students of sex determination is just the reverse, namely, that male births are evidence of a falling off in maternal condition. He said that many of the Levitical rules are ceremonial in significance; others are based on the experience of the Jews or of the surrounding nations.

WILLIAM DRAYTON, Esq., inquired the author's opinion of the abandoning of the study of anatomy and the punishment of the anatomists in the middle ages; also, whether dead bodies, under the law, were buried or burned.

ADOLPH EICHHOLZ, Esq., inclined to the belief that the notion that many of the observances mentioned were ceremonial, was not founded on fact. The monotheistic idea originally held by the Jews is not the monotheistic idea of the present. When they speak of their God, there is always a concession that other nations should have their gods. The laws which are laid down for one nation become the religion of that nation and are not purely ceremonial. The only slum dwellers who have baths are the Jews. In regard to their dietary laws, they are regulated by a law preventing overindulgence, and this law is sacred to the Jew. Very few drunkards have been found among the Jews. Except for the nervous condition of the Jews, due probably to the terrible strain under which they have lived since the middle ages, they are, as a rule, a healthy race.

DR. WADSWORTH referred to the kind of grapes the wine was made of, to the vessels for holding it and other reasons which argued that perhaps 10 per cent. of it was bad. With reference to the disposition of dead bodies, he thought the evidence was toward burial rather than burning. Further reference was made to the ceremonialism, which later had crept into the code, and which did not possess the vitality of the magnificent old law itself.



## Therapeutics

### Hyperidrosis.

Internal treatment suitable to the general condition should be instituted. When the sweating is confined to the axilla local measures are likely to be of most benefit. Crocker ("Diseases of the Skin," third edition), recommends sulphur internally. Local cleansing of the skin is of first importance, and this is usually followed by application of some lotion supposed to exert an antihidrotic action. After the lotion has had opportunity to take effect the skin should be covered with a dusting powder. After the treatment is begun it will be best not to wash the skin, but simply to dry it with the dusting powder. Belladonna, in tincture, liniment or ointment, is recommended with a view to suppressing the secretions. Astringents are also used for the same purpose; these may consist of zinc sulphate, tannic acid or alum, 0.4 to 6 per cent. (2 to 30 grains to the ounce), in water. The dusting powder may consist of boric acid with from 1 to 6 per cent. (5 to 30 grains to the ounce) of salicylic acid. Stelwagon ("Diseases of the Skin"), recommends 1 per cent. solution of liquor formaldehydi as a cleansing lotion with the cautious use of stronger lotions for therapeutic purposes.

Gerdeck recommends for the soles of the feet a 3 per cent. solution of liquor formaldehydi. This might be too strong for the axillæ. Weiss, in THE JOURNAL A. M. A., Aug. 6, 1904, page 372, cautions against its use for the feet in greater strength than a 5 per cent. solution. He recommends the use of potassium permanganate according to the following plan, which would probably be also applicable to the axilla.

A cleansing bath is first applied, followed by the removal of epidermal debris by the use of a pledget of cotton soaked in benzin. This is followed by a 15 minutes' application of a 1 per cent. solution (5 grains to the ounce) of potassium permanganate in water. Next morning the foot (or axilla) is dusted with the following powder:

R. Potassii permanganitis	.....3iii	12
Aluminis	.....gr. xv	1
Talci	.....3viiss	30
Zinci oxidi	.....3ix	35

M. Ft. pulvis.

The baths are repeated each evening and the strength of the potassium permanganate solution is increased to 2 per cent. after the third bath, to 3 per cent. at the beginning of the second week, and finally to 6 per cent.

Unna recommends (N. Y. Med. Jour., 1905), washing the affected parts with spirits of camphor or with a weak solution of vinegar, and following this with a local application similar to the following:

R. Ichthyoli	.....	
Spiritus terebinthinæ, āā	.....3v	20
Ung. zinci oxidi	.....3x	40

M. Ft. unguentum. Sig.: Apply locally on retiring.

Half a teaspoonful of the following may be rubbed into the hands (or axilla) after washing:

R. Tincturæ belladonnæ	.....3iv	15
Spiritus odorati, N. F.	.....3xxiv	95

M.

Brocq recommends (Archives de Méd. et Chir., 1905), insoles of filter paper, linen or cork saturated with the following mixture, allowed to dry, inserted into the shoes and changed daily. Similar pads might be put inside the dress shield:

R. Potassii permanganitis	.....gr. xv	1
Thymolis	.....gr. viii	5
Aquæ	.....3xxv	100

M.

The following special lotions and dusting powders have also been recommended:

#### LOTIONS.

R. Naphtholis	.....3i	4
Glycerini	.....3ii	8
Alcoholis	.....3xx	80

M.

R. Tincturæ ferri chloridi	.....3viiss	30
Glycerini	.....3iiss	10

M.

R. Quininae sulphatis	.....gr. lxxv	5
Acidi tannici	.....gr. xxx	2
Alcoholis	.....3iii	90
Aquæ	.....3viii	240

M. Ft. lotio.

R. Beta-naphthol	.....3iiss	10
Spiritus odorati (N. F.)	.....3iv	15
Alcoholis	.....3vi	180

M. Sig.: Use as a wash.

#### DUSTING POWDERS.

R. Pulv. sinapis	.....3i	4
Pulv. talci	.....3iv	120

M. Ft. pulvis. Sig.: To be dusted in the shoes.

R. Beta-naphthol	.....gr. xv	1
Pulv. amyli	.....3ii	60

M. Ft. pulvis.

R. Pulv. talci	.....3i	30
Bismuthi subnitratiss	.....3i 1/3	40
Potassii permanganatis	.....gr. xlv	3
Sodii salicylatis	.....gr. xxx	2
Pulv. amyli	.....3ii	60

M. Ft. pulvis.

R. Acidi salicylici	.....gr. xlv	3
Pulv. amyli	.....3iiss	10
Pulv. talci	.....3iii	90
Pulv. aluminis	.....3iiss	45

M. Ft. pulvis.

R. Acidi salicylici	.....gr. xlv	3
Pulv. amyl	.....3vi	25
Beta-naphthol	.....	
Sodii boratis, āā	.....3iiss	10
Sodii chloridi	.....3vi	25

M. Sig.: Apply locally.

The x-ray is said to have been used with benefit.

#### CONSTITUTIONAL TREATMENT.

Most cases of excessive sweating from the axilla are of a local nature and require little if any constitutional treatment, but the general condition should be investigated in all cases and obvious departures from the normal corrected.

Digestive disturbances may require attention and the mineral acids and stomachic bitters are often useful. Disturbance of the intestinal functions may influence the sympathetic nerve and it may be by regulating the bowels that sulphur, which is highly extolled by Crocker, acts. He recommends a level teaspoonful of precipitated sulphur in milk twice a day; if this causes too much purging it may be combined with astringents, as in the following:

R. Pulveris cretæ co	.....3vi	24
Pulveris aromatiei	.....3ii	8
Sulphuris precipitati	.....3i	30

M. Sig.: A teaspoonful twice daily.

General tonics are often required and benefit is often obtained from full doses of quinin. It is doubtful if much effect can be expected from astringents administered internally, but sulphuric acid has been recommended.

Ergot also is sometimes effective. The most important remedies are those which affect the sympathetic nervous system which undoubtedly controls the production of the perspiration. The chief of these is belladonna or atropin 0.0004 gm., increased to 0.001 gm. (gr. 1/150 to 1/60).

In some cases sweating is due to depression of the respiratory center and in these cases remedies which act as respiratory stimulants such as camphoric acid 1.5 gm. to 2 gm. (gr. xxii to xxx), or menthol 0.1 gm. (gr. 1½) may be tried.

Sage, which has a domestic reputation as a remedy for sweating, may be given in an infusion made from 3.5 gm. (gr. i) of sage to 500 c.c. (one pint) of hot water, of which a cupful may be taken three times a day (Crocker).

#### Acne.

John V. Shocmaker states, in the Medical Bulletin, that although acne is one of the most obstinate and relapsing affec-



tions, it can be either limited or cured by remedies, or may terminate spontaneously after the individual has passed the age of puberty and the system is in a state of repose. Among the various internal causes of this disturbance he mentions debilitating conditions and disorders of organs or portions of the economy which have a reflex action on the face, such as gastrointestinal disorders, anemia and uterine diseases. Menstrual irregularities and mental troubles also excite and aggravate acne.

For a patient with a tuberculous diathesis, and who is anemic and complaining of gastrointestinal disturbances, Shoemaker recommends the following mixture to be taken internally:

R.	Liquoris acidi arsenosi.....m. iii	18
	Strychninae sulphatis.....gr. 1/60	001
	Acidi hydrochloriei dil.....m. x	60
	Glycerini pepsini (N. F.).....f3ii	8

M. Sig.: Two teaspoonfuls in water after each meal.

As regards external treatment, hot wet towels are placed on the face for a few minutes at a time twice daily, followed by light massage of the face and application of the following ointment:

R.	Sulphuris sublimati.....gr. xx	130
	Creosoti .....m. xv	1
	Unguenti zinci oxidi	
	Unguenti aquae rosae, aa.....3ss	2

M. et ft. unguentum. Sig.: Rub in well night and morning.

Hygienic measures are of the utmost importance in acne, and especially in serofulous subjects. Frequent bathing of the body is essential to promote a more healthy and vigorous action of the skin. If the patient can bear cold douching over the body, or a cold sponge, it should be employed daily. Fresh air and sunlight are necessary to these patients, but the most important item of all is proper food. Food that is indigestible and unwholesome, such as pastries, jams, sweetmeats, pickles and cheese, should always be avoided. Only plain, well cooked, nutritious foods should be taken.

#### Pepsin in Alkali Pills.

In reply to a correspondent who asks if the addition of pepsin would be permissible in a prescription like the following:

R.	Olei santali	
	Olei copaibae	
	Olei cubebae, aa.....3ii	8
	Magnesii oxidi q. s.	

Ft. pil. No. lx.

the *Druggists Circular* states that pepsin is rendered inert by alkalies, even so weak an alkali as magnesium oxid. Consequently it is a waste of good pepsin to add it to such a mixture. A different excipient might be used which would permit its addition. The *Druggists Circular* states that wheat flour is a much better excipient than magnesia for the oils, that a combination of wax and flour is still better, and that with either of these the pepsin might be advantageously used.

## Medicolegal

### Pregnancy and Life Insurance.

The Supreme Court of Nebraska holds, in the case of Merriam vs. Grand Lodge Degree of Honor, that where a married woman is the holder of a policy of life insurance, it is not a false representation for her to sign a certificate, when she is pregnant, stating that she is in sound bodily health, if the certificate is otherwise true. Also, that where a married woman is an applicant for life insurance in a company that issues policies on the lives of married women, she is not required to inform the company of evidence of pregnancy discovered subsequently, to her physical examination and application. The Supreme Court Commissioners say in the case that it will not do, in sound morals, for an insurance company to issue risks on the lives of married women between the ages of 18 and 45 years, without anticipating the probability of the holders of such policies obeying the divine mandate to be fruitful and multiply and replenish the earth, and a condition,

either in the by-laws, articles of association, or certificate of benefit, providing for a forfeiture in the event that the holder should become pregnant at any time, would be clearly void, as against the highest principles of religion, morality and common decency. Consequently, when an application is made and approved, there is no duty on the holder of the certificate issued on such application to notify the company of any subsequently discovered evidence of pregnancy; nor would the fact, if subsequently discovered, prevent her from certifying that she was in sound bodily health, if such certificate is otherwise true.

### Physician Lacking Experience Still an Expert.

The Supreme Court of Oregon says that in the homicide case of State vs. Megorden a physician called in behalf of the state testified that he was a regularly graduated, licensed and practicing physician, residing at Ontario, Ore., and had been practicing five years. He was then asked what the effect of a blow on a person's head, describing it as detailed by two preceding witnesses, would have as to dazing or confusing the person, and answered that it would affect his reasoning faculties for a few moments. Before answering, the witness stated that he had never seen or had a case so struck in that place. An objection to the question on the ground that the witness was not qualified as an expert was overruled. The point raised by this exception was whether or not want of experience in exactly such a case as the one in question is sufficient to disqualify a practicing physician and surgeon of general experience in his profession. Rogers on Expert Testimony, chapter 52, says: "If the witness is a physician or surgeon, he is not incompetent to express an opinion, because of his want of observation of any case like the one in question. . . . It is not necessary, to qualify a medical witness to testify as an expert on the subject of wounds, that he should have actually seen the wound in question. His testimony may be based on a description of a wound given in court by those who saw it." The want of experience or knowledge of the particular wound in question would not affect the competency of the witness if otherwise qualified, but might lessen the weight given to his testimony. In *People vs. Thacker*, 108 Mich. 652-660, it was held that a practicing physician, a graduate of a college of medicine and surgery, and duly licensed to practice, could testify regarding a case of poisoning, although it did not appear that he had ever treated a person who had been poisoned or seen one treated by other physicians. The court therein quoted with approval from Rogers on Expert Testimony, page 45, as follows: "A witness, otherwise qualified, may express an opinion on a matter pertaining to his special calling or profession, although his knowledge of that particular matter has been derived from study rather than from actual experience. It is the doctrine of the courts that study of a matter without actual experience in regard to it may qualify a witness as an expert." And further, page 99: "The principle is well established that physicians and surgeons of practice and experience are experts in medicine and surgery, and that their opinions are admissible in evidence on questions that are strictly and legitimately embraced in their profession and practice." The witness in this case was regularly graduated in medicine and surgery, and was duly licensed to practice his profession in this state, and, being such, under the authorities above cited, he was competent to give his opinion on the matter in question by virtue of his general knowledge within the scope of his profession, although he had no experience or special knowledge of the wound in question.

### "Rheumatism" Includes Rheumatic Fever.

The Supreme Judicial Court of Maine says, in the case of Holmes vs. Continental Casualty Company, that the plaintiff was insured by a policy of accident insurance issued by the defendant, in which the latter, on the conditions named in the policy, promised to pay the insured an illness indemnity for the time, after the first week, that he was confined in the house and regularly visited by a physician, by reason of acute illness, though in the case of illness resulting from rheumatism, etc., the limit of the company's liability should be one-tenth of the amount which would otherwise be payable under the



policy. During the period covered by the policy the plaintiff was sick with rheumatic fever, and was entitled, under the contract of insurance, to recover the sum of \$40, unless that amount should be reduced to one-tenth thereof by reason of the provision in the policy last quoted. The question was, therefore, whether rheumatic fever was included by the term "rheumatism," as that word was used in the policy. The contention of the plaintiff was that by the use of this word the parties meant chronic rheumatism; that rheumatic fever is an acute sickness or disease, and consequently was not included within the meaning of the word; that there was no reason why the company should have excluded from the full benefit of its indemnity a person suffering with any acute sickness. But, the court says, the parties did not use any adjective descriptive of the kind of rheumatism intended. They simply used the word "rheumatism," which is defined in the Century Dictionary as follows: "The disease specifically known as acute articular rheumatism. The name including also subacute and chronic forms apparently of the same causation." In the same dictionary acute articular rheumatism is thus defined: "An acute febrile disease, with pains and inflammation of the joints as the prominent symptoms." The plaintiff suffered with rheumatic fever, which is acute articular rheumatism. This is the first definition given in the Century Dictionary of the word "rheumatism," as above quoted. Rheumatism may be either articular or muscular, and it may be either acute or chronic. The court is unable to say that by the use of this word in the contract the parties intended to include one form and exclude another. Apparently they used the word with its ordinary meaning, which includes all forms, articular and muscular, acute and chronic. The disease with which the plaintiff suffered, although acute, was one form of rheumatism, and must be considered to have been included within the meaning of the word as it was used in the policy.

#### License Alone Does Not Make a Medical Expert.

The Court of Criminal Appeals of Texas holds, in *Smith vs. State*, that a person not being a graduate of any school of medicine, not being shown to have read any books on surgery, or to have been at all familiar with gunshot wounds, his mere license to practice medicine, even predicated on the granting of this license by a medical board, does not qualify him as an expert, to testify regarding the fatal character of a wound.

#### Admissibility of Questions on Physician's Damages.

The Supreme Court of Alabama says, on the appeal of *Dunn & Lallande Bros. vs. Gunn*, that this action, which was brought by the latter party, a physician, was for the recovery of damages for personal injuries caused by the alleged negligence of the defendants in cutting a ditch across a road, which had been for many years traveled by the public generally, on foot, on horseback and in vehicles, and negligently leaving it open, without taking sufficient precautions to prevent persons driving on said road from falling into the same. On the trial the following questions, numbered for convenience, were propounded by his attorney to the plaintiff, while being examined as a witness in his own behalf: "1. Can you do your practice as conveniently and agreeably as you could before you were injured? 2. State what per cent. your practice has decreased since you were injured. 3. You stated in your cross-examination that your skill as physician is as great now as it was before you were injured. Please state if your ability to prosecute your profession is as great now as it was before you were injured, and if not, what per cent. has your ability to practice your profession decreased since you were injured. 4. State what amount had been your average practice per month before you were injured. 5. What per cent. has the average amount per month you make out of your practice decreased since you were injured?" The questions numbered 1 and 4 called for competent and legal evidence, and the objections to them were properly overruled. Those numbered 2 and 5 called for irrelevant testimony, such as was not within the issue made up by the pleadings. The complaint did not claim damages on account of loss of business sustained by the plaintiff on account of the injuries sustained by him. But the court

is not to be understood as committing itself to the proposition that such damages would be recoverable, even if laid in the complaint. The motion to exclude the answer to the third question should have been sustained, for the same reason as above laid down for sustaining objections to questions 2 and 5, as not being within the issues made by the pleadings, and in that it expressed the mere opinion of the witness.

#### Child of Naturalized Parent Excluded for Trachoma.

The Supreme Court of the United States holds, in the case of *Zartarian vs. Billings*, United States Commissioner of Immigration at the Port of Boston, that the petitioner's daughter, between 15 and 16 years of age, who had never been in the United States, although her father had become a naturalized citizen thereof, was properly debarred from landing on the finding of the board of inquiry that she had a dangerous contagious disease, to-wit: trachoma, section 2 of the act of March 3, 1903, providing, among other things, that certain classes of aliens shall be excluded from admission to the United States, including "persons afflicted with a loathsome or with a contagious disease." Furthermore, the statute, the court says, makes the finding of the board of inquiry final, so far as review by the courts is concerned, the only appeal being to certain officers of the department. Congress has made provision concerning an alien's wife or minor child suffering from contagious disease, when such alien has made a declaration of his intention to become a citizen, and when such disease was contracted on board the ship in which they came, holding them under regulations of the Secretary of the Treasury until it shall be determined whether the disorder will be easily curable, or whether such wife or child can be permitted to land without danger to other persons, requiring that they shall not be deported until such facts are ascertained. But Congress has not said that an alien child who has never dwelt in the United States, coming to join a naturalized parent, may land when afflicted with a dangerous contagious disease. As this subject is entirely within congressional control, the matter must rest there; it is only for the courts to apply the law as they find it.

#### Entries of Deceased Physician as Evidence.

The Supreme Court of Missouri, Division No. 2, says, in the case of *Knapp vs. St. Louis Trust Company*, an action to contest the validity of the will of a Mrs. Margaret Gaffey, that the account book of a deceased physician contained entries of which the following is a fair sample:

"1890. Mrs. Marg. Gaffey, 5888 Cabanne Place.

June 24. Hyperemia of Brain, 1 visit and Med. \$2.00

June 24. By cash paid ..... 2.00"

The court thinks that the entries were admissible in evidence in the case, not only for the purpose of showing that at certain dates the physician rendered medical services to Mrs. Gaffey, and was paid therefor, but also for the purpose of showing that he treated her for hyperemia of the brain and for softening of the brain and paralysis, and that the Circuit Court erred in holding otherwise.

#### Insanity After Murder.

The Supreme Court of Washington says, in the case of *State vs. Superior Court of King County*, that on a trial for murder the only insanity that can be pleaded as a defense must have existed at the date of the alleged crime. Suppose it was apparent that, when called for trial, the defendant in a murder case was a raving maniac. Would it be contended that a court of justice in any civilized country would proceed with his trial on the indictment or information presented against him? Such a suggestion would be shocking to every sense of humanity. Still, one not so violent might be equally insane, and the trial should proceed no more in the one case than in the other. There is no statute directing that a person while insane may be tried for murder. Such a statute, if enacted, would be in conflict with the federal and state constitutions and the well-established principles of the common law. Criminal courts are possessed of an inherent power to ascertain whether one accused of crime is sane and able to avail himself of all his constitutional rights during the progress of his trial.



## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### New York Medical Journal.

March 9.

- 1 \*Academies of Medicine. C. L. Dana, New York.
- 2 \*Physical Processes of Immunity and Infection. J. Wright, New York.
- 3 Clinical Observations on the Use of Cotarnline Phthalate. C. A. von Ramdohr, New York.
- 4 Mutual Obligations of Surgeons and Internists in the Development of Gastroenterology. H. W. Bettmann, Cincinnati.
- 5 \*Trichiniasis. A. H. Mellersh and M. H. Fussell, Philadelphia.
- 6 Cancer Treated by Trypsin. W. J. Morton, New York.
- 7 Scarlet Fever: Its Treatment at the Hospital for Scarlet Fever and Diphtheria, New York City. E. L. Kellogg, New York.
- 8 \*Indigestion: Its Significance and Diagnosis. H. F. Stoll, Hartford, Conn.
- 9 Value of Differential Leucocyte Counts in Medicine. I. S. Wile, New York.

1.—See abstract in THE JOURNAL, Feb. 2, 1907, page 442.

2. **Physical Processes of Immunity and Infection.**—This is the second paper on this subject by Wright. In it he discusses the portals of entry and the channels of infection.

5. **Trichiniasis.**—Mellersh and Fussell report a typical case which presents practically all the salient features of the ordinary attack of trichiniasis.

8. **Indigestion.**—Stoll insists on the importance of making a careful investigation into the causes of indigestion in order that a rational method of treatment may be employed with satisfactory results.

#### Boston Medical and Surgical Journal.

March 7.

- 10 \*Diagnosis of Tumors with Special Reference to the Evil Results of Overconfidence and Delay. M. H. Richardson, Cambridge.
- 11 \*Experimental Incisions Through the Abdominal Wall of Cats. F. T. Murphy, Boston.
- 12 Proper Inspection of Immigrants and School Children in Regard to the Occurrence of Trachoma. H. Derby, Boston.
- 13 \*Conservation of Hearing in Operations on the Mastoid Region. W. S. Bryant, New York.
- 14 Complete Suprapubic Prostatectomy Under Nitrous Oxid Gas Anesthesia. G. Walker, Baltimore.

10. **Diagnosis of Tumors.**—Richardson thinks it most desirable, because most beneficial, that all tumors should be regarded as malignant until they are proven benign; and inasmuch as no tumors can be proved benign while they are still in the body, all tumors should, if possible, be removed.

11. **Experimental Incision Through Abdominal Wall.**—From careful experimentation Murphy learned that suturing the incision in the abdominal wall in layers gives a more satisfactory and stronger looking wound histologically than the *en masse* suture. Wounds sutured in layers were the stronger after two weeks, the strength of the scar having been tested by an actual pull. Judged from a histologic study, the suture in layers is more desirable than the suture *en masse* because in this way in the process of repair the strong trabecular tissue arising by proliferation from the fascia unites with tissue of its own kind, thereby increasing the strength of the scar and decreasing the time necessary for repair. He says that the method of closing the abdominal incision with suture of the fascia in layers, and with a deep supporting stitch meets this theoretical requirement of careful approximation of layers, and also the practical requirement of strength and obliteration, so far as possible, of all dead space. Murphy urges that violent manipulation of the edges of an abdominal incision should be avoided with the same care as has been recognized as essential to good results in the handling of the intestines or stomach.

13. **Conservation of Hearing in Mastoid Operations.**—Bryant claims that the maximum postoperative hearing is obtained by judicious preservation of the sound-conducting mechanism, and by the most rapid possible convalescence of the middle ear.

#### Medical Record, New York.

March 9.

- 15 \*Salt-Free Diet in Chronic Parenchymatous Nephritis. G. L. Peabody, New York.
- 16 \*Influenza, Complicated by Mastoid Abscess and Leptomeningitis. H. B. Mills and N. G. Ward, Philadelphia.
- 17 Typhoid, Complicated by Multiple Abscesses of the Kidneys and Lobar Pneumonia. L. N. Boston, Philadelphia.
- 18 Prevention of Disease. E. E. Feild, Norfolk, Va.

19 \*The Hand of Iron in the Glove of Rubber. R. T. Morris, New York.

20 \*Intra-Abdominal Abscess Due to Gonorrheal and Bacterium Coli Infection Complicating Pregnancy. S. Strauss, New York.

15. **Salt-Free Diet in Nephritis.**—Peabody emphasizes the importance of the dechloridation treatment in cases of general anasarca from chronic parenchymatous nephritis with failing heart power. He says that its effect is perhaps enhanced by the simultaneous administration of heart tonics, such as digitalis and theobromin, preferably the latter. Peabody says that while clonic irrigations with hot sodium bicarbonate solution and catharsis are of value in some cases, the most important agent is the negative one referred to. After complete removal of the edema he administers progressively increasing daily quantities of salt, carefully watching for any recurrence of the edema, the endeavor being to ascertain the exact salt equilibrium for each patient. He is not yet prepared to report results.

16. **Influenza with Fatal Complications.**—The points of especial interest in the case reported by Mills and Ward are the following: An attack of influenza was followed by mastoid abscess, suppuration and necrosis of the ethmoid. An operation was done and the patient was relieved of his symptoms, except the headache. Then there developed suddenly violent pain in the head, with unconsciousness for nine days, restlessness, high remittent temperature, and finally death. At the necropsy there was found a purulent leptomeningitis with pus in the cerebral ventricles. No localizing symptoms had been noted during life.

19. **The Use of Rubber Gloves.**—In this paper Morris decries the use of rubber gloves in surgery. He declares that it leads to slow work, necessitates long incisions, and reduces the natural resistance of the patient. He believes, however, that rubber gloves may be useful in the following conditions: 1. When there is no infection or other condition to call out the patient's natural resistance to infection. 2. When dressings are to be changed for several patients in succession, or when the surgeon operates on an uninfected patient shortly after operating on an infected one. Rubber gloves, Morris declares, are not needed: 1. When infection is already under way and the patient has developed his own protection. 2. When a disease like cancer has called out such a degree of protection that it would be almost impossible to infect the patient. 3. When no infection or other disease is present, but when slow or extensive operating necessitated by clumsy gloves will allow more bacteria to fall into the wound than would be carried in by well-prepared bare hands.

20. **Intra-abdominal Abscess.**—The complication referred to by Strauss was diagnosed during the third month of pregnancy. The case is unique in that it lacked the usual constitutional symptoms of pus formation, and the apparent local signs were only those of uterine gestation, complicated by the gastrointestinal symptoms of pregnancy. Combined vaginal and abdominal drainage was established, and the patient made an uneventful recovery. She aborted three days after the operation. A bacteriologic examination of the pus found showed gonococci and colon bacilli.

#### Colorado Medicine, Denver.

February.

- 21 \*New Method of Delivering Head in Breech Cases. T. M. Burns, Denver.
- 22 Suggestions to County Society. T. M. B. Dewar.
- 23 Administrative Control of Tuberculosis in City and County of Denver. H. Sewell, Denver.
- 24 Tuberculosis of Cattle: How It May Be Repressed and Its Relation to the Public Health. M. White, Denver.

21. **New Method of Delivering Head in Breech Cases.**—The method described by Burns is a modification of the Prague method. He has employed it satisfactorily in 10 cases. As soon as the shoulders are born, the fetal body is lifted upward and the fetal back is laid on the abdomen of the mother. An assistant is asked to grasp the fetus by the feet and to pull, with considerable force, toward the mother's head. The operator, facing the vulva, with both hands grasps the fetal shoulders, placing the palms on the front of the shoulders and the fingers on the upper part of the shoulders; then, with such steady force as may be necessary, he pulls, pushing the shoulders



directly against the front of the pubes and toward the lower abdomen. The head is delivered slowly when the fetus is not asphyxiated and there is danger of considerable laceration of the perineum. The striking difference between this and others' methods is that it produces extreme extension of the head instead of flexion; it converts the fetus into a strong immobile rod, and causes a quick, easy and safe delivery of the head.

#### Texas State Journal of Medicine, Fort Worth.

February.

- 25 \*The Conveyance of Typhoid. W. Shropshire, Yoakum, Texas.
- 26 Roentgen-ray Treatment of Skin Cancer. J. M. Martin, Dallas.
- 27 A Massive Rhinolith; Weight 43 Grains. B. L. Scott, Waco.
- 28 \*Ichthyosis. J. B. Shelmire, Dallas.
- 29 Treatment of Skin Diseases by the Roentgen Ray. G. D. Bond, Hillsboro.
- 30 The Rural Tenant Household and Tuberculosis. S. D. Naylor, Stephenville.
- 31 The Business Side of General Medicine. J. E. Dildy, Lampasas.
- 32 \*Acute Septic Osteomyelitis. W. Keiller, Galveston.

25. **Conveyance of Typhoid.**—Shropshire believes that personal contact and infected drinking water are uncommon agents in the conveyance of typhoid; whereas flies and dust are common agents of infection.

28. **Ichthyosis.**—Shelmire reports a case of ichthyosis occurring in a woman 26 years of age. Portions of the palms and soles were the only parts not affected by the disease. The patient had also lost most of her hair and eyebrows. Under thyroid extract treatment, alkaline and bran baths and olive oil inunctions she improved very much, but on neglecting the treatment she soon relapsed into her former condition.

32. **Acute Septic Osteomyelitis.**—Keiller reports three cases which illustrate that some of these patients will get well even though their condition may have remained undiagnosed and consequently wrongly treated for months.

#### Surgery, Gynecology and Obstetrics, Chicago.

January.

- 33 Radical Abdominal Operation in Carcinoma of Cervix Uteri. E. Wertheim, Vienna, Austria.
- 34 \*Excision of Scapula for Malignant Growth. F. J. Lutz, St. Louis, Mo.
- 35 \*Sarcoma of the Male Breast. F. G. Connell, Oshkosh, Wis.
- 36 \*Modern Surgery of the Kidney. H. Kümmell.
- 37 \*Suprapubic Cystotomy with Retrograde Catheterization in Traumatic Rupture of Urethra. A. Dixon, Henderson, Ky.
- 38 \*Temperatures Occurring During the Puerperium. G. H. Ryder, New York City.
- 39 \*Control or Elimination of Pneumothorax in Pleuropulmonary Interventions. D. Tait, San Francisco.
- 40 \*Operations on Jaw Bone and Face. V. P. Blair, St. Louis, Mo.
- 41 \*Fractures. C. A. Parker, Chicago.
- 42 \*Technic of Hip-joint Amputation. B. B. Cates, Knoxville, Tenn.
- 43 \*Examination of the Uterine Scrapings. E. McDonald, New York.
- 44 Dr. Fernand Henrotin. N. Senn, Chicago.

34. **Excision of Scapula.**—The clinical features of the case reported by Lutz made the diagnosis of sarcoma of the scapula an easy one. The tumor grew from the anterior margin of the body of the scapula and was of the periosteal variety. The scapula was extirpated. Amputation of the arm was considered unnecessary by reason of the non-involvement of the joint structures. The tumor was easily peeled out of the axilla. The function of the joint, so far as performing the ordinary excursions of the shoulder is concerned, is restored to about one-half of what is normal. The closure of the capsular ligament, after separating it from the neck of the scapula, formed to a limited extent a substitute for an articular socket.

35.—See abstract in THE JOURNAL, Sept. 22, 1906, page 957.

36. **Surgery of Kidney.**—Kümmell discusses the achievements of modern surgery of the kidney from the standpoint of diagnosis and therapeutics. He has done 404 operations on the kidney, including 189 nephrectomies, 133 nephrotomies, 6 resections, 45 fixations, 11 decapsulations, 12 incisions of paranephritic abscesses, and 8 ureteral implantations. The mortality was 12.6 per cent. Among the nephrectomized patients the mortality was 4.7 per cent.

37.—See abstract in THE JOURNAL, Oct. 29, 1906, page 1402.

38. **Temperatures Occurring During the Puerperium.**—The causes of rise in temperature referred to by Ryder are distended breasts, mastitis, pyelitis, puerperal toxemia, simple retention of lochia, antelexion and retroflexion of the uterus,

excitement, septicemia, localized infections outside the uterus, phlegmasia alba dolens.

39. **Elimination of Pneumothorax in Thoracic Surgery.**—Tait believes that Delagènière's method is unquestionably the most valuable of the surgical methods for controlling pneumothorax. The Fell-O'Dwyer apparatus may answer in an emergency, but the uncontrolled pressure thereby exerted on the entire mediastinum may prove very injurious to even a normal heart. Tait states that experience alone will tell the value of the addition of physiologic methods to the technic of intrathoracic surgery and decide the choice between the simple positive and the complicated negative pressure apparatus.

40. **Operations on Jaw Bone and Face.**—Blair presents the results of a study of the etiology and of the pathologic anatomy of developmental mal-relations of the maxilla and mandible to each other and to the facial outline, and discusses their operative treatment when beyond the scope of the orthodontist.

41. **Fractures.**—The 250 skeletons examined by Parker were all of adults, but came to the dissecting room through the usual channels of the county morgue and a hospital for the insane. The number presenting fractures (only *intra vitam* fractures were recorded) was 106, 95 males and 11 females. The total number of fractures, including as single instances certain multiple fractures, was 182. The fractures were present in 42.4 per cent. of all skeletons. Thirty-five per cent. of all the fractures were of the ribs and practically one-fourth (64) of the skeletons presented evidences of fractured ribs. Next in frequency came fractures of the nasal bones, 36 cases. Fracture limited to the nasal processes of the superior maxillæ were observed in 11 skeletons. Two fractures involved the cranium. Five skeletons presented fractures of the spine. The transverse processes of the vertebræ were fractured four times; the scapula five times; the clavicle eight times; the humerus seven times; the ulna five times; the radius twice; the femur four times; the patella once; the tibia and fibula eight times; the tibia alone once; the fibula alone three times; the bones of the foot ten times; the pelvis twice. No fractures were observed in the hyoid bone, sternum, coccyx, bones of the hand and wrist, and some of the individual bones of the skull and tarsus.

42. **Hip-Joint Amputation.**—Cates reports five cases of successful hip-joint amputation done in three instances by Wyeth's method and in two instances by the dissecting method.

43. **Examination of Uterine Scrapings.**—McDonald describes a short method of examining the uterine scrapings. The scrapings are immediately put into salt solution and kept there until the examination is made. They are then taken out and placed on firm, soft blotting paper. After the excess of fluid is drawn away the blotter is carefully laid in a mixture of alcohol (95 per cent.) and formalin (10 per cent.) for one hour. Each scraping is then cut into small size (1 cm. square), immersed in 95 per cent. alcohol for one hour; absolute alcohol one hour, aniline oil one hour, xylol one hour, paraffin one hour. It is then ready to be embedded.

#### American Journal of Obstetrics, New York.

February.

- 45 \*Management of Bowel of Doubtful Vitality in Operations for Relief of Strangulated Hernia and Intestinal Obstruction. R. B. Hall, Cincinnati.
- 46 Abdominal Sinuses. L. R. Pierce, Newburgh, N. Y.
- 47 \*Pyelitis Complicating Pregnancy. H. Meek, London, Ontario.
- 48 Should the Appendix Be Removed as a Matter of Course When the Abdomen has been Opened for Other Conditions. A. L. Smith.
- 49 Vaginal Cesarean Section and Its Application. G. T. Harrison, New York.
- 50 \*Etiology and Treatment of the Neuroses of Infancy and Childhood. G. N. Acker, Washington, D. C.
- 51 \*Case of Complete Longitudinal Vaginal Septum Obstructing Labor. R. H. Coston, Birmingham, Ala.
- 52 \*Immediate Results of Conservative Operative Measures on Tubes and Ovaries. H. Robb, Cleveland, O.
- 53 \*Do Present Results Justify Partial Removal of Uterine Appendages When Operating for Inflammatory Diseases. F. Krug, New York.
- 54 \*Id.—L. G. Baldwin, Brooklyn.
- 55 Maternal Dystocia from "Right Posterior Ilium" Producing Persistent R. O. P. Position. M. E. Bates, Denver.
- 56 \*Strangulated Hernia. A. R. Shands, Washington, D. C.



45.—See abstract in THE JOURNAL, Oct. 13, 1906, page 1219.

47. **Pyelitis Complicating Pregnancy.**—In three cases seen by Meek the pyelitis started between the fifth and sixth month of pregnancy. The prognosis is favorable under proper medical treatment and the interruption of pregnancy is seldom, if ever, necessary.

50. **Neuroses in Infancy.**—Acker reports one case showing the effect of heredity in chorea and two cases illustrating the good effects of change of surroundings in cases of choreic convulsions.

51. **Vaginal Septum Obstructing Labor.**—In the case reported by Coston a complete longitudinal section was found extending from the introitus vaginæ to the cervix uteri and closely connected to it and to both anterior and posterior vaginal walls. This septum divided the canal into two separate compartments, through each of which the os could be felt. The uterus was normal.

52. **Conservative Operations on Tubes and Ovaries.**—Robb presents a very thorough analysis of 419 cases for the purpose of emphasizing the value of conservative operations on the ovaries and tubes.

53. **Partial Removal of Uterine Appendages.**—Krug reports the histories of three patients to show that it is necessary to individualize and to treat every case according to its own aspect. It is impossible to generalize, he declares.

54. **Id.**—Baldwin leaves the slightest fringe of ovarian tissue wherever this is possible, but leaves only such tubal tissue as is beyond question normal.

56. **Strangulated Hernia.**—Shands reports a case of strangulated right inguinal hernia in which it was necessary to resect about three inches of gangrenous intestine. On account of the poor condition of the patient no attempt was made to do a radical operation. On the third day it was seen that the abdominal wall had sloughed, leaving a large suppurating wound. This was remedied later and the patient left the hospital nine weeks after the operation in excellent condition.

#### Bulletin of the Lying-in Hospital of the City of New York. December.

57 \*Effects of Gonorrhea in Mother on the Early Nutrition of the Child. R. W. Lobenstine and J. A. Harrar, New York.

58 Myoma of Uterus Complicating Delivery and Necessitating Subsegment Hysterectomy. J. W. Markoe, New York.

59 The Urine in Pregnancy. F. E. Sondern, New York.

60 \*Simultaneous Malarial Infection in Mother and Baby. M. H. Brown, New York.

57. **Effects of Gonorrhea on Child.**—Lobenstine and Harrar studied 250 breast-fed infants during the first ten days of life. In 50 of the mothers the gonococcus was demonstrated in the genital tract. The findings are summarized as follows: 1. The average birth weight of babies of gonorrheal mothers is less than that of babies of normal mothers. 2. The average initial loss is more pronounced in the gonorrheal babies (5.82 per cent., as against 4.74 per cent.). 3. The amount of loss regained on the tenth day is only 10.9 per cent. in the gonorrheal babies, as against 49.3 per cent. in the normal babies. 4. The gonorrheal babies show both more temperature disturbance and more intestinal disturbance than normal babies. 5. The babies of non-gonorrheal febrile mothers show a greater average initial loss than the normal babies, and do not regain at the time of discharge but 5.3 per cent. of their loss, as against 49 per cent. in normal babies.

60. **Simultaneous Malarial Infection in Both Mother and Child.**—Brown found the plasmodium of malaria present in the blood in both mother and baby. Both patients recovered under appropriate treatment. The baby received calomel, grain one-tenth, every fifteen minutes, for ten doses, followed by bisulphate of quinin in aqueous solution, grains 2, three times a day, begun on the third day after the temperature rose to 104.4 F. The temperature then became normal, and continued normal until the fifth day, when it suddenly rose to 100 F., so the dose of quinin bisulphate was increased to 3 grains, three times a day, which controlled the temperature. An organic preparation of iron was then given to overcome the anemia, one-half dram, three times a day.

#### The American Journal of Orthopedic Surgery, Philadelphia. January.

61 Exceptional Rachitic Distortions of Legs. W. Blanchard, Chicago.

62 \*Influence of Necrosis Produced by Sutures in Tendon Suture and Transplantation. D. Silver, Pittsburg.

63 Scoliosis Caused by Injury of Abdominal Muscle. E. W. Ryerson, Chicago.

64 \*New Form of Shoemaker's Last. A. G. Cook.

65 Coxa Valga. B. Galeazzi, Milan, Italy.

66 Coxa Valga or Collum Valgum. J. K. Young.

67 \*Reduction of Congenital Luxation of Hip by Manipulation. G. G. Davis, Philadelphia.

68 Pott's Disease. C. Riely, Baltimore.

69 Congenital Hypertrophy of Leg. W. E. Blodgett, Detroit.

70 Attachment to Bradford Frame for Holding Head. W. E. Blodgett.

62. **Suture Necrosis in Tendon Surgery.**—Silver is convinced that many of the failures in tendon suture and transplantation are due to insufficiency of the suture. He has made this subject one of special study in order to determine whether the necrosis of tendon tissue may reach such a degree as to endanger the stability of the suture. He found that yielding of the tendon in tendon suture and transplantation through necrosis produced by over-tight sutures must occur, if at all, very rarely, when the sutures are tied under ordinary tension. The process of repair was found to be slower in tendon transplantation than in tendon suture and tenotomy. Silver advises that care should be taken not to separate the tendon from the surrounding tissue for any greater distance than is absolutely necessary, and to preserve and suture the sheath as far as possible.

64. **New Form of Shoemaker's Last.**—Cook points out a way by which the orthopedic surgeon can obtain any kind of shoe he wishes and have it fit. The shoes are made over plaster-of-Paris casts of the feet as follows: Seat the patient in a comfortable chair, the foot hanging down and the muscles relaxed. Then completely cover the foot with a thin layer of vaselin and place a small strip of lead over its dorsal surface. Now, apply a plaster-of-Paris bandage, incorporating in the last few turns of bandage a steel plate cut in the form of the sole and heel of an ordinary shoe. Place the foot on the floor with the foot flexed to the right angle, and carefully mold and rub in the plaster-of-Paris bandage until it has set. To remove the cast cut down over the piece of lead, spring the cut edges a little, and pull off as you would a boot. After removing the cast approximate the cut edges, tie with a string or bandage, and it is ready to fill with plaster-of-Paris cream. When the plaster-of-Paris has thoroughly set the original mold, including the steel foot piece, is stripped off, leaving a perfect model of the foot, in the position it assumes when an ordinary shoe is worn. To make the last complete it is only necessary to add a graceful toe, which can easily be built on with a little practice. Finally, saw the last in two at the instep, making a shoulder to prevent slipping. Tack on a small piece of leather to steady it, and cover the last with a stocking. The shoe is now lasted and bottomed in the usual manner. To remove the last pull the heel-piece out of the stocking. Then pull out the stocking and you have the toe-piece. The heel is put on after the shoe is taken from the last.

67. **Reduction of Congenital Hip Dislocation.**—The object of Davis' method is to exert the maximum of force with the greatest degree of safety to the patient. The child is placed face downward on the table with its pelvis resting on a sand pillow and the leg to be operated hanging down over the edge of the table. An assistant now grasps the knee with one hand and the shaft of the femur beneath with the other and flexes and slightly abducts the limb, steadying and supporting it against his body. The surgeon then places his hands over the head of the bone and the trochanter and presses downward with the weight of his body. As the pelvis is supported by the sand pillow this tends to push the head of the bone forward. This manipulation is repeated, the surgeon gradually abducting the thigh (raising the knee) more and more until the amount of abduction desired is obtained. Davis says that in some instances the head of the femur is felt to glide forward, in others it seems to "crunch" (crush) forward, and in others it jumps forward with a distinct click. After it has once been pushed forward it can readily be luxated and re-



placed at will. In difficult cases the thigh should be well flexed and the femur well supported by the assistant with one hand at the knee and the other on the shaft. Tenotomy of the adductor longus tendon is always done previous to attempting reductions. This method has been used in five cases, the patients varying in age from  $3\frac{1}{2}$  to 8 years, and reduction was effected in all without either difficulty or accident. One patient had previously been treated unsuccessfully by the usual method by another surgeon.

**American Journal of Urology, New York.**  
*February.*

- 71 \*Lipoma and Liposarcoma of the Kidney. C. Hartwig, Germany.
- 72 \*Case of Essential Unilateral Hematuria; Nephrectomy. J. W. Keefe, Providence.
- 73 \*Calculus of Bladder. G. K. Swinburne, New York.
- 74 Hematospermia. E. W. Ruggles, Rochester.

71. **Lipoma and Liposarcoma of Kidney.**—Hartwig reports a case of liposarcoma of the right kidney which was extirpated. The patient died.

72. **Essential Unilateral Hematuria and Nephrectomy.**—In the case reported by Keefe nephrectomy was done successfully on a man aged 38 for essential unilateral hematuria.

73. **Vesical Calculus.**—Swinburne has performed litholapaxy 11 times and suprapubic cystotomy for stone once. He prefers general anesthesia, the anesthetic to be given by a trained anesthetist.

**New York State Journal of Medicine.**  
*February.*

- 75 Address, President's, Medical Society of the State of New York. J. D. Bryant, New York.
- 76 Substitution and its Remedy. C. T. Brandow, Locke, N. Y.
- 77 Medical Charities of Manhattan and the Bronx. F. L. Lattimore, Philadelphia.
- 78 History of the Medical Society of the State of New York. J. J. Walsh, New York.

**Virginia Medical Semi-Monthly, Richmond.**  
*February 22.*

- 79 Cancer in Fisherville District, Augusta County, Va. A. L. Tynes, Fisherville, Va.
- 80 Professional Discourtesy. A. B. Greiner, Rural Retreat, Va.
- 81 Flat Foot. W. P. Matthews, Richmond, Va.
- 82 Adenoids. J. L. Rent, Lynchburg, Va.
- 83 Use of Adrenalin During Ether Anesthesia. C. S. Venable, Charlottesville, Va.
- 84 Fractures—Their Medicolegal Importance. J. T. Graham, Wytheville, Va.
- 85 \*Proprietary Preparations as Affecting Scientific Therapeutics. W. J. Innes, Brookneal, Va.
- 86 Medical Treatment of Diseases of the Bile Tract. M. P. Rucker, Manchester, Va.
- 87 Emphyema. M. S. Martin, Stuart, Va.
- 88 Principles of Surgery. S. McGuire, Richmond.

85. **Proprietary and Scientific Therapeutics.**—Innes is of the opinion that a number of physicians prescribe remedies without knowing the nature of the drugs contained therein, basing their assurance as to the potency of these remedies not on information derived from well-known accredited authorities, but on the testimony of unknown writers who are often men of narrow vision and of limited experience, and who form hasty conclusions. Many of these remedies are new and have not been tested sufficiently to warrant any real estimate of their value. Innes says that two qualifications mark the accomplished physician—diagnostic skill and therapeutic ability. Therapeutics he considers the most important branch of medicine because it is only as a therapist that the patient has any use for the physician. The remedy for this state of affairs, he asserts, is to conform to official remedies, and the profession should see to it that the U. S. Pharmacopeia covers the ground of therapeutic needs adequately so that physicians can limit themselves entirely to official preparations. Innes insists that special attention in the way of practical instruction in clinical therapeutics and prescription writing should be given the undergraduate, and that he be educated to avoid contracting the proprietary habit. The work of the Council on Pharmacy and Chemistry of the American Medical Association is commended highly.

**Journal of the Arkansas Medical Society, Little Rock.**  
*February 15.*

- 89 \*Dislocation and Fracture of Humerus at Upper Third. L. E. Willis, Newport.
- 90 \*Intestinal Obstruction. T. F. Kittrell, Texarkana.

89. **Dislocation and Fracture of Humerus.**—As the result of a fall from a tree Willis' patient sustained an upward dislocation of the shoulder with fracture of the humerus near the surgical neck. The upper end of the lower fragment was projected upward and almost through the soft parts. Medical aid was not sought until 33 days after the accident. The patient had had fever and chills for 30 days. About 10 days after the accident occurred the right shoulder, arm and pectoral region became almost black. The patient was put on antimalarial treatment for three days and then a free incision was made over the outer aspect of the right shoulder. The head of the humerus and about two and one-half inches of shaft was split half in two longitudinally. The head was forced back into the glenoid fossa, the two fragments were wired together, as were also the upper and lower fragments of the humerus. The patient made an uneventful recovery and was able to use his arm with ease and freedom. When last seen he was using ax, crosscut saw and maul, and did not complain of pain or weakness.

90. **Intestinal Obstruction.**—Kittrell reports five cases of intestinal obstruction. The causes of the obstruction were tuberculous peritonitis, intussusception, cicatricial constriction, gunshot wounds of the intestine and obstruction due to an unknown cause occurring in a man who fell and sustained a fracture of the femur. In this case there had been no bowel movement for three days and there was enormous abdominal distension. The abdomen was opened, but no cause for the obstruction could be found. The patient died a few hours after the operation. He had suffered from a similar attack several years previously.

**California State Journal of Medicine, San Francisco.**  
*February.*

- 91 Retiring President's Address, Santa Clara (Cal.) Medical Society. J. L. Asay.
- 92 Operations on the Thyroid Gland. W. I. Terry, San Francisco.
- 93 \*President's Address, Los Angeles County (Cal.) Medical Association. F. E. C. Mattison, Pasadena.

93. **Nostrums and Proprietaries.**—Mattison devotes most of his address to the discussion of what has been done by lay and medical journals to help the medical profession to educate the public as to the evil effects of the use of nostrums. He also advocates the notification of all communicable diseases and the thorough disinfection of premises occupied by any one suffering from a communicable disease.

**Alienist and Neurologist, St. Louis.**  
*February.*

- 94 Psychologic Studies of Man's Moral Evolution. A. S. Ashmead, New York.
- 95 Erotic Symbolism. H. Ellis, Cornwall, England.
- 96 Neurones in the Light of Our Present Knowledge. J. Collins and E. G. Zabriskie, New York.
- 97 Alcohol in Therapeutics. C. H. Hughes, St. Louis.
- 98 Recurrent Functional as Distinguished from the Typical Organic Dementia Senilis of Literature. C. H. Hughes, St. Louis.

**Journal of the South Carolina Medical Association, Greenville.**  
*February 21.*

- 99 Medical Organization, President's Address Fourth Medical Association (S. C.). H. R. Black, Spartanburg, S. C.
- 100 Non-Professional Misinterpretation of Common Symptoms. F. J. Carroll, Summerville, S. C.
- 101 Hydrophobia. D. Furman, Greenville, S. C.
- 102 The Business Side of Medicine. J. Lyon, Ninety-six, S. C.
- 103 Lobar Pneumonia—Its Etiology, Pathology and Treatment. H. L. Shaw, Fountain Inn, S. C.
- 104 Study of Therapeutics. A. S. Todd, Manning, S. C.

**Philippine Journal of Science, Manila (Supplement V).**  
*December.*

- 105 Enumeration of Philippine Gramineæ with Keys to Genera and Species. E. D. Merrill.

**The Medical Herald, St. Joseph.**  
*March.*

- 106 Notes on Postoperative Peritoneal Adhesions. B. A. McDermott, Omaha, Neb.
- 108 Corn Nuclein. W. F. Waugh, Chicago.
- 107 Heart Disease in Obstetric Cases. M. Strong, Omaha.
- 109 Tuberculosis of Joints. T. E. Potter, St. Joseph.
- 110 Operative Treatment of Gonorrhea in the Male. A. C. Stokes, Omaha.
- 111 Tubo-uterine Pregnancy. F. E. Walker, Hot Springs.
- 112 Relations of the Ministry and the Medical Profession. W. W. Burks, Nevada, Mo.
- 113 Diseases of the Kidneys with Cardinal Symptoms. S. A. Johnson, Nevada, Mo.



Interstate Medical Journal, St. Louis.  
(Annual Progress Number.)  
February.

- 114 Therapeutics. W. Engelbach, St. Louis.
- 115 Genitourinary Surgery. H. McC. Johnson, St. Louis.
- 116 Gynecology and Obstetrics. H. Ehrenfest, St. Louis.
- 117 Neurology and Psychiatry. S. I. Schwab, St. Louis.
- 118 Laryngology and Otology. W. E. Sauer, St. Louis.
- 119 Dermatology and Syphilis. M. F. Engman, St. Louis.

St. Louis Medical Review.  
March 2.

- 120 Treatment of Gallstones. J. C. Morfit, St. Louis.
- 121 Relation of Certain Abnormal Ocular Conditions to the Etiology of General Neuroses. N. M. Semple, St. Louis.

Lancet-Clinic, Cincinnati.  
February 23.

- 122 Training of the Child with Reference to Prevention of Nervous Diseases. P. Zenner, Cincinnati.
- 123 Asthma with Mixed Infection Following Repeated Attacks of Influenza. W. F. Waugh, Chicago.

March 2.

- 124 After-treatment of Suppurative Abdominal Drainage Cases. C. T. Souther, Cincinnati.
- 125 \*Present Status of Acute and Chronic Suppuration of the Middle Ear. J. A. Stucky, Lexington.

March 9.

- 126 Foreign Body in the Larynx and Tracheobronchial Tract. L. D. Brose, Evansville, Ind.
- 127 Operations for Pyothorax. S. Graves, St. Louis.
- 128 Treatment of Alopecia. E. S. McKee, Cincinnati.
- 129 Treatment of Acute Catarrhal Bronchitis. G. F. Butler, Chicago.

125.—This article has appeared in the *Kentucky Medical Journal*, February, 1907.

FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional interest.

British Medical Journal.  
February 23.

- 1 \*Treatment of Lachrymal Obstruction. J. H. Parsons.
- 2 \*The Lachrymal Sac in Economy of Vision. J. J. Evans.
- 3 \*Merycism of Rumination in Man. E. M. Brockbank.
- 4 \*Milroy Lecture on Kala-azar. L. Rogers.
- 5 \*Case of Cerebrospinal Meningitis. J. S. Darling and W. J. Wilson.

1. Treatment of Lachrymal Obstruction.—Parsons says that in the majority of cases of lachrymal obstruction caused by inflammation of the lachrymal sac and nasal duct, syringing, properly carried out, results in complete cure, if the case has never been treated with probes. If syringing fails, extirpation of the lachrymal sac is indicated.

2. Lachrymal Sac in Economy of Vision.—According to Evans, excision of the lachrymal sac is indicated in the following conditions: 1. Cases of dacryocystitis which have resisted conservative treatment by probing, etc., for three months or more. The radical treatment is more urgently called for when probing causes acute suffering, when the patient has already suffered from corneal complications, and when there is disease of the bony walls of the lachrymal canal. 2. In cases in which the dacryocystitis is bilateral and the patient has already lost one eye from hypopyon ulcer, the removal of the sac on the side of the healthy eye is a matter of extreme economic necessity. At present insurance companies are loth to insure a workman who has lost one eye, but if the danger of a double dacryocystitis became common knowledge, probably all such cases would be refused absolutely. 3. As a preliminary to operations on the eyeball in cases of dacryocystitis. Here again the necessity for the operation becomes absolute if the fellow eye has already been lost through postoperative infection from the lachrymal sac. 4. In diseases of the sac which endanger general health—for example, tubercle and malignant growths. 5. Lachrymal fistula.

3. Rumination.—Brockbank has under observation several members of one family in which rumination has occurred, or is occurring in at least three generations, probably four, and there are signs of its onset in the fifth generation. The family is healthy as a whole. Males and females are affected with equal frequency. All the cases are of a simple variety.

4. Kala-Azar.—In this lecture Rogers reviews what is known of this affection, and analyzes several epidemics that occurred in India.

5. Cerebrospinal Meningitis.—Darling and Wilson report a case of cerebrospinal meningitis from which they obtained a pleomorphic diplococcus in pure culture from three different samples of cerebrospinal fluid taken by lumbar puncture. The coccus assumed a bacillary form on Conradi-Drigalski media; did not liquefy gelatin; clotted milk; produced no indol; produced no gas in sugar-containing media, and was pathogenic for rabbits. The authors conclude that this meningeal diplococcus belongs to the *Streptococcus fecalis* group and is identical with the *Micrococcus rheumaticus*.

The Lancet, London.  
February 23.

- 6 \*Objects of Hunter's Life and Manner in Which He Accomplished Them. H. T. Butlin.
- 7 \*Milroy Lectures on Kala-Azar. L. Rogers.
- 8 \*Lettsomian Lectures on Diagnosis and Localization of Cerebral Tumors. C. E. Beevor.
- 9 \*Conditions of Blood Vessels During Shock. J. D. Malcolm.
- 10 \*Infective Endocarditis Cured by Inoculation of a Vaccine Prepared from Organisms in Patient's Blood. J. Barr, W. B. Bell and S. R. Douglas.
- 11 \*New Method of Fixation of the Bones in Excision of the Knee. E. W. H. Groves.
- 12 \*Affections of the Pancreas. S. Phillips.
- 13 Preliminary Note on Rinné's Test. R. Lake.
- 14 \*Cellulitis of the Spermatie Cord. F. C. Madden.
- 15 Rôle of Blood Plasma in Disease. H. Campbell.

6.—See abstract in THE JOURNAL, March 16, page 974, paragraph 10.

7. Kala-Azar.—See abstract No. 4.

8. Cerebral Tumors.—In this lecture Beevor discusses the tumors situated in the region of the cortex in front of the ascending frontal convolution and comprising the superior, middle and inferior frontal convolutions.

9. Condition of Blood Vessels During Shock.—Malcolm reiterates his views as to the nature of shock and the conditions of the blood vessels during shock. He holds that the vessels, and especially the peripheral vessels, are tensely contracted and that the blood is forced rather than drawn into the central parts of the body. He is of the opinion also that adrenalin administered for shock can be beneficial only at considerable risk and that saline injections are useful and free from danger only during recovery from shock. He prefers injections into the cellular tissue to intravenous injections, because if the fluid does not find its way into the vessels from the cellular tissue an attempt to force it into a vein is likely to prove harmful as well as futile. He regards the usefulness of injections with a view to increasing the bulk of the blood as very limited in cases of uncomplicated shock. The most important treatment, in his opinion, is preventive. Everything possible should be done to maintain a flow of blood to the surface and to the head, and to keep the patient alive by warmth, by the administration of strychnin and of vasodilators, and by mechanical means. The surgeon must reduce the traumatism by getting over the operation quickly.

10. Vaccine Cure of Infective Endocarditis.—In the case reported by the authors inoculations were regulated by the examination of the opsonic power of the patient's serum.

11. Excision of Knee.—Groves describes a method of fixation of the bones following excision of the knee which he had used successfully in a number of cases. Two rods are passed horizontally through the femur and the tibia about two inches in each case from the line of section. Each rod is one eighth of an inch in diameter and six inches long. The projecting ends are then drawn together by two vertical rods provided with screw threads and nuts. These can very quickly be tightened up by a box spanner. When the apparatus is in position and firmly screwed up the bones are immovably fixed. The final tightening of the screw nuts can be done after all the stitches are put in and the leg is on a splint and the two surfaces of bone can be securely pressed together so that the occurrence of a fibrous zone between them is impossible. Each of the transfixing rods has a point and screw thread at one end and an eye one-eighth of an inch in diameter at the other. The lateral rods are similarly made. Each transfixing rod has one connecting rod passing through its eye and its point passes through the eye of the opposite connecting rod.

Groves makes the following claims for this operation: 1,



It fixes the bones together more firmly and more rigidly than any other method because the fixation acts on the dense bone of the shaft and not on the cancellous tissue; 2, the bones are transfixed and held at points well away from the diseased area; 3, the final fixation and tightening can be effected after the wound is sewn up and the leg is on a splint; 4, it saves the patient a great deal of pain in the dressings; and, 5, it leaves in the bones no foreign bodies which may have to be removed by a subsequent operation.

**12. Affections of Pancreas.**—In this paper Phillips discusses the clinical history and treatment of acute pancreatic catarrh.

**14. Cellulitis of Spermatic Cord.**—Under this title Madden refers to a series of cases the symptoms in which closely resembled those of strangulated hernia, but which on operative investigation proved to be cases of cellulitis of the spermatic cord. In two of the cases the patients stated that they had suffered for many years from hernia. In both instances Madden was able to demonstrate an empty hernial sac in the center of the scrotum and inflamed tissues encountered.

#### Journal of Tropical Medicine and Hygiene, London.

February 15.

- 16 Tropical Forms of Pityriasis Versicolor. A. Castellani.
- 17 \*Tropical Clothing. L. W. Sambon.
- 18 Hemoglobinuric Fever with Long Latent Period. P. W. Bassett-Smith.

**17. Tropical Clothing.**—Sambon claims that the white man in the tropics should wear black, red, or orange-colored clothing because these are the colors which exclude the short rays. He states that the use of white clothing has been adopted in imitation of native custom, but in doing so the white man overlooked the all important fact that the native is already fully protected by a natural armor of pigment which is impervious to the harmful actinic rays. He asserts that the wearing of white outer garments and black, red or yellow underclothing, or the use of white garments lined with a cloth of appropriate color would no doubt be effectual; but the ideal for the white man in the tropics is a fabric that might at the same time exclude the actinic rays and reflect the heat rays, thus avoiding complexity of garments and much unnecessary weight.

#### Medical Press and Circular, London.

February 6.

- 19 Chronic Non-suppurative Diseases of the Middle Ear. M. Yearsley.
- 20 \*Possible Danger in Exploratory Puncture of the Breast. H. Armstrong.
- 21 Tuberculosis Dispensaries and the Co-ordination of Measures Against Tuberculosis. R. W. Philip.
- 22 \*Early Case of Leontiasis Ossea. S. H. Law.

February 13.

- 23 \*Treatment of Non-Malignant Gastric Ulcer. C. Ball.
- 24 Cerebrospinal Meningitis. W. Elder.
- 25 Acute Meningococcal Cerebrospinal Meningitis in Young Children. J. Thomson and S. McDonald.
- 26 Infant Feeding. R. Hutchison.
- 27 \*Treatment of Peritonitis. H. W. Carson.

February 20.

- 28 Hydronephrosis with Notes of an Extreme Case. W. Alexander.
- 29 \*Acid Intoxication Following General Anesthesia. R. Campbell.
- 30 Cerebrospinal Meningitis in Glasgow. A. K. Chalmers.
- 31 Eye and Ear Symptoms in Cerebrospinal Meningitis. C. Shaw.
- 32 \*General Fetal Dropsy. J. Dunlop.

**20. Exploratory Puncture of Chest.**—Armstrong states that when he is positive of the directness of clinical diagnosis he does not hesitate to resort to puncture to confirm the diagnosis; but when he is doubtful, he resorts to the use of the needle with much trepidation. In illustration of his statement he cites one case in which the use of the needle nearly caused the death of the patient. The case proved to be one of chronic interstitial pneumonia, possibly infected with tubercle, and the needle entered the lung. He advises fortifying the patient by previous administration of stimulants, performing the operation with the patient in the recumbent position and not plunging the needle too far in.

**22. Leontiasis Ossea.**—Law's patient was a boy only 12 years old. He seemed to be in good health and was well developed. His only complaint was nasal obstruction. On examination there was found a hard, bilateral growth in the infraorbital region, extending up in such a way as to cause exophthalmos

and the nasal obstruction. The Roentgen ray showed great thickening of all the bones of the cranial vault.

**23. Treatment of Non-Malignant Gastric Ulcer.**—Ball urges that in all cases of uncomplicated gastric ulcer in which a reasonable trial of treatment by rest and limited diet is not followed by marked improvement, gastroenterostomy should be performed. In one of his cases there was a curious sequence to gastroenterostomy. The portion of jejunum corresponding to the stomach anastomosis became dilated to four times its normal size, forming a sort of secondary stomach, and produced obstruction by kinking of the distal portion of intestine; there was also continuous vomiting. A lateral anastomosis below the dilatation relieved the symptoms; this was done a year ago and the patient at present remains in good health.

**27. Treatment of Peritonitis.**—Carson discusses the treatment of peritonitis under three heads: (1) preoperative, (2) operative, and (3) postoperative. Under the first head he discusses the use of turpentine enemata and placing the patient in such a position that the exudation will tend to gravitate toward the pelvis. The operative procedure should include elimination of the primary cause, avoidance of manipulation, breaking down adhesions, flushing, etc., and continuous drainage. In the after treatment the aim should be to promote leucocytosis, to prevent further infection of the peritoneum, and to eliminate the toxic products in the infecting organisms before they can become absorbed into the circulation.

**29. Acid Intoxication Following General Anesthesia.**—Campbell is convinced that delayed chloroform poisoning is a dread reality, and he reports three cases that terminated fatally 50 hours, 38 hours and 30 hours respectively after operation. That heredity may enter into the consideration of the causes of this condition may be assumed from the fact that in one of Campbell's cases he was informed that two other children of the same family had died in much the same way, but without any anesthetic having been given. In another case of unexpected death he discovered that a brother of the patient had died in exactly the same way the day after being operated on.

**32. General Fetal Dropsy.**—In the case reported by Dunlop miscarriage took place during the sixth month. The fetus resembled a case of acute Bright's disease with general anasarca, with pitting on pressure. There was no desquamation and no emphysema of the skin, but a true dropsy. The father was well but the mother had had influenza while she was pregnant. She was in good health both before and after this attack.

#### Clinical Journal, London.

February 6.

- 33 \*Abscess of the Liver. H. Mackenzie.
- 34 \*Arrest of Cancerous Growths. W. B. Clarke.
- 35 Treatment of Surgical Emergencies. A. Baldwin.
- 36 Surgery of the Rectum. F. C. Wallis.

February 13.

- 37 Pneumonia. W. H. White.
- 38 Certifiability. C. A. Mercier.

February 20.

- 39 Essentials of a Diagnosis. C. B. Lockwood.
- 40 Diagnosis of Pregnancy. F. C. McCann.

**33. Abscess of Liver.**—Mackenzie reports three cases, in one of which the diagnosis was comparatively easy, while in the other two cases it was somewhat difficult, the symptoms simulating in one instance acute pneumonia. He says that if a sufficient number of symptoms and visible signs are present an exploratory operation should be done.

**34. Arrest of Cancerous Growths.**—Clarke reports two interesting cases of malignant growth. One of the patients had a tumor of the intestine which had been arrested for ten years. The tumor had not been removed. Microscopic examination of a lymph gland showed undoubted evidences of carcinoma. The second patient had carcinoma of the breast. A Halstead operation was done but the growth recurred and two years afterward the patient begged that something be done to relieve her pain. There were a large number of secondary growths on the side of the chest, but no evidence of visceral invasion. A double oöphorectomy was done. Within 48 hours the pain ceased and the thickened and edematous skin began to shrivel. Nearly all the secondary nodules disappeared. In this case the tumor has been arrested seven years.



## Presse Médicale, Paris.

- 41 (XV, No. 5, pp. 33-40.) \*Dietetics for the Aged (*La loi de 1905 et l'alimentation rationnelle du vieillard*). L. Landouzy.
- 42 \*Possible Spread of Typhoid Fever by Urine (*Analyses d'urines typhiques et propagation, etc.*). M. P. Remlinger.
- 43 \*Choice of Hot Beverage in Stomach Affections. (*Choix d'une boisson chaude*). L. Meunier.
- 44 (No. 6, pp. 41-48.) Prodromal Pseudo-neurasthenia in Dementia Præcox (*Pseudo-neurasthénie, etc.*). Pascal.
- 45 Disinfection of Sputum (*Désinfection des crachats*). J. P. Langlois.

41. Dietetics for the Aged.—Landouzy discusses the subject from the standpoint of state assistance of the aged poor; a law to this effect went into force in France with the current year. This grants a pension to the aged, the infirm and the incurables, ranging from \$2 to \$6 a month, to be paid at their homes if they are not already beneficiaries of institutional care. Wise expenditure of this sum is necessary, he says, to produce the 1,950 calories needed by the average old man or woman weighing about 140 pounds. Most of these calories are required to maintain the body heat, muscular energy and the like being reduced to the minimum. He gives a number of menus costing about 10 cents a day, suitable for the aged, emphasizing that fresh meat is costly and is less nourishing than a diet of bread with a little ham or bacon or coffee, grapes or raisins, figs or chocolate, vegetables, chestnuts, rice and a little cheese. For beverages he suggests milk, coffee and a glass of native wine at dinner. An inexpensive, nourishing soup can be made from vegetables and bacon fat. He declares that on a diet of this kind the aged will thrive, as it is of easy digestion, appetizing and non-constipating.

42. Analysis of Typhoid Urine.—Remlinger suggests that special air-tight vials should be provided for receptacles for urine that is to be analyzed, and that all persons having anything to do with the transportation or the analysis of the urine should take special precautions against contamination of their hands or articles in the environment. Achard has recently reported the infection of an attendant whose duty it was to carry the urine of typhoid patients to the laboratory for examination, and of the interne who made the examination.

43. A Hot Beverage for Persons with Stomach Affections.—Meunier thinks that it is possible to derive direct therapeutic benefit from the hot drink taken with the meals by adding to the hot water some substance that will aid digestion and evacuation of the stomach. Considerable experience has shown remarkable efficacy in this respect of an infusion of malt, retaining unimpaired the diastase or digestive ferment that forms around the germinating bud of the grain of barley. In making beer, the grain is treated with boiling water which destroys the diastase. He recommends an infusion of the malt made with water just below the boiling point. The beverage is prepared like French coffee; a tablespoonful of the malt is ground in a coffee mill and a teacupful of hot water is poured over it. The diastase in this refreshing drink supplements, he asserts, the action of the diastase in the saliva, thus aiding in the digestion of starch.

## Semaine Médicale, Paris.

- 46 (XXVII, No. 6, pp. 61-72.) Posthemiplegic Contractures. (*Contractures post-hémiplégiques pseudo-précoces*.) L. Bard.
- 47 New Method of Local Anesthesia in Extraction of Teeth. (*Anesthésie diploïque*.) R. Nogué.

## Monatsschrift f. Geb. und Gynäkologie, Berlin.

Last indexed, page 652.

- 48 (XXV, No. 1, pp. 1-148.) \*Experiences with Ruptured Extra-uterine Pregnancy with Hemorrhage into the Abdominal Cavity. (*Extrauterinschwangerschaft mit freiem Bluterguss in die Bauchhöhle*.) E. Haim and O. Lederer. Concluded in No. 2.
- 49 \*Placenta Prævia at Schauta's Clinic. (*Zur Statistics der P. p.*) O. Bürger and R. Graf.
- 50 Innervation of Uterus. (*Innervation des Ut.*) O. Roith.
- 51 \*Relations Between Gynecologic Affections and Neuroses. (*Wie verhalten sich die gyn. Erkrankungen zu den Neurosen*.) H. Sutter.
- 52 (No. 2, pp. 149-290.) \*Laparotomy for Irreducible Backward Displacement of Gravid Uterus. (*Was kann die Lap. bei irreponibler Retroversio und Retroflexio uteri gravidi leisten*.) O. Klüster.
- 53 Unelastic Balloon as Obstetric Dilator. (*Der zugfeste Ballon als geburtshilflicher Dilator*.) A. Mueller.
- 54 Retroperitoneal Tumor. (*Retroperit. Geschwulst*.) W. Hannes.
- 55 Epithelioid Tissue in Female Genital Apparatus. (*Epithel. Gewebe im Gen.-App. des Weibes*.) K. Ulesko-Stroganowa. Commenced in No. 1.
- 56 \*Carbon Dioxid Percentage in Blood of Umbilical Vein. (*Kohlensäuregehalt des Blutes in der Nabelschnurvene*.) A. Rieländer. Commenced in No. 1.

48. Ruptured Ectopic Pregnancy.—This communication from Lotheissen's clinic reviews the experiences with 27 cases of ruptured extrauterine pregnancy. Only four of the patients were primiparæ. In nine instances the rupture must have occurred at the time of the last menstrual period and the hemorrhage from it had been assumed by the patient to be the normal menses. The rupture occurred generally between the second and third month of the pregnancy; in six cases during the first month. The imbedding of the ovum in the tube makes the wall so thin at this point that rupture is liable to occur on the slightest provocation. A case is on record in which fatal hemorrhage followed gentle palpation by the physician. The rupture may occur without serious hemorrhage at the time. In one of the cases reported the patient was being prepared for operation; the pulse was good and there were no signs of collapse. While the field of operation was being disinfected, collapse suddenly occurred. The waxy pallor is the most striking symptom in a typical case of ruptured extrauterine pregnancy with profuse hemorrhage. The pallor in some cases had even a yellow tinge, although actual icterus was never observed in the clinic. The hemoglobin percentage dropped to 25 or 30 in most of the cases. The abdomen was usually painful on pressure all over the lower part, while meteorism and rigidity of the abdominal walls were minimal if present at all. Even with small amounts of escaping blood, zones of dulness were discovered in the lower part of the abdomen or over Poupert's ligament. Fluctuation was rarely observed, probably owing to the fact that blood is thicker than the fluid of effusions and transudations. In thirteen of the patients the pulse was over 120, in six between 100 and 120, and in the others below 100. No typical findings were discovered in the genital organs, although there was some escape of blood through the vagina at the time of the rupture in 16 cases. In a few cases the hemorrhage was so profuse that it suggested uterine abortion. Important for differentiation is a history of suddenly appearing, irregular genital hemorrhage with sudden pains, pallor, vertigo and tendency to faint, followed by a period free from symptoms.

49. Placenta Prævia at Schauta's Clinic.—Bürger and Graf state that 344 cases of placenta prævia were observed in the clinic between 1892 and 1905, in a total of 44,676 childbirths. This is an average of one to 130 births. Other German writers have reported an average ranging from the maximum of one in 58 to one in 1,532 (von Winkel, Saxony). The predisposition to placenta prævia seems to be enhanced by previous childbirths, especially when accompanied by certain complications, such as abortion, operative delivery, atony or manual or premature detachment of the placenta. About 45 per cent. of the 350 children in question were born viable. Comparison with statistics from other clinics demonstrates, they think, the superiority of the treatment followed over that in vogue elsewhere. It consists in combined version without immediate extraction, with eventual dilatation of the still relatively narrow birth passages by means of the hysterurynter. About 28 per cent. of the stillborn children had not reached term and 11.7 per cent. were born before the eighth month. Nine others were in extreme maceration, one was syphilitic and another a monstrosity. The mortality in other clinics is given as ranging from 48.88 to 78 per cent.

51. Relations Between Gynecologic Affections and Neuroses.—Sutter's article is based on 315 cases of various gynecologic affections observed in public and private clinics at Munich. Neuroses were observed in 19.5 per cent. of the 200 private patients and in 42.6 per cent. of the 115 patients in the public clinic. The neuroses, although less numerous, were more serious in the first group. A chart was kept for each patient recording the intelligence, memory, gait, attitude, motor paralyses, signs of motor excitability, sensitiveness to contact, to pressure, to pain, temperature, paresthesia, hyperalgesia of the skin, reflexes, bladder and rectal functions, the findings being noted both during and outside of the menstrual periods. The neuroses were observed with special frequency in the cases of inflammatory gynecologic processes and displacements. Sutter agrees with Windscheid that the acquired neuropathic disposition is a more frequent factor than the inherited in these



gynecologic neuroses. He adds that masturbation in women has much more serious consequences than in men. He thinks that a morbid nervous system is able to induce a gynecologic affection, even aside from the manifest affections due to masturbation, foreign bodies and exaggerated sexual desires. Sutter's experience has been that myoma is rare among multiparae. Chronic metritis and chronic atrophying parametritis are liable to be induced by psychic and physical overwork, with frequent commotion in the nervous system from infectious diseases, chlorotic conditions or intoxications of various kinds. The sympathetic system suffers especially under these conditions. The absence of neuroses with cancer is a noticeable fact in his statistics. The knowledge of the presence of cancer probably banishes the thought of all minor troubles; it is possible that carcinomatosis may prevent the development of a neurosis.

**52. Laparotomy for Irreducible Retrodisplacement of the Pregnant Uterus.**—Küstner reports a case of serious disturbances from fixation of the gravid uterus by adhesions fastening it low down in backward displacement. The pregnancy was between the fourth and fifth month. The abdomen was opened and the dense adhesions severed, after which the uterus was easily raised to its normal place. No attempt at ventrofixation was made, but a Smith pessary was introduced and a catheter left in the bladder for a week. The pregnancy continued to a normal termination. Küstner declares that a laparotomy allows correction of the condition with the least possible injury to the bladder. "The bladder is everything, the uterus nothing, in backward displacement of the gravid uterus," Pinard used to say, and a laparotomy allows better oversight of the bladder and adhesions in such cases. Küstner adds that the incision should begin above the umbilicus and should not extend so far down as the space in front of the bladder. The latter organ is thus left in peace while the uterus is being mobilized. Instead of attempting any operation on the bladder, or inducing abortion in cases of the kind with threatening symptoms, the possibility of straightening the uterus through a laparotomy should be considered. This should be done not so much in the interests of the pregnancy as to insure more favorable conditions for the functioning of the bladder. In the after-treatment the damaged bladder should receive first consideration.

**56. Carbon Dioxid in the Blood of Vein of the Umbilical Cord.**—Rieländer tabulates the findings with 21 infants and gives an illustrated description of a simple apparatus which he has devised to determine the proportion of carbon dioxid in the blood. He thinks that it may prove useful in the clinic generally. Hitherto the physician has merely been able to guess at the proportion of carbon dioxid in the blood from the degree of cyanosis.

#### Mitteilungen a. d. Grenzgebieten der Med. u. Chir., Jena.

*Last indexed, XLVII, page 1422.*

- 57 (Third supplementary No., pp. 1-1128, *Memorial to Mikulicz*.) Johannes von Mikulicz-Radecki. W. Kausch.
- 58 \*Operative Treatment of Extensive Prolapse of Rectum (Mastdarmvorfälle.) O. Samter.
- 59 \*Autoplastic Implantation of Bone. (Knochen-Implantation.) A. Tietze.
- 60 \*Experiences with Surgery of the Stomach. (Magenchirurgie.) E. Martin.
- 61 \*Technic of Plastic Operation on the Nose. (Nasenplastik.) A. Henle.
- 62 Otogenic Septic General Infection. (Vom Ohr ausgehende septische Allgemeininfektionen.) W. Kümmel.
- 63 Emergency Hospital for Industrial Accidents. (Berufsgenossenschaftliche Unfallstation vom Roten Kreuz in Breslau.) A. Nisché.
- 64 \*Decapsulation in Chronic Nephritis. (Chir. Behandlung der chron. Nephritis nach Edebohls.) M. Zondek.
- 65 \*Typhoid Ulceration in Thyroid Gland. (Strumitis typhosa.) W. Hübener.
- 66 \*Diagnosis and Treatment of Foreign Bodies in Upper Air Passages. (Fremdkörper, etc.; Bronchoskopie und Radioskopie.) G. Gottstein.
- 67 \*Absorbable Magnesium Button. (Zur Darmknopfrage.) Chlumsky.
- 68 Hysterical Fever. (Hysterische Fieber.) W. Kausch.
- 69 Congenital High Shoulder. (Schulterblatthochstand.) Graetzer.
- 70 \*Cancer of Large Intestine. (Zur Klinik des Dickdarmkrebses.) W. Anschütz.
- 71 Post-typhoid Abscess in Liver. (Leberabscess nach Typhus.) P. Lengemann.
- 72 \*Influence of Oxygen on the After-effects of Chloroform. (Einfluss des Sauerstoffes auf die Nachwirkungen des Chl.) Id.
- 73 \*Roentgen Treatment of Stiff Joints. (Röntgenbehandlung versteifter Gelenke.) E. Moser.

- 74 Acute Dilatation and Excessive Secretion of Stump of Stomach after Resection for Carcinoma. (Akute Dilatation und Saftfluss nach Resektion, etc.) Heile.
- 75 Abnormally Short Fingers or Toes. (Brachydaktylie.) A. Machol.
- 76 Intestinal Incarceration Cured by Laparotomy. (Innere Einklemmung, etc.) V. E. Mertens.
- 77 \*Contusion of the Epiphyseal Cartilage of the Head of the Femur and its Consequences. (Kontusion der Knorpelfuge des Schenkelkopfes und ihre Folgezustände; Coxa vara. Coxitis deformans.) G. Schmidt.
- 78 \*Experimental Surgery of Lungs and Pleura. (Lungen- und Pleurachirurgie.) M. Tiegel.
- 79 Method for Exact Measurement of the Spine in Various Positions. (Messung und Aufzeichnung der Wirbelsäule.) K. Ludloff.
- 80 \*Connection Between Clinical Duration of Gastric Cancer and Operability. (Chir. Behandlung des Magencarcinoma.) A. Hoffmann.
- 81 Statistics of Mammary Carcinoma and Cures. (Mammacarc. u. deren Heilung.) E. Scheu.
- 82 Hysterical Edema from Surgical Standpoint. (Hyst. Oedem.) C. Goebel.
- 83 \*Bloodless Operations on the Skull and Study of the Brain under Atmospheric Overpressure. (Blutleere Op. am Schädel unter Ueberdruck.) F. Sauerbruch.
- 84 Surgery of Gastric Cancer. (Magenresektionen, 1891-1904, Mikuliczschen Klinik.) M. Makkas.
- 85 Bullet Wounds. (Schussverletzungen, Mikuliczschen Klinik.) Stappenbeck.
- 86 Contusions of the Intestines. (Zur Pathologie und Klinik der Darmkontusionen.) H. Bucholz.

**58. Extensive Prolapse of the Rectum.**—Samter reports a dozen cases with the ultimate outcome of operative treatment. Recurrence was not observed in any instance. The various conditions presented by the different patients compelled strict individualization in the operative procedures, combining and modifying different technics, as he relates in detail.

**59. Autoplastic Implantation of Bone.**—Tietze relates good results obtained by transplantation of a piece of bone in order to remedy serious defects in the forearm. His experience with the method in the foot has not been satisfactory, but for the hand it has given excellent results. The first patient was a woman of 53; the first phalanx of the left great toe was implanted in the defect left after resection of the lower end of the radius for sarcoma. The head of the phalanx was cut off, and it was implanted with the cartilage end toward the carpus and the raw end toward the cut surface of the radius. Roentgen pictures were taken every month, and by the end of the year the bones were seen to be solidly united. A small recurrence of the tumor was removed two years later, and also a nodule found on the back of the hand. Since their removal the patient has been in excellent health, and she is still an accomplished pianist. The second patient was a man of 50; a piece from the right tibia, about 5 or 6 cm. long, was implanted in the defect in the left ulna after resection of a periosteal sarcoma. The bones are now solidly united. The third patient was a housemaid of 21. The peripheral end of the second metacarpus of the left hand had been destroyed by a tuberculous process. After resection the defect was filled with a piece taken from the fourth metatarsus of the left foot. It fitted so perfectly in the defect that under the Roentgen rays it looked as if the original bone had been merely fractured transversely.

**60. Experiences with Operations on the Stomach.**—Martin reviews his experiences during the last eight years with operations on the stomach, a total of 72 operations on 61 patients. In cancer, whenever he is sure that everything morbid can be removed, he performs a radical operation, but not otherwise. He regards jejunostomy as a very promising operation for ulcer, but offering little prospects of benefit in case of cancer. He discusses the indications, technic and after-results.

**61. Plastic Operations on the Nose.**—Henle has found that plastic operations with cartilage are free from the disadvantages of bone grafting. He relates the particulars of two cases in which the nose was restored by making a framework out of one or two pieces cut from the costal cartilages. In one case the nose was congenitally deformed; in the other the nose had been shot away. The cosmetic results attained have remained permanent during the years since, cartilage not being absorbed like bone tissue or paraffin.

**64. Decapsulation of the Kidney in Chronic Nephritis.**—Zondek reiterates that experimental research and clinical experience are confirming the uselessness and inadvisability of Edebohls' method of decapsulation in chronic inflammation of the



kidneys. The lesions are irreparable, but the patient can live many years after their first appearance, while decapsulation is by no means a harmless or justifiable intervention under these circumstances.

**65. Typhoid Strumitis.**—In Hübener's case the typhoid infection dated from 16 years before, but evacuation of the abscess in the thyroid gland revealed the presence of typhoid bacilli in pure cultures. He reviews 119 articles from the literature bearing on the metastases of typhoid infection.

**66. Foreign Bodies in the Upper Air Passages.**—About 164 pages are devoted to the experiences at Mikulicz's clinic with foreign bodies in the upper air passages, 15 cases in all, and a summary of 137 cases published by others. Immense progress has been realized by the introduction of bronchoscopy.

**67. Button for Anastomosis of Hollow Viscera.**—Chlumsky gives a historical sketch of the subject, with 46 illustrations, and commends buttons made on the pattern of the Murphy button, but from absorbable material. Independently of Payr, he found that magnesium is an excellent material for the purpose, and now uses an exact copy of the Murphy button with the exception of the spiral spring and plate, which can be safely omitted, as the magnesium button is completely absorbed in time. It can be boiled, and it keeps well, while it is simple, cheap and easily introduced. In dogs, the button still holds by the end of a week, and is not completely absorbed until after from two to four weeks. It might be possible, he thinks, to hasten absorption by adding some chemical to the magnesium, possibly hydrochloric acid. This would tend also to prevent another disadvantage of these magnesium buttons, namely, that sharp-edged splinters are liable to cleave off. His clinical experience with these buttons has been eminently satisfactory. In one case the button was passed in the stool at the end of a week. In another no trace of the button could be discovered with the Roentgen rays by the twelfth day. He gave the patients dilute hydrochloric acid after the ninth day (4 or 5 drops in a glass of water).

**70. Cancer of Large Intestine.**—Anschütz comments on the good results obtained by radical operation in cancer of the large intestine. He ascribes them to the lesser malignancy of cancer at this point and to the fact that with no other organ can the tumor and the glands be removed so radically as in these cases. Of 138 patients operated on at Mikulicz's clinic—1891-1906—91 were men. Nearly half the cases were inoperable when first seen. He regards the finding of a stiff loop of the intestine as the most positive indication for operative interference, even when no tumor can be palpated. It indicates obstruction and increased peristalsis in case of carcinoma of the colon; this sign was more or less pronounced in 60 cases. If recurrence is not observed in a year and a half, the prospects for a permanent cure are good. Some of the patients are still alive after 13, 10, 9 and 8 years after a single operation, and 14 out of 25 treated by an operation in three sittings. Fully 50 per cent. of the patients were permanently cured by surgical intervention; 10 to 15 per cent. did not survive the effects of the operation.

**72. Influence of Oxygen on After-Effects of Chloroform.**—Lengemann describes experimental research which demonstrates, he thinks, that chloroform given with oxygen is much less toxic than when given with air. But even at the best, enough toxicity is left to compel caution. He considers the ideal general anesthesia to date to be that induced with ether, possibly preceded by morphin, with only enough chloroform, in small amounts, to render the anesthesia more profound.

**73. Roentgen Treatment of Stiff Joints.**—Among the cases reported by Moser is that of a man of 52 who, since the age of 24, had suffered from pains and stiffness in the hip, probably the relics of an osteomyelitic process in the neck of the femur. He had tried all kinds of treatment—baths, massage, electricity, Swedish movements—but without results, the latter measures even increasing the pain. He walked with a cane, limping very much. Under Roentgen treatment the joint became less painful and he could use it with greater ease. The improvement continued progressively after suspension of the Roentgen exposures. About a dozen exposures of from five to ten minutes each were made in the course of three or four

months, with a hard tube, at a distance of from 15 to 30 cm. After each exposure the patient lay down for a time. No benefit from Roentgen treatment was obtained in the cases of deforming arthritis, and in another case the exposures induced pain in a previously painless joint. The joints did not regain normal mobility in any instance, but it is a great gain to a patient to be able to raise the hand even to the head, when previously it could not be raised more than a few inches, or to be able to sit down and get up with ease instead of the act being accompanied by great pain and only accomplished with difficulty, as before the treatment in one of the cases.

**77. Contusion of the Epiphyseal Cartilage of the Head of the Femur.**—Schmidt here relates three instances of severe coxitis or coxa vara developing years after an apparently insignificant accident to the hip, injuring the epiphyseal cartilage and thus interfering later with the nutrition of the head of the femur. It is important for the diagnosis that an interval free from symptoms follows the primary injury. On suspicion of such an injury the physician should be careful not to render conditions worse by rough measures at reduction in case of dislocation. Suspicion of crushing of the epiphyseal cartilage indicates rest in bed for several weeks with extension and, later, cautious attempts to use the limb in dressings, relieving pressure and correcting the position of the limb.

**78. Surgery of Lungs and Pleura.**—Tiegel has performed numerous operations on the lungs and pleuræ of dogs in Sauerbruch's overpressure pneumatic cabinet, and states that it allows operations to be protracted for hours, with the pleural cavity opened, without the slightest signs of disturbance in the functions of lungs or heart, provided the anesthesia is thorough and profound. He analyzes a number of fatal injuries of the lungs or pleura that have been published and points out that in some of them the trouble was manifestly due to what he calls distension pneumothorax (*Spannungsthorax*), and not to extravasation of blood as assumed at the time. When the symptoms are due principally to the distension pneumothorax, his experience indicates that all trouble can be averted by puncturing the pneumothorax cavity and leaving a valve cannula in place until symptoms from this source have subsided. He gives an illustration of a valve cannula which he has devised for the purpose, and which he has found very efficient in both experimental and clinical experience.

**80. Prospects of Operative Treatment of Cancer of the Stomach.**—Hoffmann concludes his article with the remark that better prospects in regard to cancer of the stomach can not be expected in the line of improved technic, but only from earlier diagnosis. Physicians and the public should be trained to recognize the condition earlier. On an average 10.3 months elapse after the first symptoms before the surgeon sees the patient. There is an unmistakable connection between the duration of the symptoms and the possibility of radical removal of the cancer and ultimate cure.

**83. Bloodless Operations on the Skull Under Increased Atmospheric Pressure.**—Sauerbruch's overpressure pneumatic cabinet has been frequently mentioned in these columns, especially its advantages for allowing operative intervention on the lungs and pleura without fear of pneumothorax. He here relates experiences with operations on the skull in the overpressure cabinet. They allowed remarkable oversight of the physiologic conditions of the brain, especially in regard to compression of the brain and the conditions of the circulation through this organ. Among the practical results of his research is his announcement that a sharp distinction should be made between local pressure and compression from the cerebrospinal fluid. Measures which act only on the blood pressure, such as infusion, or have an influence merely on the filling of the veins in the skull, such as venesection, are of no use in local compression. Trephining is the only measure indicated in case of local compression of the brain, especially extradural. He advises trephining on suspicion of local compression even when signs of irritation and paralysis suggest trouble only in an entirely circumscribed region. It is not necessary to wait for the characteristic "pulse of compression," change in the type of breathing, vomiting and loss of consciousness, before feeling



justified in operating. Even slight disturbances in consciousness are an early symptom of compression and justify trephining before severer symptoms on the part of the medulla are observed. The trouble from local compression consists more in the pushing aside and compression of the brain matter than from the tension of the cerebrospinal fluid, and a large opening should be made, with permanent resection of the bone and corresponding dura. Even when the compression is due to the cerebrospinal fluid his experiences suggest that trephining is more certain in its results than mere lumbar puncture, even if often repeated.

*Zeitschrift f. klinische Medizin, Berlin.*

*Last indexed, XLVII, page 1862.*

- 87 (LX, Nos. 5-6, pp. 357-528) \*Polycythemia with Enlargement of Spleen. (Erythrozytosis—Polyzythaemia rubra—megalo-splenica.) H. Senator.
- 88 Changes in Liver Cells after Experimental Nephrectomy and Inanition. (Azidose.) M. Mosse.
- 89 \*Spasmodic Mydriasis in Valvular Disease. ("Springende Pupillen.") Géronne.
- 90 Hemorrhagic Erythema Nodosum and its Relation to Purpura. (Erythema nodosum haemorrhagicum.) Id.
- 91 Experimental Study of Appearance of Sugar in Nephritic Dropsy. (Zucker im nephritischen Hydrops.) Bibergeil.
- 92 Elimination of Pathologic, Coagulation-modifying Albuminoids in the Urine in Nephritis. (Eisweisskörper im Harn bei Nephritis.) J. Brodzki.
- 93 \*Experimental Study of Renal Dropsy. (Nierenwassersucht.) Georgopulos.
- 94 Id. Blanck.
- 95 Hemolysis in Nephritis. (Hämolyse bei Nephritis.) E. J. Leopold.
- 96 Action of Salts on the Kidneys in Experiments on Animals. (Einwirkung von Salzen auf die Nieren.) Id.
- 97 \*Proportion of Water in the Blood Serum in Cardiac and Renal Dropsy. (Wassergehalt des Blutserums bei Herz und Nierenwassersucht.) H. Strauss.
- 98 (LXI, Nos. 1-2, pp. 1-200.) \*Nature of Diabetes Insipidus. (Wesen des D. insip.) F. Seiler.
- 99 \*Defective Development of Arterial System. (Hypoplasie des Arteriensystems.) S. v. Ritook.
- 100 \*Cysticercus in the Fourth Ventricle. (Cysticerken im vierten Ventrikel.) A. Stern.
- 101 Dirotic Pulse with Aortic Insufficiency. W. Janowski. Id. A. Nürnberg.
- 102 Experimental Tests of Isotonic Mineral Waters. (Prüfung isot. Mineralwasser.) P. Bergell and L. Laband.
- 103 Fat in the Blood in Diabetes. (Diabetische Lipämie.) G. Klemperer and H. Umber.
- 104 \*Albumin Metabolism Dependent on Action of Nerves and Ferments. (Lehre vom erhöhten Eiweissstoffwechsel.) E. Aronsohn.

87. Polycythemia with Enlargement of Spleen.—Senator reports the results of study of the metabolism, especially of the gases, and of the blood in two cases of this affection. He thinks that the evidence is in favor of increased production of red corpuscles from hyperfunctioning of the bone marrow. Much light would be thrown on the affection if it could be determined that the enlargement of the spleen precedes the polycythemia. The only measure that seemed to relieve his patients was spontaneous hemorrhage or venesection, and the benefit was only temporary.

89. Spasmodic Dilatation of the Pupils with Existing Valvular Affection.—The patient was a woman of 47 with pronounced mitral insufficiency, stenosis and failing compensation. The left pupil was dilated more than the right, although the reaction was undisturbed. After reclining on the right side, the right pupil sometimes became temporarily dilated. Géronne assumes that the valvular affection was responsible for this anomalous mydriasis by intermediation of the sympathetic system, the cardiac ramifications of the nerve probably being involved in the valvular affection.

93. Experimental Study of Renal Dropsy.—All the articles in this number of the *Zeitschrift* issue from Senator's laboratory. This monograph by Georgopulos relates the findings in nephritis experimentally induced in lower animals with uranium or cantharidin. He has demonstrated that there is no constant parallelism between the amount of chlorids eliminated through the kidney and the proportion of chlorids in the dropsical accumulations of water. More water is retained, in proportion, than chlorids, thus lowering the chlorid content of the blood. The retention of water is not dependent, therefore, on the retention of chlorids. It depends, rather, on some primary disturbance in the water-secreting capacity of the kidneys. These findings are not corroborative of the salt theory in regard to renal dropsy, but speak against it. He adds that the pathologic findings in this experimental nephritis and the course of the affection apparently resembled those in human

nephritis in every respect, and the conclusions based thereon can be applied also to man. He agrees with Senator that toxic substances circulating in the blood injure the vessel walls and lead to transudation when there is an over accumulation of water in them from the disturbance in the water-secreting faculty of the kidney. These assumptions are reinforced by the fact that injection of nephrectomized rabbits—free from dropsy—with a small amount of blood serum from the rabbits with the experimental nephritis was always followed by extensive transudation of fluid into the abdominal cavity. The results of these and other experiments suggest that copious ingestion of fluids has a favorable effect on the diseased kidneys so long as the diluting power of the kidney is unimpaired. On the other hand, it aids in increasing the dropsy if the water-secreting faculty of the kidneys is impaired. The retained water has a beneficial action, however, as it dilutes the toxic substances in the blood. The rabbits that were not given much water died with symptoms of intoxication, while none was observed with the rabbits which were given water freely. It may be that the lower molecular concentration and the less frequent development of uremia in parenchymatous nephritis, in contrast with interstitial nephritis, is the result of the retention of water. The elimination of water in case of contracted kidney generally proceeds normally while the secretion of the solid elements of the urine is much impaired. Restriction of water, for fear of its effects on the heart and dropsy, under certain circumstances may prove directly harmful for the organism as a whole.

97. Water Content of Blood Serum with Cardiac and Renal Dropsy.—Strauss has continued his study of the blood serum with a refractometer since his first publications on the subject three years ago, and here announces a number of interesting findings. Among them is the fact that in case of retention of water in consequence of kidney disease, the retention of water is always preceded by a primary retention of salt. This factor is missing in cardiac dropsy, which is the primary result of failing compensation. The changes in the blood serum are much more instructive than the results of research on the metabolism, in case of renal or cardiac dropsy. The findings by the refractometric method of investigation harmonize perfectly with the data learned otherwise. It gives direct insight into the action of diuretic measures on hydremic and dropsical conditions. The reduction of the proportion of water in the blood serum under measures to enhance diuresis can be accurately followed step by step with the refractometer. He gives some concrete examples from his clinical experience, adding that he was the first to call attention to the nephrogenic retention of salt and the consequent therapeutic indications in case of renal dropsy. He adds that the question of retention of salt has nothing to do with the treatment of impending or established uremia, although when the uremia is associated with a tendency to dropsy, the conditions for recovery are more favorable, as the poisonous substances are diluted, and can be removed by draining away the dropsical fluid.

98. True Nature of Diabetes Insipidus.—Seiler concludes from his clinical and experimental experiences that diabetes insipidus is the result of an anomaly in kidney functioning which consists in the fact that the kidneys are no longer able to secrete urine of a normal concentration. The concentration is always below normal. If sufficient fluid is not ingested, then the elements of the urine are retained and trouble follows. To obtain sufficient fluid for the purpose Nature calls for increased intake of fluid by increased thirst, and satisfying the thirst leads to the polyuria. This may possibly be the cause also of the polyuria observed with contracted kidney. It might be possible, he suggests, to influence the diabetes favorably by diuretics to improve the secreting conditions in the kidneys.

99. Hypoplasia of the Arterial System.—Ritook describes 17 cases in which the symptoms were observed which he explains by assuming defective development of the arterial system. He has found in the literature records of 56 cases of hypoplasia of the arterial system. The patients were all under 27, and they all exhibited extreme anemia, resisting treatment, and for which no other cause could be discovered. Defective develop-



ment of other organs was also evident, such as a very small heart, or hyperplasia of the genital organs, or defective blood production, as in leukemia and hemophilia. Early fatigue of youthful individuals with otherwise normal hearts, after comparatively slight physical exertion, is an important sign of the condition, as also subnormal temperature, very slight fever in febrile affections, and cold hands or feet permanently or periodically. Further symptoms are palpitations of the heart, amounting at times to actual angina pectoris, accompanying cardiopneumosis or following slight physical exertion, especially in individuals who are growing fast during puberty; hypertrophy of the left heart, if no other reason for it can be ascertained, but without the jugular pulse, the radial pulse corresponding to the hypertrophy or presenting very small pulse waves; acute or rapidly developing cardiac insufficiency after comparatively slight physical exertion, and, finally, low resisting powers in infectious diseases, especially the acute infections, on account of the early exhaustion of the heart. The condition was diagnosed during life in 12 of the 73 cases. Treatment can only be that of a valvular affection, with scrupulous avoidance of physical exertion even for persons apparently in good health.

100. *Cysticercus* in the Fourth Ventricle.—Stern relates the histories of four patients with *cysticercus* in the fourth ventricle, giving the postmortem findings and appending the details of 68 cases from the literature. The diagnosis is based on the pronounced and generally very violent symptoms of general pressure in the brain, headache, vertigo and vomiting, with intervals of freedom from symptoms. Pain and stiffness in the back of the neck, continuous vomiting and cerebellar ataxia point to an affection of the posterior cranial fossa, while choked disc, somnolence and slowing of the pulse show the increased intracranial pressure. In some rare cases there are also focal symptoms, such as diabetes, respiratory disturbances, cerebral and abducent paralysis. The diagnosis is rendered certain by the Bruns sign, that is, the sudden onset of severe cerebral symptoms when the head is brusquely moved. This sign was observed in a fourth of all the cases; it has been noticed also with tumors of the posterior cranial fossa. The affection frequently terminates with sudden death. In case of lumbar puncture, the sudden subsidence of the pressure after escape of a minimal amount of fluid is a sign of crowding in the posterior cranial fossa and is a warning against withdrawal of more fluid. With the death of the *cysticercus* the symptoms may subside, but this has been only exceptionally observed. We do not know how long the *cysticercus* lives. More favorable prospects are afforded by Oppenheim's discovery of calcified parasites in the brain in a case in which the patient had had no appreciable symptoms from their presence for years before his death. In another case in his experience a patient with cortical epilepsy had hydatid cysts elsewhere, and the epilepsy was assumed to be the result of the presence of the parasites in the brain. The seizures finally ceased and he can now be regarded as cured. In a case reported by Marchand a vesicle was found shriveled and others ruptured. These findings suggest the possibility of a more favorable outcome than has been the rule hitherto. Attempts have been made to treat the condition on the same lines as tapeworm, but without the slightest success. Bruns and Henneberg believe that it might be possible to incise the vermiform process of the cerebellum and evacuate by puncture the *cysticercus* vesicle in the fourth ventricle in case the *cysticercus* is free. This Bruns assumes to be the case when the patient becomes dizzy and falls when he moves his head brusquely. He warns, however, against attempting the operation if the fluid in the ventricle is under great pressure for fear of sudden death. The operation should be attempted only when the hydrocephalus is not very intense, as shown by the absence of headache. The most characteristic sign of *cysticercus* in the fourth ventricle is the striking alternation between serious symptoms and periods of entire freedom from symptoms. Lumbar puncture may be useful for diagnosis and treatment, as also puncture of the ventricle, according to Neisser's technique, to relieve the internal hydrocephalus.

104. *Albumin Metabolism*.—Aronsohn presents arguments to prove that the increased metabolism of albumin during fever depends on the action of the nerves and ferments. The assumption of a toxic decomposition of albumin has no scientific basis. The augmented albumin metabolism occurs only in case of fever or excessive nervous excitement, in cachexia, and also when the body cells are insufficiently supplied with carbohydrates and fat. During fever and nervous excitement the metabolism of albumin is increased by the increased innervation of the cells (irritation of the heat center). Cancer is not accompanied by increased metabolism except during febrile periods of cachexia. In exophthalmic goiter, pernicious anemia and afebrile tuberculosis the albumin metabolism is not enhanced. The increased elimination of nitrogen in case of phosphorus, arsenic and chloroform intoxication is due to the accompanying rise in temperature.

#### Archivio per le Scienze Mediche, Turin.

*Last indexed, page 654.*

- 105 (XXX, No. 4, pp. 341-451.) Hypophysis in Marmot During Hibernation and in Summer. (Su l'ipofisi delle marmotte.) A. Gemelli.
- 106 Etiology of Bacterial Necrosis. (Necrosi batteriche.) F. Vanzetti.
- 107 Extreme Hyperplasia of Thymus in an adult. (Enorme tumore del mediastino anteriore dovuto unicamente ad abnorme persistenza e forte iperplasia del timo.) G. Tarozzi.
- 108 Changes in Uterine Epithelium During Gestation in Certain Animals. (Epitelio uterino durante la gravidanza.) A. Carraro.

### Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

*MEDICAL DIAGNOSIS. A Manual of Clinical Methods for Practitioners and Students. Fifth Edition, Enlarged and Revised, by J. J. Graham Brown, M.D., F.R.C.P.E., F.R.S.E., Assistant Physician, Royal Infirmary of Edinburgh, and W. T. Ritchie, M.D., F.R.C.P.E., F.R.S.E., Clinical Assistant Pathologist, Royal Infirmary of Edinburgh, with 200 Illustrations. Cloth. Pp. 508. Price, \$3.00. New York: Imperial Publishing Company, Edinburgh and London: William Green & Sons, 1907.*

*TEXT-BOOK OF THE PRACTICE OF MEDICINE. For Students and Practitioners. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in Jefferson Medical College, Philadelphia. Second Edition, Revised and Enlarged, with 131 Engravings. Cloth. Pp. 1132. Price, \$5.00 net. Philadelphia: Lea Bros. & Co., 1907.*

*TUMORS, INNOCENT AND MALIGNANT, Their Clinical Character and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S., Surgeon to and Member of the Cancer Investigation Committee of the Middlesex Hospital. Fourth Edition, with 355 Engravings. Cloth. Pp. 675. Price, \$4.50 net. Chicago: W. T. Keener & Co., 1907.*

*TEXT-BOOK OF OPHTHALMIC OPERATIONS. By Harold Grimsdale, M.D., F.R.C.S., Ophthalmic Surgeon to St. George's Hospital, and Elmore Brewerton, F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital. Cloth. Pp. 349. Price, \$5.00 net. Chicago, W. T. Keener & Co., 1907.*

*LIST of the Fellows, Members, Extra-licentiates and Licentiates of the Royal College of Physicians, London, and of the Holders of the Diploma in Public Health. Granted Jointly by the College of Physicians and Surgeons. Paper. Pp. 326. 1907.*

*FOURTH ANNUAL REPORT OF THE SUPERINTENDENT OF THE BUREAU OF GOVERNMENT LABORATORIES for the Year Ending Aug. 31, 1905. By Paul C. Freer, Superintendent of Government Laboratories. Paper. Pp. 24. Manila Bureau of Printing, 1906.*

*ALCOHOL, The Sanction for Its Use, Scientifically Established and Popularly Expounded by a Physiologist. Translated from the German of Dr. J. Starke. Cloth. Pp. 317. New York and London: G. P. Putnam's Sons, 1907.*

*EYE INJURIES AND THEIR TREATMENT. By A. Maitland Ramsey, M.D., Fellow of the Faculty of Physicians and Surgeons, Glasgow. Illustrated. Cloth. Pp. 210. Price, \$6.00. New York: The Macmillan Company, 1907.*

*FIFTY-FIRST ANNUAL REPORT on the Births, Marriages and Deaths in the City of Providence, for the Year 1905. By Charles V. Chapin, M.D., City Registrar. Paper. Pp. 239. Providence: Snow & Farnham, 1906.*

*ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY, vol. III. From Ea to Gu. Leather. Pp. 535. Price, \$5.00. Edinburgh: William Green & Sons. Chicago: W. T. Keener & Co., American agents, 1907.*

*JOHNS HOPKINS HOSPITAL REPORTS. Volume XIII on Studies in Urological Surgery and volume XIV on Studies on Hypertrophy and Cancer of the Prostate. Paper. Baltimore: Johns Hopkins Press, 1906.*

*FIFTH ANNUAL REPORT of the Director of the Bureau of Science. By Paul C. Freer, Director of the Bureau of Science, for the Year Ending Aug. 1, 1906. Paper. Pp. 24. Manila Bureau of Printing, 1906.*



# The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVIII.

CHICAGO, ILLINOIS, MARCH 30, 1907.

No. 13.

## Original Articles

### CHANGES IN THE LYMPHOID TISSUE IN CERTAIN OF THE INFECTIOUS DISEASES.\*

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BOSTON.

In 1898, in a paper read before the Association of American Physicians, I called attention to a form of nephritis associated with acute infections, which, although recognized and described, did not seem to me to have been accorded the attention it deserved. This, the acute interstitial non-suppurative nephritis, is characterized by the appearance of foci of cellular infiltration in the interstitial tissue of the kidney. In some cases the extent of the cellular infiltration is so great that marked macroscopic changes are produced in the organ. In these cases the kidney is greatly enlarged, the capsule is distended, thin and often separates spontaneously on section. In children the fetal markings are less distinct and often obliterated. The surface is pale, of a grayish opaque color, somewhat resembling the amyloid kidney, mottled with irregular more hyperemic areas. The stellate veins of the surface are injected and often show punctate ecchymoses around them. The surface may be irregular, due to the projection of small irregular nodules which are more opaque than the surrounding tissue. On section of such kidneys the normal markings of the cortex are obliterated and the contrast between pyramids and cortex is less distinct. The increase in size is principally due to swelling of the cortex, which may be three or more times thicker than normal. The general color of the cut surface is grayish and opaque with areas of injection and scattered ecchymoses. Corresponding to the elevated areas on the surface there are often areas more opaque which extend in lines from the pyramids to the cortex. The tissue is soft, lax and easily broken; it is moist and an opaque milky fluid may be pressed out or flows spontaneously from the cut surface. The weight of the kidneys may be enormously increased. In one case of diphtheria and measles in a child, aged 2 years, the combined weight of the kidneys was 480 grams. In another child with scarlet fever, aged 8 years, the kidneys weighed 400 grams. I have found such extreme cases only in children dying of scarlet fever or diphtheria. In the majority of cases the enlargement is but slight and there may be no macroscopic evidence of the condition.

Microscopic examination shows a cellular infiltration of the interstitial tissue usually accompanied by accumulations of similar cells in the veins and capillaries. The cells have a tendency to accumulate in foci which are found more often than elsewhere at the base of the pyramids and beneath the capsule. The cells were regarded as lymphoid in character and of the type of the

plasma cells. Since 1898 in all routine examinations of tissue the presence of these cells in the tissues and their origin have been studied. The interstitial cell accumulations are most frequent in the kidney, but are not confined to this organ. Next to the kidney they are most frequently found in the adrenal glands and they are occasionally found in the pancreas and in the lungs. They are most common in the organs of children, and the marked cases with great enlargement of the kidneys are only found in children. In the kidneys in smallpox it is a common condition, but I have never found such extreme degrees as to lead to macroscopic changes. I have been struck with the frequency of the condition in the kidneys of mice. In a large number of autopsies on mice made by Dr. Tyzzer in the course of his carcinoma work such interstitial foci were found in about one-fifth of the cases.

As a routine the tissues were hardened in Zenker's fluid and thin paraffin sections were stained in methylene blue and eosin. For certain purposes both Mallory's connective tissue stain and the phosphotungstate hematoxylin were used, but the descriptions are based on the methylene and eosin stain. Sections were taken from the outer edges of the pieces of tissue where the hardening agents had fully penetrated. There is great variation in the character of these cells, but it is possible to divide them into three classes.

1. Small lymphoid cells of the usual type, with a nucleus rich in chromatin which is arranged peripherally with projections into the interior, and a variable amount of pale cytoplasm. The nuclei vary little in size and are from 3 to 5 microns in diameter. Most of the cells give the appearance of free nuclei, but usually in cells lying separate the faint irregular outline of the cytoplasm can be distinguished outside of the nucleus. No structure and no granulation can be distinguished in the cytoplasm. It usually stains a faint lilac color with the methylene blue and eosin.

2. The most numerous cells are large cells with a rather vesicular nucleus. They vary greatly in size, being from 6 to 15 microns in diameter. The largest I have seen was 18 microns, the average is about 9. The cell outline is usually round, it may be irregular from mutual pressure. Occasionally cells are found apparently in active ameboid motion with long, usually blunt, cytoplasmic projections. The cytoplasm stains a pale blue and is non-granular in the methylene blue and eosin stain. Intense stain with phosphotungstate hematoxylin brings out a very fine distinct granulation in many of the cells. Occasionally faint vacuoles can be distinguished, usually at the periphery. In the best preserved preparations centrosomes can be seen often in pairs. The nucleus is relatively large. It varies in size from 4 to 8 microns, the average being about 6. It is round and usually placed eccentrically. It contains relatively little chromatin. There is a clear nuclear border appearing

\* Lecture delivered before the Harvey Society, Feb. 23, 1907.



as a rim of chromatin with slight projecting masses. From these masses filaments extend into the nucleus and often end in large irregular masses of chromatin which usually stain less intensely than that in the periphery. An intranuclear network apart from the chromatin can not be distinguished. In some cases these cells form the majority.

3. The third sort of cells, between which and the cells just described there are transitions, correspond to the plasma cells. These show considerable variation in size, the cytoplasm stains intensely with methylene blue and with most other nuclear stains. The nucleus is relatively small, always placed peripherally, its edge often in line with the edge of the cell; the chromatin is abundant and placed around the periphery. The nucleus somewhat resembles that of the small lymphoid cell. The cytoplasm is non-granular and alongside of the nucleus is a clear crescentic-shaped area in which the material which gives to the general cytoplasm its characteristic stain is absent. With the methylene blue and eosin combination this area stains faintly with eosin. The cytoplasm seems to be of firm consistency, the cells are round or oval and tend to retain this shape under conditions of mutual pressure. In addition to these, which are the characteristic cells, there are variable numbers of eosinophile and mast cells. There are also, particularly in the more advanced cases, numbers of large cells with vesicular nuclei and vacuolated protoplasm slightly staining with eosin which are phagocytic for the lymphoid cells and often contain one or several of these enclosed in vacuoles.

These same cells of the lymphoid type are contained in the vessels and are most numerous in the straight veins of the pyramids. I have found numerous cases in which they were confined to these vessels and absent in the interstitial tissue. There is a certain difference in that the typical plasma cells are relatively much more numerous in the tissues than in the vessels. When present in the pyramidal vessels in large numbers the cells may also be found in the capillaries of the cortex. I have rarely found them in the glomerular vessels. The pyramidal vessels containing the cells are dilated, and the cells are loosely contained in them or closely packed. I have never found anything approaching the mural arrangement of polynuclear leucocytes in the vessels of an inflamed area. Similar cells are occasionally seen in the blood contained in sections of arteries and veins, but never in considerable numbers. Numerous nuclear figures are found in the cells, both those within the vessels and in the interstitial tissue. Nuclear division is accompanied by peculiar changes in the cell cytoplasm. The cytoplasm becomes filled with basophilic granules, and in the tissue a cloud of such granules is often seen around the cell as though cast off in the act of division.

All of these cells are ameboid, the small lymphocyte probably the least so. I have not infrequently seen them in the act of emigration and in the rapidly hardened tissues the forms assumed by the free cells can be interpreted only in this way. In the kidneys more or less degeneration is usually associated with the presence of the foreign cells and in the most marked cases their presence in such immense numbers in itself produces disorganization of the tissue. I have not been able to regard them, however, either in the kidneys or in other tissues as merely a reaction to injury. In the kidneys of mice there is frequently an infection with *Klassiella muris*, but I have not been able to see any local relation between the various forms of this organism and the

presence of the cells. In the adrenals particularly they may be found in foci in which the tissue appears perfectly normal. The only place I have found them in which their presence is definitely associated with parenchymatous injury is in the interstitial tissue about the focal lesions of the testicle in smallpox.

It is certain that these cells can only reach the tissues from the blood. There are no local cells which can give rise to them, and their presence in the vessels and their emigration make their blood origin evident. The abundance of nuclear figures in the cells both within and without the vessels shows that when brought to the tissues their number is rapidly increased by proliferation. I have been at a loss to account for their presence in the kidneys in such large numbers. In the case of accumulations of polynuclear leucocytes in vessels and in tissues we are warranted in assuming a positive chemotaxis exerted on the cells within the vessels by the single or combined action of parasites and injured tissue. In the interstitial foci we can exclude any local effect of parasites and, although there is always in these cases some degeneration, there seems to be no relation between the locality and extent of the degeneration and the presence of the cells. I was at one time inclined to regard their accumulation as mechanical. There must be slow flow and low pressure of blood in the venous groups of the pyramids, where these cells principally accumulate, owing to the length, the abundance and large size of the vessels, and the further fact that the entry of blood into them is preceded by a double capillary circulation. This would tend to cause foreign substances in the blood, and these cells are foreign to the normal blood, to accumulate here. In the kidney in a case of pernicious malarial fever with great numbers of parasites in the blood the principal intravascular accumulations of the parasites were in these vessels. But such a mechanical theory will not explain their accumulation in other vessels of the kidney nor in other organs. It seems to me that we must assume the action of a positive chemotaxis coming from the tissues and exerted on these cells alone. There are no polynuclear leucocytes in the vessels with them, except the few which might be found in the amount of blood, nor are they present in the tissues. In all of the cases in which the cells appear we have evidence of the diffused action of injurious soluble substances and it is possible the substances themselves or products formed from their action on cells may exert a local influence. Some support is lent to the mechanical theory by the presence of these cells in comparatively large numbers in the liver capillaries.

But little attention has been paid by those who examine blood smears to the presence of these cells. Cell differentiation by this method is based on the presence in the cell cytoplasm of granules which take a specific stain with certain dyes. Few methods of work have been given which have been of more importance in increasing knowledge than this method of Ehrlich. The essential principles of leucocyte differentiation and origin which he deduced from study of the blood and marrow by the method still stand. The method, however, has decided limitations when it comes to the differentiation of cells which have no specific granulation. For the differentiation of such cells we must depend on size of cell and nucleus and structure, character and staining of cytoplasm, distribution and amount of chromatin in nucleus, etc. There is always difficulty in the classification of single cells, as is shown by the perennial warfare which is waged concerning the differentiation and



origin of the cells which appear in injured tissues. In the study of tissues we take into account more the relations of cells in the formation of the tissue than their characteristics as single cells. Few cells seem more characteristic than the liver cells, and yet we may be very uncertain in the recognition of a single liver cell separated from its organic connection. The cells in question have generally been grouped with the mononuclear cells of the blood. In the very careful study of the blood of smallpox by Brinckerhoff, Magrath and Bancroft no attempt was made to differentiate the varieties of mononuclear cells. The interstitial cells seem to me to correspond best with the cells described by Türk under the name of irritation cells. He regards these cells as coming from the marrow and representing a differentiation of the marrow cell in a direction opposed to the normal differentiation into the polynuclear leucocyte. He describes them as uninuclear, non-granular cells whose size varies. They resemble the small and medium sized lymphoid cells of the marrow, but are distinguished from these by the small relative size of the nucleus. The nucleus contains abundant chromatin, is sharply circumscribed, has definite structure and rarely shows nucleoli. It is eccentrically placed in the cytoplasm. The protoplasm is compact and stains intensely with methylene blue, often more deeply than the nucleus. He found these cells in the blood in long-continued leucocytosis or in the cachexias of anemia, they appearing in the same conditions in which a few myelocytes and erythroblasts become washed into the blood. The irritative cells of Türk have received much more attention at the hands of French than of German authors and have received special mention in the examination of blood in smallpox.

For the origin of these cells we must turn to the lymphoid tissues, to the lymph nodes and the diffusely distributed similar tissues.

I shall preface my remarks on pathologic conditions by some statements of the normal. The lymph node is essentially composed of a mass of small lymphoid cells intersected by spaces and channels. There is a broad space or sinus around the convexity of the kidney-shaped structure, and from this channels are given off which run toward the hilus separating the cell mass into small divisions or strands. The sinuses are crossed by numerous strands formed, the larger by connective tissue, the smaller by anastomosis of cell processes. The sinuses and the septa are lined by endothelial cells and the cell strands are composed of such cells. The lymphoid cells are supported by a reticulum of connective tissue and probably by a finer reticulum formed of branching cells.

In the masses of small lymphoid cells, particularly along the convexity, there are round or oblong foci of differentiated cells. These foci were first described by His and afterward more fully studied by Fleming, who regarded them as the centers of cell production or germinal centers. The diffusely distributed lymphoid tissue represented by the tissue in the alimentary canal between the submucosa and the epithelium differs from this structure both in the character of the cells and in their arrangement. In this tissue there are at intervals cell aggregations resembling a portion of a lymph node with one or several germinal centers. The definite lymph sinuses which are so conspicuous in the node are not evident in this tissue. Masses of lymphoid tissue very similar to the cell aggregations which compose the intestinal follicles are found in the spleen along the arterial branches. There are also small lymphatic foci in the

lungs of children which repeat in miniature the structure of the node. I have never known just where to place the thymus in the category of the lymphoid tissues. It contains no germinal centers and has seemed to me a place of destruction of lymphoid cells by phagocytes rather than of their formation.

There is one thing which comes out strongly in the study of the lymphoid tissues, and that is their preponderance in the child. There is a steady atrophy with age. The activity of the intestinal lymphoid tissue is the most persistent. One can, as a rule, easily judge of lymphoid activity by the presence of germinal centers. In the lymph nodes of children they are rarely absent, in adults they are usually absent unless there is some condition which excites activity in local nodes. Another point of interest is the greater activity of the tissue in small mammals. In the monkey, rabbit, guinea-pig, dog and mouse active lymphoid tissue is the rule.

Under normal conditions in the nodes cell production is confined to the germinal centers and the terminal cell is the small lymphoid cell. The cells composing the centers differ so much in appearance from these that one has at first the inclination to regard the center as a definite tissue enclosed in the node in some such way as the islands of Langerhans are enclosed in the pancreas. This is accentuated by finding at times a more or less distinct capsule around the center separating it from the surrounding tissue. Usually the small lymphoid cells are massed more closely immediately around the germinal center. The cells in the germinal center have a very indefinite, loose, pale protoplasm not granular and staining a faint lilac with the methylene blue and eosin stain. The cell outlines are indefinite, and in many cases can not be distinguished. The nuclei vary in size from 5 to 8 microns and are typically vesicular. They have a sharp edge and a small amount of chromatin which is placed at the rim and in small clumps in the interior. Thin chromatin filaments usually connect the single masses. Nuclear figures are very abundant and usually imperfectly preserved. The cell mass much resembles active embryonic tissue. Among these cells, and progressively increasing in number toward the periphery, there will be found numbers of the small lymphoid cells, and in the tissue outside of the center scattered germinal cells will be found. There is always found in the center rather evenly distributed among the germinal cells a number of larger cells, with vacuolated acidophilic cytoplasm and large, pale, vesicular nuclei. These are eminently phagocytic and contain cell and nuclear fragments seemingly derived from small lymphoid cells. Nuclear detritus may also be seen not enclosed in phagocytic cells. As Fleming and others have shown, capillaries are abundant in these centers. As much as the germinal cells seem to differ from the small lymphoid the transition to the latter can be followed. The change seems to be produced by contraction of both cytoplasm and nucleus. The transudation stream is evidently from the center to the periphery, and the newly formed cells are swept by this into the surrounding tissue.

The germinal centers play an interesting part in the pathology of the tissue. Oertel was the first to show that in diphtheria there were foci of necrosis in the lymph nodes corresponding to the germinal centers. Similar foci are common in scarlet fever, in smallpox and in other conditions. The necrosis is rarely regional, usually all the germinal tissue in nodes, in spleen and in intestine is affected. The cells seem to be extremely vulnerable, for they are equally affected in seemingly



different toxic conditions. The presence and the contents of the phagocytic cells show that necrosis takes place even under normal conditions. In many infectious conditions the germinal centers are not affected, but I have not been able to make as full comparative studies in this direction as I wish to. In a series of cases it is easy to follow the course of the pathologic process in the centers. The destruction is due not only to the vulnerability of the cells, but to the abundance of the capillaries and the probably abundant transudation which brings a greater amount of the toxic substance contained in the blood in contact with them. I do not believe that in this case the destruction is by phagocytes, but that these simply ingest the dead and injured cells.

There seems at first sight a lack of harmony in the facts set forth; in smallpox, scarlet fever and diphtheria the germ centers which must be regarded under normal conditions as the source, either principally or alone, of the normal lymphoid cells, are destroyed, yet in these diseases there is a vast increase of cells of the lymphoid series. I have recently again gone over a large number of lymph nodes from cases of diphtheria, scarlet fever and smallpox. All of these show the same conditions, but the diphtheria nodes, owing probably to better preservation, have proven best for study. All the pathologic conditions from the beginning necrosis of single germinal cells to the disappearance of the center can be easily made out. With the disappearance of the germinal cells a nodule formed of phagocytic cells having some resemblance to a miliary tubercle appears. There is a tendency to fusion of the cytoplasm, the individual cell outlines are distinguished, with difficulty. There may be some remains of nuclear detritus, but usually with the formation of the phagocytic nodule this has all disappeared. I have not been able to clearly follow the disappearance of the phagocytic cells. There is no necrosis or it is not evidenced in the usual way. The cells fuse together into an indefinite, small, shrunken, reddish stained mass, in which swollen fibers of the reticulum which had not formerly been present appear. The capillaries in the centers disappear, probably by simple compression, their cells adding to the necrosis. The most marked changes are found in the large germinal centers of the tonsils. The necrosis here is massive and is often complicated by hemorrhage and fibrin formation. The phagocytic cells become involved in the common necrosis and their activity, so prominent a feature in the nodes elsewhere, is not manifest. There is no resemblance in the fate of the phagocytic cells to the caseation of tuberculosis. At no time do polynuclear leucocytes play a part.

During this process of germinal center destruction the nodes show evidence of marked activity. There is nearly always edema. Not only are the sinuses dilated, but the cells in the reticular tissue are separated from one another. The macroscopic swelling of the nodes seems to me due more to edema than to cell increase. There is no increase, but rather diminution in the number of small lymphoid cells. There is more or less destruction of these cells evidenced by fragmented and pycnotic nuclei. The cellular activity is in cells not normally present in the node. These cells vary so much in size and structure that no single description will apply to them. The most common type is a cell with a rough, irregular border, the cytoplasm not smooth and not definitely granular. There are no distributed granules similar to those in the granular cells. The cytoplasm has a tendency to the basophilic stain. The shape of the

cell is round, oval or irregular. The nucleus in size corresponds to the cell. It is often placed eccentrically and two nuclei are occasionally seen. The nucleus is vesicular in type, the edge sharp, with one or several chromatin clumps in the interior. There is great variation in size of the cells, the average being about 10 microns with nuclei 7 microns. Very large cells up to 20 microns with nuclei 12 microns may be found. Nuclear division is active. With the appearance of the nuclear figures the cell cytoplasm becomes intensely granular, the granules varying in size. The cell is sometimes surrounded by a cloud of these irregular deeply stained granules which have seemingly been cast off from the cell. There are other cells which differ from these in that the cytoplasm stains more intensely blue, and others which closely approach the plasma cell type. I have occasionally found cells which can not be distinguished from myelocytes, both those with basophile and amphophile granules. All of these cells share in the mitoses. Eosinophile cells of the marrow type are also found. These cells are found everywhere in the node, in the reticular tissue and in the sinuses. They are rather more numerous in the lymph strands than in the convexity of the node. They may be scattered or in groups, the latter presenting some resemblance to a germinal center. I have occasionally found cells with a peculiar conformation consisting in a cap of intensely stained blue granules at one or both poles. The granular mass seems to be an addition to the surface of the cell, for it makes a distinct projection above the curve. I have never found such cells outside of the lymph nodes and know of no explanation for the appearance. The cells are numerous in the efferent lymphatics, in the hilus of the node and nuclear figures are found in them here. The cells in the sinuses often differ in having a more reticular cytoplasm with definite vacuoles around the periphery. They are also in the blood vessels, and I have seen them in the walls in the act of migration. The spleen usually contains great numbers of these cells around the follicles and in the pulp. Here also mitotic figures are numerous, and the cells are often in groups. Polynuclear leucocytes play no part in the process; they may be present in the sinuses in considerable numbers if there has been suppuration in the lymph territory of the node; they are usually degenerated and enclosed in phagocytes.

Phagocytic cells are present in the sinuses in great numbers, the sinuses may even be filled with them. There is no difficulty in distinguishing the phagocytic cells from the others, and no transitions are seen between cells of the lymphoid type and phagocytic cells. Nor can there be any doubt as to the origin of the phagocytes. They come from the endothelial cells lining the sinuses. Nuclear figures may be found in the cells attached to the sinuses and rarely in the free cells. Cells usually lymphoid are found enclosed in them. Apparently these cells are not always dead when ingested, as far as this can be determined by the appearance of the cell. The endothelial proliferation is not confined to the lymph endothelium. In all these nodes one is struck by the marked change in the endothelium of the vessels. The nuclei are large, closely packed together, and often lie with their long axes perpendicular to the lumen of the vessel. Nuclear figures are found in the cells and some of them appear in the act of detachment. Phagocytosis of lymphoid cells by the cells attached to the vessels may be seen. In the spleen similar changes may be seen in the cells lining the sinuses. Whether such newly formed cells originating from the en-



endothelium of blood vessels migrate and contribute to the number of phagocytes in the sinuses is undetermined. The ingested cells often appear in all respects to be normal and even nuclear figures may be found in them.

To sum up, we may say that in certain of the infectious diseases changes consisting essentially in necrosis and following proliferation take place in the lymph nodes. These changes, though they may be accentuated in regions, are general, affecting all the foci of lymphoid tissue. The necrosis is chiefly in the germinal centers, but in addition there may be destruction of the scattered small lymphoid cells. The necrotic cells are taken up by phagocytes, which are in part normally present, but their numbers are greatly increased by proliferation of the endothelial cells of the sinuses. The new formation of cells does not as normally or at least does not immediately lead to increase in the small lymphoid cells. The new cell formation seems to start from cells of an indefinite character resembling those found in the germinal centers. In part they seem simply to grow in size, retaining their characteristics, in part by change in cytoplasm and shrinkage of nuclei they become converted into plasma cells and cells may also be formed which can not be differentiated from myelocytes. Polynuclear leucocytes play no part in the process. When present they can be regarded as accidental and due to suppuration in the regional lymphatics of the node. The newly formed lymphoid cells enter into the blood in part by means of the efferent lymphatics, in part by migrating into the vessels. Such cells are found in blood vessels in all tissues of the body. They seem not so fully to be adapted to the blood movement as are the normal leucocytes. This may be due either to a difference in specific gravity or to the character of their cytoplasm. The normal leucocytes are cells with smooth surfaces, the polynuclear leucocyte certainly has on the outside a layer of differentiated cytoplasm constituting a species of cell wall. These cells have a rough, irregular outline. More of these are found in the capillaries of the liver than polynuclear leucocytes even in conditions of high leucocytosis as in pneumonia. They are found in great numbers in the vessels of certain organs, as in the kidney. From the vessels they pass by active ameboid motion into the interstitial tissue and may be found there in such numbers that the weight of the organ may be trebled. In the interstitial tissues the cells have a greater tendency to plasma cell differentiation than they have elsewhere and foci may be found composed of typical plasma cells. The cells have marked power of proliferation and nuclear figures are abundant. In the process of division the cytoplasm becomes more granular and granules are cast off. I have not been able to determine a relation between these foci and injury or degeneration of the tissue. The interstitial foci are more frequently found in the kidney than elsewhere. Next to the kidney they occur in the adrenal glands. The cells in the interstitial tissue in the necrotic foci of the testicle which are found in smallpox are of a similar nature. In animals I have found similar conditions only in the mouse, in which animal interstitial foci in the kidney are common. In the interstitial foci there is usually no accompanying infiltration with polynuclear leucocytes. I have seen bacterial foci with necrosis and polynuclear leucocytes and the interstitial foci in the same kidney with no commingling of cells. There may be commingling if bacterial infection or necrosis occurs in the same region with the interstitial foci, but the processes are independent.

In the normal tissues we have an analogous form of

activity of the lymphoid structures. The lymphoid tissue of the alimentary canal has normally an action very similar to that which we have described in the lymph nodes. Such activity is found in all parts of the intestine and varies in degree. In the lymphoid tissue here the germinal centers are prominent and cell proliferation rapid. Phagocytic cells are prominent and always contain nuclear fragments. A part of the newly formed cells seem to become small lymphoid cells. Others give rise to cells of the types we have been considering. It must not be forgotten that, although nuclear division is more common in the least differentiated cells, it is also found in the larger cells and in the cells of the plasma cell type. The entire mucous tissue of the intestine may be crowded with these cells. The plasma cells tend to accumulate close beneath the epithelium. I have been able to acquire small pieces of mucous membrane from the surgical clinics which were removed in the course of operations requiring the opening of the stomach and intestine. Often some more or less obvious pathologic condition could be recognized in the tissue removed. The lymphoid infiltration in the stomach is more prominent in the pyloric than in the cardiac region. It varies enormously in degree. In certain lesions, as in ulcer and carcinoma, it was intense. In pathologic conditions the principal cells were plasma cells. I was surprised at the very small amount found in the stomach of a suicide. In the intestine the infiltration increases progressively, reaching its acme in the vicinity of the ileocecal valve and in the appendix. In many pathologic conditions there is an enormous increase in these cells; in others, as in tuberculous lesions, they may be entirely absent.

There is also analogy in the lymph nodes of the smaller mammals. The nodes of all the apparently normal guinea-pigs I have examined show a remarkable degree of activity leading to the formation of large cells. I have found such cells in the sections of blood vessels. The most remarkable degree of lymphoid activity I have encountered is in the follicles of the dog's intestine. Here the germinal center may occupy almost the entire area. It is crowded with nuclear figures and the phagocytic cells are numerous.

In the course of my work on the lymphoid structures it was necessary, of course, to study the blood and the bone marrow. Certain ideas as to the blood as a whole and the cytologic relation between the blood and the blood-forming organs have been forced on me. I do not think it possible at this time to construct any scheme of leucocyte formation which will not be largely hypothetical, and as a hypothesis I venture to produce this. But little can be gained by the study of the blood alone. It contains almost entirely cells which have undergone full differentiation and which enter the blood as completed products. As such we have the polynuclear leucocyte, a cell with high ameboid activity, with marked phagocytic powers for bacteria and utterly incapable of further differentiation and of proliferation. Under normal conditions they have a definite numerical equilibrium with the other cells. The type of the lymphoid cell as found in the blood with the small round nucleus with rim chromatin and slight cytoplasm I also regard as a completed cell incapable of further differentiation or increase. It is more ameboid than we generally think and is influenced by chemotaxis, but not to the same degree as is the polynuclear leucocyte. In regarding this as a cell in the same position with the polynuclear leucocyte opposition is encountered. Dominici regards



a cell identical with or indistinguishable from this cell as the primordial germinal cell of the blood. Maximov regards it as the cell from which his polyblasts arise. In the various cell schemes which the hematologists love to form and for the truth of which they are willing to fight and bleed and die, at least on paper, and which differ from one another chiefly in complexity, cells of the small lymphoid type figure as primordial cells. There is a mistaken idea as to the structure of a nucleus which is associated with proliferative activity. Relative to its size the nucleus of a proliferating cell contains but little chromatin. It is vesicular. Such nuclei are always found in rapidly proliferating cells whether in the embryo, in tumors, in regenerating tissue or in blood-forming organs. The evidence that the small lymphoid cell is an inactive cell lies in the character of its nucleus, in the fact that no nuclear division is ever seen in it, and that these are the cells in which destruction is most obviously taking place. No member of the lymphoid group of cells is phagocytic either for other cells or for bacteria. No cells are so constantly destroyed and removed by the cell phagocytes. The non-granular mononuclear cell of the blood, the so-called transition cell of Ehrlich, is phagocytic for other cells chiefly lymphoid and rarely for bacteria. It is an active cell and capable of division, but probably not of further differentiation. These are the three types of cells which concern us. The lymphoid cell under normal conditions is formed in the lymph nodes. The formative cell is the germinal center cell, the newly formed cells gaining the type of lymphoid cell by contraction of both cytoplasm and nucleus. The transition is short and does not take place by definite intermediate cell forms. The polynuclear leucocyte, however, has a much more complex formation. The primary formative cell for this is a cell with little differentiation and in its general characteristics resembling the germinal center cells of the lymph nodes. The polynuclear cells are formed from this cell passing through well characterized cell stages, in the first of which, the premyelocyte, the cytoplasm becomes abundant and indefinitely granular. The cell has some superficial resemblance to the plasma cell, but retains the active vesicular nuclear type. The myelocyte is formed from this cell by the differentiation of amphophile granules in the cytoplasm, and from this the polynuclear cell is directly formed. Mast cells and eosinophile cells are also formed by differentiation from the premyelocyte. Nuclear figures seem to me to be less common as differentiation proceeds. Nothing corresponding to the germinal centers can be distinguished in the marrow, and we at no place find the proliferative activity which is shown in the germinal node centers. If we consider the sum of the lymphoid tissue, it is much greater both in the child and in the adult than the sum of the myeloid tissue. That the myeloid tissue is capable of rapid and enormous increase in its activity is shown by the pyogenic infections. The eosinophile cells are formed by differentiation in the myelocyte series, but I do not think exclusively there. I feel sure that they may be formed in the intestinal canal and in pathologic conditions elsewhere. There is not a sharp separation of the two best marked varieties of leucocytes when we consider their histogenesis. The cell which can be regarded as the mother cell is practically the same for both. In the bone marrow it produces the myelocyte series, in the lymphatic tissues the lymphocyte series. It is the locality which determines. Even in the marrow there is some differentiation toward the lymphocyte series. It need not surprise us that under

pathologic conditions there may be confusion in the process, that myelocytes may be formed in lymphatic tissue, and that the marrow may take on chiefly lymphatic activities.

I feel that I must make some apology for this paper in that it hardly touches on the questions which are uppermost. What concerns us now very much more than the questions of cell origin is cell function. What is the relation between lymphoid tissue and growth? Why is the lymphoid tissue most developed in the period of most active growth and why the decline in age? Why do we have the peculiar forms of activity which are shown in the intestinal canal? Why the constant association between active new formation of lymphoid cells and phagocytes which devour them? Why the association of lymphoid cells with the formation of tissue in which they can not take part? Why do certain diseases call forth such high degrees of activity in lymphoid tissues, while other diseases, such as tuberculosis, do not? Why should there be such differences in the amount of lymphoid tissue and in its proliferative activity in different animals? Have these cells any relation to immunity production? Those diseases in which activity is the most manifest are characterized by a definite immunity production, but I should hesitate to base any conclusion on this fact.

To all these questions I could contribute nothing but half-formed and indefinite ideas without a sufficient experimental basis. Toward the solution of some of them there must be more thorough study of the cell activity of the lymphoid tissue in different diseases, and for such study I make a plea.

## MENINGISM AS DISTINGUISHED FROM MENINGITIS.

FROM AN OTOLOGIC VIEWPOINT.\*

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### DEFINITION.

Meningism is a morbid state characterized by a meningitic syndrome without intracranial inflammation. Obviously the word pseudomeningitis, or false meningitis, can not be applied, as there can be no such thing as a false inflammation. The term "meningeal irritation" is defective, inaccurate, and anyway, can be applied only to a limited class of cases.

The name meningism has been applied by the French neurologists to several morbid conditions associated with a meningitic syndrome. None of these writers treat the subject from an otologic viewpoint. Dupré writes:

In the course of some infections or intoxications, or certain morbid states less well defined (dentition, helminthiasis, etc.), of which the indirect influence is called reflex, there may appear, most often in young and hysteric subjects, a syndrome more or less closely simulating the picture of meningitis. The forms, acute or chronic, cerebral or spinal, of meningism, are of nice diagnosis, and of reserved prognosis; for, aside from the fact that the patient may die of meningism without meningeal lesions, the appearance of the syndrome, by indicating a particular vulnerability of the cerebral cortex, foreshadows the later possibility of a true and fatal meningitis. The pathology of these "accidents," inexplicable by the negative results of autopsies, seems attributable to an action exerted on a cerebral cortex, hereditarily predisposed, by poisons of

\* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1903.



external, internal or microbial source. . . . The solution of the pathogenic problem is reserved to the technic of the future, which will demonstrate lesions invisible to dynamic pathology.

Pochon elaborated Dupré's work, but included also two additional classes: The toxic (alcoholic, phosphoric, uremic, etc.), and the hysteric, the toxic nearly corresponding to what some English and American authorities have classed as serous meningitis and pseudomeningitis, as of alcoholism. Rocca describes the variety associated with infectious diseases. While these and others have described the condition as seen by the internist, no exhaustive study of the subject from the otologic viewpoint has come to my notice. By this it is not meant that the condition is unrecognized. In his classic text-book Dench aptly says:

In children the diagnosis [of meningitis] is much more difficult, since any acute infectious disease or a disturbance of the gastrointestinal canal will give rise to exactly the symptoms above mentioned.

As every otologist knows we are often called on, as in a number of the cases reported herewith, to determine whether meningitic symptoms are due to ear disease or to the concomitant general malady. The frequency with which this problem arises in otologic differential diagnosis, it seems to me, justifies the nosologic independence of the morbid condition. With the object of urging the recognition, not so much of this name, as of some name for the condition, I present this study. The sooner the morbid condition is allowed a place in nosonomy, the sooner will its pathology and diagnosis be developed.

Diffuse infective purulent leptomeningitis almost invariably ends fatally. A few preëminent operators like Dench, Jack, Macewan and others have reported authentic cases, but these are so rare as to prove the rule as exceptions. In an enormous experience Dench has seen but a single case. To operate on a patient who will certainly die is to discredit otology, and prevent or delay consent in other and operably curable cases. To operate on a child whose symptoms are due not to an extension of its ear disease, but to the toxemia of an acute infection, is to make a grave mistake. To fail to operate on an operably curable mastoid or a middle ear disease which is producing grave symptoms is a fearful error.

Now when it is admitted, as all experienced otologists will admit, that all of the assident, and many of the considered pathognomonic signs of meningitis may be present in the absence of intracranial inflammation, this condition, call it meningism or what you may, merits closer study than it has ever yet received. It is my hope that this paper, which is chiefly clinical, will incite the interest of others better able to solve the problems, especially those of its pathology, which seem particularly obscure. Much work also remains to establish a more certain basis for early differential diagnosis.

I am by no means certain that some of the cases I have classed as irritative meningism were not serous meningitis, but there is no evidence, clinical or pathologic, that cases of this kind are associated with serous infiltration or exudation, and it would seem better to acknowledge our ignorance of their pathology and class them clinically under their syndrome. In regard to the toxemic variety there can be no question as to the absence of a serous exudate or any discoverable lesion, and to class such cases as pseudomeningitis is a misnomer.

Fulminating cases of epidemic cerebrospinal meningitis have occurred where no macroscopic or microscopic lesions other than intense congestion were discoverable at the autopsy. This casts serious reflections on the path-

ologic research of the day and caused me some hesitation in urging the recognition of a name for a condition based on failure to discover a lesion. In these fulminating cases death is due probably to overwhelming doses of toxins, and would later develop inflammation if the patients lived. Yet this does not lessen the necessity for study in an effort to recognize another condition in which toxemia or other factors produce symptoms, but do not later end in inflammation.

Hypercemia probably exists in some cases of meningism, and it may be argued that hyperemia may be considered the first stage of inflammation and that this justifies calling these cases meningitis, but a passive meningeal hyperemia is no more a meningitis than is the climacteric flush a dermatitis.

#### VARIETIES.

The cases which I have observed may be conveniently classified, clinically and pathologically, under three heads, irritative, toxemic and reflex. It must not be inferred that these varieties are always distinct, as two or all may coexist.

#### ETIOLOGY.

*Predisposing Factors.*—In his paper which deals with the meningism of acute diseases, dentition, etc., Dupré lays great stress on the abnormal vulnerability of the cortical zones. In some instances he considers previous attacks of meningism as factors in increasing vulnerability to a point where they may be contributory etiologic factors in meningitis. A neuropath, as in Cases 8 and 13, must of necessity be more susceptible to meningism than a normal person.

Neuropathic heredity, as shown in nearly all of my cases, is frequently a predisposing factor in vulnerability.

Nerve cell "habit" is a factor in vulnerability. Its influence in the nosogeny of the erethismic phenomena, especially of the convulsions, seems certain. Nerve cells which have a number of times discharged, as in a convulsion, naturally are more readily influenced again in a like manner.

Hysteria and other neuropathic antecedents are likewise etiologic. All these are shown in my case reports.

Age is an important predisposing factor. Of 62 cases, 50 (81 per cent.) patients were under 12 years of age. Adults, however, are not exempt, especially neuropathic individuals, as frequently seen in severe typhoid fever cases, and as shown in one of the appended cases. Sex is also a factor. Of the 62 cases 48 (80 per cent.) patients were females.

*Exciting Factors.*—Irritative Cases: Traumatism, as from operative work (especially if rough), corrosive solutions, as mercuric chlorid, in cases in which the brain or meninges (even if only the dura) are exposed, are factors. This often follows work on the venous sinuses, as shown in Cases 1 and 2. It is a frequent error, and one I committed myself in my earlier work, to make too much pressure in applying the dressing in obliteration of the cerebral sinuses. Very little pressure is required.

Toxemic Cases: As shown by my cases and as recognized by internists and pediatricists, these may be excited in vulnerable individuals by the toxins of almost any acute infectious disease, as the exanthemata, typhoid fever, pneumonia, acute rheumatic fever, malarial fevers, gastroenteritis, colitis, etc. Toxemia, of course, may be favored by uremia, faulty metabolism or defective elimination.



Reflex Cases: Helminthiasis, as in Case 8, and dentition, as in Case 11, are factors.

The etiology of "meningisme pyretique" of the French authors is explained in the name, whatever theory as to its pathologic mechanism may be adopted. Obviously, the influence of the temperature *per se* can not be separated from the influence of the toxins proceeding from the same basic cause as the temperature itself. The etiology of any given case doubtless may partake of any one or all of these factors.

#### PATHOLOGY.

Because of the rarity of autopsies, the pathology must be deduced from clinical observations of living tissues and of symptoms. This is a very unsatisfactory pathology, and yet from the very fact that recovery is the usual criterion of a non-inflammatory condition, autopsies must be rare.

The pathology of some cases may be similar to that of a functional neurosis, which has no anatomic basis. Like a neurosis it is subject to reclassification, as refinements of pathologic research shall demonstrate that some of the cases are due to then recognizable lesions. Much light would be shed on the pathology of meningism if it had a perfectly satisfactory conception of the pathologic mechanism of those fulminating cases of cerebrospinal meningitis which are fatal before any microscopically discoverable lesion is produced. As to the site of the pathologic influence, it is very certain from analogous symptoms that result from actual lesions in other diseases, that the cortical and subcortical cells are influenced as well as the meninges.

Pathologically, cases of meningism may be classified under three heads: 1. Toxemic meningism, and 2, reflex meningism, in both of which there are absolutely no discoverable lesions. 3. Irritative meningism, in which there is a non-infective hyperemia without leucocytic migration or serous exudation. In the irritative class may be placed those cases seen by every otologist, in which an acute otitis media in children produces marked meningitic symptoms, which clear up promptly on incision of the drum membrane. To quote Dench:

In children, when the tympanic roof is exceedingly thin, it is not improbable that the meninges in the immediate neighborhood are congested; but the process stops here, and true meningitis is not developed.

One autopsy exemplifies this, Case 3.

Irritative meningism is also seen in cases in which the cerebral membranes have been subjected to rough handling, to the contact of strong antiseptic solutions and to similar irritations. These irritations have been noticed doubtless by all otologists, and are exemplified in Cases 1 and 2. That there is a zone of cortical irritation around the site of a brain operation, especially the kind of brain operations the otologist is constantly doing, seems plausible, the state probably being one of increased circulation, and of direct influence on cells adjacent. In this class of cases the meningeal congestion is often apparent to the operator's eye on the living subject. If the case is one of meningism, this increased vascularity does not reach the stage of exudation or leucocytic migration. The influence of operative trauma on the cortical cells, independent of, or in the absence of, increased vascularity, is probable.

An increase in the amount of the normal lymph in the pial spaces, or a slight pial edema might escape notice at an exploratory operation or at an autopsy. Then, again, it must be admitted that in the absence of organisms their toxins may excite a degree of congestion bor-

dering on or possibly reaching inflammation. Some of the cases in which the meningitiform symptoms are bilateral may be thus accounted for by the effect of nosotoxins in the circulation, derived from either the purulent otitic focus or from a general malady of which it is the complication. The chemistry of the future will isolate from the tissues, or more palpably from the fluids, of these cases, a toxin whose action is productive of meningism, just as strychnin produces its characteristic phenomena.

The most marked of my own cases of the irritative form of meningism have occurred after operative work on the venous sinuses of the brain. In addition to the irritation of operative manipulation, it is probable that there may have been some venous stasis, due to obliteration of the large venous channel, resulting in a slightly increased quantity of ventricular fluid. This, however, does not constitute a meningitis, serous or other, for not only are there no pyogenic organisms or pyogenic processes, but there is no inflammation, either at the site indicated by the symptoms, or elsewhere. In these sinus operations cerebral anemia from hemorrhage, shock and collapse, vasomotor paresis of the general or cerebral circulation, are all potent factors, the influence of which, direct and reflex, has never been exhaustively studied.

Toxemic and reflex cases, it must be confessed, have no lesions that are demonstrable by the laboratory technic, macroscopic or microscopic, of to-day. In other words, these cases have no anatomic basis. It may be argued that if toxins act on the cortex they produce at least temporary lesions, be they ever so evanescent. On a moment's consideration, however, we will remember that drugs acting on the cortex produce the most marked phenomena without demonstrable structural or even circulatory change apparent at autopsy. In regard to the pathology of the fatal cases of toxemic meningism, it is not unreasonable to assume that overwhelming amounts of nosotoxins may prove fatal just as cerebral poisons may, and this without microscopically demonstrable lesions.

In an acute infectious disease, with or without ear complications, the nosotoxins acting on the cortical or subcortical cells may produce somnolence, stupor, if not coma, the clinical aspect differing in no way from the same phenomena resulting from the inflammatory products of meningitis, or the exudates of the so-called serous meningitis. The phenomena are probably due also to circulatory changes in the central nervous system induced by nosotoxins in the fluids and in the blood. These changes may be in the form of stasis due to active congestion, initial to acute disorders of childhood or ischemia incident to wasting disease, as cholera infantum. The prompt relief of symptoms by small doses of morphin points to the importance of circulatory changes in the pathology of meningism.

Reflex meningism even more certainly than toxemic meningism may be looked on as without lesions, or at least as having lesions which must be left to the refined pathologic technic of the future to demonstrate. That reflex influences may have profound and even fatal effects on the sensorium is well known. With both the toxemic and reflex forms, in the absence of autopsies, and of the clinical observations of paralysis, pressure and depressive symptoms, I do not see any grounds for the assumption that such cases should be classed with serous meningitis. In regard to the pathology of the convulsive and other phenomena of high temperature, the "meningisme pyretique" of the French, but little is really known,



though plausible theory is not lacking. The same may be said of the occurrence of optic neuritis in the toxemic or reflex meningism of acute otitis media. As to the pathology of the optic neuritis noted in one instance, I have nothing to offer. As all know, this has been noted in acute otitis of children, without any really satisfactory demonstration of its nosogeny.

#### SYMPTOMATOLOGY.

In general, it may be stated that any or all of the early symptoms of meningitis may be present in meningism. The late symptoms were only present in four of my cases. The symptoms are those of cortical erethism, not those of cortical depression. All of the symptoms may be modified and intermingled with those of the intercurrent malady. An initial chill was noticed in a few of my cases, but was probably present though unnoticed in many of the others. Convulsions were noted in thirteen cases, usually not repeated. In some of the cases doubtless the convulsion may have been due in part or wholly to the high temperature. In one case it was due to postoperative cerebral anemia, and in another to stasis following operative obliteration of the lateral sinuses. Vomiting was constant, being noted in 48 cases. Paralysis were not noted in any instance, the nearest approach being pupillary phenomena, and these were more likely erethismic than paralytic, probably spastic miosis. The strabismus noted in 3 cases was probably the manifestation of latency. Loss of sphincteric control in children is not necessarily paralytic, and incontinence of urine and feces occurs without sphincteric paralysis. Anesthesias were not demonstrated, though they were only searched for in a few instances. Coma was notably absent, the nearest approach being stupor, which was present in 5 cases, nearly all cases of the toxemic variety. Persistent stupor was present in some of the toxemic cases, and stupor was reached in a few instances, but absolute coma was not.

**Temperature:** The temperature was usually constantly elevated, the maximum being 105.2. Remissions occurred in some instances. In other instances it was modified by an intercurrent disease, and by spongings. Nothing characteristic was noted. Doubtless further observation will accumulate valuable data. In general, it may be said that the temperature was that of meningitis, though usually of lower range. This can not, however, be considered characteristic, as of course we all see meningitis with moderate temperature elevation.

**Pulse:** The pulse may be said to have been rapid in proportion to the temperature, and to have been comparable to that of the early stages of meningitis. In no instance was it indicative of pressure. Nothing characteristic was noted.

**Respiration:** This seemed to follow the pulse and was arrhythmical only when interfered with by convulsive and spasmodic phenomena. Constipation was present in a number of cases. Vomiting was present in most cases.

**Cephalalgia:** Cephalalgia was a practically constant symptom. It was referred in most instances to the frontal and temporal regions. When monolateral it was referred to the side of the affected ear, but even in monolateral ear cases it was in most instances bilateral. Rarely was it limited to the occiput. Hyperideation was doubtless present oftener than noted. Vertigo was noted a number of times, but its presence in children is not always easy to determine. Delirium was an almost constant symptom.

**Jactitation:** This was present in many cases. Case 1

is typical of this. Fibrillary movements were noted in a few instances.

**Spasms:** Spasms were present in the severe cases, tonic in some, clonic in other cases, monolateral in several instances. Trismus was noted once. Grinding of the teeth was noted a number of times.

**Nuchal Rigidity:** This was one of the most common symptoms and was usually indicative of the toxemic variety.

**Photophobia:** Photophobia was often present, but whether only apparent, due to irritability of temper, or to normal sensitiveness following almost constantly closed lids, was not determined. Other hyperesthesias as of the general surface were noted in a few cases.

**Tache Cerebrale:** This was absent in the cases tested, though it was not searched for in every case. Aphasia was present in one case. Kernig's sign was present in four instances.

#### PROGNOSIS.

The prognosis is favorable, provided the condition be not the forerunner of a true meningitis. In view, however, of our inability to differentiate these cases, the prognosis must necessarily be grave. The meningitic syndrome initial to the acute febrile diseases of childhood is not of grave prognosis in itself, but only as indicating the severity of the basic disease. If, in a given case, the syndrome is due to the basic disease and not to the ear complication, the prognosis is evident. In medical meningism, Dupré, Belfanti, Auscher, Herge, Claisse, Sollier and others cite fatal cases of meningism without discoverable microscopic or macroscopic intracranial lesions. Some of these authors also consider the occurrence of meningism indicates a vulnerability of the cortex, which foreshadows the possibility of the condition later developing into a true meningitis.

#### DIAGNOSIS.

The diagnosis of meningism must be considered from two viewpoints: First, the differentiation between meningism and a true meningitis. Second, as to whether the meningism is due to the basic disease or to the ear complication, the etiologic diagnosis.

When meningism occurs in a case of ear disease complicating acute disease, otologists should be able not only to make a diagnosis of meningism, but to differentiate as to whether it is due to the otitic or the general malady. That we are rarely able to do this until late, indicates the necessity for study of this condition. The most positive diagnostic point is the recovery of the patient who has had the meningitic symptoms. Unfortunately, however, this almost pathognomonic sign is not available at the time most needed. Patients with serous meningitis also recover, but this usually can be excluded as hereinafter indicated.

Changes in the fundus oculi are usually late, but are of value if positive, indicating meningitis, or at any rate intracranial lesion. If negative they are valueless, and it must not be forgotten that optic neuritis has been observed in acute otitis media, in the total absence of intracranial symptoms. In one of my cases of irritative meningism, Dr. Glendon E. Curry found paleness of the discs, haziness of the retina with capillary congestion, but no engorgement of the larger vessels.

Lumbar puncture, with subsequent microscopic examination, in meningitis is only of value diagnostically when positive, and it is only positive so late that the diagnosis is readily made from the symptoms alone.



The tache cerebrale was absent in all of the 62 cases observed.

Of the 62 cases, in only 8 was a blood examination made. In these 8 leucocytes were increased, but, as pus was present, the value of leucocytosis diagnostically is not yet determined. An exhaustive blood investigation in all its refinements promises much diagnostically, as well as pathologically.

In making a differential diagnosis between the varieties of meningism, the irritative form will be shown by monolateral erethismic symptoms, and will be found after monolateral operative or other traumata. The toxic and the reflex forms will be found in conditions in which a source of toxins or of primary reflex irritative cause can be found and the erethismic symptoms are usually bilateral. The toxic may co-exist with either of the other forms.

While in the early stages of a serous or a purulent meningitis we may be unable to make a positive diagnosis, a stage comes later when a negative diagnosis is readily made. This is marked by the onset of pressure symptoms, paralytic phenomena, anesthetics and true coma. When these appear meningism is usually excluded. Later still, we have further negative evidence in the respiratory disturbances, first those of intracranial pressure and later the arrhythmic phenomena of the periodic type, often the Cheyne-Stokes kind, which forecasts impending dissolution.

While it is possible to have this series of symptoms follow an overwhelming dose of nosotoxins in toxic meningism, it is so rare that we will usually be safe in expecting to find intracranial lesions when paralytic and localized anesthetic symptoms have been present. Absolute coma may be toxic, but in the class of toxic cases we are considering it is rare. In acute non-suppurative encephalitis the cortical depressive symptoms develop early.

A diagnostic point of much value as between meningism and meningitis is the quieting action of comparatively small doses of morphin on the erethismic phenomena in meningism. Much larger doses are required in meningitis.

Epidemic cerebrospinal meningitis intercurrent with a preceding chronic purulent otitis occurred once in my experience and was diagnosed only after the rash appeared. Meningism was previously excluded on the appearance of cortical depressive phenomena.

A neuropathic personal history, with hereditary and somatic stigmata and a neuropathic family history, points to meningism, but does not exclude meningitis. A history of initial convulsions and delirium with previous illnesses, for instance in the exanthemata, should put us on our guard against making a diagnosis of meningitis until paralyzes appear.

In the acute infectious diseases of childhood the characteristic symptoms usually develop promptly to clear up the diagnosis, as the meningitic syndrome recedes, if the case be one of meningism. This short duration of the meningitic syndrome is a valuable diagnostic point. If the syndrome persists it points to organic disease.

The toxic meningism seen in the exanthemata is usually initial and of short duration. When nuchal rigidity persists longer than 48 hours, we may in most cases look for graver intracranial developments. In acute otitis media if nuchal rigidity with pyrexia and headache persist unabated for 48 hours after a proper myringotomy, meningism is less probable than meningitis.

In a case of suppurative ear disease, especially of the chronic form, the headache, acute delirium, vomiting and convulsions, ushering in a fulminant attack of an acute intercurrent infection, as typhoid fever, influenza, pneumonia, etc., are often of difficult early diagnosis. A little time for the development of the characteristic symptoms of the intercurrent malady will permit of a diagnosis from the suggestions here given.

Toxic meningism can be eliminated from the diagnosis, in some instances by the use of drastic purgatives, especially calomel. Care must be taken here, however, to guard against error. The subject of a true meningitis, as well as another, may suffer from autotoxemia; indeed, he is even more likely to suffer thus, because of his constipation and his defective elimination, due to disordered innervation. I have frequently urged this point, especially in connection with brain abscess.

In a monolateral suppurative ear case the sudden onset of bilateral and general symptoms of intracranial involvement without a prior monolateral stage may mean infective leptomeningitis, with infection of the cerebrospinal fluid, or it may mean only toxic meningism. Of course, monolateral symptoms in infective meningitis later become bilateral by extension.

In the gastrointestinal diseases of children the history of preceding attacks and the short duration, together with the gastrointestinal symptoms, point to the cause of the meningism.

In "meningisme pyretique" the symptoms recede with the temperature recession and reappear with the exacerbation, and no cause for the meningitic syndrome other than the hyperthermia is found.

Tuberculous meningitis can, I think, be excluded on the duration of the attack, the history of previous attacks, and its insidious onset, usually without convulsions. The coincidence of an acute otitis media in a child, with early tuberculous meningitis, once led me into error. No previous history was obtainable because of the prior death of both parents. I found well-developed tuberculous lesions at my exploratory operation. The child recovered promptly from the operation and the otitis, but died six months later of meningeal and mesenteric tuberculosis.

In older children hysteria is a possible source of error in diagnosis, especially when it manifests itself in the course of a febrile disease with an ear complication. The history of previous hysteric attacks, inversion of the phosphates, loquacious delirium, with distinct statements, instead of incoherent mutterings, all mark hystericism. In one of my cases hysteria was diagnosed on the sole observation that the strabismus was double convergent. In another case pyrexia from acute otitis media deceived me until the meningitic symptoms were noticed to follow my ear examinations, subsiding in the interval, and that no symptom beyond volition was present. Some French neurologists nosologize a "meningisme hysterique."

Uremia and other toxic comata may be excluded diagnostically by the well-known signs. These cases could be admitted nosologically as toxic meningism, but it would seem better to leave them in their present class.

#### TREATMENT.

The prophylaxis of the irritative form includes the careful handling of the meninges in operative work, the avoidance of irritative solutions and of undue pressure after exploration of the cerebral sinuses. But little pressure is needed. When stimulants are required for post-



operative shock after sinus operations, strychnin should be avoided, especially as it is by no means the best stimulant anyway.

Rest and absolute quiet in a darkened room are essential. The ice bag to the shaved head is grateful and is of benefit. High temperature, whether the cause of the meningism or not, is to be combated by sponging.

In toxemic cases prompt and energetic stimulation of elimination yields prompt results. A brisk calomel purge, followed by salines and vigorous diuretics and diaphoretics, are indicated. No food should be given, as it is not absorbed and its decomposition yields toxins. If the source of the toxemia be an acute otitis media, I deem immediate termination of the acute otitis by posterior drainage through the mastoid imperatively demanded, even though the mastoid be uninvolved. This I urged strongly two years ago. To wait for mastoid symptoms in such cases is a disgrace to otology. The symptoms of the irritative and reflex varieties are quieted promptly by morphin, though there are objections to its use on account of its masking the symptoms, causing vomiting, etc., and in the toxemic cases it has the additional disadvantage of checking elimination of not only nosotoxins, but of the ordinary autotoxins, which are, of course, injurious, whether they are a factor in the case or not. In the reflex form, if the source of the efferent irritative impulse is known, its removal is obviously the first step.

#### CASE REPORTS.

Many of the following reports are incomplete, because of meager notes taken before the importance of the subject was recognized. Obviously, time forbids a full report of all of the 62 cases; only typical ones are selected. It is unnecessary to include the many instances of the type often seen by otologists, in which a meningitic syndrome disappears after myringotomy.

**CASE 1.—Irritative Meningism, following Operative Lateral Sinus Obliteration, with Jugular Exsection.**

**History.**—G. M., aged 9, female. Family history included asthma and insanity, terminating in suicide. Patient developed a large mastoid abscess following a right chronic otorrhea of some years' duration. Temperature and pulse were normal.

**Operation.**—With the assistance of the family physician, Dr. C. H. Ingram, and Dr. W. H. Strang, I opened the right mastoid. A large collection of foul pus was found under the periosteum, and there was a gap in the cortex filled with exuberant granulation buds which sprung from the dura over the sinus at the knee. All diseased bone was removed and about an inch of the sinus laid bare. Incision of the sinus showed it to be filled with septic clot of very foul odor. The external jugular was ligated and exsected from the clavicle to the parotid gland. The sinus was then cleaned out to the jugular bulb and backward to the torcular, where a free flow of blood was obtained, the bone being removed for the entire distance, and the sinus being slit open and packed with iodoform gauze, and dressings being applied in the usual manner. Temperature, 97.1; pulse, 140, and weak.

**Postoperative History.**—After operation the temperature rose to 100, and the following day 102.2 was reached, the pulse rate remaining about the same, 140, but stronger. On the second day the pupils were widely dilated, equal, and they responded sluggishly to light. Photophobia was marked. Patient became very restless, cried out when touched, and both the conjunctivæ and the skin were of icteroid hue. Patient answered questions clearly when pressed, but was exceedingly irritable, and kept saying, "Let me alone." Temperature, 103.4, pulse 146. Patient vomited once, retched several times, complained of headache, would grind her teeth, and also cry out in sleep, waking at times with a start.

On third day the dressings were changed, and wound found in the best possible condition; drainage stains were icteroid.

There was active delirium, with frequent crying out, muttering at times. Patient could be roused and attention fixed for a moment. Kernig was present, together with spastic rigidity of the legs, with feet in "pigeon-toed" varus position. Eye examination by Dr. Glendon E. Curry showed "slight divergent strabismus, patient too stuporous to test the extraocular muscles, both pupils dilated, right responding to light stimulus, the left fixed. Media clear, discs pale, retina slightly hazy throughout, capillaries congested, larger vessels not engorged." Temperature, 103.1; pulse, 142.

On the fourth day jerking of the right arm and hand was noticed, becoming more and more marked, jerking upward until the hand almost touched the face. In the afternoon the right foot began to jerk occasionally, and often the foot and hand would jerk at the same time. She could not readily be roused to consciousness, yet actual coma was not present. Urinations and evacuations were involuntary. Knee jerks were exaggerated. Temperature, 103.5; pulse, 138.

On the fifth day condition was the same. Wound was dressed and found clean. The diagnosis of both myself and Dr. Ingram was infective leptomeningitis, prognosis unfavorable. Both of these would, I am sure, have been concurred in by any otologist had he seen the case. Morphin, gr. 1/16, was given hypodermatically, which quieted the patient promptly. The symptoms began to lessen in severity, and on the sixth day she asked for water, but seemed dazed, and on the seventh she recognized her father. Recovery was uneventful.

That this case was not infective leptomeningitis is evidenced by the recovery. That it was irritative and not toxic is evidenced by its monolaterality. That the cortex participated seems certain from the symptoms. There seems to be no basis for assuming this to be a serous meningitis. It is noteworthy that the child was neuropathic and that the family history included asthma and insanity.

**CASE 2.—Irritative Meningism following Operative Obliteration of Lateral and Sigmoid Sinuses.**

**Patient.**—M. K., aged 9, female, American, emaciated and septic, was sent to me by Dr. C. J. Stybr for operation, with a diagnosis of "pus in the left mastoid, with probable intracranial complications."

**History.**—There had been a left chronic otorrhea since typhoid fever four years previously. There were no ear symptoms other than otorrhea one month prior to operation, when Dr. Stybr was called to see the child in convulsions following vertigo. There had been no chills, sweats, or temperature exacerbations, so far as known, though as Dr. Stybr had been called but twice, once four weeks before, and again one day before operation, this part of the history is uncertain. Temperature, 103 F.; pulse, 120.

**Operation.**—Chloroform was carefully administered by Dr. Stybr, and with the assistance of Dr. Ellen J. Patterson, I opened the mastoid. There was no perforation of the cortex, but as soon as this was chiseled through, foul pus was found in every direction in the mastoid cells. The inner table was found eroded away over the vertical portion of the sigmoid sinus, the gap being crowded full of black gangrenous looking granulations, of foul odor, springing from the dura. The gap in the inner table was enlarged in every direction with the rongeur, the flakes lifted from over the lateral sinus and knee showing black from chromogenic bacteria.

The dura around the black mass of granulation buds was dark crimson, fading to normal only when the sinus had been uncovered back to the torcular. This area of pachymeningitis was bathed in foul, greenish pus, constituting an extradural abscess, which was followed in every direction until the dura was found only injected. Pus oozed from the mastoid foramen when the periosteum was elevated. The sigmoid sinus was uncovered down to the jugular bulb. The bone being softened all the way, broke down under the curette like honeycomb under a spoon.

Palpation revealed that the sinus was soft and boggy at the knee, but very firm, almost cord-like, below that point. The sinus was split open by an incision about 2 cm. in length. A firm, organized clot was found to have occluded the lower



sigmoid and the jugular bulb. This seemed so firm and healthy that, in view of the extremely bad condition of the patient, it seemed wiser not to disturb it, but to leave to Nature the finishing of what she had so well begun. The lateral sinus was slit up backward until the curette could reach the torcular. This brought a free flow of blood, when the sinus was packed with iodoform gauze.

The patient's condition was so very bad that it was deemed unwise to keep up anesthesia even the 15 minutes longer that would have been required for the exsection of the jugular, especially as it seemed probable that the lower end of the organized clot was not infective. The wound was quickly cleansed and packed with iodoform gauze, and a dressing applied. Patient was put to bed with raised foot and an enema of very hot salt solution given. She rallied fairly well, considering her weak, septicemic condition, and now an opportunity to study her symptoms was afforded.

*Symptoms.*—Eye examination by Dr. Curry showed photophobia and slight divergent strabismus, fundus negative. There was a marked amnesic aphasia. For instance she would say: "I want—up there," or only, "I want," pointing to a glass of water, of which, when given, she would drink eagerly. All nouns seemed forgotten; she could not even say "Mamma," though at times she would recognize and cling to her mother.

Jactitation was marked, asleep or awake. She was delirious when sleeping, but at times seemed clear when aroused. She would start up and cry out. There were tonic spasms of right arm, rigidity of the neck, and occasional choreic movements in other groups of muscles. She said she could not see, but this was probably vertigo. When raised, she always fell to the left. She was constipated and the urine was scanty, totally suppressed for 24 hours. After operation, temperature 100 F., pulse 160, respiration 30. The temperature rose to 103.2 F., pulse fell to 118.

Dressings were changed on the third day and the wound was found clean. At the end of a week strength increased and cerebral symptoms gradually subsided.

#### CASE 3.—*Irritative Meningism from Blow on Head.*

*History.*—J. S., aged 15, male, whose family history included paralysis agitans, convulsive tic and alcoholism, had left chronic suppurative otitis of 7 years' duration following influenza. Mastoid was said to have been operated at that time, but discharge from canal never ceased. Blow from a baseball bat over left mastoid three days before I saw him was followed by a chill, vomiting, headache, delirium, vertigo, aphasia and clonic spasms of right foot. Temperature 100, pulse 120 and soft. The mastoid region was swollen and ecchymosed.

*Operation.*—I advised immediate operation, but found no disease of the bone except a slight necrosis of the posterior walls of the antrum and outer wall of the aditus. The inner table was not diseased, and there was no fracture. Not feeling satisfied I removed the normal inner table throughout the mastoid wound and then also trephined through an independent scalp flap over the motor area, afterward enlarging the bone wound with the rongeur until I exposed about 6 sq. cm. of dura. The dura was congested, but nowhere was there any sign of actual inflammation, of thickening or exudation. The scalp flap was replaced and stitched, and a dressing was applied. Then the mastoid operation was completed by the radical method.

The meningitic syndrome subsided as if by magic, evidently by the depletion of the operative hemorrhage. Scalp and postaural wounds healed *per primam* and the boy made a good recovery, not only from his irritative meningism, but from his chronic ear disease.

#### CASE 4.—*Meningism in a Case of Mastoid Empyema, complicating Measles, preceding Bronchopneumonia. Operation. Absence of meningitis. Recovery.*

*History.*—J. B., aged 2, male, gave negative family history. Patient has Morel's ear.

*Operation.*—I operated for acute mastoid empyema, following otitis media complicating measles. Dura not exposed. Postoperative temperature, 100 for two days, when it rose to 104; pulse, 130; respirations, 40. Chill, vomiting, headache, convulsions, nuchal rigidity, photophobia, followed in quick succession. My diagnosis of infective leptomenigitis was

changed to toxic meningism, when the attending physician, Dr. J. B. Crombie, made out a bronchopneumonia.

#### CASE 5.—*Meningism due to Pneumonic Toxins. Mastoid operation. Recovery.*

*History.*—Family history included fatal singultus, lesion unknown. Patient had cleft palate. Myringotomy on the sixth day of measles, evacuated pus, on the tenth day pneumonia, when temperature 104, pulse 130, respiration 48, developed. On the thirteenth day a convulsion was followed by increasing delirium, photophobia, ocular suffusion of the measles having previously subsided; nuchal rigidity, encephalic ery, twitchings of the muscles of all four extremities impartially. Pupils were normal.

*Operation.*—I advised immediate mastoid operation in the absence of mastoid symptoms. Under local anesthesia by Newman's method I opened an antrum containing pus and granulation tissue. The other mastoid cells being normal, and the inner table seeming sound everywhere exposed, and considering the pneumonia, the local anesthesia, and especially the bilateral character of the meningitic syndrome case, with monolateral ear disease, I considered further exploration unjustifiable.

In 48 hours all symptoms but those of the pneumonia subsided.

Reviewing the case, I think the meningeal syndrome was toxic due to pneumonia, though other interpretations are tenable. The mastoid wound healed in four weeks and, in my opinion, the operation was justifiable as promptly terminating the otitis media before development of possible serious complications.

#### CASE 6.—*Toxic Meningism due to Otitic Toxins; Possibly also to Irritative Reflexes from Pressure.*

*History.*—O. M., aged 2, female, had acute otitis media following whooping-cough. There had been a convulsion, nuchal rigidity was marked, and there were vomiting, constipation, muscular twitchings, and the hydrocephalic cry. These symptoms were noted by Drs. W. P. McCorkle, W. M. Campbell, and H. E. Clark, all able clinicians. When I saw the case the drum membrane had ruptured, pus was flowing freely, the symptoms were abating, and they disappeared in twenty-four hours from their onset. A mastoid operation was required a week later, but there was no return of the meningitic symptoms.

#### CASE 7.—*Laryngeal Diphtheria, Otitis Media Acuta, with Cerebral Symptoms. Death from Asphyxia. Autopsy.*

*History.*—J. T., aged 4, male, had laryngeal diphtheria, undiscovered and untreated until the third day. Intubation and antitoxin. On fourth day the symptoms were nuchal rigidity, vomiting (even with tube out) heterolateral twitching of arm and leg, pupils dilated and sluggish. In the evening profuse serosanguinolent discharge from right ear was followed by subsidence of all signs of cerebral irritation. Death occurred on the fifth day from asphyxia. The child had coughed up the tube, unnoticed by the mother.

*Autopsy.*—Autopsy showed slight congestion of the meninges over the tegmina tympani et antri of the affected ear. It is probable that at the time the meningitic symptoms were noticed the congestion extended farther. There were no signs of actual inflammation, nor of a serous exudate or infiltrate. Bacteriologic examination of fluid from the pial spaces at the congested area was negative.

#### CASE 8.—*Reflex Meningism due to Helminthiasis.*

*History.*—M. L., aged 8, female, gave a family history of hysteria, neuralgia, diabetes, and a personal history of chorea. Right foul purulent otitis media since scarlatina, 3 years. Patient was anemic and emaciated, supposedly from absorption.

*Symptoms.*—Cephalalgia, convulsion, vomiting, vertigo, clonic spasms resembling chorea alternately in all four limbs without selection, also of the nuchal muscles. Temperature normal, pulse normal in rate and tension.

*Diagnosis.*—As consultant I was inclined to exclude an ear complication on the perfectly normal pulse tension and choreic nature of the nuchal rigidity. On my tentative diagnosis of toxic meningism the attendant gave a brisk calomel purge, which to our surprise brought away all but the head



of a large tenia mediocanellata. The symptoms all subsided at once and our diagnosis was changed to reflex meningism.

CASE 9.—*Reflex Meningism due to Dentition.*

*History.*—R. K., aged 18 months, male, whose family history included dementia and epilepsy, had had chronic suppurative otitis media since measles at 6 months.

*Symptoms.*—Convulsion, vomiting, trismus, constipation, nuchal rigidity. Temperature, 102. No signs of mastoid involvement. On incision of the gums over the anterior molars all symptoms promptly subsided.

CASE 10.—*Hysteria Simulating Meningism or Meningitis.*

*History.*—L. L., aged 17, female, had no somatic stigmata. Family history on both sides neuropathic, including asthma, neuralgia, diabetes, dementia. Patient had had right chronic suppurative otitis media since measles in infancy. Radical operation advised but refused. Patient heard and brooded on dangers of otitic brain trouble and read all available literature on the subject of meningitis. Operation refused by parents until superimposed mastoid empyema complicating la grippe occurred two years later.

*Postoperative History.*—Following radical operation, which did not expose the dura at any point, headache, persistent vomiting, nuchal rigidity, delirium, crying out, convulsions, jactitation and photophobia caused me great apprehension until I noticed that the eyelids were both tightly shut by the orbicular muscles; that all symptoms disappeared during sleep, which seemed in every way normal; that all the symptoms were very much intensified at the dressings, and that temperature, pulse and respirations were normal. On these observations I based a diagnosis of hysteria, which proved to be correct. The phosphatic formula was inverted.

CASE 11.—*Meningism due to Influenza Toxins.*

*History.*—S. G., aged 5, female, whose family history included diabetes mellitus, hay fever, and chorea, had high fever and delirium with every illness. Patient was taken ill while playing and had convulsion, headache, vomiting, delirium; temperature 104, pulse 130 in four hours. Next day sneezing, coughing, suffusion of eyes, coryza, led attendant to suspect measles, though immunized by preceding attack. Lymphatics in neck were swollen. Revised diagnosis, influenza, which was prevalent at the time. Drum membranes both bulging, myringotomy. Temperature and pulse remained high. Head drawn back by nuchal spastic. Death from bronchopneumonia.

*Autopsy.*—Autopsy showed no macroscopic or microscopic intracranial abnormality. Dr. Joseph H. Barach searched carefully a number of specimens but failed to find any cellular evidence of inflammation. Cultural and microscopic examinations of cerebrospinal fluid were negative.

CASE 12.—*Meningism due to Typhotoxins.*

*History.*—J. K., aged 15, male, family history was unknown. Both antihelices were absent. At orphanage it was said he had had convulsions at the beginning of every severe illness. Chronic otorrhea of some years' duration was one of Hutchinson's trio, all of which were present. In the first week of typhoid fever there were headache, active delirium, herpes labialis, vomiting. In the second week, stupor and retraction of the head. Bilateral Parrott's pupillary sign was present. Temperature ranged between 102 and 104, pulse 100 to 120. In the third week patient died of perforation.

*Autopsy.*—Autopsy failed to show any sign of meningitis. There was no excess of cerebrospinal fluid, no engorgement of the intracranial vessels, no trace of serous or fibrinous exudate. Careful microscopic search by Dr. Joseph H. Barach failed to show any new connective tissue cells, or evidence of leucocytic migration. My diagnosis in this case was meningitis from extension of the old otitic pus focus, and I advised immediate operation, which erroneous advice was not followed, for reasons unnecessary to mention.

CASE 13.—*Meningism from Toxemia, Secondary to the Swallowing of Otitic Pus.*

*History.*—H. C., aged 16 months, male, four months after measles, while in apparent health, was suddenly taken ill with vomiting.

*Symptoms.*—Photophobia, opisthotonus, neck muscles as rigid as if the vertebræ were ankylosed, flexors of legs stiffened at times, but not quite so rigid as the nuchal muscles. Child

would batter the head with both hands as if suffering severe headache. Temperature 104, pulse 100. Slight gastrointestinal trouble, but not enough to account for the symptoms.

*Operation.*—Having excluded other possible causes, Dr. W. P. McCorkle asked me to look at the ears and throat. The nasopharynx was filled with pus, which was streaming from the left Eustachian tube. Both membranæ tympanorum were reddened. I incised both of them, a little serum coming from the right, pus from the left.

Next day the meningitic symptoms were much lessened, and in four days the child was well, though some soreness and stiffness of the nuchal muscles persisted for a week, evidently the result of the violent tonic spasm, which at its worst was the most rigid I ever saw. The child could have been suspended by hooking the occiput on the edge of a table.

#### CONCLUSIONS.

1. Without lesion of the meninges there may be a syndrome comprising many of the diagnostic symptoms of meningitis. Before recovery, such cases are often indistinguishable from meningitis.

2. The term meningism is, on the whole, the least objectionable that has yet been applied to this syndrome.

3. Nosologic independence of the condition will stimulate research.

4. According to etiology, these cases may be classified as either reflex, toxemic or irritative.

5. In all three classes there are circulatory changes, and in many cases direct action on the cortical and sub-cortical cells. In the toxemic cases the nosotoxins circulating in the blood act as toxic doses of cerebral poisonous drugs do.

6. As otologists we have mostly to do with irritative and toxemic cases. When any of these forms occur accidentally in a case with middle ear disease, correct diagnosis becomes of the utmost importance.

7. Any meningitic symptom may occur, but the erethistic are much more frequent than the depressive. The full development of pressure symptoms or paralysis will usually exclude meningism.

8. The readiness with which the symptoms of meningism may be quieted by small doses of morphin is a valuable diagnostic point.

9. These cases of meningism are distinct from Quinke's "serous meningitis;" in that there is no serous trouble.

10. In the course of middle-ear disease, the symptoms of meningism often demand radical operation for cure, even if the mastoid be yet uninvolved.

#### THE RADICAL MASTOID OPERATION.\*

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The radical mastoid operation is employed principally for the permanent cure of intractable chronic purulent otorrhea, and consists essentially in opening the mastoid cells, breaking down the upper portion of the posterior osseous meatus, throwing the cells, antrum, aditus ad antrum, tympanum and meatus into one large cavity, which must be thoroughly cleansed of all pathologic tissue, both soft and osseous, and then covering this large bony surface with new epithelium by means of specially

\*The following illustrations are omitted: Figures 3, 4, 6, 14, 15, 17, 19, 21, 22, 23, 42, 43, 44 and 45. Most of these appeared in THE JOURNAL April 14, 1906. They will appear in the reprints of this article.



devised flaps, skin grafts and natural healing processes. This procedure is the acme of mastoid surgery, should only be undertaken by an operator of special experience, and is worthy of the continued study of the aural surgeon. Perhaps in no space of similar size in the body is operative work fraught with so much danger as when the surgeon undertakes to break down the innermost portion of the osseous meatus and to remove all pathologic products from the remote recesses of the hearing apparatus. In and near this minute space are found the sigmoid sinus, the internal carotid artery, the jugular bulb, the cerebrum and cerebellum, the facial nerve, the ossicles, the fenestræ ovalis and rotunda, the cochlea, the semi-circular canals and other portions of the labyrinth, etc. All of these anatomic landmarks are to be avoided, and to do this and still perform a thorough and curative operation is a task of no mean caliber and one that may well tax the skill and experience of the aural surgeon. It can be well understood that an absolutely accurate knowledge of the anatomy of the parts, obtained from many dissections, and much study of the temporal bone, must be the essential preparatory steps for him who would undertake to do this work, and no one should even then assume the responsibility who has not seen the operation performed many times by competent operators. The words "radical operation" are used to express conveniently what was known, and is now frequently referred to, as the "Stacke-Schwartz" operation, so called because it combines the good features of both Stacke's and Schwartz's ideas. Stacke proposed entering the antrum (after the post-auricular incision had been made) by way of the meatus and tympanum, while Schwartz advocated opening the antrum first and then proceeding to the tympanum and meatus. Thus the term "Stacke-Schwartz" operation was evolved, which has finally given place to the more comprehensive word "radical," as it certainly is a procedure radical in nature and intended for the complete cure of a suppurating ear.

#### PRELIMINARY TREATMENT.

Before the operation is performed the head should be thoroughly shampooed and cleansed and about one and a half inches of hair bordering the mastoid process should be removed by shaving. The ear should be scrupulously cleansed with alcohol and profuse bichlorid irrigation, and the side of the head and neck on which the operation is to be made should be thoroughly scrubbed with brush, soap, alcohol, ether, bichlorid solution, etc., after which a wet bichlorid pack should be placed over the operative area and retained by a bandage. This cleansing process should be repeated after the patient has been anesthetized and is ready for the operation. An essential factor in this operation is constant, reliable and intense illumination, for which purpose several devices are satisfactory. I prefer a strong electric light attached to the forehead, the eyes being protected by a metal shield, but there are other methods of illumination which, doubtless, are equally satisfactory for lighting up the remote and perplexing areas of the tympanum, antrum, etc., without which a satisfactory operation is impossible. The head light which I use goes over the head and the electric wire is not directly connected with the forehead pad, which, of course, very materially mitigates the heat of the apparatus. This is still further lessened by the lamp being thrust away from the head by a jointed arm that can be bent in any direction. On this is used a 16 candle-power lamp, with a bell-shaped aluminum shade, thickly coated on the outside

with a black fiber hood, which furnishes a brilliant illumination with a minimum amount of heat. (Fig. 1.)

#### THE INCISION.

The first step in the operation is the incision through the soft parts, and this is made by various operators in many ways, some making a long straight incision, others give it a slight curve, while still others make an incision considerably curved around the superior portion of the auricle. Whiting and some others make a second incision at about the middle of the first and proceed directly backward for about one inch for the purpose of affording a large operating field.

The incision I make is an extensive one (Fig. 2), extending from a point a little below the mastoid apex to a point directly over the upper anterior prolongation of the auricle, thus curving it acutely and enabling a large operating field to be exposed. I make it as long as possible to avoid the annoyance and delay of having to enlarge the opening from time to time, because fresh outbursts of hemorrhage obscure the bone work and have to be controlled. I can see no objection to a long incision, as an extra suture or two will set matters right at the end of the operation, and I believe it is better to commence the incision at the mastoid tip rather than at its base, as there is less danger of plunging the knife into the cervical tissues and producing troublesome hemorrhage.

#### BARING THE FIELD.

After the incision has been completed the soft tissues should be pushed away in all directions by a periosteotome (Fig. 3\*), care being taken to preserve as much periosteum as possible. While this is easy of accomplishment at the anterior, superior and posterior portions of the bone where the osseous surface is smooth and but loosely attached to the periosteum, it is quite a different matter at the inferior aspect of the bone over the mastoid tip, where the bone is rough and the periosteum, tendinous tissue, etc., are firmly adherent to the corrugated surface. It will here be necessary to cut away the soft tissues with strong, blunt, curved scissors, being careful not to carry the points of the scissors too far from the mastoid apex, as it is possible to cut the facial nerve as it proceeds from the stylo-mastoid foramen to the cervical tissues. After the scissors have been thus used a scraping periosteotome should be employed to smooth away from the bone surface the ragged soft tissue that has been left by the scissors, after which the narrow periosteotome should be passed between the osseous and cartilaginous meati to separate them at their posterior, superior and inferior aspects in order that a clear view of the innermost recesses of the meatus and tympanum may be obtained, which is absolutely essential to intelligent operating. This can be much facilitated by passing a long narrow strip of gauze through the cartilaginous meatus and bringing it out behind, between the cartilaginous and osseous meati. The now doubled gauze strip should then be handed to an assistant, who should gently pull the cartilaginous meatus and auricle forward, thus keeping the former out of the way of the operator's view and surgical procedures. It should never be forgotten that a clear view of the osseous meatal margins is necessary in all mastoid operations, as it affords to the surgeon a key to the entire operative area and indicates the point at which chiseling should commence. It will be observed that nothing has been said about the suppression of hemorrhage by artery forceps, and this is owing to the fact that I seldom use them in a mas-



toid operation, having found that they are in the way and that the moment the self-retaining retractors are placed in position and well expanded, all soft tissue hemorrhage ceases; nevertheless, if a surgeon employs the hand retractors he must, of course, use artery forceps for the control of flap hemorrhage. In this article, however, it is assumed that the self-retaining retractors (Fig. 4\*) are employed and that one pair is placed in the upper angle of the wound and another pair in the lower angle. They should be so placed that their teeth are under the periosteum and that the entire extent of the soft flaps is within their grasp. The arms should then be separated to their fullest capacity, thus suppressing hemorrhage by traction, and opening up an enormous view (Fig. 5) of the bony operative field. This renders the horizontal backward incision recommended by Whiting and others unnecessary, unless extensive cerebellar or lateral sinus operative procedures are indicated, which, fortunately, occurs but seldom.

The parts should now be cleansed and work on the bony cortex commenced with chisel, mallet (Fig. 6), rongeur, curette, etc. Chiseling should be commenced in the space limited by a line drawn through the superior roof of the osseous meatus above, and another drawn through the posterior wall of the osseous meatus behind and directly in the region of the spine of the meatus.<sup>1</sup> The bone should be cut away (Fig. 7), little by little, until the interior of the mastoid cavity and the mastoid antrum are exposed to view, care being taken in the initial work to keep as close to the posterior wall of the meatus as possible, and in searching for the antrum we should proceed from the upper angle of the bone opening, inward, forward and on a line with the course of the external auditory meatus, keeping as close to the latter as possible and below the zygomatic extension, until the antrum is reached. The operator will frequently be reminded as the mastoid cavity is approached of the sclerotic or hardened character of the bone. It is not so easy to break through the mastoid cortex as it is in acute abscessed conditions, as the protracted osteitis has often produced an ivory-like hardness of the bone and an increasing obliteration and consolidation of the cells, which produces a hardness that will sometimes splinter the strongest chisel.

Layer after layer of the cortex may be removed before any evidence of cell structure is manifested, and for this reason the rongeur may not be used so freely as in the acute operation. Owing to the osseous sclerosis and cellular obliteration it is not, as a rule, necessary to open the bone as far as the apex, although should well-defined cell development or infection be manifested, as the interior of the bone becomes gradually exposed, complete evisceration of the process should be accomplished. In cases where osteosclerosis has existed for some years there is apt to be a gradual pulling forward of the sinus and a consequent encroachment on the nor-

mal operative area, which renders it necessary for the surgeon to exercise additional caution, lest he inadvertently break through the sinus wall. The same process sometimes lessens the caliber of the antrum and draws it deeper and further into the bone, a possibility which should not be forgotten by the careful surgeon. The operator should carefully endeavor to produce a funnel-shaped opening in the bone, with its broad roundish base at the mastoid cortex, and its comparatively pointed apex in the tympanic and antral cavities. The outlines of the funnel may be necessarily altered in case of a forward displacement of the sinus, and in case this vein lies so far forward as to render a typical opening of the antrum, etc., more or less difficult or impossible, the antrum should be reached, as advised by Stacke, by breaking down the posterior-superior wall of the bony meatus and progressing backward and inward until the antrum is reached. This expedient will, however, be rarely desirable, as such unusual malpositions are, happily, extremely rare.

After the funnel-shaped opening has reached the antrum, and a bent probe (Fig. 8) can be gently passed from the antrum into the tympanum, and can be felt by another probe passed into the tympanum by way of the bony meatus, the posterior-superior wall of the meatus should be broken down (Fig. 9) by chisel, rongeur, etc., under ample and intense illumination. From now on, if not before, it is better to stand or sit at the side of the patient, as the succeeding steps of the operation can be performed with more safety, and better power of observation, than if the operator stands at the patient's back.

In breaking down the posterior-superior wall of the meatus the aim should be to cut away sufficient bone to leave a somewhat triangular-shaped space with its base at the bony meatal orifice and its apex at the tympanum and antrum. This may be accomplished by the chisel or a small Jansen rongeur or by one of the bone crushers that are used by some operators. It must not be forgotten that injury to the facial nerve or semi-circular canal may easily accompany this step of the operation, and much care should be exercised in its accomplishment. The complete clearing away of the upper portion of the bony meatus without injury to surrounding parts is much facilitated if a small pathway through the bone to the tympanic cavity can be distinctly blazed by some instrument. I have found the bone crusher which I use (Fig. 10) to be of great service for this purpose. Before using it the mastoid cavity, antrum, etc., should be thoroughly curetted and cleaned. The crusher has not sufficient power and strength to break down the entire thickness of the meatal wall. The surgeon should proceed as if expecting to destroy the meatal wall with the chisel and mallet alone, and carve away a considerable portion of the bony wall with these instruments.

After, perhaps, one-half of the work has been accomplished the footplate of the crusher should be carefully insinuated through the antrum to the middle ear, the handle firmly depressed so as to raise the footplate of the instrument away from the inner tympanic wall, and the arms of the handle forcefully brought together (Fig. 11), which will, of course, crush down the bone contained between the jaws of the instrument. The blades are not broad, and the channel thus produced is, therefore, of small dimensions, but it is quite sufficient to point the way for further bone destruction, which now can be easily and comparatively safely accomplished by chisel, rongeur, curette, etc.

1. The absence of characteristic meatal outlines in young children, as well as the fact that in the young, the antrum is located relatively higher than in those of adult years, renders it necessary for us to seek other guides to initiatory chiseling procedures in patients of tender years. Such a guide may be found in the bony ridge constituting the posterior root of the zygoma, whose lower edge, usually, is about on a level with the antral roof. Chiseling should therefore begin at a point just below the bony ridge, and should also be just posterior to a line drawn through the position of the posterior wall of the undeveloped osseous meatal opening. Neither should it be forgotten, as mentioned recently by Kopetzky in the American Jour. of Surg., that in the young the tympanic cavity is only separated from the jugular bulb by a very thin plate of bone, in which may sometimes be found congenital defects, and that therefore operative procedures in the neighborhood of the tympanic floor, should be very circumspectly performed.



The length of the posterior-superior meatal wall removed, which forms the base of the triangular wedge, should extend from the floor of the orificial margin of the bony meatus to the superior wall of the meatus, and the two angles of the opening should gradually converge until the inner wall of the tympanum and antrum are reached. By adhering to this design the facial nerve as it passes through its sclerotic, petrous casing on its downward course to the stylo-mastoid foramen will escape injury, and the writer does not believe that many of the operative facial paralyses are produced at this point in the operation. In cutting away the posterior meatal wall it should be remembered that the facial nerve as it passes through this wall is situated about half an inch from the surface of the mastoid cortex, and that there is, therefore, no danger of touching it until about this depth is reached. The posterior meatal wall may, therefore, be cut away clear down to the floor of the meatus at the meatal mouth, which produces a much smoother healing than when a large osseous hump is allowed to remain at this point, on account of the needless fear of cutting the facial nerve. The opening should gradually diminish in size until the attic, aditus ad antrum and antrum are reached. Great care should be taken as the innermost particles of bone are struck away, a climax which can usually be distinctly recognized by the feel of the chisel and the crushing sound of the bone, as if a cavity had been opened. It is extremely easy as this last portion of the bone is broken to send the chisel crashing into the inner wall of the tympanum or aditus, thus rendering injury to the facial nerve, cochlea, semi-circular canals, etc., quite possible. It is for this reason that Stacke devised his protector, which is being used less and less by experienced operators, who prefer to dispense with it as a needless and somewhat dangerous appliance, the necessity for it being overcome by careful and painstaking manipulations.

After the last fragment of the bony bridge which separates the tympanum from the antrum has been removed (Fig. 12) the surgeon is at the most critical period of the operation, where the most delicate and careful work is to be performed and where the greatest danger of facial paralysis obtains. There should again be impressed on the mind of the surgeon the urgent necessity for strong illumination and the desirability of working slowly and deliberately, frequently wiping away the blood and keeping the general and specific topography of the parts well under observation, so that important organs may escape injury. The lower portion of the meatal remnant should be carefully smoothed and rounded, and the upper portion, together with the upper, outer portion of the tympanic and antrum walls, thoroughly removed so that the attic roof is on a direct line with the upper wall of the bony opening (Fig. 13), and can be thoroughly and unobstructedly viewed, examined, curetted and drained.

A failure to perform properly this portion of the operation has been the cause of many uncured cases. As the facial nerve runs along the upper and inner angle of the tympanum, the removal of the portion of the tympanic and antrum walls just described is accomplished with considerable danger to the nerve, and much caution should be observed in the performance of this necessary step. After this is accomplished, if not before, the malleus and incus may be removed by forceps, and the walls of the tympanum, aditus ad antrum, antrum and mastoid cavity carefully explored for necrotic fistulæ, which,

if found, should be dealt with in accordance with sound surgical principles, involving a thorough elimination of necrosis, etc., wherever found. The chorda tympani nerve is invariably injured during these procedures, producing a temporary numbness and loss of taste in the anterior two-thirds of the tongue on the affected side. All granulation tissue, necrosis and cholesteatoma should now be removed with the curette, especial care being taken to free the tympanic cavity of such pathologic accumulations. In curetting the middle ear, etc., however, much caution should be observed lest the tegmen be unnecessarily broken, the facial nerve injured, the stapes removed and the fenestra ovalis opened to infection, or the cochlea or semi-circular canals entered. Care in curetting when near these danger points should, however, enable the surgeon to avoid injurious traumatism of this nature. It should not be forgotten that Jansen and other leading surgeons are commencing to carry the boundaries of this operation still further than was formerly seriously proposed, and are advocating and practicing the elimination of all labyrinthine necrosis, great care being, of course, taken when possible to avoid injury to the facial nerve. From the time the necessary portion of the meatus is being removed to the time when the bone operation is completed it should be the specific occupation of a conscientious assistant constantly to watch for any twitching of the face on the side of the operation, as this phenomenon would probably indicate an interference with the tissues of the facial nerve and would guide the operator to desist from further manipulations in that particular spot.

Under good illumination and perhaps with applications of adrenalin and drying with cotton or gauze, the tympanic orifice of the Eustachian tube should be found and curetted, as, if this is not done, granulation tissue usually remains and a mucous secretion from the unclosed tube may become a constant and annoying sequel of the operation. This little procedure may be accomplished with a small sharp spoon curette, and Whiting has devised a conical-shaped bur which quickly rims out the orifice. I have, however, found his bur overlarge for the purpose and do not like its conical shape, as it may be too energetic in its action, especially when attached to such a strong handle, which not only invites undue force but also obstructs the view of the bur and tube, which should always be kept in sight. I, therefore, use a bur with round outlines which seems capable of doing less harm, and also one (Fig. 14) possessing a straight handle (without a hand crossbar, as in Whiting's) which can be rolled between the fingers when rimming out the tube orifices. It is not likely that much force will be employed in using this instrument, and the bur and tube can always be kept clearly in view. It should never be forgotten that the osseous Eustachian tube and the internal carotid artery are only separated by a thin shell of bone which may easily be broken in curetting the Eustachian tube, a fact which argues in favor of careful manipulation and in a forward and outward, instead of a backward pressure of the curette or bur in the curetting process, as the canal for the artery lies behind that of the Eustachian tube.

Having now finished the bone portion of the operation and thrown the meatus, entire tympanic cavity, aditus ad antrum, antrum and mastoid cells into one large cavity, which has been thoroughly cleaned and curetted, the surgeon should next turn his attention toward the suturing and thorough and rapid healing of this large cavity. The retractors should now be removed and the field of



operation cleaned, after which the cartilaginous meatus should be split and cut, according to the fancy of the operator, in such a manner as to produce flaps by means of which great progress may be made toward the speedy healing of the large bony cavity; and the flaps most in use for the plastic portion of the operation are those of Panse, Körner, Ballance, etc. The specific objects of the procedure are to prevent stricture of the cavity and to employ the upper, lower and posterior portion of the cartilaginous meatus to assist in covering the walls of the osseous cavity and to act as foci for the process of

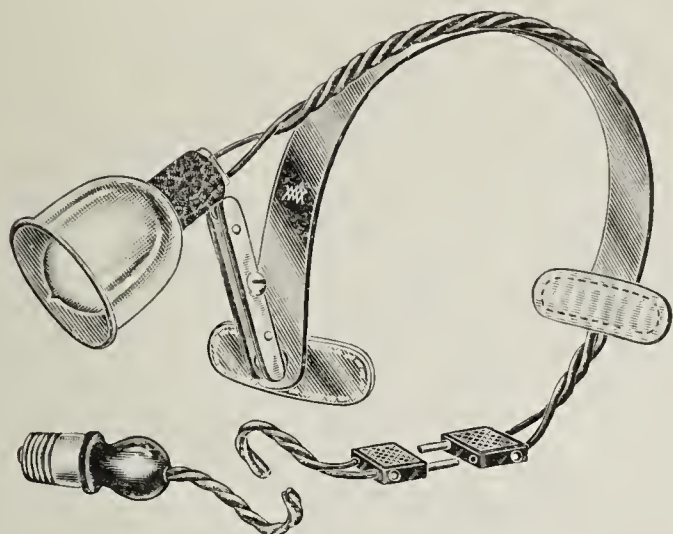


Fig. 1.—The electric head light.

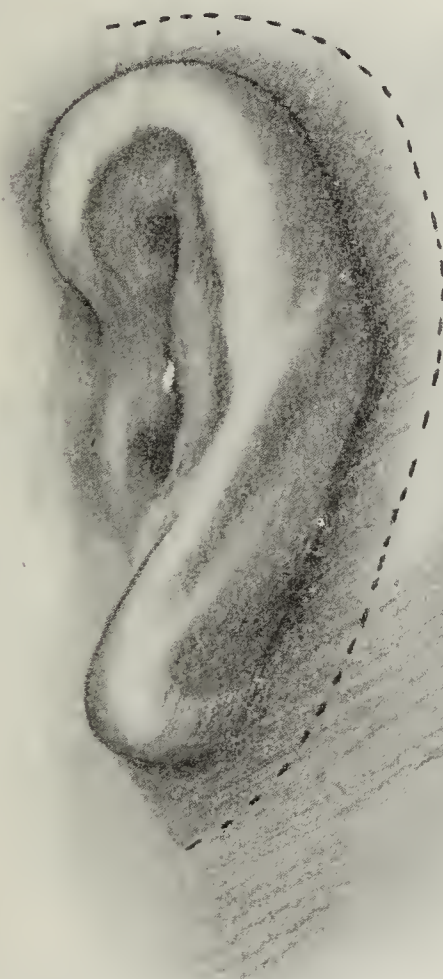


Fig. 2.\*—The line of incision.

new epidermization. The Panse flap may be made by splitting the cartilaginous meatus horizontally from its tympanic end to the concha and then making a cross or "T" incision at the conchal edge, which produces two triangular-shaped flaps which may be pushed or sutured back and made to partially cover the exposed bone. One of the objections to this, as well as to other plastic procedures, resides in the large, gaping and de-

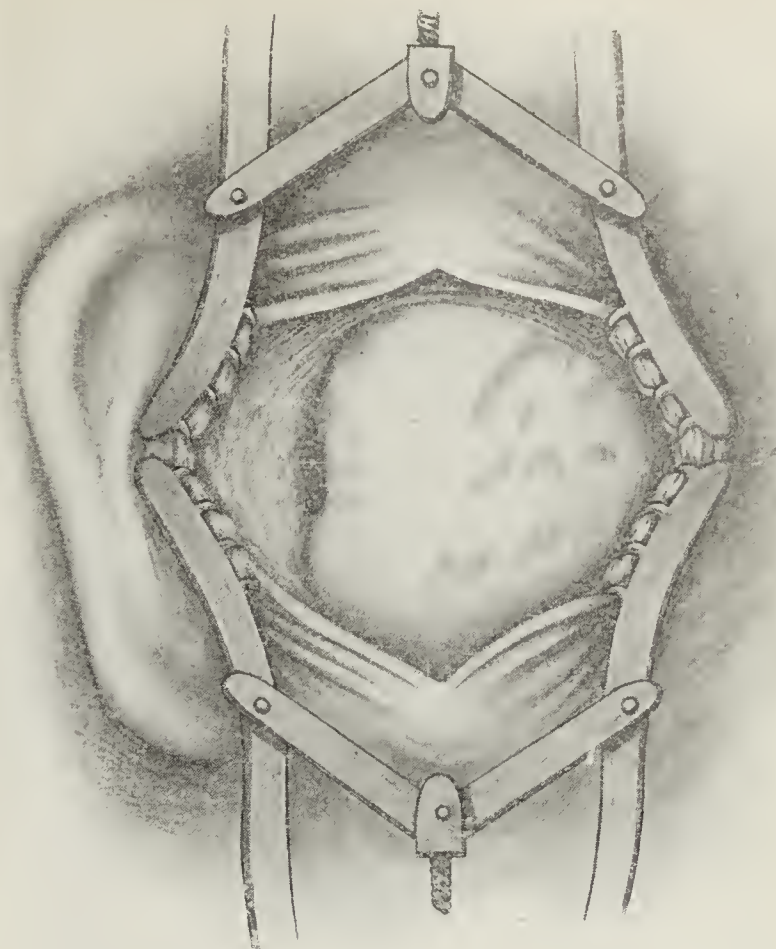


Fig. 5.—Showing the retractors in position, and the well defined outlines of the osseous meatus.

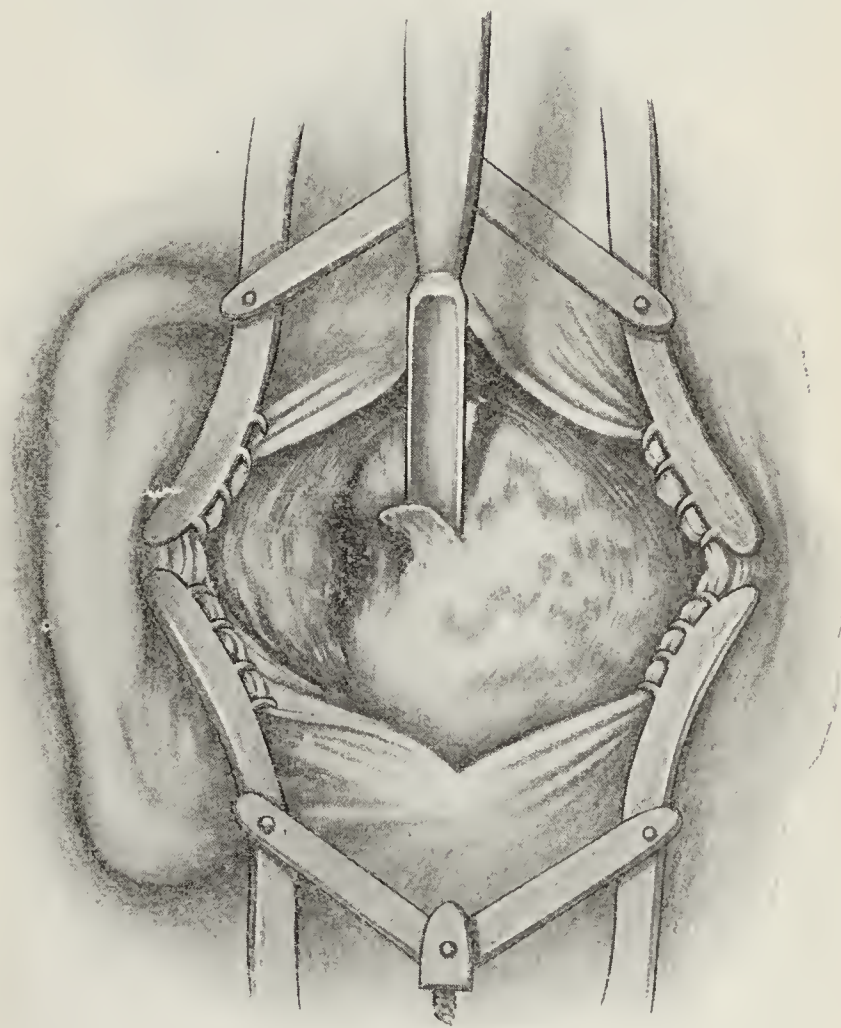


Fig. 7.—The grooved chisel of Whiting at work.

formed meatus that frequently follows. This trouble may be entirely dissipated by the use of two knives which make the cross or "T" incision first, and with accuracy, thus producing a meatal orifice of exactly the desired shape and character.

One knife is lance-shaped (Fig. 15) and double-edged and may easily be pushed from the raw posterior portion of the auricle (Fig. 16), at a point corresponding as



nearly as possible to the middle edge of the meatus, through to the middle of the meato-conchal rim, where the point reappears and where the blade edges should somewhat enlarge the opening thus made. The counter

puncture should be made a little back of the meato-conchal edge in order to enlarge the meatal orifice.

The knife should now be withdrawn and another and blunt-pointed knife (Fig. 17) made to take its place, as the see-saw movement necessary to finish the incision up and down would be likely to produce multiple punctures in the other side of the meatus, provided the use of the pointed lance-shaped knife was continued.

The blunt point of this knife renders the subsequent procedures free from such embarrassments, and the fact that the blade convexes forward on the edge enables the

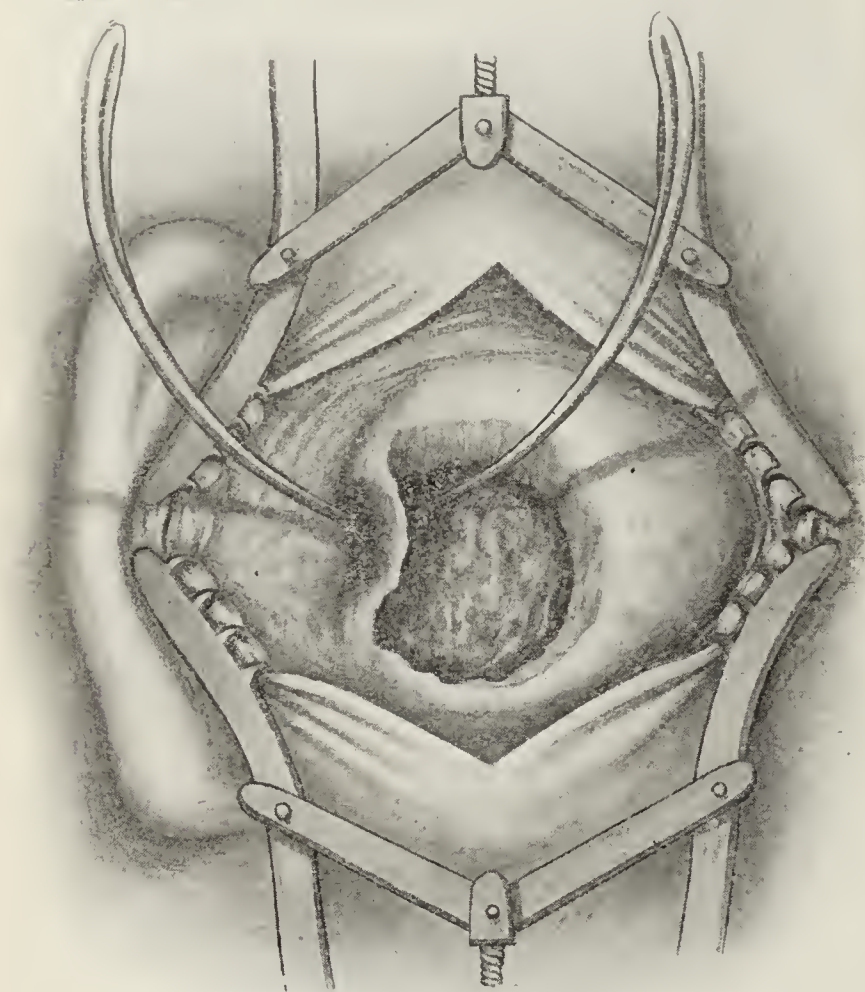


Fig. 8.—Showing the funnel-shaped opening, with one probe passed into the tympanum by way of the antrum, and another into the tympanum by way of the meatus.

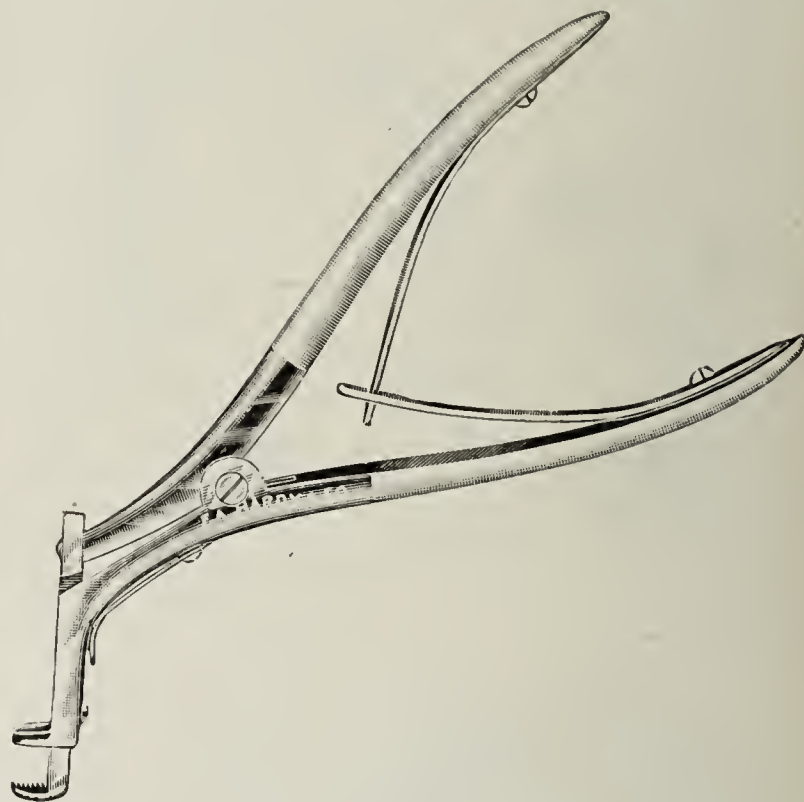


Fig. 10.—The bone crusher.

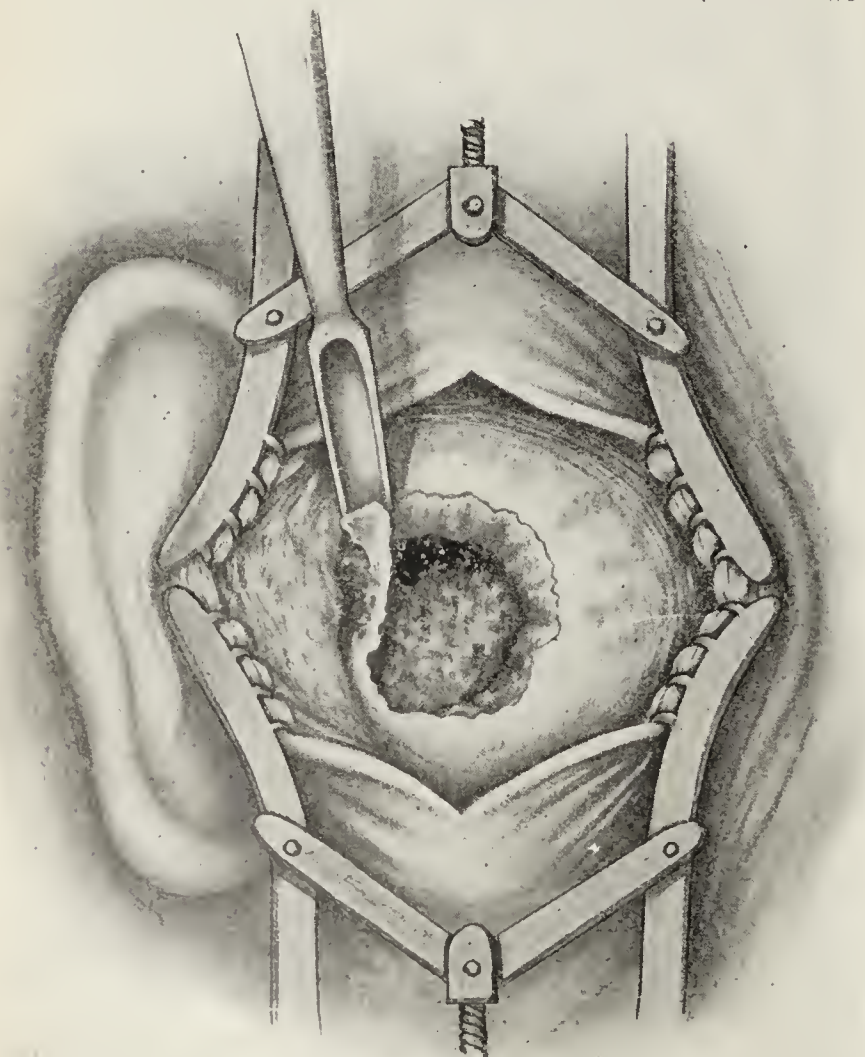


Fig. 9.—Commencing to cut away the bone from the upper posterior meatal wall.

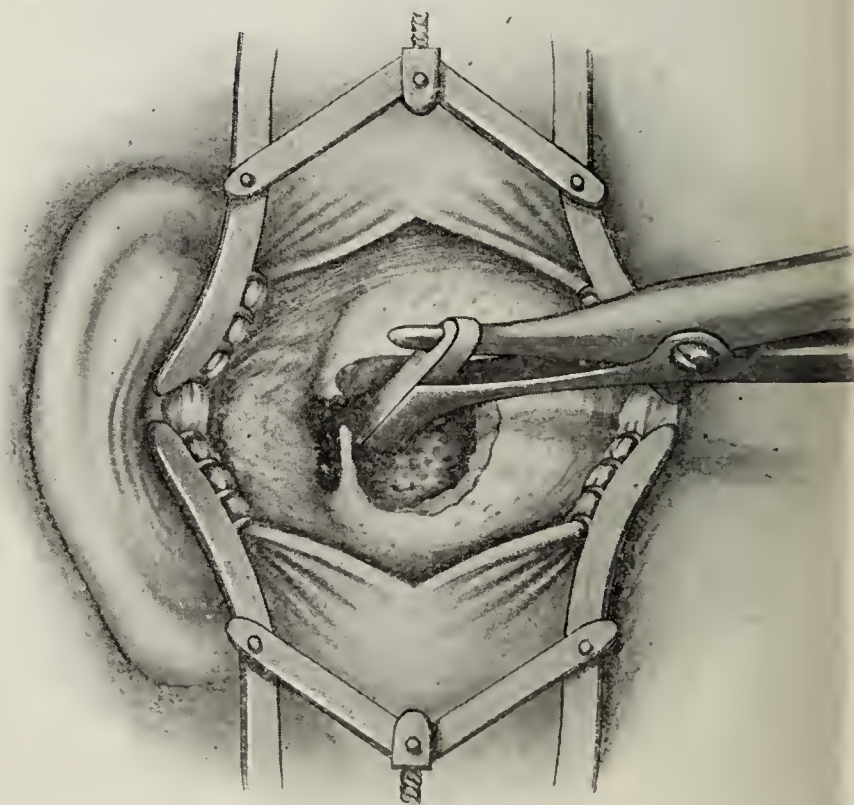


Fig. 11.—The bone crusher at work.

surgeon to more effectively complete the remote corners of the incision (Fig. 12).

The knife should be carried up as far as desired and then down, always keeping in view the meato-conchal edge and retaining the line of incision a little behind this edge. In this way the meatal opening is only enlarged a trifle and the surgeon can be absolutely sure that a constant and non-deforming result will occur. The back-



ward incision along the cartilaginous meatus can now be completed by a divulsor and knife. For the purpose of spreading the meatus or of directing the course of the knife some surgeons have used a strong pair of expanded forceps or a grooved director, but for some time I have used what I call a meatal divulsor (Fig. 19), which fits into the meatus and spreads it firmly (Fig. 20), thus enabling the surgeon to easily and accurately cut the posterior wall of the meatus wherever desired. Some surgeons make this incision at the middle of the meatus,

operation. The latter method of meatal splitting is probably the better, although either may be used.

The flaps can be made much more pliable and useful by thinning them of all loose connective and soft tissue, and even some of the cartilaginous tissue by forceps, scissors or knife. The flaps should now be turned back and sutured (Fig. 21) with catgut to the posterior portion of the anterior lip of the original mastoid incision, or they may be simply forced back and held in position by packing.

Some operators advocate endeavoring to fasten the periosteum of the anterior or auricular flap to the periosteum or soft subcutaneous tissue of the posterior flap.

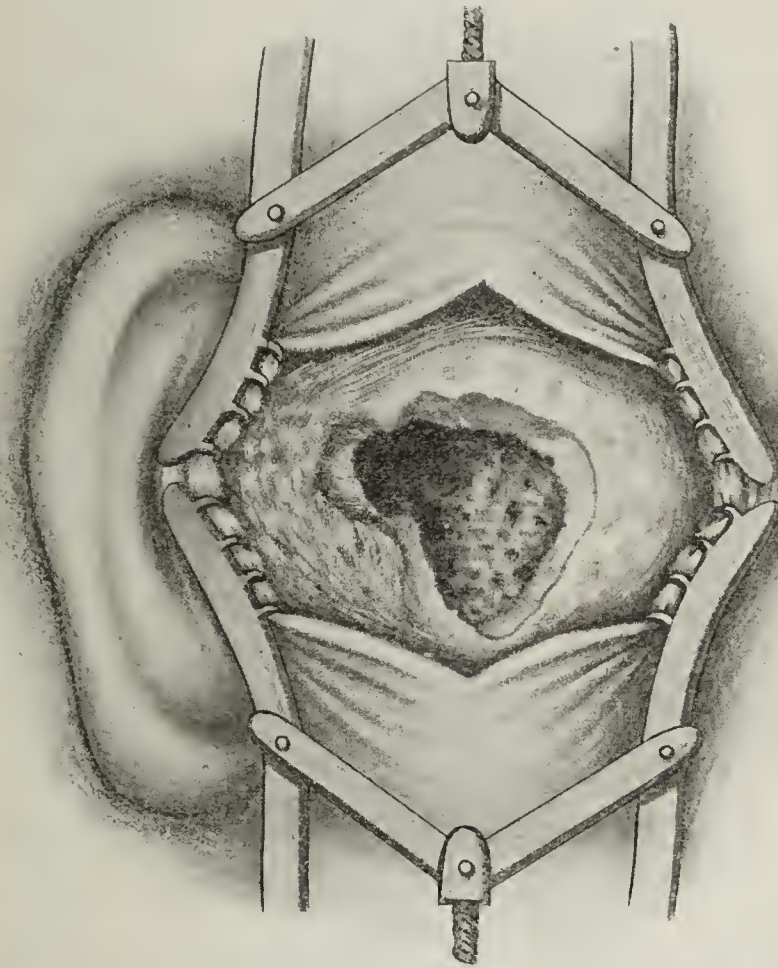


Fig. 12.—Showing the completed opening.



Fig. 13.—1, auricle; 2, external auditory canal; 3, drumhead; 4, stapes; 5, internal carotid artery; 6, eustachian tube; 7, internal carotid artery; 8, attic; 9, malleus; 10, incus. The broad black line shows that portion of the upper bony meatus which must be removed. (After Deaver.)

others prefer to make it considerably below the middle, as by this procedure a large upper flap is produced which materially assists in dermatizing the superior wall of the large bony cavity. The floor of the new meatus makes much less trouble in proper healing, as the floor of the osseous meatus has not been materially disturbed in the

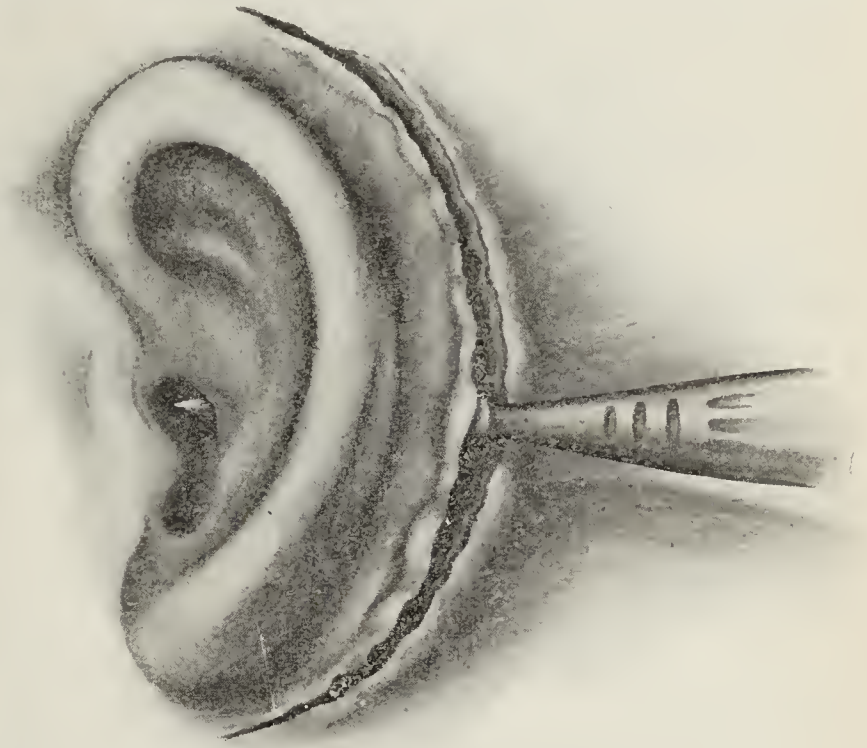


Fig. 16.—Showing the lance-shaped knife puncturing the edge of the concha.

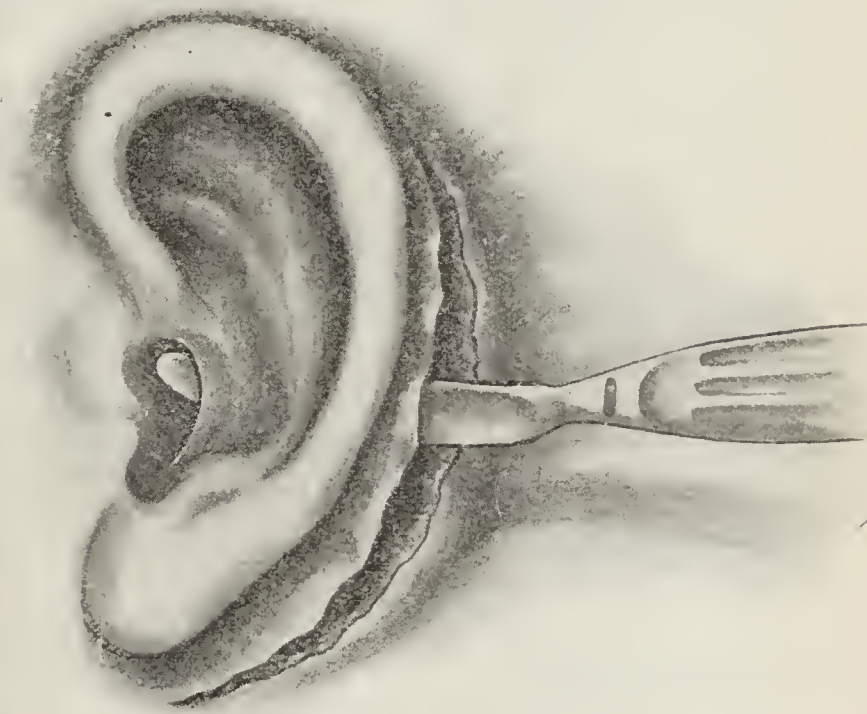


Fig. 18.—Shaping the T-shaped incision.

While this may frequently be accomplished I am convinced that it is a serious mistake, not only because of the tenseness of the tissues produced by the stretching, but because it frequently produces in the healing a division of the mastoid cavity into two cavities, one above the stretched false, soft tissue roof, and the other below it. The two are usually connected by one or two rounded apertures, and the upper cavity not having its bony roof adequately dermatized, must, of course, be a focus of



disease and discharge that prohibits a successful termination of the case. The triangular flaps should, therefore, be turned back, as it were, and their apices sutured to the soft subcutaneous tissues of the *anterior* mastoid flap.

It must, of course, be evident that in case the horizontal incision through the cartilage is made down as far as possible in order to produce a larger upper flap to help cover the roof of the opening there will be only one flap (and that one the upper) which is suturable, as the lower flap will be so close to the bone as to be unsuturable. The original outside mastoid wound is now

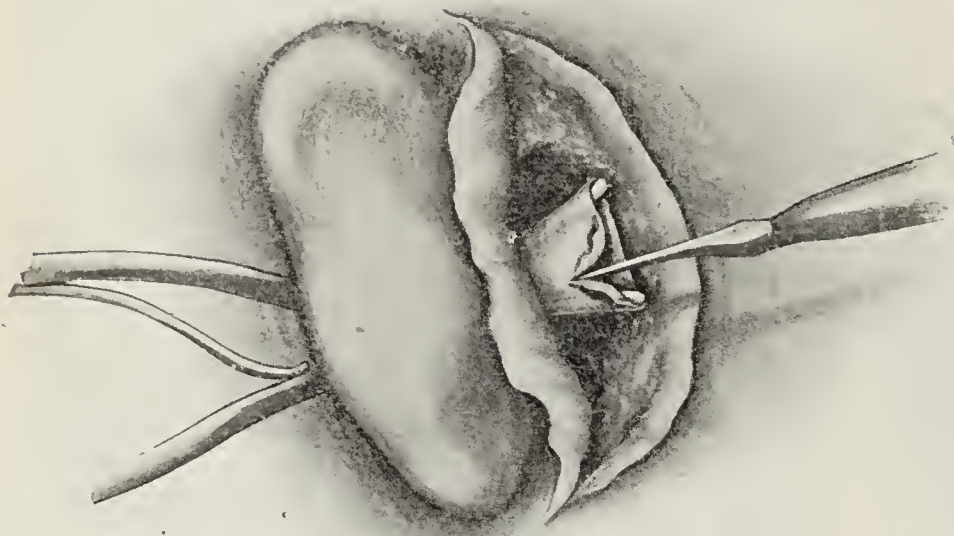


Fig. 20.—Making the horizontal incision through the cartilaginous meatus, by means of the divulsor and knife.

drawn together with Michel metal (Figs. 22, 23, 24, 25) or silkworm gut sutures, after which the meatus is irrigated, flushed with some antiseptic solution, dried, cleansed, and firmly packed with 5 per cent. xeroform gauze, which I use exclusively for packing mastoid cavities.

Especial pains should be taken to support the triangular meatal flaps in their new positions by firmly placed gauze packings. Loose gauze is now freely placed over the entire operative area, a soft pliable bandage applied and the operation is completed.

Some surgeons prefer what is known as the Koerner flap (Fig. 26) for the purpose of inducing epidermis to form over the large osseous area, and this is performed

be pushed backward until it comes fully in contact with the bone, and then should be held there by packing. This forms quite a large center for epidermis production and often produces a complete and rapid healing of the parts.

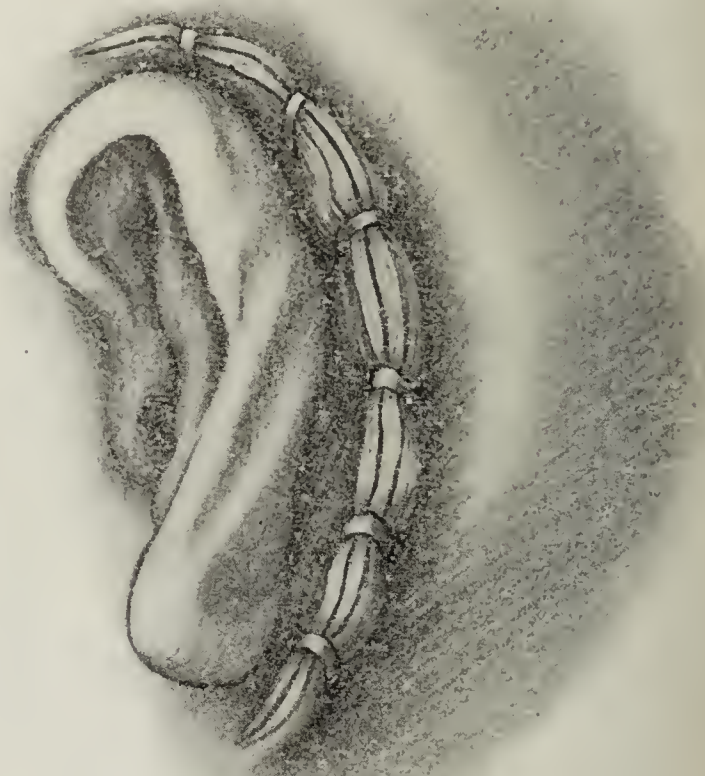


Fig. 25.—Showing the Michel sutures in position.

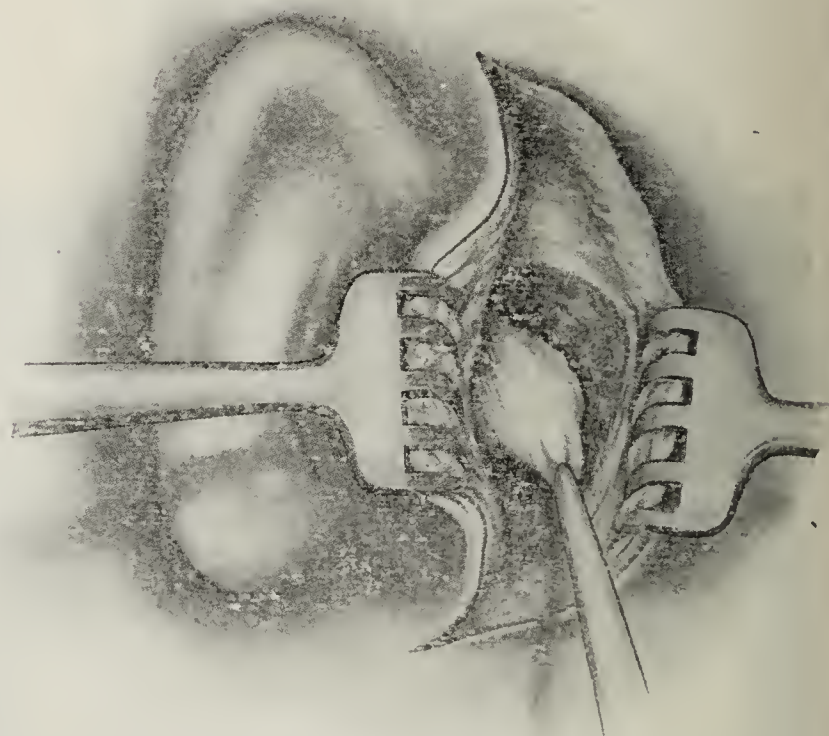


Fig. 26.—The Koerner flap, held by forceps.

(To be continued.)

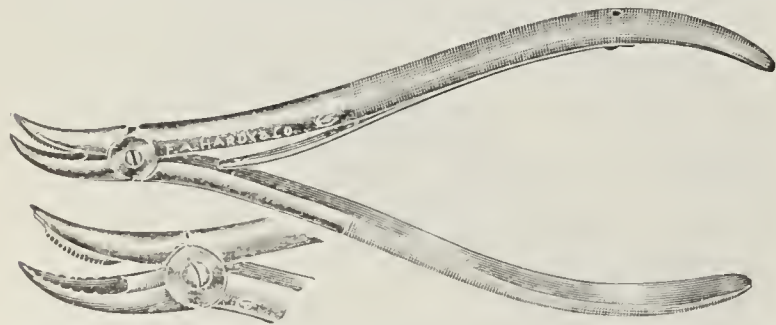


Fig. 24.—Instrument for removing the Michel sutures.

by making two longitudinal incisions in the posterior tissue of the cartilaginous meatus, from its tympanic end to the conchal margin, about one-quarter of an inch apart.

This produces what might be called a tongue flap, and should be made as thin as possible by cutting away all superfluous tissue, and possibly by even dissecting out the cartilage. After being thus prepared and the parts cleaned and dried, the tongue flap should

**The Free Hospital.**—The proper attitude of the hospital to its community, in regard to the admission of patients, is difficult of solution. The greater the diversity of social conditions, and the larger the number of people whose relations with the hospital must be governed by rules and regulations, the more arduous the task. This is what the medical charity faces when it attempts to systematize its activities.—E. B. Young, M.D., in the *Bull. of Am. Acad. of Med.*



# SPINA BIFIDA.\*

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The object of this paper is to plead for a more extended use of operative means in the treatment of spina bifida, to add another case in which the patient was successfully operated on to those already on record, and to elucidate some points in the operative technic of this condition, simplifying the operation as well as rendering it more effective.

A child born with one or more vertebræ defective, and with the contents of the spinal canal protruding through that defect, is certainly a sorrowful object to thrust on a community. Left to its fate, such a child will either succumb early from rupture of the protrusion, or from an ulceration of the tumor and consequent septic spinal meningitis; or, if it survives, it is condemned to a miserable existence with paralyzed rectal and vesical sphincters and various trophic disturbances equally distressing.

The case I report is of the latter type, and the results obtained from the treatment instituted were so satisfac-

way and breaking open again. When she was 10 years old she had a severe attack of cystitis, from which she recovered. At 15 she suffered from a milder attack of the same trouble, and has had pus in the urine most of the time since, but not sufficient to cause any subjective symptoms. Since she was 1½ years old a defect was noticed in her left foot, and when she was 14 years of age her right foot commenced to show signs of progressive deformity.

*Examination.*—The patient was an unusually bright and intelligent girl and well developed. An offensive urinary odor emanated from her body. Abdominal and thoracic findings were negative. In the lumbar region a mass about the size of a medium-sized cocoanut was present, about 10 cm. in diameter. It had a broad base, was covered by normal skin, and had no erosions or discolorations. Over each of the nates was an ulcerated surface about the size of the palm of the hand, the outer border of each being surrounded by scar tissue (Fig. 1).

The left foot had a complete pes planus, the arch being completely sprung; the right foot was shorter and broader than the left and had an unusually high arch. The entire leg appeared somewhat atrophied compared to the left.

Reflexes: Both knee jerks were absent; no ankle clonus was present and there was no Babinski sign.

Tactile and pain sense as well as temperature sense were entirely absent over the area below the tumor growth, as well

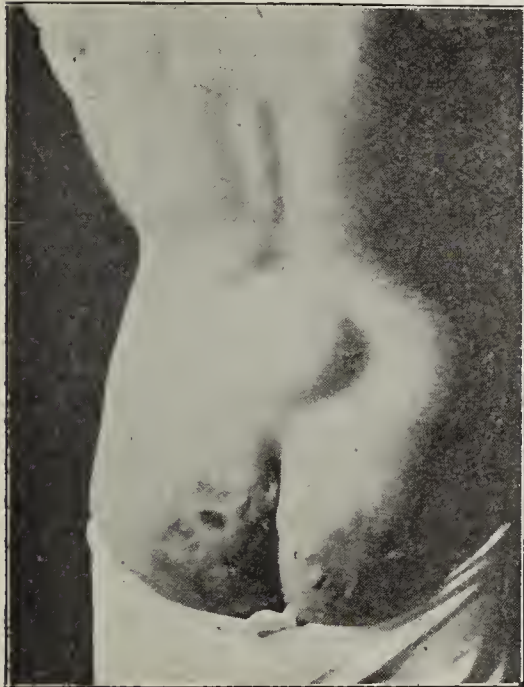


Fig. 1. Patient before operation.

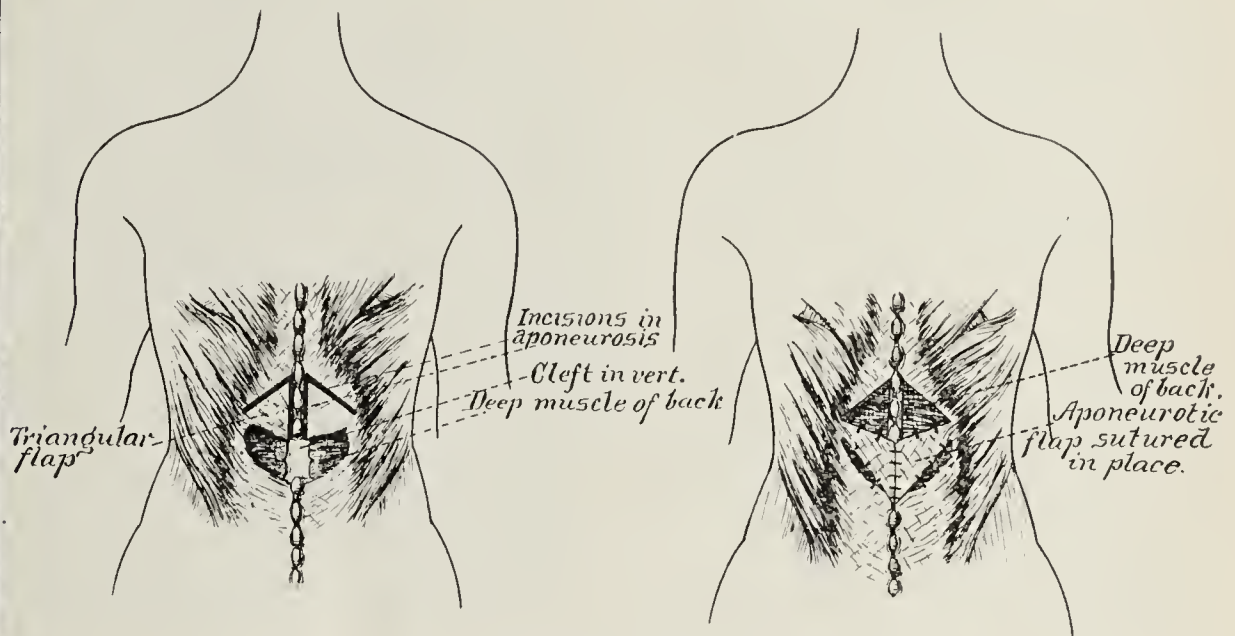


Fig. 2. Details of the method of operation.

tory that its presentation before the society was deemed justifiable.

*Patient.*—B. A., aged 16, a Russian Pole, one and one-half years in this country, referred to me by Dr. M. M. Spitz, presented herself for treatment for a congenital swelling on her back and inability to control urination or defecation.

*History.*—There was no trace of nervous or mental derangement or of any congenital malformation on either parent's side, nor any evidence of syphilis. Immediately after birth a mass the size of a hen's egg was noticed in the lumbar region of the patient's spine. It increased in size in proportion to her growth. The patient was normal in all other respects. She was a bright, intelligent child and walked when she was 1 year old. She had at no time control of either rectum or bladder, and the urine dribbling from her continuously gave her an offensive odor, although her personal habits were cleanly. At times she had retained feces, her bowels remaining constipated for seven or eight days, after which she would have an involuntary movement. At all other times she had incontinence. When she was 7 years old trophic disturbances developed over both buttocks, manifested by two large ulcerated areas, which have remained open more or less, healing part

as over both buttocks, several inches beyond the ulcerated surfaces. Pain sense in the lower extremities appeared to be hypersensitive.

Urine: Appearance cloudy; sp. gr., 1011; reaction, alkaline: albumin and pus were present and large numbers of triple phosphates.

*Treatment.*—The patient had been under the care of various surgeons, both abroad and in this country. She also stayed several months in one of the large hospitals in Europe, and although ever willing to submit to any form of treatment offering any possibility of relief, operation was everywhere denied her. It appeared to me to be the only possible means of relief, and further, that operative interference in her case offered a fairly good prognosis, both as to immediate and remote results. The part of the cord affected in her case was that below the eleventh dorsal vertebra, the cauda zones, the axons of which are possessed of nuerilemma and are capable of regeneration, if placed in a condition to do so. So, even if a degeneration of that portion of the cord had already existed, hopes might still be entertained for regeneration with improvement in the girl's condition in time.

*Operation.*—The girl was admitted to the hospital and was operated on the following day. The cleft was in the arches of the first and second lumbar vertebræ, the laminae were wanting. The tumor proved to be a mixed lipoma and myelomen-

\* Read before the Milwaukee County Medical Society, Oct. 12, 1906.



ingocele. The meningeal sac was intimately adherent by fibrous bands to the lipomatous mass; and the terminal end of the cord and a network of nerve trunks were firmly adherent to the dorsal portion of the sac. These were replaced within the spinal column, the sac removed, as was also the mass of fat, the cleft in the bone covered and the skin over it united.

*Postoperative History.*—For the first six days after operation the patient had an even rise of temperature, ranging between 99.8 and 100.2 F., and kept the bed clothes constantly saturated with urine due to the continuous dribbling from the bladder. On the third day she had an involuntary movement of the bowels after previous administration of a cathartic. This happened several times afterward under similar conditions. On the seventh day she was able to retain urine for two hours at a time, and to control its passage, and she declared it was the first time in her life that she experienced the sensation of desire to urinate and control of the same. Her rectal trouble also began to improve after that time.

Unfortunately, three days later she developed an acute cystitis which delayed her convalescence somewhat. It is now a little over two months after the operation, too short a time to expect any regeneration of degenerated nerve tissue to have taken place, yet sufficient improvement is already manifest in her condition to justify fully the operative interference. This is probably due to the removal of the pressure on the cord.

She is now able to retain her urine from three to four hours at a time; has the sensation of the desire to urinate and has more than a moderate control over the vesical sphincter; only occasionally does desire to urinate and the relaxation of the vesical sphincter come on so precipitately that the urine is voided before she can betake herself to a suitable place. Her rectum fared even better, and she now has a daily evacuation of the bowels under full control and without any artificial aid; only twice did an involuntary evacuation take place during the night while asleep. The ulceration over the buttocks healed without any direct treatment a few days after the operation.

#### • TECHNIC.

Regarding the operative technic of this condition, certain principles must be observed and special care exercised in the application of asepsis and in the emptying of the tumor of its cerebrospinal fluid. Directions for guidance in these particulars may be obtained from any text-book on the subject. It is in regard to the method of closing the defect in the bone that surgeons are still at variance. Merely uniting the skin over the defect by suture as practiced by some does not appear a rational procedure. The skin over the tumor is invariably very thin and even ulcerated and can hardly be deemed a sufficient protection. Flaps of bone and periosteum from the adjacent vertebrae and the crest of the ilium have been utilized by various surgeons with varied success. This procedure has since been abandoned as impracticable. It materially complicates the operation, inflicts considerable traumatism to tissues and thereby enhances a predisposition to infection that, above all things, must be avoided.

The muscle-flap method of Bayer is the one now commonly practiced and advocated. This is executed in the following manner: A longitudinal incision through the entire thickness of the muscle is made on either side of the spine at some distance below the cleft; the flaps are dissected off and reversed over the cleft so that the dorsal surface lies anteriorly. This necessitates cutting the muscle at right angles to the direction of its fibers, which is a disadvantage, and when a large defect is to be covered a considerable depression is left on either side of the back in consequence of the removal of so much muscle tissue. I improved on this method by utilizing the aponeurosis of the latissimus dorsi (Fig. 2). This muscle arises in part by a strong aponeurosis from the spinous processes of the six inferior dorsal, the lumbar and the

sacral vertebrae. A longitudinal incision of sufficient length to cover the defect was made over one side of the spinous processes above the cleft, thus freeing a section of the aponeurosis of the latissimus dorsi at its origin on that side. From the upper point of the longitudinal incision another longer oblique downward incision was made. As the aponeurosis is missing directly at the cleft we have here a free border extending horizontally from the lower point of the longitudinal incision close to the lower point of the oblique incision. Thus we have a triangular flap of aponeurosis free at all points except the apex. Using this apex as a center, the entire flap is rotated downward until it covers the defect in the vertebrae on that side. The same procedure is followed on the other side and the two adjacent borders of the flaps are united with chromicized catgut sutures directly over the defect (Fig. 2).

This method is very simple and easy of application, requires but a few minutes' time in its performance, does not seriously interfere with the anatomic relations of tissues, and, lastly, affords for the vertebral defect a covering that ranks next to bone in strength and consistency.

#### CONCLUSION.

From a study of this case the following facts may be noted:

1. Previous to the operation the girl was growing progressively worse.

2. Improvement in her condition set in within a few days after the operation and has continued to the present.

3. At present, a little over two months since the operation, she is almost entirely well.

The deductions to be made are:

1. Continuous pressure on the terminal portion of the spinal cord will entirely suspend the function of such portion, giving rise to a serious train of symptoms.

2. Such pressure, though extending over a period of years (16 years in this case), need not necessarily impair the nerve tissue of the cord beyond recovery.

3. A speedy restoration of function and alleviation of symptoms may follow the removal of the pressure.

Peerless Building.

### CONJUGATE DEVIATION OF THE EYES AND HEAD AND DISORDERS OF THE ASSOCIATED OCULAR MOVEMENTS

IN TUMORS AND OTHER LESIONS OF THE CEREBRUM.

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PHILADELPHIA.

(Concluded from page 1009.)

#### AUTHOR'S CASES OF CONJUGATE DEVIATION OF THE EYE AND HEAD.

CASE 1.—McL., a woman, aged 60, was admitted to the Philadelphia General Hospital, March 13, 1905, to the service of Dr. Spiller from the out-wards, with a history of a stroke of one day's duration, in the left side.

*Examination.*—The tendon reflexes of the upper limbs seemed to be absent. In the lower limbs the patellar and Achilles jerks were increased, more on the left side, and the Babinski sign was present on this side. Sensation for touch and pin prick was normal. The patient was not wholly unconscious and could respond to questions and would obey commands. A sweetish, urinous odor which suggested a uremic condition was present. The pupils were equal and larger than normal, and the response



to light was sluggish on both sides. She could not be tested for accommodation and convergence, and ocular movements because of her mental condition. An occasional tremor was noticed which involved the whole of the left side of the face and the left thumb, this tremor being fine in character. The tremor was at times communicated to the lower part of the right side of the face. Besides, the patient had occasionally a distinct series of convulsive movements which were limited to the left side of the face, the muscles of the face twitching about twice a second, and with this there were twitchings in the muscles of the neck, most marked on the left side, the head being turned to the left with both eyelids closing and opening synchronously with the other contractions. The left thumb was also involved, no movement being apparent in the rest of the hand or of other portions of the body. These convulsions lasted about three minutes, after which the patient would take a long breath as though recovering from an attack of epilepsy.

When examined by me, on the date of death which was five days after stroke, the patient's head was constantly deviated to the left, the eyes deviating to the *right*, there being a constant horizontal movement from the left to the right, the eyes not going past the median line.

*Autopsy.*—No gross lesions were found in the brain. Two depressions were found on the lateral surface of the left cerebral hemisphere which were filled with fluid, one of these depressions occupying the area of Broca, and extending upward into the

obtained. Forceful deviation of the head to the right would cause immediate movement of the head back to the left.

*Clinical History.*—The patient soon became conscious and it was then found that he was motor aphasic, and that he could only answer "Yes, Sir" and the word, "Norah." The paresis of the right limb disappeared almost completely and nothing remained but the weakness in the right lower face, this being also less than it had been at first. The deviation of the head was not so marked, but the deviation of the eyeballs was still as marked as ever. He was then admitted to the University Hospital. Examination seven days after his attack showed almost complete disappearance of the paresis on the right side, including the face. The deviation of the head was entirely absent, but the eyeballs still had a tendency to deviate to the left. Voluntary associated ocular movements were well performed upward, downward and to the left, but to the right he could not bring his eyeballs more than just a little past the median line. Motor aphasia still persisted. It was not until about seventeen days after his attack that he was able to bring his eyeballs completely to the right in associated ocular movements. The motor aphasia was still somewhat present.

*Diagnosis.*—The patient evidently had a hemorrhage in Broca's convolution on the right side, this involving partially the center for movements of the head, and of the eyes in the adjoining posterior portion of the second frontal convolution.

CASE 3.—McJ., a woman, aged 62, was admitted to the nervous wards of the Philadelphia General Hospital, March 28, 1906, in the service of Dr. Spiller.

*Examination.*—She was mentally clear and answered questions logically and would obey commands well. She stated that she had had intense headache, some dizziness, nausea and vomiting for the previous three days. While lying passively in bed the head was deviated to the right and she was unable to turn it to the left. On a forcible attempt to straighten her head the resistance to the movement was very noticeable. It could, however, be forcibly turned completely to the other side, but would immediately turn to the right. The eyes were also deviated constantly to the right. The patient unquestionably had right homonymous hemianopsia, as she was able to recognize all objects properly on her right side but failed utterly on her left. The pupils were unequal and seemed to react slowly to light. Efforts at convergence in looking to the right could only be tested, and



Fig. 1.—A fibrosarcoma of one occipital lobe, causing besides other symptoms, paralysis of associated ocular movements, probably as the result of the hemianopsia (Case 7).

lower posterior portion of the second left frontal convolution. The other area was in the lower part of the intraparietal fissure. These areas presented the appearance of a pushing apart of the convolutions without the formation of sclerotic tissue. As they were filled with fluid there must have been pressure exerted on the surrounding brain tissue.

CASE 2.—W., a man, aged 60, had been in the Wills Eye Hospital because of glaucoma, under the care of Dr. S. Lewis Ziegler who referred the case to me. He had been blind for the past three years. While walking down stairs he suddenly became unconscious and fell. He was brought back to the wards and had two convulsions, irregular in character. He persisted in this comatose condition for two days, during which time the head and eyes were deviated to the left, but there was no paralysis noticeable in any of the limbs.

*Examination.*—When examined by me two days after his fall the head and eyes were strongly deviated to the left, the eyeballs being in a constant to-and-fro lateral movement, the movement being always from the right to the left and never past the median line. There was a distinct weakness of the lower part of the right face and to a less degree of the right upper limb. The right lower limb was very little if at all involved. Sensation seemed normal; the tendon reflexes on the right side were increased and the Babinski response on this side was

when this was done convergence was normal.

During my examination, which lasted about three-fourths of an hour, the patient had five convulsions which would start as follows: There was first a slow turning of the head from the right to the left; at the same time or perhaps a second later there was an upward movement of the left arm as if the hand was held in gesticulation; the head was now held in violent tonic contraction to the left and the face was drawn to the left, the right face drooping; the eyeballs were in constant contraction to the left and were jerked to and fro violently to the left outer canthus. Almost immediately after the movement of the left upper limb the right upper limb was raised and the body was forcibly turned to the left. The tonic contraction of the left hand and face were now succeeded by a clonic contracture of all the limbs of the body. During the tonic contracture the left angle of the mouth was violently drawn upward, the eyelids were alternately opened and closed on both sides, but about three times as rapidly on the left side as on the right. The convulsions sometimes would start in the left side of the face, or again would start simultaneously in the left side of the face and left arm or the right limb. In the majority of instances, however, the convulsion would start with movements of the left face or the left hand.

There was present also a complete left hemiplegia, flaccid in



character. The reflexes were increased on both sides, more on the left. The Babinski reflex was present on this side and not on the right. Sensation for all forms was lost completely over the left side. The sense of position was also lost in the left upper and lower limbs and she was unable to recognize any object placed in the left hand.

She was able to look upward and downward with both eyes equally and well. She could look to the right and when this was done the right eyeball was not brought to the outer canthus by one-fourth inch, the left eyeball, however, was fully deviated to the internal canthus. Associated ocular movements to the left were impossible.

Patient died three days after her admission to the hospital.

*Autopsy.*—Fracture of the cranial bone was found starting at about one-half inch above the ear and extending downward almost to the foramen magnum. The line of another fracture extended from a point between the foramen magnum directly backward to the right of the lateral sinus. Extensive hemorrhages were found occupying the right frontal pole, this extending in its posterior aspect to the foot of the second frontal convolution and lower part of the precentral convolution. Small hemorrhages were also found involving the right angular gyrus and the right occipital point. Horizontal section of the brain showed the hemorrhage to be cortical in all these points and not involving the white substance in any portion.

CASE 4.—S., adult male, was admitted to Philadelphia General Hospital, Dec. 9, 1902, to the service of Dr. Mills.

Nothing could be obtained of his past history as he was admitted in a stuporous condition and his identity was unknown. A complete left hemiplegia was present. The tendon reflexes were exaggerated, more so on the left side. The

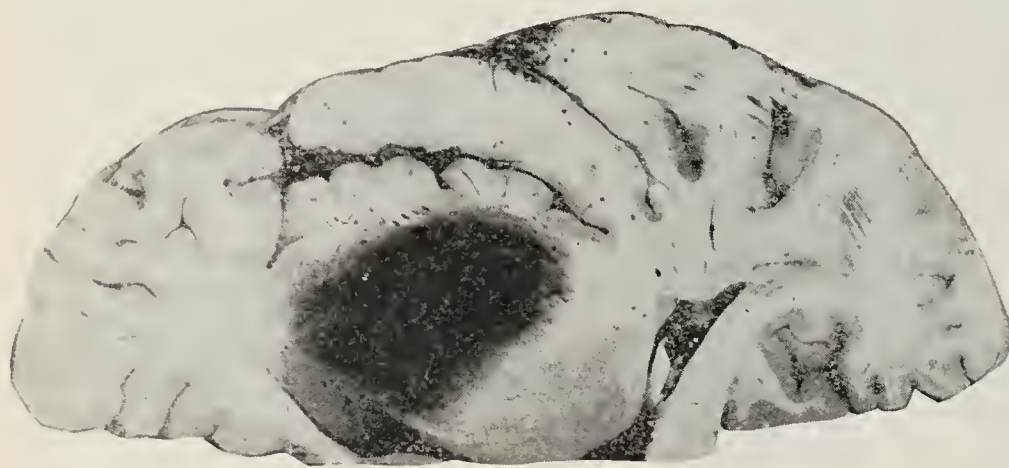


Fig. 2.—Area of softening involving the caudate nucleus and lenticular nucleus, with a fresh hemorrhage underneath the angular gyrus. Clinically, hemiplegia with temporary hemianesthesia and hemianopsia was demonstrated. The two latter symptoms were probably due to the shock of the hemorrhage (Case 16).

Babinski reflex was present on this side. He apparently had a complete left hemiplegia with left hemianesthesia and left hemianopsia. The pupils did not react to light or accommodation on either side. Patient was unable to turn his eyes in associated movements to the right. He died three days after his stroke.

*Autopsy.*—Several large hemorrhages were found involving the greater portion of the right parietal convolution and extending forward beyond the Rolandic fissure into the back part of the frontal lobe and posteriorly in the occipital lobe.

CASE 5.—B., male, aged 60, a weaver, was admitted to the nervous wards of the Philadelphia General Hospital, in the service of Dr. Spiller, April 4, 1903.

*History.*—He had syphilis when 30, but otherwise his past history was of no importance. When admitted to the hospital he complained of weakness and stiffness in both lower limbs which he had had for the previous six months, and also some difficulty in talking and swallowing. There was no history of apoplectic attacks.

*Examination.*—His gait was stiff, his steps were short; station was normal with eyes open and closed; speech was bulbar, it being dull, monotonous and indistinct. He had dribbling of saliva, difficulty in chewing and eating and would even choke. There was no apparent weakness in any of the cranial nerves. The lower portion of the face seemed atrophied, but no tremors were present either here or in the tongue. The

upper and lower limbs were weak and spastic, especially the left; all the tendon reflexes on both sides were exaggerated, especially on the left. Ankle clonus was present on both sides and the Babinski reflex was typical on the left and uncertain on the right. Sensation was normal for all forms everywhere. Some atrophy was present on both sides in the thenar and hypothenar eminences, especially on the left side. Some general atrophy was also present.

*Diagnosis.*—The patient was regarded as a questionable case of bulbar palsy; the slow progress and the absence of more involvement of the cranial nerves and of fibrillary tremors, making the diagnosis of pseudobulbar palsy possible.

*Clinical History.*—The condition of the patient gradually became worse, the bulbar symptoms becoming more marked. Two days before his death he suddenly became unconscious and had convulsions, clonic in character, these being limited entirely to the right side. When examined by Dr. Spiller (who made the following observations) the patient was found in an entirely unconscious condition, paying no attention when his name was called; breathing was stertorous and the right cheek was puffed out as though that side of the face was paralyzed. The right upper and lower limb was raised, and dropped like a flail, and irritation of these parts did not elicit any movement. The reflexes were more exaggerated on the right side and this side was more spastic. The Babinski response was prompt on each side. The head and eyes were deviated to the left. If the head was forcibly turned to the right it would soon forcibly turn back to the left. Slight irregular lateral jerkings of the eyeballs were present. The right pupil was larger than the left and the reaction of the iris to the light was slightly present. The deviation of the head and eyes persisted until the following day, when the patient died.

*Autopsy.*—The case proved to be one of pseudobulbar palsy, as a scar of an old hemorrhage was found in each lenticular nucleus. Besides a recent hemorrhage was found in the left occipito-temporal region extending to the cortex. This hemorrhage was in the posterior portion of the first and second left temporal convolutions and just below the angular gyrus. The area involved was 4 cm. deep and 1.2 cm. in its greatest width.

CASE 6.—G., a woman, aged 80, a domestic, was admitted to the nervous wards of the Philadelphia General Hospital, Oct. 12, 1905, in the service of Dr. Mills. Nothing was known either of the family or of past history. She had a history of suddenly developing numbness of the left hand, followed by pain and convulsions limited to the left face and hand and weakness in these parts.

*Examination.*—When examined by Dr. McConnell, the patient showed a distinct weakness of the lower part of the left face and of the left upper limb, this weakness in the limb being more marked in the distal parts. The other limbs were not involved. Sensation for touch and pain were normal everywhere. The reflexes in the left upper limb were exaggerated, but the other parts were normal. During the examination the left side of the face and the left hand were the seat of intermittent convulsive movements, the head being drawn somewhat to the left and the left angle of the mouth upward and outward, closing both eyelids and wrinkling the brow, with dilatation of the left nostril. The left platysma muscle was also in contraction. There was no movement of the eyeballs during the convulsion (Dr. McConnell was positive of this, for he observed her especially with this purpose in view). The convulsion would last for two minutes and did not involve any other portion of the body. The patient was perfectly clear in mentality during the attacks and would answer questions and obey commands directly after the convulsions were over.

Examination of the eyes showed the pupils to be moderately dilated and round, the response to light and accommodation being normal. The left ocular and palpebral conjunctivæ were greatly inflamed. Associated ocular movements upward and to the left were greatly impaired, being in fact almost entirely lost, the loss of upward movement being more marked in the



right than in the left eye. The paralysis of associated ocular movements persisted until her death, which occurred four days after her admission to the wards.

*Autopsy.*—An area of softening was found in the middle of the right precentral gyrus, this softening extending downward as far as and not involving any of the frontal convolutions. A fresh hemorrhage was found in the posterior portion of the occipital cortex, this hemorrhage being 2.5 cm. from the occipital bone. It was 2.5 cm. wide and 2. cm. deep, extending into the white matter and possibly involved the outer part of the optic radiations. The hemorrhage was posterior and inferior to the angular gyrus and very close to it.

Dr. Mills recorded the complete history of this important case before the American Neurological Association, in Boston, June 4 and 5, 1906, in a paper entitled, "Focal Encephalitis."

CASE 7.—McC., a woman, about 50, a patient of Dr. Crothers, of Chester, was seen in consultation by Dr. Mills and myself.

*History.*—Some notes were obtained from one of her relatives who had been with her constantly for a year or two. This relative stated that the first symptom of which the patient complained were flashes of light which she always saw from the left side. Later the niece observed that she would stumble against objects which were placed on the left, as the left side of the door through which she was passing. This tendency grew worse as time went on and probably indicated a left homonymous hemianopsia. She began to suffer from agonizing headaches, and still later developed nausea and vomiting. It was not until nearly a year after the visual symptoms appeared that she began to develop weakness in the left arm and leg.

*Examination.*—When she first came under observation patient had a left hemiplegia, the limbs being somewhat contracted. The tendon reflexes were prompt on both sides, but more so on the left, and the Babinski response was present on this side. The patient's mentality was not of the best and it was impossible to tell the state of the sensation. The associated ocular movements were normal to the right and downwards; upward movements were limited, but associated ocular movement to the left was impossible. The pupils were equal and the iritic reflexes were normal.

Eye examination by Dr. C. I. Stiteler showed vision, O. D., 5/9; in O. S., 5/12. The pupils reacted normally, the media in O. D. was slightly hazy and the outline of the nerve head could clearly be seen only at the upper temporal border, the rest of the nerve being very indistinct and somewhat swollen, especially at the lower border where the margin could not be seen. The retinal vessels were enlarged. In O. S., the media was slightly hazy; the nerve head was normal.

*Operation.*—There were besides, intense headaches, and some nausea and vomiting. Because of these symptoms of brain tumor an operation was decided on in the motor area. After the operation the patient became considerably better and lived comfortably for two months. In this period homonymous hemianopsia (left lateral) was clearly apparent. Dr. Crothers, under whose care she was, stated that she would never voluntarily look to the left, but that she could look upward, downward and to the right normally; but that towards the last he was able to get her, after violent effort, to look to the right.

*Autopsy.*—A large tumor was found filling up the whole of the right occipital lobe, extending very nearly to the surface but not breaking into the cortex. The convolutions and fissures over this tumor were much flattened. The tumor extended to the posterior part of the corpus callosum and displaced forward the structures anterior to this. Just at the anterior border of the tumor the wound made by the surgeon at the time of the operation could be found. The angular and supra-marginal gyri were involved in the tumor.

CASE 8.—H., woman, aged 60, a cook, was admitted to the Philadelphia General Hospital, Dec. 15, 1904, in the service of Dr. Mills.

*History.*—Five days before admission to the hospital the patient suddenly became unconscious and developed a complete right hemiplegia.

*Examination.*—She was unconscious on admission; the paralysis on the right side was complete and flaccid in character. The reflexes on each side were diminished, but the Babinski reflex was present on the right. The patient soon recovered

consciousness and was able to obey commands; sensation was not disturbed and there was no hemianopsia. Motor aphasia was well marked. The following notes were made by Dr. Pemberton, the resident physician: "The right pupil is contracted and apparently immobile to light. The left pupil is dilated and fixed. The media of both eyes is very cloudy, especially the left, which shows a cataract and a marked arcus senilis; accommodation seems to be impossible. The patient looks straight ahead and she cannot apparently move her eyes in any direction when told to do so, although she evidently understands commands and makes an effort to obey, as shown by slight turning of the head."

The patient died nineteen days after the appearance of the apoplectic symptoms.

*Autopsy.*—A thrombus of the left middle cerebral artery was found, with softening of the brain in the precentral, postcentral and the whole of the parietal convolutions, that is, in the area supplied by the middle cerebral artery. The softening extended to the lenticular nucleus, but did not invade it, as the thrombus was beyond the point where the arteries to the basilar ganglia arise. The posterior portion of the second frontal convolution was not involved.

CASE 9.—H., a woman, aged 70, was admitted to Philadelphia General Hospital, June 23, 1903, to the service of Dr. Spiller, with a history of right hemiplegia, one day in duration.

*Examination.*—The paralysis on the right side was complete and flaccid in character. The patient was stuporous and could not be aroused. The reflexes were diminished, this being more so on the paralyzed side. The Babinski reflex was obtained on the right side; not on the left. Pin prick seemed to be perceived on the paralyzed side, as shown by the movements of the opposing limbs. There was decided conjugate deviation of the head and eyes to the left. When the tongue was protruded it was also protruded to the left.

Patient died eight days after her stroke.

*Autopsy.*—A recent hemorrhage was found in the left optic thalamus, destroying the greater part of the thalamus and extending into the posterior limb of the left internal capsule, but apparently not invading the lenticular nucleus or involving the optic radiations.

CASE 10.—H., a tailor, aged 80, was admitted to Philadelphia General Hospital, March 6, 1906, from the out-wards, to the service of Dr. Spiller.

*Examination.*—A complete right hemiplegia was present, the paralysis being flaccid in type. The tendon reflexes were increased on the right side and the Babinski response was prompt. On the left side the reflexes were normal. Pin prick was not recognized on the right side, but on the left side any irritation would cause prompt movement. It was impossible to tell whether hemianopsia was present. There was also incontinence of urine and feces. The patient's head was deviated to the left and when it was forcibly turned to the right or to the median line it was immediately turned back to the left. There was also a conjugate deviation of the eyes to the left.

Examination two days later showed practically the same condition, the deviation of the head and eyes being as marked as when examined the first time. There were present besides, constant horizontal movements of the eye, this being perceived with the eyes open, and also when they were shut, the movements being transmitted to the lids. These lateral movements were also to the left. Irregular and jerking movements were also present in the left limbs. Examination two days after this and six days after his stroke, still denoted the same condition, the head not being deviated so strongly. The deviation of the eyes, however, was as marked as ever. Any movements of the head would always be to the left and never to the right, no matter where the irritation was made. The pupils were small and equal; the light reaction was normal. All movements of the eyeballs were to the left and not to the right. The patient died seven days after his stroke.

*Autopsy.*—A recent large hemorrhage was found filling up the posterior horn and descending horn of the left lateral ventricle, but not into the anterior horn, and also involving a large part of the lenticular nucleus, doubtless disturbing the function of the left optic radiations and involving also the posterior limb of the internal capsule and the optic thalamus.



**CASE 11.**—D., a man, aged 52, with a history of syphilis and alcoholism, was admitted to the nervous wards of the Philadelphia General Hospital, Sept. 17, 1902, in the service of Dr. C. S. Potts, to whom I am indebted for the material of this case. A day before his admission the patient had an apoplectic attack, with a resulting left hemiplegia.

**Examination.**—The paralysis was complete and flaccid, the tendon reflexes were not exaggerated on either side, but the Babinski response was obtained on the left side. A hypesthesia for touch and pain was apparently present in the paralyzed side. The patient had conjugate deviation of the eyes to the right, with inability to turn the eyes to the left.

**Autopsy.**—An area of softening was found in the lenticular nucleus of the right side, and extending into the posterior limb of the internal capsule, but not invading the optic radiations.

**CASE 12.**—R., a man, aged 77, was admitted to the nervous wards of the Philadelphia General Hospital, July 19, 1904, in the service of Dr. Spiller.

**History.**—A sudden attack of unconsciousness the day before, resulting in a left hemiplegia.

**Examination.**—On the following day examination showed a complete left hemiplegia, the paralysis being flaccid. The tendon reflexes were lost on the paralyzed side and were diminished on the sound side. The Babinski response was obtained on the left side. Pin prick was not recognized at any portion of the left side, but was promptly recognized on the right side. The patient was not totally unconscious, as he would obey commands, as sticking out his tongue and lifting up his limbs of his sound side. There was also present incontinence of urine and feces. The eyes were distinctly deviated to the right, but there was no deviation of the head. It was impossible to tell if hemianopsia was present.

The patient died six days after his stroke.

**Autopsy.**—A large hemorrhage was found destroying the posterior portion of the right lenticular nucleus, extending backward beyond the nucleus almost to the angular gyrus and destroying the posterior part of the posterior limb of the internal capsule. This large hemorrhage did not involve the cortex at any point, although in one part minute hemorrhages were found in a portion of the cortex about the island of Reil.

**CASE 13.**—S., a man, aged 51, was admitted to the Philadelphia General Hospital, Sept. 21, 1903, into the service of Dr. Mills.

**History.**—He had been admitted to the hospital several years previously with a history of right hemiplegia, from which he partially recovered.

After being in the hospital for two years he suddenly had an attack of unconsciousness. The resident physician, Dr. Maier, found him in a stuporous condition, the right arm and leg being completely paralyzed and the right face drooping. Some spasticity was present on this side and the reflexes were exaggerated. The head was not deviated to either side; the eyes were turned up and oscillated slightly from the right to the left. He died two days afterwards.

**Autopsy.**—A lesion was found in the left lenticular nucleus not extending apparently into the internal capsule, and reaching and invading the claustrum, extreme capsule and not reaching the cortex. The lesion must have involved the fibers underneath the angular gyrus.

**CASE 14.**—A. was an old right hemiplegic, who had for a long time been in the nervous wards of the University Hospital. His previous records were lost.

One morning he suddenly became unconscious and had convulsions, which were limited to the left upper and lower limbs and the left side of the face. The eyes were turned in conjugate deviation to the right. Both upper and lower limbs were flaccid, there being, however, more tonicity in the left side. The tendon reflexes were lost in all the limbs, but the Babinski response was distinct on the right side. The patient died the same day.

**Autopsy.**—The ventricles were found to be considerably dilated and the scar of an old cyst was found in the external portion of the left lenticular nucleus and involving the extreme capsule.

**CASE 15.**—C., a woman, was admitted to the nervous wards of the Philadelphia General Hospital, July 12, 1904, into the service of Dr. Spiller.

**History.**—The patient then had a paresis on the left side of the body. Feb. 22, 1905, she suddenly became paralyzed, about seven months after her first stroke.

At this time Dr. Spiller made the following dictation: "The patient is in a deep stupor and is unable to understand anything said to her. The eyeballs are deviated to the right and there are frequent irregular jerky movements to the right, the left edge of the cornea going but very little beyond the median point of the palpebral fissure during these movements. These eponic movements of the eyeballs are suggestive of an irritation of the left cortical center of the ocular muscles."

When she was seen by Dr. Pemberton, the resident physician, somewhat previously, but on the same day, the eyes were turned to the left, and there were no jerky movements of the eyeballs. She had therefore conjugate deviation of the eyes to the left, but this was at the time when there was no irritation of the eye muscles, and therefore would seem to indicate that she was looking at her lesion. The head was not stiff and remained where placed; there was also a slight tendency of the eyeballs to be drawn upward as well as to the right. The pupils were dilated, and equally so, and did not respond to light. Occasionally an involuntary jerking of the left upper limb was observed. Both upper and lower limbs were flexed and the reflexes were diminished, the left more than the right. Babinski response was present on the left but not on the right. She died the following day.

**Diagnosis.**—Left hemiplegia.

**Autopsy.**—A limited area of sclerosis of the anterior portion of the right second frontal convolution was noted. There was also a cyst in the anterior portion of the left lenticular nucleus. An area of softening in the right frontal lobe at the frontal point was found. The lateral ventricles were also somewhat dilated.

**CASE 16.**—C., a woman, aged 35, was admitted to the Philadelphia General Hospital, Dec. 1, 1905, to the service of Dr. Hirst.

**History.**—Patient was delivered of a child four weeks previously, since which time she had been having a temperature and had apparently been septic. Two days before her admission she suddenly fell, became unconscious, and has not been able to speak since.

**Examination.**—She was examined five days after her admission by Dr. McConnell and myself. The patient then had a complete right hemiplegia, the limbs on the paralyzed side being spastic and contracted in the usual hemiplegic position, the reflexes were exaggerated on both sides, the right more than the left, and the Babinski response was present on this side. The patient was not unconscious and would obey commands. The head and eyes had been deviated since her admission constantly to the left. Pin prick or touch on the right side could not be recognized anywhere, but on the left side sensation was promptly recognized. Objects were not recognized in the right visual fields of either eye, as was demonstrated by the feeding cup and other tests, therefore, right homonymous hemianopsia was present. The patient was aphasic, but could understand questions and would nod responses. The right masseter muscle was in a constant state of contraction, causing the right jaw to be locked. She was able to turn her eyeballs upward, downward, and to the left, but could not turn them to the right. When examined a day after this the patient could turn her eyes a little to the right, but not normally so. She died a few days afterwards as the result of a double pneumonia.

**Autopsy.**—An area of red softening was found, involving the left caudate and the left lenticular nucleus. A small hemorrhage was also found in the cortex of the upper portion of the first temporal convolution just below and anterior to the angular gyrus.

#### DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia, agreed almost, although not entirely, with Dr. Weisenburg's conclusions. He does not believe that the only cortical ocular center is situated in the posterior portions of the second and third frontal convolutions. That the only actively functioning center in the whole human being is situated in this region can be accepted as a practical fact based on clinical and pathologic observations. Dr. Mills believes that there is a motor region



in the lower animals and in man for every cortical region of the special senses. For practical purposes of diagnosis, however, the only one that claims attention in the human being is the musculocutaneous or main motor region. The human being has an auditory motor region, a visuo-motor region, etc. As shown by the investigations of Flechsig and the experiments of Grünbaum and Sherrington, Schäfer and others, motor centers are situated along the calcarine and parieto-occipital fissures and the posterior extremity of the intraparietal fissure. These centers may be largely in abeyance in the human being, their place having been taken as the result of racial and individual evolution by the more frequently employed oculomotor centers of the main motor area. Dr. Weisenburg, he said, has not laid particular stress on what appears to be a matter of much clinical importance, namely, the difference between the results caused by a lesion of the oculomotor cortical center of one side, and lesions occurring simultaneously or successively in these centers on both sides of the brain. The oculomotor centers of one side are probably effective in the control of movements of both sides. Therefore, lesions of one side may fail to give persisting symptoms. Dr. Mills said that the view advocated by Dr. Weisenburg is probably correct, namely, that the nuclei of the nerves supplying the internal recti and those supplying the external recti of both sides are connected by special tracts.

Dr. W. G. SPILLER, Philadelphia, considers that perhaps one of the most important conclusions stated by Dr. Weisenburg in his report of the sixteen cases with necropsy, is that conjugate deviation of the head and eyes can not be used as a clinical sign of lesions of any particular part of the brain. Dr. Weisenburg's views resemble those entertained by certain neurologists in regard to word-seeing. By some it is held that the center for word-seeing is in the angular gyrus of the left side; by others that the loss of word-seeing produced by a lesion in this gyrus is caused by a destruction of the fibers passing beneath this gyrus to the first temporal convolution. The latter resembles the view advanced by Dr. Weisenburg, viz., that there is no definite center in the angular gyrus for conjugate movement of the head, and that when deviation occurs from a lesion here, it is the result of destruction of the fibers beneath the cortex. Numerous observations are needed to establish this view. Dr. Spiller agrees with Dr. Weisenburg that there are probably separate centers for the movements of the head and eyes. In some cases there is deviation of the head without conjugate deviation of the eyes, while in other cases the two may exist together, and not infrequently one will disappear without the other. Dr. Weisenburg's idea that there may be a latent deviation in every case of apoplexy with hemiplegia, shown by the inability of the patient to look toward the paralyzed side, is interesting, Dr. Spiller said, but difficult to prove, as usually consciousness is lost and it is impossible to obtain voluntary movement of the eyes. Cases occur, however, in which this examination may be made.

Dr. Spiller cautioned against the improper estimation of incoördinate movements of the eyeballs present shortly before death. Such movements at that time have little diagnostic value. In his paper, read before the American Neurological Association, in 1905, on "Paralysis of Associated Ocular Movements," he made no reference to congenital cases, or to experimental work on animals, but referred only to the condition as acquired by man. In that paper he expressed the view that persistent paralysis of associated upward movement of the eyeballs is due to a lesion near the oculomotor center. If there could be a lesion in each cortical center for the movements of the eyes, they might together produce associated upward paralysis, but lesions are not likely to occur exactly symmetrically on the two sides of the brain. Von Monakow, he believes, reports a case in which there was a lesion between the oculomotor centers beneath the floor of the aqueduct of Sylvius; there was no loss of individual movement of the eyeballs, but there were no associated movements because of the destruction of the connecting fibers. Since the presentation of his paper in 1905, Dr. Spiller has had the opportunity of observing two more

cases of paralysis of associated upward movement of the eyeballs. One of these patients was under the care of Dr. Potts, and the condition seemed to be caused by a lesion in the optic thalamus, as in connection with other symptoms, sensory hemiplegia persisted and motor hemiplegia largely disappeared. The other case was that of a patient of Dr. Langdon, in the service of Dr. George E. de Schweinitz, seen by Dr. Spiller in consultation. A young man, aged 17, who had been perfectly healthy until March, 1906, began to have disturbance of vision, and had to leave work; he complained of stiffness in his limbs and joints. When seen on May 12, 1906, he was found to have complete paralysis of upward movement of the eyeballs, choked disc on the right side, loss of the patellar tendon reflex and of the Achilles tendon reflex, and hemianopsia, but no paralysis of the limbs. He entirely recovered. It was probably a case of polioencephalitis superior, for which no cause could be found.

In one of his cases reported in his paper, of complete paralysis of upward associated movement of the eyeballs, death occurred in May, 1906. Dr. Spiller was so fortunate as to obtain the patient's brain through Dr. Cadbury. Shortly before going to Boston Dr. Spiller examined a number of sections from this case. There was nothing abnormal that could be seen by the naked eye. It was only by staining section after section and examining each very carefully that he was able to discover a very minute tumor of the cerebral peduncle near the oculomotor center. Dr. Spiller still believes that when there is persistent paralysis of upward associated movements of the eyeballs it is due to a lesion near the oculomotor nuclei.

Dr. T. H. WEISENBURG, Philadelphia, said that in his paper reference to the cases in which lesions involve the oculomotor centers of either side was only brief, as these cases are very rare, and besides a critical study has shown that in not one were the lesions limited to the oculomotor centers. Regarding Dr. Mills' opinion that there is a distinct motorocular center in the occipital lobe, Dr. Weisenburg said he is not fully in accord because of the lack of such evidence. He has no reason, however, not to think so for if Dr. Mills holds any view it is only a question of time when it will be proved to be true.

## ARSENIURETED HYDROGEN POISONING.

WITH REPORT OF FIVE CASES.

NOBLE WILEY JONES, M.D.

PORTLAND, ORE.

Our knowledge of the toxic effect of arseniureted hydrogen gas,  $ASH_3$ , on the animal body is limited yet to the experimental results of certain investigators of the origin of icterus, notably of Stadelmann, Minkowsky and Naunyn and Eppinger and to the scattered clinical reports of less than one hundred cases of poisoning in man. It was believed at the time of the occurrence of these five cases here detailed that numerous others would be reported from the different mining districts which had made use of the MacArthur-Forest cyanid process in the working of low grade gold ores, owing to the numerous attempts to smelt locally the zinc "product," which contains the gold values. But after the lapse of eight years these cases remain the only instances of such poisoning from this source that have come to my attention. Hunting through the meager literature of the subject, I have been able to collect the reports of fifty-five cases. They are all isolated in nature; some of them in the persons of experimental chemists, others in laborers in anilin dye works, several among makers of toy balloons. Only in one instance, reported by Trost in 1873, was this form of arsenic poisoning the result of a metallurgical process. Here it concerned the technical recovery of silver from lead



ore, in the course of which procedure zinc was added to the ore charge, smelted, and a zinc-silver product obtained, which, in turn, was treated with a warm dilute hydrochloric acid solution to render the zinc soluble and the silver insoluble as their respective chlorids. Both the zinc and the hydrochloric acid contained arsenic as an impurity, the latter 0.027 per cent., and as a result nine workers became poisoned with the generated arseniureted hydrogen gas, three of them fatally.

This compound of arsenic has been known since 1775, when Scheele discovered it while experimenting with arsenic acid. Its intense toxic properties were not known until Gehlin, a Munich chemist, fell victim to it in 1815. Producing the gas intentionally from known arsenic salts, he attempted to recognize its presence by the odor and inhaled enough to cause his death nine days later. The briefly reported symptomatology of this, the first case, corresponds closely with all others observed. Since this time it has been closely studied chemically, and its production is known to occur under the following conditions: (a) By the action of nascent hydrogen on a soluble salt of arsenic; (b) by the action of dilute HCl or  $H_2SO_4$  on the arsenids of zinc or tin; (c) by the action of water on the arsenids of alkali metals, and (d) by the action of a hot solution of potash and powdered zinc on reducible compounds of arsenic. It is a colorless gas with a strong odor of garlic; soluble in 5 volumes of water, of neutral reaction, and possessing a density of about three times that of air. It oxidizes slowly in the presence of air and moisture with deposition of the element. It burns with a greenish, almost colorless flame, with formation of arsenous oxid.  $As_2O_3$ . Its mixtures with air or oxygen are explosive. Just why arseniureted hydrogen is the most poisonous of all the mineral compounds of arsenic is not definitely known. It contains a relatively high percentage of arsenic. It is a diffusible gas and capable of rapid absorption from the lung tissue. But it is possible that its great toxicity is due, in part at least, to certain properties acquired from its combination with hydrogen.

The salient points in the clinical histories of the published cases are best reviewed in tabular form, more detailed individual description being unnecessary, as all cases showed much the same symptomatology, and many of them have been reviewed by other writers, namely, by Geigy and Becker.

For the following brief clinical reports of these five cases I am indebted to Dr. A. L. Castleman, then of Mercur, Camp Floyd Mining District, Utah, and to Dr. A. J. Hosmer, of Salt Lake City, under whose care the patients were:

CASE 1.—1896. D. C. J., metallurgist; a young, well built, healthy man.

*History.*—About two hours after having worked with the refining of zinc product from an experimental cyanid mill, he was suddenly seized with a feeling of intense malaise and chilliness, soon followed by intense abdominal pain which radiated toward the back. The first urine voided was dark and bloody; urination became more frequent and a larger quantity than normal in 24 hours was passed. The bloody character subsided slowly, the urine becoming clear after the sixth day. Jaundice set in early; it was of a distinct yellowish type like that of an acute catarrhal jaundice, but soon becoming of a bronze color. This disappeared slowly during convalescence. Slight fever, always under 100 F., was noted during the first three days. The pulse was rapid and easily compressible. There was no dyspnea at any time noted. The patient was not allowed active movement. The liver, spleen and kidneys were never palpable. The severely acute symp-

toms disappeared after three days. Convalescence required five weeks, but a moderate degree of anemia remained for several weeks more. At time of writing, 10 years from time of illness, the patient is entirely well, shows no signs of kidney lesions and has passed examinations for life insurance.

CASE 2.—Aug. 22, 1898. J. W., helper; aged 34; good health.

*History.*—The man was suddenly overcome about 5:30 p. m., while at work over a vat in the zinc cyanid refining plant of the Golden Gate Gold Mining and Milling Company, Mercur, Utah. The vat contained the zinc cyanid product, sulphuric acid and various impurities from the ore, especially large traces of arsenic. The patient was carried into the open air by the other workmen, where Dr. Castleman found him a few minutes later. He was then in a semi-dazed condition; could not stand; complained of coldness, numbness and cramping of the extremities and of severe nausea and vomiting. The vomitus was the normal stomach contents. The skin was livid in appearance, pulse 72, temperature normal. A small quantity of urine voided at this time looked normal to the eye. The patient was removed to his house. At 6:30 p. m. severe abdominal pain set in, which radiated into back and loins, and of which he complained bitterly, although he remained in a semi-stupor. Vomiting continued every 15 or 20 minutes. Diarrhea was present. At 7 p. m. the condition of the patient was the same and naturally voided urine appeared normal. Temperature was normal. The patient later became very restless, even when free from pain. At 10 p. m. hiccough set in and his skin began rapidly to assume a bronzed color. At this time he tried to pass urine but failed. There was much vesical tenesmus. Catheterization afforded one ounce of black urine containing much heavy sediment. This was the last urine obtained although frequent catheterization was resorted to. The following morning the skin was of a deeper bronze or copper color. Vomiting and hiccoughing continued at frequent intervals. The stools were dark and glairy in appearance. The vomitus was stained a green color. Pulse persisted from 110 to 120, with some irregularity and low tension. There was no delirium, but the stuporous condition remained. The patient lost strength until 10 p. m. of August 23, when he became unconscious and died the following morning, 60 hours after his exposure to the gas.

*Examination of Urine.*—I later examined the catheterized urine and found it to contain large quantities of methemoglobin, some bile pigment, large quantities of detritus, seemingly disintegrated red blood corpuscles, and some washed-out pale looking intact corpuscles. Small traces of arsenic were found by the Reinsch test, but not with a Marsh apparatus. The stools contained much bile pigment. Blood smears made by Dr. Hosmer showed an evident anemia due more to a solution of the hemoglobin contents than to an actual disintegration of the red cells. Blood counts were not made.

*Autopsy.*—Six hours after death. Body of a well developed and nourished man. Rigidity was present and some posterior lividity. Skin was uniformly copper colored, darker over face, neck and upper chest. Subcutaneous fatty tissue and muscle were copper colored. Abdominal and pleural cavities were negative except for slight brownish staining. Lungs were negative. Pericardial sac was filled with brownish fluid. Myocardium was deeply copper stained, otherwise negative. Stomach contained small amount of mucus. Scattered submucous ecchymoses appeared throughout, more marked at cardiac end of lesser curvature. The intestinal mucous membrane was uniformly injected; the descending colon was small and contracted. Liver weighed 2,600 grams; it was dark colored and the cut surface was very bloody; lobular markings were fairly distinct. The gall bladder was distended with a large amount of black, dense, tarry bile. Spleen weighed 320 grams, black; pulp soft and bloody. Malpighian bodies were visible. Kidneys together weighed 290 grams; they were dark purple colored. Capsule stripped readily. On the cut surface a large, hemorrhagic, undifferentiated appearance was seen, soft and bloody. Cortical markings were lost. The renal pelvis was empty and mucous membrane smooth. Bladder was small, empty and contracted to large walnut size. Bone marrow of ribs and right femur was stained deep copper color. Other organs were negative. Brain and cord were not examined.



*Microscopic Examination.*—The tissues had been hardened in 70 per cent. alcohol. Preparations were made with (a) hematoxylin and eosin; (b) alum carmin, potassium ferrocyanid and hydrochloric acid, and (c) alum carmin, equal part solution of ferrocyanid and ferrocyanid of potassium and hydrochloric acid.

*Liver:* The structure of cords of liver cell is well maintained, the nuclei staining well. Masses of orange, brown and black pigment granules are seen in all cells, more marked in the region of the intralobular veins and at the peripheries. The radicles of the portal vein are filled more or less with coagulum and corpuscle debris. There is an absence of round-cell infiltration. There is an absence of Prussian blue precipitation in the cyanid preparations excepting in the contents of the hepatic veins. This is stained quite uniformly bluish.

*Kidneys:* The outlines of the tubules and the glomeruli are fairly well retained. The capsules of the latter are filled with a lightly granular coagulum containing some few isolated well-stained cells. The convoluted tubules are thoroughly disintegrated. A heavy granular coagulum fills each lumen. The cuboidal and short columnar cells of the small collecting tubules have undergone the least destruction of any, yet they all show necrotic changes. There is an irregularly uniform, slight increase of the interstitial connective tissue. Nowhere is any marked round-cell infiltration noticed. Formed blood cells are sparingly seen. Throughout the cortex the Prussian blue reaction is seen only in scattered areas. Immediately beneath the capsule is an area 1 to 2 m.m. thick which shows an almost structureless condition. Here the cyanid reaction is well marked. In certain portions of the medulla this reaction is prominent. It seems to bear no relation to the amount or location of corpuscle debris.

*Spleen:* The splenic pulp is loosely arranged. The Malpighian corpuscles numerous and small. Certain large areas of necrosis are seen, composed of a reticulated coagulum, taking an eosin stain well, and containing in its meshes corpuscle debris and many pale corpuscles from which the hemoglobin contents have been removed. No extra vascular hemorrhage is seen. No evidence of the iron reaction is found in the cyanid-treated preparations.

*Bone Marrow:* Normal structure. Blood vessels contain more or less coagulated mass of debris in which there is considerable brownish or black pigment granules. Some of these granules give a Prussian blue reaction; most of them do not. About a few of the vessels a diffuse blue staining is seen, not associated with the granules nor extending into the lumen of the vessel.

Tissues from other organs were not received. Pieces of the kidney treated by the Reinsch test gave traces of arsenic. The liver and spleen did not do this.

*Anatomic Diagnosis.*—Acute hemorrhagic nephritis; acute splenic tumor with areas of necrosis; acute hepatic tumor; acute disseminated submucous hemorrhages of stomach and intestines, mild; diffuse red blood corpuscle destruction; diffuse discoloration of superficial and deep tissues.

CASE 3.—L. G., assayer, a well developed, healthy man, was exposed to generating arseniureted hydrogen gas at the same time as the patients in Cases 2, 4 and 5.

*History.*—Four and a half hours after exposure, while sitting in the doctor's office talking with him and feeling well, he suddenly became cold, weak, very pale and numb about the feet. He walked a short distance to his house with the help of a companion, but fell as he entered the door and could not rise. He was seized soon with nausea and considerable lumbar pain; no abdominal pain. His urine became rapidly bloody, remaining such for seven days. It was increased in amount. He began to turn yellow about the time of the beginning of his pain. This deepened in a day's time to a bronze and later took on a distinct greenish tinge. Temperature remained about 100 F. or less for three days, then went to normal. The pulse was accelerated, but of moderately good tension. Convalescence lasted six weeks, after which a decided anemia remained for some time. The patient is now living, is well and has never shown signs of kidney trouble.

CASE 4.—J. M., helper, a healthy man, suffered same exposure to gas as former two patients.

*History.*—He was taken sick in a similar way to patient in Case 3 while standing on the street, five hours after exposure. He was assisted home, and also fell to the ground on reaching the house and was unable to rise. He had walked probably the length of one and a half of the ordinary city blocks. The patient's symptoms were severe from the start. His urine became hemorrhagic and on the fourth day nearly ceased. After that until his death, on the ninth day, only from 5 to 10 c.c. of urine could be obtained in 24 hours by catheterization. An early jaundice passed rapidly into a brown color of the skin and sclerae. The pulse became rapid and weak, and toward the end the man became comatose and died without delirium or convulsions. No autopsy was obtained. Blood smears from this case showed the same washed-out appearance of the red cells, rather than an extensive erythrocyte destruction.

CASE 5.—A., helper, a healthy man, some time within 24 hours after exposure began to pass bloody urine and developed a jaundice like that of a mild acute catarrhal jaundice. His hemoglobinuria lasted four days, at the end of which time he returned to his work. His symptoms, consisting mostly of slight chilliness and malaise, were indefinite and unimportant in character. The patient made a complete recovery, is now living and is well.

#### ETIOLOGY.

Wherever the formation of arseniureted hydrogen, intentionally or unintentionally, is possible, poison cases will occasionally be met. With the extensive application of the MacArthur-Forest cyanid process in the handling of low grade gold ores, which has as its principle the solution of the gold values from the ore by means of a dilute potassium cyanid solution and the recovery of the values from this solution by its filtration through zinc dust or shavings, which precipitates the gold partly in the form of fine metallic gold and partly as a double cyanid salt of gold and zinc, it was expected that cases of arsenic poisoning from this source would be rapidly multiplied: First, because arsenic is a frequent constituent of ores and more or less of it passes into solution and is collected in the product, and, secondly, because it is often an impurity of the zinc and also of the sulphuric acid sometimes used in the refining of the product. However, no other cases have been reported from any of the mining districts in South Africa, Australia, or from this country where the cyanid process is extensively used, so that we are justified in placing these cases in the list of accidental poisonings which have occurred infrequently in the arts and in experimental laboratories.

Of the sixty cases here recorded, seventeen patients were scientific men or their students, fourteen were workers in metallurgical reduction works, seven in anilin dye works. Ten were Italian balloon peddlers who generated hydrogen gas from scraps of zinc and impure acid and made their own balloons. Barker's case is that of a man who was cleaning castings in a foundry with sulphuric acid. In the manufacture of chemicals, as zinc chlorid, these accidents have occurred, so that the possible source of this form of arsenic poisoning is wide, and one may wonder, indeed, that so few cases have been recorded.

#### PATHOLOGY.

The pathology of these cases differs in many ways from that of other arsenical salt poisonings. The blood and chief excretory organs receive the brunt of the effect of the gas—the blood directly, the kidneys both directly and indirectly. The skin is discolored from the deposition of pigment in it. The degree of color depends on the degree of transformation of the iron portion of this pigment. The lungs are usually nega-



TABLE OF CASES OF ARSENIURETED HYDROGEN POISONING.

		Occupation.	Recovery.	Death.	Days.	Appearance of First Symptoms.	First Symptoms.	Urinary Symptoms.			Skin Discoloration.	Type of Symptoms.	Dyspnea.	Solenic tumor.	Fever.	Pulse.	Remarks.
								(a) Hemoglobinuria.	(b) Duration of days.	(c) Anuria.							
1	Gehlin....1815	Chemist....	+	+	9	1 hour...	Nausea.....	+	Death...	?	?	Severe....	?	?	?	?	
2	Schindler..1836	Pharmacist.	+	+	49	3 hours..	Dizziness.....	+	5	0	Dark brown.	Moderate..	?	?	?	Weak, frequent.	
3	Taylor....1836	Chemist....	+	+	24	?	?	+	?	?	?	?	?	?	?	?	
4	O'Reilly...1841	Chemist....	+	+	7	Immediate.	Dizziness.....	+	Death...	0	Copper to greenish.	Severe....	?	?	0	Weak, then forcible.	Postmortem.
5	Mouat....1850	Chemist....	+	+	22	1 hour...	Choking.....	+	?	0	Icteric....	Moderate..	?	?	?	Full, hard, frequent.	Died late of uremia.
6	Vogel.....1851	Physicist....	+	+	2	Immediate.	Weakness.....	+	1½	0	?	?	0	?	Fever..	Quiet.	
7	Ollivier...1863	Chemist....	+	+	5	1 hour...	Headache.....	+	5	+	Earthy yellow.	Severe....	+	+	?	110, full, regular.	
8	Chevallier..1863	Pharmacist..	+	+	?	8 to 10 hr.	Headache.....	+	?	?	?	Mild.....	?	?	?	?	
9	Vallette...1870	Chemist....	+	+	30	Few minutes.	Nausea.....	+	?	?	Icteric....	Moderate..	?	?	?	?	
	Vallette...1870	Worker.....	+	+	15	Few minutes.	Urinary;.....	+	?	?	Icteric....	Severe....	Labored.	?	?	?	
10	Ollivier...1872	Physicist....	+	+	19	6 hours..	Bloody urine..	+	3	?	Icteric....	Moderate..	?	?	Fever..	?	
	Ollivier...1872	Assistant....	+	+	Less.	6 hours..	Bloody urine..	+	?	?	Icteric....	Mild.....	?	?	?	?	
11	Trost.....1873	Director....	+	+	Few..	?	Unwell.....	?	?	?	?	Mild.....	?	?	?	?	
	Trost.....1873	Worker.....	+	+	19	Some hours.	Nausea.....	+	3	0	Icteric....	Moderate..	Labored.	?	Fever..	100	
	Trost.....1873	Worker.....	+	+	?	5 hours..	Nausea.....	+	4	0	Dark yellow.	Moderate..	?	?	Fever..	Rapid.	
	Trost.....1873	Worker.....	+	+	Few..	?	Slight symptoms.	?	?	?	?	Mild.....	?	?	?	?	
	Trost.....1873	Worker.....	+	+	2	?	Nausea, pros.	*	2	?	Yellow....	Severe....	?	?	?	160	
	Trost.....1873	Worker.....	+	+	6	?	Nausea.....	+	6	+	Yellow, turgid.	Severe....	?	?	38.5	160	
	Trost.....1873	Worker.....	+	+	3	?	Nausea.....	+	3	+	Yellow, turgid.	Severe....	?	?	?	?	
	Trost.....1873	Worker.....	+	+	?	?	Nausea.....	+	?	?	?	Moderate..	?	?	?	?	
	Trost.....1873	Worker.....	+	+	?	?	Nausea.....	+	?	?	?	Moderate..	?	?	?	?	
	Trost.....1873	Worker.....	+	+	?	?	Nausea.....	+	?	?	?	Moderate..	?	?	?	?	
12	Wächter...1878	Balloon peddlers.	+	+	?	1 hour...	Nausea.....	+	3	0	Yellow....	Moderate..	20	+	38 6/	100, full.	
	Wächter..1878	2d.....	+	+	45	1 hour...	Nausea.....	+	4	0	Lemon yellow.	Moderate..	36	0	38 /	108	
	Wächter..1878	3d.....	+	+	47	1 hour...	Nausea.....	+	9	0	Gray, icteric.	Severe....	36	+	38 2/	120, full.	
	Wächter..1878	4th.....	+	+	10	1 hour...	Nausea.....	+	10	+	Lemon yellow to gray.	Severe....	?	+	?	120	
13	Dütting...1888	Balloon peddlers.	+	+	6	?	Nausea.....	+	6	+	Icteric to deep yellow gray.	Severe....	?	0	?	?	Postmortem.
	Dütting...1888	2d.....	+	+	3	?	Nausea.....	+	3	+	Yellow....	Severe....	?	?	?	?	Postmortem.
	Dütting...1888	3d.....	+	+	7	?	Headache.....	+	4	0	Yellow....	Mild.....	?	+	?	?	
	Dütting...1888	4th.....	+	+	10	?	Headache.....	+	4	?	Gray yellow.	Mild.....	?	?	?	?	
	Dütting...1888	5th.....	+	+	16	?	Headache.....	+	4	?	Dirty yellow.	Mild.....	?	?	?	?	
	Dütting...1888	6th.....	+	+	9	?	Headache.....	+	2	0	Icteric....	Mild.....	?	?	Fever..	?	
14	Eitner....1879	Physicist....	+	+	5	?	Nausea.....	+	2	0	Icteric....	Mild.....	?	?	?	?	
	Eitner....1879	Physicist....	+	+	4	?	Nausea.....	+	1	0	Icteric....	Mild.....	?	?	?	?	
	Eitner....1879	Student.....	+	+	?	?	Unwell.....	+	?	0	Icteric....	Mild.....	?	?	?	?	
	Eitner....1879	Student.....	+	+	?	?	Unwell.....	+	?	0	Icteric....	Severe....	Free.....	+	39.3	?	Postmortem.
15	Coester...1884	Anilin worker.	+	+	13	?	Nausea.....	+	13	+	Icteric....	Mild.....	?	?	?	?	Uremia.
		Anilin worker.	+	+	8	?	Nausea.....	+	4-6	0	Icteric....	Mild.....	?	?	?	?	
16	v. ury-Benz, 1885.	2d.....	+	+	8	?	Nausea.....	+	4-6	0	Icteric....	Mild.....	?	?	?	?	
		3d.....	+	+	8	?	Nausea.....	+	4-6	?	Icteric....	Mild.....	?	?	?	?	
		4th.....	+	+	8	?	Nausea.....	+	4-6	?	Icteric....	Mild.....	?	?	?	?	
		5th.....	+	+	7	?	Nausea.....	+	4-6	?	Icteric....	Mild.....	?	?	?	?	
17	Becker....1885	Student.....	+	+	3	2½ hours	Loin pain....	+	2½	+	Bronze....	Severe....	?	0	36.8 to 38.3	104.....	Postmortem.
18	Geigy....1887	Factory hand.	+	+	7	?	Nausea.....	+	7	+	Bronze to yellowish.	Severe....	46	0	37.2	104.....	Postmortem.
	Geigy....1887	Anilin worker.	+	+	16	?	Nausea.....	+	6	0	Brown....	Moderate..	20	0	37 9	100	
19	Schickart..1891																
20	Martin...1893	Foreman in chemical works.	+	+	5	21 hours..	Generally ill, pain in abdomen.	+	5	+	Deep yellow.	Severe....	0	?	0	104, irregular at times.	
		Laborer.....	+	+	6	Soon.....	Vomiting, pain in back.	?	4	+	Jaundice..	Severe....	?	0	?	?	Postmortem.
		2d.....	+	+	6	Soon.....	Vomiting, pain in back and over liver.	?	4	+	With erythema.	Severe....	+	+	?	?	Postmortem.
21	Mann and Clegg.	3d.....	+	+	8	Soon.....	Malaise and back pain.	+	8	0	Jaundice..	Mild.....	0	0	?	?	
		4th.....	+	+	8	Soon.....	Malaise and back pain.	+	8	0	Anemia, jaundice.	Moderate..	0	0	?	?	
		5th.....	+	+	12	10 hours.	Vomiting, epigastric pain.	+	?	0	Some jaundice.	Mild.....	?	0	?	?	
22	Gulivitsch..1898	Foundryman	?	?	?	1 hour...	?	+	?	0	?	?	?	?	?	?	?
23	Müller.....	Tin worker..	+	+	?	?	?	+	?	?	?	?	?	?	?	?	
24	Barker.....	Laborer.....	+	+	?	?	?	+	?	?	?	?	?	?	?	?	
25	?	Chemist....	+	+	?	?	?	+	?	?	?	?	?	?	?	?	
		Metallurgist	+	+	35	2 hours..	Malaise, chills, abdom. pain.	+	6	0	Jaundice to bronze.	Moderate..	0	0	Slight, 3 da.	Rapid, soft.	
		Helper.....	+	+	4	Within 24 hours.	Slight malaise.	+	4	0	Jaundice..	Mild.....	0	0	0	Normal.	
	Author...1906	Assayer.....	+	+	42	4½ hrs.	Cold, nausea, lumbar pain.	+	7	0	Bronze, greenish.	Moderate..	0	0	38.8 3 da.	Rapid.	
		Helper.....	+	+	9	5 hours..	?	+	9	?	Brown....	Severe....	0	0	?	Rapid, soft.	
		Helper.....	+	+	60	At work..	Cold, vomiting, abdominal and lumbar pain.	+	60 hours.	+	Bronze to copper color.	Severe....	0	0	Slight.	Rapid, soft.	Postmortem.



tive; edema of the dependent portions has been noted. In patients who have lived some days before death has occurred a moderate degree of fatty change of the myocardium has been described, but never are there the high grade fatty changes of the parenchymatous organs that are seen in phosphorus poisoning, for instance. There is a notable absence of fatty degeneration. The kidneys are usually somewhat enlarged, dark colored, very bloody and the seat of a high grade hemorrhagic nephritis. The tubules are filled with detritic casts, the blood vessels with broken-down red blood cells. The glomeruli are least involved. Round-cell infiltration is not much seen, for the reason that the process is so intense and so little time elapses that reactive measures have not time to take place. The liver is large, dark colored and bloody; the cells contain much pigment and but little fat. The biliary radicles contain pigment. The gall bladder is distended in all reported cases with a thick, tarry bile, and the bile ducts are open. The spleen shows acute tumor, the stomach and intestines have nothing characteristic, except the large amount of bile in the contents of the latter. All serous membranes are more or less stained. Traces of arsenic have been obtained from the urine, kidney, liver, bile and blood by different investigators. Iron-containing pigment is rather generally found throughout the body as shown by cyanid preparations.

#### SYMPTOMATOLOGY.

Three symptoms stand out as fairly characteristic of this type of arsenic poisoning: Pain in the region of the kidneys, jaundice and hemoglobinuria. The long period between the inhalation of the poison and the onset of the symptoms is the opposite of that of other arsenical salts. Although this period varies within limits, it is seldom less than one hour and usually is several. The shortness of the period depends to a large extent, though this also varies, on the amount of arsenic inhaled. Becker's patient experienced symptoms within one-half hour and terminated fatally in three days. Still, in this case the patient had been at work in the same laboratory room the entire afternoon and could easily have been poisoned several hours before the time noted. In all cases of moderate or great severity the onset is fairly sudden with the feeling of coldness or with chills, rapidly oncoming prostration, dizziness, headache, numbness of the extremities and pain. Nausea, in some cases vomiting, is found, associated usually with the pain and, in a measure, proportionate to its severity. The vomitus is first the normal stomach contents, later it is mixed with more or less bile. In one case of Vallette's a quantity of black blood was vomited once.

The pain is usually severe, sharp and paroxysmal, though the patient is seldom entirely free from pain, and in the majority of cases it is located in the lumbar region of the back and radiates into the loins. Others have experienced diffuse abdominal pain or an epigastric pain, associated with the lumbar distress. In only the first of this series of five cases was all pain localized in the abdomen, and none experienced in the region of the kidney. In very mild cases there may be no pain. In the non-fatal cases actual pain ceases, in a few days, usually with the establishment of free diuresis. In those terminating fatally it continues until relieved by unconsciousness, which precedes death.

Hemoglobinuria is a constant symptom in all cases. It begins within a few hours of the onset, lasts a variable length of time measured by days, and terminates

either favorably by a gradual return to the normal or fatally by complete urinary suppression. In many of the non-fatal cases a distinct diuresis is noted independent of treatment. In two of our cases this was present. In the least severe case there was nothing noted except the hemoglobinuria and the light grade of jaundice. The urine varies from dark red to brownish black in color, contains sufficient albumin to completely coagulate it by heat, and shows large quantities of methemoglobin, oxyhemoglobin and some bile pigments (Geigy). The sediment is variable. It may be very small in amount and contain only a few epithelial cells and no whole or disintegrated blood elements in the mild cases. The sediment of the severer cases may be very rich, consisting of large quantities of disintegrated red cells (Wächter, Dütting, author), a variable number of washed-out, pale-appearing, but otherwise uninjured, erythrocytes (author), and granular, epithelial and blood casts (Wächter, Geigy), though for the most part the urinary condition is almost a pure methemoglobinuria. Traces of arsenic were found in the urine by Wächter and myself. In one case, that of Müller (1837), there was a generalized subcutaneous emphysema of uncertain origin; in all other reported cases jaundice was present. This begins soon after the onset of the symptoms. In our mild case it remained a distinct, yellowish jaundice. In those of any severity the skin soon turns a darker color, becoming brownish, coppery, sometimes greenish. The discoloration lasts usually some weeks, gradually fading when the coincident anemia becomes evident.

Nervous symptoms are present in all severe cases. In none of our cases were they severe. Stupor, semi-unconsciousness, later unconsciousness were present in our fatal cases. In Case 2 the patient at first had cramps in the legs; later he was very restless even when free from pain. There were no evidences of uremic twitchings or convulsions as reported by Coester and Becker. Exaggerated deep reflexes were not present in our cases nor reported so in others. Severe headache has been noted by some, though, as a rule, it is not so much complained of as the lumbar pain. Disturbances of vision, hearing and sensation have not been found.

The vascular system presents the picture of a severe blood dissolution. The anemia is grave. It consists seemingly of a solution of the hemoglobin content from the red cell more than a disintegration of the cell itself, although there is also a widespread destruction of the erythrocytes. The hemoglobin by Fleischl or Gowers may be relatively high. Rouleaux formation is retarded or prevented. There is no leucoeytosis. Geigy reports in his first case the following blood findings: Reds, 885,000 to 920,000; hemoglobin (Gower), 57 per cent.; presence of disintegrated red cells and the shadows of non-disintegrated cells. No rouleaux formation. In his second case there were: Reds, 2,920,000; hemoglobin, 62 per cent.; small tendency to rouleaux formation, few disintegrated cells and few shadows of cells. Becker, in his case, found by smears large numbers of unstained shadows of red blood cells, much detritus and few white cells. This was the condition in two of our cases as noted in smears made by Dr. Hosmer. Diffuse bleeding is less common than might be expected from the condition of the blood and urine. Müller described large and small petechial spots on the extremities of his patient. Vallette described, in his second case, which resulted fatally, severe hemorrhages from the nose, gums, tonsils, bowels and genitalia. Blood in the stool



has been noted a number of times. But these conditions are the exception.

Moderate dyspnea on exertion is commonly described. Distinct air hunger in all of our cases was noticeably absent in spite of the severe blood destruction. It is mentioned, however, by Becker and Geigy. The stools are usually loose. Diarrhea may occur, but devoid of signs of inflammation as with other arsenic compounds. The stools are dark colored from the large amount of bile contained. Without doubt death is due largely to acute urinary suppression. Some patients, as stated above, have shown distinct uremic signs; the majority, however, have not. Of the 20 fatal cases here recorded, the most rapid death was that of Trost's fourth patient, who died in two days. Our second patient died in 60 hours from the time of exposure. Vallette's patient lived for thirty days before dying, which is the longest period of time noted. The average for 19 cases, in which the duration of the illness is stated, is 8.2 days. Of the 60 patients whose cases are recorded, 40 recovered; of these, the length of convalescence, that is, the length of time in hospital or kept from work, is given for 25. The longest is seven weeks, reported by Schindler; the shortest, four days, one case reported by Eitner and one by me. The average duration of illness was 17.3 days. In all of my cases a severe anemia lasted for some time after all other signs of illness had disappeared. Ultimate recovery without complications or sequelæ was the result in all cases.

#### TREATMENT.

Aside from measures taken to prevent the escape or formation of arseniureted hydrogen gas in laboratories or in the arts, the treatment in such cases is purely symptomatic. Three indications are present, along the lines of which much can be accomplished for the patient. First, the need of abundant fresh air. Oxygen should be of much benefit and should be used continuously. Secondly, the establishment of free diuresis to prevent the blocking of the uriniferous tubules by disintegrated blood cells and tubule epithelium. Toward this end all bland diuretics can be used, especially large quantities of water and milk, and often repeated saline enemas and warm baths. General supportive treatment, as in all prostration cases, is, of course, always needed. The use of digitalis need not be avoided for fear of a fatty myocarditis, because the latter, to any extent, does not exist. As a rule, the patient with suppressed urine will die. Active diuresis is a very favorable sign, and the majority of patients with polyuria will recover. The long-standing anemia is much benefited by iron.

#### THE EFFECT OF ARSENIURETED HYDROGEN GAS.

Among the earlier writers on this type of arsenical poisoning, Eulenberg<sup>26</sup> (1865) stated that after aspiration of the gas it was no longer to be demonstrated in the blood. Hermann<sup>27</sup> (1874) determined that arseniureted hydrogen was oxidized by the oxygen contents of the hemoglobin to arsenous acid, and from this fact he believed the poisonous properties of the gas due to its property of breaking up oxyhemoglobin. That arseniureted hydrogen is oxidized to arsenous acid by the blood and also by the liver tissue was later verified by Stricker<sup>28</sup> (1882). The reduction of oxyhemoglobin with the following destruction of the red blood cells was first noted by Bogomaloff<sup>29</sup> (1868) and Rabuteau<sup>30</sup> (1873). These observations were of importance because of their bearing on the previous discovery of Virchow<sup>31</sup> (1847),

that all extravasated blood increased the formation of biliary pigments, and also the relation the action of the gas bore to other intoxications, infectious diseases, etc., which were accompanied by icterus without an apparent stasis of the bile outflow. That is, the icterus accompanying this form of poisoning belonged to the old group of hematogenous as opposed to hepatogenous icterus or icterus of pure stasis. Because of this relationship to the pathogenesis of icterus more is known of the specific effect of arseniureted hydrogen than otherwise would have been. In 1868 B. Naunyn<sup>32</sup> conducted the first animal experiments with the gas and found the specific changes in the blood and hemorrhagic infarcts of the kidneys. His work led him to believe more strongly in the view then existing that bile salts were formed in the circulating blood as well as in the liver. The later reports of poison cases by Vallette, Ollivier, Trost, Wächter and Eitner added much encouragement to this belief. Shortly afterwards Stadelmann<sup>33</sup> began a series of animal experiments with toluylendiamin and arseniureted hydrogen to prove a common basis for both types of icterus. In many sections on dogs he found the gall bladders uniformly distended, the bile thick, tarry and tenacious and histologically the biliary radicals in the liver engorged with bile pigment and crystals. At the same time he noticed that the more severe the icterus the less bile there was in the intestine. It was clear to him, therefore, that stasis was obtained by the consistency of the bile itself, and that the icterus was as dependent on mechanical causes as any obstructive jaundice. The primary cause lay in the destruction of the blood, but the real cause was an overproduction of bile which clogged the biliary passages and allowed resorption into the lymph and blood spaces to occur. He termed this condition icterus from polycholia, or pleiochromia.

Minkowsky and Naunyn,<sup>34</sup> a little later, undertook a series of experiments with geese and ducks, because the anatomic relations between the portal vein and renal veins is such that the liver can be removed from the general circulation. Normal geese and ducks showed, after a short inhalation of arseniureted hydrogen gas, hemoglobinuria and a distinct increase of bile pigment excretion. Fowls from which the livers had been removed showed a hemoglobinuria, but no bileverdin in the urine. These experiments were seemingly conclusive that the formation of bile salts could not occur without the presence of the liver. Histologically they noted large cells containing fragments of red blood cells and clumps of hemoglobin scattered mainly through those organs, as the liver, spleen and bone marrow, where the blood current was slowest, which gave an iron reaction when treated with ferrocyanid of potassium and hydrochloric acid. Moderately rapidly this bile pigment became reduced and entirely disappeared. The probable formation is that of hemotoporphyrin from the free hematin, the former passing to the liver, where it is converted into biliary salts. These cells containing fragments of erythrocytes found in the liver capillaries were also noticed to stain green when treated with a 5 per cent. corrosive sublimate solution. The cells in the other portions of the body did not do this, and this fact was considered by both authors to mean an actual transformation into biliverdin as taking place in these cells found within the liver. They also assume that the hemoglobin dissolved from the cells and remaining free in the serum is transformed into bile salts by the liver cells. Ponfick<sup>35</sup> has asserted that the normally func-



tionating liver will take care of one-sixtieth part of the total hemoglobin content. Whenever destruction of the red cells liberates an amount which exceeds this quantity icterus will result. Clinically at least, it would seem that this condition does not hold true and that something besides a destruction of blood is needed to explain an icterus, especially when associated with little or no ascertainable anemia. Many have held that a second factor is necessary, a functioning disturbance of the liver cells themselves, such as is assumed in case of the kidney cell which permits an albuminuria. It is easy to assume the possibility of disturbed function on the part of the liver cells from the effect of so intense a toxic agent as arseniureted hydrogen.

The more recent work of Eppinger,<sup>36</sup> which is based on careful histologic preparations that have allowed the walls of the bile capillaries to be plainly seen and have demonstrated imperfect lymph spaces between the bile capillaries and the cells, has again added more weight to the purely mechanical theory of icterus. He describes in these types of jaundice obstruction of the capillaries, often a sinuosity, varicosity, at times a rupture of the walls, and as a result the bile escapes into the lymph spaces and thence into the blood. This obstruction of the capillaries is often of the nature of distinct casts or thrombi and does not concern the bile passages. In the main this work has been confirmed by Minkowsky and Winckelmann,<sup>37</sup> although they do not find these lesions in all forms of jaundice examined, especially of infectious jaundice. In these cases the former believes a specific action of the cell the primary cause, so that he still groups icterus into two large classes—the true obstructive type in which mechanical obstruction is the underlying cause, and the toxic, cyanotic and nervous type, in which a disturbed cell function is the determining factor.

In brief résumé, arseniureted hydrogen is an exceedingly toxic compound of arsenic which acts on the animal body in a way distinct from that of other arsenic salts. The principal organs attacked are the blood and the kidneys. The lesions of the former consist of a rapid dissolution of the hemoglobin content and an actual disintegration of the red cells. The effect on the latter, as seen postmortem, is an intense, diffuse, hemorrhagic, degenerative process, involving the convoluted tubules most severely and the glomeruli least and showing but slight reaction toward regeneration. The jaundice which is present in all cases is probably of an obstructive type in the main, though it is highly probable that disturbed liver cell function also plays a certain rôle in its formation.

I wish to thank Dr. Castleman and Dr. Hosmer for the use of the cases and their clinical reports, and also Professor Hektoen in whose laboratory this work was done.

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## Clinical Notes

### INSPECTION OF THE JUGULAR VEIN; ITS VALUE AND ITS LIMITATIONS IN FUNCTIONAL DIAGNOSIS.

A CRITICISM BY DR. HIRSCHFELDER AND A REPLY BY DR. MCCASKEY.

#### I. A CRITICISM.

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The subject of heart-block and the recent additions to the knowledge of the allied functional disturbances of the heart and of the so-called cardiac neuroses have aroused a great deal of interest in the revelations from tracings of the venous pulse and polygraphic tracings. Although with appropriate apparatus<sup>1</sup> these are somewhat less difficult to obtain than are good radial pulse tracings, some form of rather expensive polygraph is necessary, and about half an hour is required to obtain the desired record.<sup>2</sup> Nevertheless so much information is to be gained by what they show that this procedure can scarcely be omitted from the modern routine examination of heart cases.

It is, therefore, natural that efforts should be made to minimize the labor involved in such investigation, and in this regard the recent contribution of Dr. G. W. McCaskey<sup>3</sup> marks an attempt toward simplicity. By means of the Mackenzie receivers<sup>4</sup> placed on the jugular vein and apex and attached to tambours bearing levers in the usual manner the pulsations from these areas are transmitted to the levers, which are brought as close as possible to each other; and from the respective movements the events of the cardiac cycle are deciphered. He does not state what advantage this visual method has over simply watching the pulsation of the jugular vein while feeling the pulse in the carotid with the finger.

1. Hirschfelder (Arthur D.): Graphic Methods in the Study of the Cardiac Diseases, American Jour. Med. Sci., 1906, cxxxii, 378.

2. With my polygraph, a modified form of the Erlanger blood pressure apparatus, a set of records may occasionally be obtained in less than ten minutes, but usually more time is required.

3. An Ocular Method for the Diagnosis of Heart-Block, JOURNAL A. M. A., 1907, xlvi, 418.

4. Mackenzie (James): The Study of the Pulse (London) Macmillan, 1903.



The latter method is often most satisfactory and should be absolutely so for the diagnosis of complete heart-block when there are four or more beats of the auricle to one of the ventricle; in fact, by that means the first diagnoses of heart-block were made.

In the numerous tracings from the jugular veins which I have made at the Johns Hopkins Hospital during the past two years I have been struck by the fact that it is much easier to see these pulsations than to transmit them to the tambour lever, so that no small fraction of the time for obtaining good permanent records is required in this method. I have frequently watched the movements of the levers, as now suggested by Dr. McCaskey, in order to see whether one could judge of these movements by the eye with any degree of accuracy. When controlled by tracings taken immediately afterward it became evident not only to myself but to other members of the staff, that it was quite impossible to judge of the exact sequence of lever movements occurring within 1/5 sec. of each other. It is true that successive beats of the auricle do not occur within this interval; but, as may be seen from

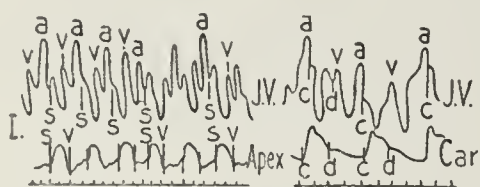


Fig. 1.—Physiologic venous pulse, with normal waves somewhat exaggerated, owing to much-distended veins; divided into 1/5 second spaces: a = presystolic wave on jugular pulse; s = onset of ventricular systole; c = onset of wave in carotid pulse; v = crest of postsystolic wave (instant of opening of tricuspid valve); j. v. = jugular vein; car. = carotid.

the appended (normal) jugular tracing (Fig. 1), secondary waves (v) do take place, whose time of occurrence must be most accurately estimated before these cases can be differentiated from cases of partial heart-block. Unfortunately, this can be accomplished only by the somewhat troublesome method of mensuration on graphic records. In support of this statement may be cited the experience in the medical clinic of the Johns Hopkins Hospital during the current year where a constant effort has been made to diagnose functional disturbances of the heart by inspection of the venous pulse and then to control these by graphic records.<sup>5</sup>

The criteria applied were as follows: The observer beat time with his finger to the regular beats of the carotid pulse to accustom himself to the rhythm. (Graphic records made

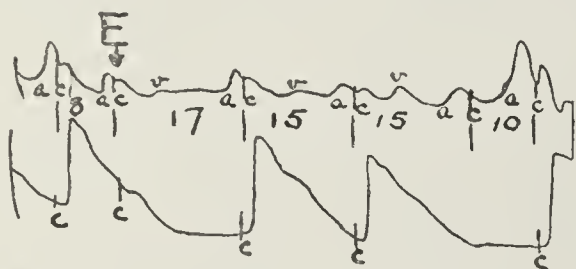


Fig. 2.—Auricular extrasystoles at E. Lettering as in Fig. 1.

to control this method of marking show that while it is sometimes absolutely accurate there are often discrepancies amounting to 1/5 sec.) If at the instant when a ventricular systole was expected no beat occurred in the carotid and no

5. It is not my desire to intimate that these methods in any way supplant the graphic methods. They are of use only in the absolutely typical cases; and whenever the results of the observations are not perfectly sharp and unambiguous they are of no value. In a large proportion of cases, however, the findings are typical, and the clinician can save himself a troublesome examination. If he does resort to instruments he at once encounters difficulties, the principal of which is the difficulty in adjusting the receiving tambour to the jugular so as to obtain the correct movement of the lever. Dr. McCaskey's method suffers from this disadvantage in exactly the same degree as any of the ordinary graphic methods, and yet lacks the advantage of giving a tracing which shows everything accurately. In any case, either to be published or in which the simple inspection method does not lead to a perfectly unambiguous observation, nothing less accurate than the graphic method yields trustworthy results. With my modification of the Erlanger blood-pressure apparatus a tracing may be taken even more easily than a visual observation made by the method of Dr. McCaskey.

first sound or only an extremely distant (auricular) one and this was accompanied by an extra wave in the jugular while the next beat fell in at the regular time, it was fair to assume that the ventricular had failed to follow one auricular contraction. If, on the other hand, the first sound occurred before it was due, one was justified in assuming that an extra systole had occurred. When several faint and distant sounds (not murmurs) are heard in diastole accompanied by waves in the jugular but unaccompanied by either a pulsation in the carotid or an apex impulse a high degree of heart-block is quite certainly present.

Extrasystoles taking their origin in the auricles can often, but by no means always, be differentiated from those arising in the ventricles in the following way:

Auricular extrasystoles, like the regular systoles, show a presystolic filling of the vein followed by a systolic collapse, then a second filling and, lastly, a postsystolic collapse (two fillings and two collapses) for each beat in the carotid; ventricular extrasystoles often show only one large flapping rise and fall about synchronous with the carotid pulse, the appearance being quite different from the usual jugular wave and quite characteristic. Graphic records illustrating these two forms of venous papule are shown in Figures 2 and 3. Another point, also not infallible, is that the time occupied by the regular systole, the auricular extrasystole, and the pause before the next regular beat is often less than two regular cardiac cycles. So that if in these cases one beats the time of the regular rhythm not only does the extrasystole come before the regular beat would have occurred, but the subsequent beat occurs before the second regular beat would have taken place had there been no extrasystole. The entire rhythm appears for the moment altered. When there is a ventricular extrasystole<sup>6</sup> (also with late auricular extrasystoles<sup>7</sup>) the duration of systole, extrasystole, and subsequent pause is exactly equal to two regular

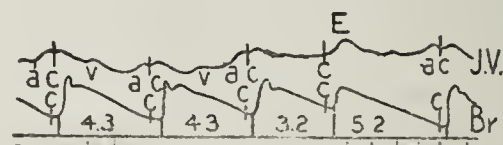


Fig. 3.—Ventricular extrasystole at E. Lettering as in Fig. 1.

cardiac cycles; and when one beats time to the regular rhythm it is observed that the extrasystole occurs before a regular beat would have come, while the next regular beat falls in at exactly the instant at which it would have fallen if no extrasystole had been present, and the rhythm is not otherwise disturbed.

This distinction between the different kinds of extrasystoles is of some practical clinical importance, as it has been found that the irregularities due to ventricular extrasystoles often disappear under digitalis,<sup>8</sup> while digitalis often converts a case with auricular extrasystoles into one of partial heart-block, and does distinct harm to the patient.<sup>9,10,11</sup> Some experiments made in collaboration with Dr. Eyster<sup>7</sup> indicate that conduction from auricle to ventricle is diminished with early extrasystoles, but not with those occurring late in diastole. It is only with the former that the above-mentioned marked disturbance of rhythm takes place, so that it is probable that digitalis may be given judiciously and safely in all cases of irregularity due to extrasystoles in which systole, extrasystole and subsequent pause occupy the time of two full cardiac cycles.

The disturbance of rhythm due to intermittent overaction of

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the vagus (Mackenzie's "youthful type") may sometimes be differentiated from that due to auricular extrasystoles by the fact that, though there is a pause bearing no relation to the rhythm of the heart, this pause is not preceded by a premature beat or sound.

We have also attempted to differentiate from inspection between the normal venous pulse and that of tricuspid insufficiency. It is often impossible to determine with the eye whether a filling of the vein occurs during systole of the ventricle or just before it, so an attempt was made to adopt a criterion which it has since been learned has been sometimes found useful by Dr. G. A. Gibson of Edinburgh. The normal jugular pulsation shows, as stated above, two fillings of the vein and two collapses for each beat in the carotid. The typical pulsation in tricuspid insufficiency consists of a single filling of the vein and a single collapse for each carotid cycle; so that it has become customary in the wards to speak of them as the "double" and "single" types of venous pulse. In most cases this criterion suffices for the diagnosis of tricuspid insufficiency (subsequently borne out by the physical findings and autopsy), but there are some notable exceptions to this rule.

1. In cases where secondary elevations appeared in the venous pulse during the systolic phase, tricuspid insufficiency being present. 2. In those normal cases where, owing to the small amount of collapse occurring during the systolic period, only one venous wave could be seen with each carotid cycle.

These ambiguities were always readily cleared up by careful measurement of the tracings obtained. The clinical observations were, moreover, corroborated by other members of the medical staff.<sup>12</sup>

Hence it would appear that, although inspection of the venous pulse may frequently yield valuable information as to the disturbance of cardiac function, it is subject to grave errors, not less serious than those incurred by omitting the use of apparatus in determining blood pressure or of the thermometer for temperature. Heart-block, partial or complete, is a condition of too somber significance to justify physicians in failing to control their observations from inspection by the use of more accurate methods—the venous pulse tracing.<sup>13</sup>

## VISUAL METHODS IN DIAGNOSIS OF HEART-BLOCK.

### II. A REPLY.

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In availing myself of the opportunity of making a rejoinder to Dr. Hirschfelder's criticism of my recent communication I wish first to say that I think his criticism is partly right and

partly wrong. The diagnosis of complete heart-block with the auricle beating four or five times as fast as the ventricle can undoubtedly, as he says, be made without instruments of any kind. In partial heart-block, however, which probably always precedes the complete form, the problem is entirely different. We may not have bradycardia in these cases, but only an irregularity caused by an occasional "block" of the auricular impulse. These cases, the recognition of which is so important, can scarcely be detected without the aid of suitable instruments. It might, of course, be possible in favorable cases to *feel* an omission of the radial pulse or apex beat and *see* that a conspicuous venous pulsation continued without interruption. This could only be due to a "block" of that particular auricular impulse, and would point to incipient heart-block.

With a trained and capable physiologic investigator like Dr. Hirschfelder such observations might be quite reliable, but the dangerous fallacy which underlies the routine clinical attempt to determine the time relations of cardiovascular events by inspection and palpation is forcibly illustrated by the history of the now exploded theory of the delay of the radial pulse in aortic regurgitation. Such men as Flint, Balfour and Broadbent taught the correctness of this theory, Balfour stating<sup>4</sup> that "this delay in aortic reflex is invariable." Graphic tracings made in many cases of aortic regurgitation by Mackenzie have shown that there is not the slightest delay beyond the usual physiologic period, and his observations were corroborated, or anticipated rather, without his knowledge by Francois-Franck and Keyt. It undoubtedly does not occur.

When the left ventricle contracts in cases of aortic regurgitation there is a continuous column of blood from the distended ventricle to the radial artery in a closed tube of normal size, and the column must move without delay and the radial pulse be produced, as we now know it to be, at once; and yet Balfour, an able acute clinician, said that the delay might be "so great that the radial pulse coincides with the ventricular systole immediately succeeding that which has produced it." What a comment this bit of history is on the correct interpretation of such events by the unaided senses! I do not wish to underestimate the value of the highly trained eye, ear and finger, and I think that one of the greatest benefits of the graphic methods will be to enable the clinician to educate those senses in a school of precision heretofore unattainable. He will learn by unimpeachable demonstration just what certain sensations mean, and will be able to interpret them as never before. So I would urge inspection and palpation in the study of cardiac disease with greater ardor than ever, checked and guided by the graphic methods.

What are the advantages offered by this "visual method over simply watching the pulsation of the jugular vein while feeling the pulse in the carotid with the finger"? The facts above cited concerning the retardation of the pulse in aortic regurgitation show how misleading the direct observation of these phenomena may be. It seems to me that a comparison of two parallel levers, especially designed for inspection, simplifies the matter very much. They present a broad surface instead of the narrow-pointed ends of the writing lever. They are much longer than the writing levers on Dr. Hirschfelder's modification of Erlanger's sphygmomanometer which he has been observing with the same end in view, and, therefore, have much greater amplitude of motion. That the observation and comparison of such levers can be more easily and more accurately made than observation of the venous and palpation of the carotid pulses seems to me clear; but whether these advantages are sufficient to justify the multiplication of instruments already burdensomely numerous may easily be questioned. If it could be regarded as a finality in the instrumental study of auriculo-ventricular relations it would be different; but, as clearly stated in my former communication, such is not the case. For instance, a lengthening of the a-c interval (i. e., the interval between the auricular systole and the carotid pulse) is important, even in the absence of any irregularity of the ventricle, as showing a probable impairment of the conductivity of the bundle of His. This could be recognized in exceptional cases if well marked by watching the motions of the levers from the venous pulse and the apex beat, when the

12. Preble: (Insufficiency of the Tricuspid Valve in the Course of Pernicious Anemia, *American Jour. of Med. Sci.*, 1906, cxxxii 393) reports the finding of tricuspid insufficiency in cases of marked anemia, as had also v. Leube. Neither of these writers supported their findings by tracings from the veins, nor mention having made any. Many years before this Potain (*La Clinique médicale de la Charité*, 1894) had shown by tracings that no real tricuspid insufficiency was present in this group of cases. This observation of Potain is also confirmed by the recent and very careful work of H. E. Hering (*Deutsch. med. Wochschr.*, 1906, i). In those cases of marked and of pernicious anemia which have come under my observation no tricuspid insufficiency has been present. In one case the venous pulse was of the "single" type, but tracing showed that the collapse occurred during systole of the ventricle. In face of this evidence the observations of Preble and Leube require confirmation.

13. As I have stated elsewhere (see footnote 1 and also Observations on Paroxysmal Tachycardia, *Bull., Johns Hopkins Hosp.*, 1906, xvii, 337) two kinds of partial heart-block are to be distinguished; the organic heart-block, due to lesion in the course of the His' atrio-ventricular bundle; and the failure of ventricle to follow all the impulses from the auricle, due to overaction of the vagus. The former type is always to be regarded as a forerunner of complete block (cf. Erlanger and Hirschfelder: *Further Studies on the Physiology of Heart-Block in Mammals*, *Amer. Jour. Physiol.*, 1906, xv, 153). The second type can be differentiated from the first only by means of atropin, or some other drug which paralyzes the vagus.



latter can be utilized, which is not rarely impossible. It would, however, be uncertain and unreliable, while with simultaneous tracings the precise interval can be measured with perfect accuracy. I use the Mackenzie polygraph in practically every case, and consider the graphic tracings so essential to accurate diagnosis that I would deeply regret if any one should on my recommendation forego these for a method which, while it has a value, is limited in its application and falls short of the requirements of scientific accuracy. It was only intended to serve as a means of prolonged observation of arterial and venous pulsation, and, especially when the apex beat can be utilized, of making a preliminary diagnosis of heart-block, which should, of course, be verified and studied in detail by graphic tracings.

The diagnosis of heart-block, even of the partial form, should not, as Dr. Hirschfelder remarks, be made without verification by simultaneous tracings of the venous and arterial pulse. It should be borne in mind, however, that partial heart-block can be produced by other lesions than degeneration of the conducting bundle of His—conditions from which complete recovery is entirely possible so that the "sombreness" of the diagnosis of partial heart-block depends on its pathology. The ventricle, because of nutritional or other changes, may have its irritability so depressed that it will not regularly respond to a normal auricular impulse transmitted through a perfectly normal set of conducting fibers; or, on the other hand, an impaired tonicity of the auricle may very probably initiate an impulse so weak as to be occasionally ineffective.

We clinicians are more than grateful for the criticisms and scientific methods of the physiologists, for they have made possible the tremendous strides which have been made within the last decade in cardiac pathology and therapeutics.

## A CASE OF DOUBLE PLEURISY WITH EFFUSION.

J. F. M'GARRAHAN, M.D.  
COHOES, N. Y.

Cases of double pleurisy with effusion are seemingly rare enough to warrant the following report:

*Patient.*—M. W., aged 11½, was first seen June 18, 1903.

*Family History.*—On the father's side this was negative. There had been several cases of pulmonary tuberculosis among the mother's sisters, one of whom was ailing at the time this child was seen. A sister of the patient had pleurisy with effusion four years before, which required early aspiration and the girl made a good recovery. One brother died at 4 years of diphtheria.

*Personal History.*—The girl had typhoid fever at the age of 8. Six months before the present attack she developed a rash resembling scarlet fever, which disappeared in 24 hours. The child was not very sick at the time. Ten days before I was called she came home from school with fever, headache, vomiting and nosebleed. A harsh dry cough quickly developed, which was associated with some pain through the chest and much distress. The fever continued and breathing became much embarrassed. The cough was distressing and bothered her greatly; she was unable to lie in any one position except for a short time, and had to be propped in a chair day and night. There was repeated epistaxis and much prostration.

*Examination.*—When first seen dyspnea was very marked, respiration was 60, temperature 102.6 F., and pulse 160. The child was cyanosed. Inspection revealed limited motion of the lower chest. There was dulness on percussion, merging into flatness, beginning at the angle of the scapula on the right side, and 1½ inches above the angle on the left side, and to about the fourth rib anteriorly on both sides. Auscultation showed harsh breathing, bronchial in character, over both sides, above the area of dulness, and over this area there was fairly distinct transmission of the bronchial respiratory sounds. The heart showed little displacement and no organic lesion. The urine was negative.

*Treatment.*—The left chest was aspirated June 19, giving 19 ounces of light colored fluid and on the day following aspiration of the right chest gave a little over a pint of fluid of the same character. Much relief followed the removal of the fluid, and the usual medical treatment—counter-irritation, diuretics, an occasional saline cathartic and iodine in several of its forms—was used. The thickened pleurae were rather slow in returning to normal, but under outdoor life, syrup of iodide of iron and cod liver oil, the child made a good recovery and was discharged as cured August 14. Since this time she seems healthy.

## MALIGNANT TUMOR OF THE TESTICLE.

J. B. CUTTER, M.D.  
Surgeon to the Santa Fe Coast Lines.  
ALBUQUERQUE, N. M.

The recent report<sup>1</sup> on this subject calls to mind a similar case coming under my own observation.

*Patient.*—J., a brakeman, applied to me, in May, 1906, for relief of what he had been told was hydrocele.

*Examination.*—The left testicle was found to be enlarged to the size of a lemon; it was fairly firm and not painful. Operation was advised and submitted to and the left testicle was removed and found to be carcinomatous. Recovery was uneventful and the man soon returned to work. A bad prognosis was given.

*Subsequent History.*—In November, 1906, the man returned for treatment and placed himself under the care of another physician, having meantime left the employ of the railroad. I was called to see the patient in consultation and found in the left hypochondrium a more or less movable mass. This had been gradually increasing in size and had been variously diagnosed, having been called among other things, a floating kidney. The man was emaciated and typically cachectic. A fatal prognosis was given in keeping with the original findings. The man insisted on an operation, which was performed; he died about ten days later. A growth involving the abdominal viscera of the left side was found, and no attempt at removal was made. The involvement was of course metastatic and although no microscopic examination was made it was undoubtedly carcinomatous, as was the testicle.

## TRIPLETS WITH ONE PLACENTA.

WALTER E. SCARBOROUGH, M.D.  
SHELBYVILLE, ILL.

*Parental History.*—The father and mother are natives of Illinois; the father is 38 years of age and the mother 32. The mother had previously given birth to seven children, two of whom were twins.

*History of Present Case.*—I was called at 3 a. m., February 1. On making an examination I found the right foot presenting. The amniotic sac had not yet ruptured, so I punctured it and with the next pain the right foot descended into the vagina. Delivery was easy. After tying the cord I made an examination and found another sac presenting. In the course of 45 minutes I ruptured it and found a breech. The child was delivered, the cord tied, and another amniotic sac appeared; this I ruptured and, after 30 minutes another breech presented. This delivery was more difficult than the others.

*Remarks.*—A peculiar feature of the case was the fact that there were three distinct and separate amniotic sacs and only one placenta, which was delivered after the last child was born.

After the third day the mother was able to nurse all three children. The three—two boys and a girl—weighed together 20½ pounds.

1. Rolfe (W. A.): A Rare Form of Malignant Tumor of the Testicle, THE JOURNAL A. M. A., Feb. 9, 1907.



## New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 1031.)

(A list of all accepted articles is published on one of the advertising pages of *The Journal* in the first issue of each month.)

### VERA-DIASTASE ESSENCE.

A liquid containing 0.130 Gm. (2 grains) of vera-diastrase in each 4 Cc. (1 fluidram) of a menstruum containing 14 per cent. of alcohol, 12.5 per cent. of glycerin, with small amounts of flavoring matters.

*Actions and Uses.*—See Vera-diastrase.

*Dosage.*—4 Cc. (1 fluidram).

Prepared by Frederick Stearns & Co., Detroit, Mich.

### VERA-DIASTASE TABLETS.

Tablets containing, each, 0.130 Gm. (2 grains) of vera-diastrase, which see.

Prepared by Frederick Stearns & Co., Detroit, Mich.

### CREOSOTE CARBONATE.

Creosote Carbonate is a mixture of carbonic acid esters, analogous to guaiacol carbonate, prepared from creosote.

It is prepared by passing a current of carbonyl chloride into a solution of creosote in sodium hydroxide, and purifying the oil product by washing with weak soda solution and with water.

It is a yellowish, thick, honey-like, perfectly clear and transparent liquid, containing 92 per cent. of creosote. It is odorless and has a bland oily taste. It is insoluble in water, but soluble in alcohol, ether, chloroform, benzene and in fixed oils.

The addition of a few drops of ferric chloride solution to the alcoholic solution should not cause any change in color. On boiling with potassium hydroxide solution the odor of creosote is evolved.

It is incompatible with alkalis.

*Actions and Uses.*—Creosote Carbonate has the same action as creosote, but is claimed to be non-toxic and devoid of irritant properties. It is recommended as a substitute for creosote for internal exhibition in tuberculosis, pneumonia, and as an intestinal antiseptic.

*Dosage.*—From 0.3 to 2.0 Gm. (5 to 30 grains) for children, to 1 to 4 Gm. (15 to 60 grains) for adults in milk, coffee, wine, cod-liver oil or emulsion. Externally it may be applied undiluted.

### CREOSOTAL.

A name applied to Creosote Carbonate, which see.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 501,235; U. S. trademark.

### CREOSOTAL-HEYDEN.

A name applied to Creosote Carbonate, which see.

Manufactured by Fabrik von Heyden, Radebeul, near Dresden, Germany (Schering & Glatz, New York). U. S. Patent No. 501,235. U. S. trademark.

### DIONIN.

A name applied to Ethyl-morphine Hydrochloride, which see.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). German patents Nos. 102,654, 107,225, and 108,075. U. S. trademark.

### DIACETYL-MORPHINE.

Diacetyl-morphine,  $C_{17}H_{17}(C_2H_3O_2)_2NO$  =  $C_{21}H_{23}O_5N$ , is a synthetic alkaloid obtained by the acetylation of morphine.

Diacetyl-morphine was first introduced under the name Heroin by the Farbenfabriken, vorm. Friedr. Bayer & Co. It may be obtained by heating morphine with acetylchloride, washing the product with water and dilute solution of sodium carbonate and crystallizing it from alcohol.

It is a white, odorless powder, having a bitter taste, an alkaline reaction and melting at 173° C. (343.4° F.). It is practically insoluble in water or ether, sparingly soluble in cold alcohol, but readily soluble in hot alcohol; it is soluble also in chloroform and in benzene. It forms salts with acids which are soluble in water. On prolonged warming with mineral acids it is saponified, splitting off acetic acid and reforming morphine.

A solution of 1 part diacetyl-morphine in 100,000 parts of water becomes distinctly turbid on addition of solution of iodine. Its color reactions are similar to those of morphine, with the following exceptions: It does not liberate iodine from iodic acid and does not at once produce a blue coloration with potassium ferricyanide and ferric chloride. No blue color is produced by the addition of ferric chloride to a neutral solution (1 in 100) made by the careful addition of dilute sulphuric acid. Its solutions reduce potassium permanganate.

*Action, Uses and Dosage.*—See Diacetyl-morphine Hydrochloride.

### ETHYL-MORPHINE HYDROCHLORIDE.

#### CODETHYLIN HYDROCHLORIDE.

Ethyl-morphine hydrochloride,  $C_{17}H_{17}NO(OH)(OC_2H_5)HCl + H_2O = (C_{19}H_{24}O_3ClN + H_2O)$ , is the hydrochloride of the ethyl ester of morphine.

The product was first introduced by Merck & Co. under the trade name Dionin. It may be obtained by the action of ethyl iodide on morphine in the presence of alkali, the basic product being purified by crystallization from hot alcohol, dissolving the crystals in hydrochloric acid and crystallizing.

It is a white, microscopically crystalline powder, odorless and only slightly bitter. It is soluble in about 7 parts of water and in 2 parts of alcohol, insoluble in ether and in chloroform. It melts completely with decomposition at 125° C. (257° F.).

It gives the usual reactions for alkaloids. It is distinguished from morphine salts by its insolubility in excess of alkali, and by not producing an immediate blue color, but gradually developing a blue-green coloration, when its solution is added to dilute ferric chloride solution containing a fragment of potassium ferricyanide.

It is incompatible with alkalis and their carbonates and alkaloidal reagents, as potassium-mercuric iodide, tannic acid, picric acid, etc.

*Actions and Uses.*—It is claimed that this compound acts like morphine without producing constipation, nausea or lassitude. It is the conclusion of some good observers that it possesses no advantage over codeine. Applied to the eye, it causes a local vaso-dilation, leading to acute conjunctival edema.

Ethyl-morphine Hydrochloride is recommended to relieve pain, especially in respiratory affections, as an antispasmodic in whooping-cough, for insomnia and externally in the treatment of corneal affections, conjunctivitis, iritis, etc.

*Dosage.*—0.015 to 0.06 Gm. (1/4 to 1 grain). Externally it is applied in 10 to 20 per cent. solutions.

(To be continued.)

**Avoidable Blindness.**—Hess states in the *Med. Klinik*, iii, 133, 1907, that he is confident that fully half of the 30,000 cases of blindness known in Germany were avoidable, not to mention the much larger number of cases of partial impairment of vision from avoidable causes. The avoidable accidents, such as from flying particles of matches, from stone throwing and the like form a long list, and he suggests that it might be interesting to compile statistics of the number of cases of loss of one or both eyes from quack practices. The strict vaccination regulations in Germany have reduced to less than 1 per thousand the cases of blindness from smallpox, but in Austria—where vaccination is not so rigorously enforced—from 20 to 30 per cent. of the inmates of the blind asylums owe their blindness to smallpox.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter.]

SATURDAY, MARCH 30, 1907.

## SCIENTIFIC WORK IN THE PHILIPPINES.

The fifth annual report of the director of the Bureau of Science of the Philippine Islands, Dr. P. C. Freer, indicates considerable advance in scientific research in that country during the year. The bureau has been enlarged by the incorporation of the Bureau of Mines and this has occasioned considerable crowding and inconvenience from the use of rooms for purposes for which they were not intended. Difficulty has also been experienced in keeping the service of skilled investigators in the various departments, especially for positions which pay from \$1,400 to \$1,600 a year. It would seem that the distance from home and the inconveniences of change of climate, etc., make a higher salary necessary for the beginning workers. Nevertheless the work offers opportunities for advancement, both scientific and financial, which should form a strong inducement to properly equipped men from the United States.

The library forms an important adjunct to scientific work and it is receiving constant additions which, on account of the lack of help at the command of the librarian, are compelled to remain without sufficient cataloguing. The various investigators have established two journal clubs for the discussion of the results of research and to assist in removing that scientific isolation which handicaps the investigator in the tropics. The establishment of the *Philippine Journal of Science* has been a successful means of calling the attention of scientific men in various parts of the world to the work of the bureau and of securing exchanges which are of great service in the work of the department. The director now suggests that this journal be divided into three sections, one devoted to medical subjects, one to general scientific papers and the third to systematic botany and botanic subjects.

Important work has been done in the division of biology in the preparation of a cholera vaccine which has been used with the apparent effect of protecting against cholera those who were inoculated. In Angat, where 1,078 individuals (about one-sixth of the inhabitants) were vaccinated, 122 cases of cholera appeared of which 121 were among the uninoculated and only one among the inoculated. It is the opinion of those who have been actively engaged in this work that the best method of limiting or eradicating cholera in any country is that of vaccination. In addition to the

various serums for human diseases, the rinderpest serum has been manufactured, and the occurrence of some cases of tuberculous among imported cattle in the islands will probably render it necessary for the laboratory to add tuberculin to its list of preparations. The work of Musgrave on amebic dysentery and of Herzog on beriberi has been important, and the Army Board for the Investigation of Tropical Diseases is pursuing work in the biologic laboratory from which practical results may be expected. Studies of mosquitoes have been made and the question of limiting this pest will be considered in the near future.

The botanic work promises to be of commercial importance in the study of the timber and other plant products of the Philippines. The use of locust fungus in an attempt to limit the spread of locusts was unsuccessful—a result which is in accord with the latest experience in South Africa. The chemical department, in addition to the study of oils, gums, resins and fibers suitable for paper-making, has undertaken the study of the medicinal plants of the islands and much material already has been gathered, but a discussion of the results would be premature. Mineral deposits have been investigated and the supply of Philippine coal promises to become sufficient for local use. Asbestos deposits are found in Ilocos Norte, but have not yet been investigated by the bureau.

## MILK AND TUBERCULOSIS.

The International Congress on Tuberculosis held in London in 1901 will be chiefly remembered by the startling announcement made by Prof. Koch that bovine and human tuberculosis are produced by different bacilli, and that bovine tuberculosis is transmissible to the human subject to only a very slight extent, if at all. This statement was a veritable "bolt from the blue." Up to that time the propagation of tuberculosis by the agency of infected milk, at any rate of milk drawn from tuberculous cows whose udders were affected, was held to have been proved beyond the shadow of a doubt. The revolutionary announcement of the celebrated German professor has done far more good than harm. It has stimulated research on the subject to a degree never before known, and although even now no hard and fast statement can be made, the results of the numerous investigations which have been undertaken in many countries have immensely increased our knowledge. Commissions have been appointed to investigate the matter in Germany and Great Britain, and searching and exhaustive investigations have been made in the United States and Canada. Independent researches have also been instituted and carried out in perhaps all the civilized countries of the world.

Merely to mention the results arrived at from this mass of evidence would be impossible in the scope of an editorial. It may be said, however, that German authorities generally lean more toward Koch's views than do



American and British investigators. On the whole, German scientific men hold that there is a distinct difference between the micro-organisms of human and bovine tuberculosis, though many notable Germans dissent from these opinions. For example, Behring thinks that the diseases are intercommunicable. Prof. Dungern<sup>1</sup> of the University of Freiburg is stated to have demonstrated that bovine tuberculosis is transmissible not only to man but to apes. American students of this subject as a general rule may be said to incline to the view that human and bovine tuberculosis are intercommunicable. Prof. Theobald Smith,<sup>2</sup> however, is of the opinion that the old notion that all tuberculosis originating in the intestinal tract is of bovine origin, must be abandoned. British investigators, as a rule, adhere more or less strongly to the idea that tuberculous milk is capable of directly infecting, and not infrequently does directly infect, the intestinal tract in young children. With comparatively few exceptions, British medical men believe in the transmissibility of bovine tuberculosis to the human subject by means of infected milk. Dr. Nathan Raw<sup>3</sup> contends that bovine tuberculosis affects young people, is traceable to infected milk and affects the tonsils, the alimentary tract, the glands, and, through the blood, the meninges, the bones, the joints and other parts, while human tuberculosis is air-borne and affects adults by way of the lungs as in pulmonary phthisis.

Recently the theory of the intercommunicability of human and bovine tuberculosis, if theory it still may be called, has received remarkable confirmation from two quarters. A *Bulletin* of the Bureau of Animal Industry of the United States Department of Agriculture was issued a short time ago. The researches referred to in this report were carried out by Drs. Schroeder and Cotton. The conclusions to which they came were most definite and very sweeping. They state that as a result of their experiments they are convinced that a tuberculous cow is more dangerous to the health of man than is the human consumptive.

The report of the Royal British Commission on Human and Bovine Tuberculosis, appointed in 1901 to investigate the infectivity of meat and milk of tuberculous cattle and cows to man, which has also been published recently, gives results from investigations far more exhaustive than those detailed in the American publication. The commission, which was carefully composed and included among others the late Sir Michael Foster, Prof. Sims Woodhead and two well-known veterinary experts, summed up its report as follows: "There can be no doubt that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis; and there also can be no doubt that in the majority at least of these cases the bacillus is introduced through cows'

milk. Cows' milk containing bovine tubercle bacilli is clearly a cause of tuberculosis." This statement is sufficiently definite, and while, of course, it will not be taken as the last word on the matter, it must carry a considerable amount of weight. The experiments undertaken by the commissioners seem to have been very thorough. Investigations were made in the bovine body by the introduction of bacillus of human tuberculosis, and another into the effects produced in the bovine body by the introduction under similar conditions of the bacillus of bovine tuberculosis. Animals other than bovine were also experimented on. Recording their conclusions in regard to experiments on anthropoid apes the commissioners stated: "It is clear that the bacillus of bovine tuberculosis will, either by feeding or by inoculation, produce in even a small dose generalized progressive tuberculosis in the anthropoid ape, an animal so nearly related to man."

Further investigations into the subject, especially those by German students, will be awaited with great interest.

Meanwhile it must be conceded that the preponderance of evidence is in favor of the conclusion that bovine tuberculosis is transmissible to man by milk, and hence the hygienic precautions in vogue or proposed find full justification. It must not be overlooked, however, that other avenues of infection are open, such as the contamination of food and drink by human tubercle bacilli, the swallowing of bacilli from dust, or articles contaminated by sputum, with which children may easily soil their fingers, and lastly inhalation of bacilli laden dust or spray. While investigation may be making the inhalation theory less prominent it should not be hastily concluded that no danger is to be apprehended from such inhalation.

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#### THE BORDERLAND IN MEDICAL LIBRARIES.

The medical library movement is assuming promising proportions in this country. In almost every city of fifty thousand inhabitants and in a number of even less population some such project is being vigorously pushed. Certain side issues in the matter seem worthy of having attention directed to them. Not only are books relating to medicine sure to be of interest to the next generation but all books relating to medical affairs of any kind especially to physicians themselves, and all books written by physicians, though on non-medical topics, can scarcely fail to be of interest. As a matter of fact, while old editions of text-books have only exceptionally any interest after a revised edition has been issued, these other books maintain their value from the historical standpoint. In this respect, it is well to remember the change that has come over the attitude of librarians and book collectors with regard to advertisements of all kinds. Many of the old magazines, stored on shelves of general libraries, would be of increased value if they

1. *Lancet*, Nov. 4, 1906, p. 1370.

2. *Boston Med. and Surg. Jour.*, Jan. 18, 1906.

3. *Lancet*, Aug. 5, 1905, p. 365.



contained the advertisements which originally appeared in them, but which were removed by the binders.

For library purposes advertisements are now carefully bound in with the reading matter proper, and this method will probably obtain in the future in medical libraries. Many pamphlets and other publications relating only indirectly to medicine, but showing in any way the temper of the times toward physicians, or toward medical questions, will be of distinct significance. Books written by physicians, no matter what the subject, should find a place in medical libraries since they will provide an excellent picture of the occupations of physicians of this and preceding generations, during the moments which they stole from their life work for their pleasure. A good library collection of works written by physicians, or men closely associated with the medical profession, would contain a large number of works representing valuable contributions to literature. For instance, Dante's works would have to be among them, for he was a member of the guild of the apothecaries in Florence, and Copernicus' works must find a place, for he was a practicing physician as well as an astronomer, and Locke's works, for he was a physician first and a philosopher afterward. These are only some of the greater names, but it would not be hard to mention others. In our own generation some excellent literary work has been done by physicians and in America such names as those of Oliver Wendell Holmes, Robert Joyee, and S. Weir Mitchell tell us of men whose literary achievements reflect the highest honor on the profession.

In the hurry of practical life this feature of medical libraries is in danger of being neglected, and it will be a distinct loss to future generations if it is; for, as a rule, it is not hard to make collections of such books, and once they have been shelved, they remain for all time. A list of books by physicians relating to non-medical subjects would be of great interest and if some one could but find the time to prepare such a document, it would prove an excellent guide and doubtless would direct attention to what can be accomplished in this matter. This department need not at all interfere with the collection of the more practical and more urgently important works on medicine, yet it will add greatly to the interest of libraries and their attractiveness for medical men, especially when the library is housed in a building by itself that has something of the nature of a club-house.

#### CITY EXECUTIVES AND FRAUDULENT CONCERNS.

A jewelry firm selling goods by auction in a neighboring city was recently put out of business by the city executive because of charges preferred against it by the Jewelers' Association. The basis of the accusations against the company was that of misrepresenting the wares sold. The action taken was a good one and reflects credit both on the city administration and the business association bringing up the matter. A medical journal<sup>1</sup> published in the same city asks, pertinently, what would happen if the physicians there should offer a protest against the advertising medical concerns of that city. That these are more guilty of fraud and deception than any jewelry auctioneer could be goes without saying; that they, instead of merely depleting the purse, play fast and loose with the health and lives of their dupes is also evident. Yet not many city executives could be found who would, on the protest of the reputable physicians of that city, put the ubiquitous "medical institutes" and advertising quacks out of business. Whether the moral support given such concerns by the daily press of the city has anything to do with the lack of enthusiasm usually exhibited by city officials under such conditions is a question that the unbiased observer will be forced to ask.

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#### THE DANGERS OF PATHOLOGIC WORK.

Pathologic and bacteriologic laboratory research have their perils, as is every now and then demonstrated by the death of some prominent worker in this field. The latest victim to the cause of science is Dr. Allan Macfadyen.<sup>2</sup> This eminent English bacteriologist, so well known by his work on endotoxins, etc., succumbed to an accidental laboratory infection. Medical history has a long roll of such martyrs, and it is probable that enlistment in this department of scientific service involves not much less risk to life or limb than does the taking up of the profession of the soldier in the present stage of the world's history. Of course, every physician runs certain risks and may be called a soldier of humanity, risking his own health and life for the defense of others. But laboratory workers, and especially those investigating the causes of virulent infections, take special risks and can not always avoid their consequences. Formerly cadaveric blood poisoning was almost the only recognized peril of the pathologist, others being incurred unknowingly if at all. It requires perhaps greater courage to investigate disease when we know that such study involves the handling and cultivation of micro-organisms of the most virulent type. It may even require the direct incurrence of infection in the study of pathologic conditions as yet not fully understood, but none the less formidable. It seems to be in the order of things that every little while some especially valuable life, like that of Dr. Macfadyen, must be sacrificed in this way.

#### SANITATION VS. INFECTION: ITS LIMITATIONS.

The recent epidemic occurrence of certain infectious diseases in some parts of the country has caused naturally much newspaper comment and some criticism, even by physicians, of the ill success of sanitary boards and officials in preventing such outbreaks. Of course we can hardly expect anything else. The public does not take a judicial view of such matters or recognize the unavoidable conditions that sanitarians have to meet. Modern science has given us the mastery over certain diseases. Smallpox and typhoid fever should be non-existent; that

1. Wis. Med. Jour., January, 1907.

2. THE JOURNAL A. M. A., March 23, 1907, p. 1053.



they do occur is the fault of the general obstinacy of a large section of the human race. There are still some diseases that are not under control, such, for example as scarlet fever with its wide range of symptoms from an almost unrecognizable ailment to a rapidly fatal disease, its capricious contagion, the varying immunity to its infection, and our ignorance as to its germ. One can appreciate the difficulties that must necessarily be met in its ideal prophylaxis and suppression. There is probably no epidemic of scarlet fever in which there are not many walking cases innocently spreading the disease, and some of them perhaps incapable of positive diagnosis by any means at our command. The immunity of many adults is possibly due to their having had the disease in this unrecognized form in early life. Hence the practical impossibility of eradicating the disorder with our present ignorance of its causal organism and its life history. There are other disorders that are likewise protean in their manifestation and more or less impossible in their prophylaxis, but scarlatina is perhaps as striking an illustration as any other disorder of some of our present limitations. In the meanwhile we can only restrict the spread of the disease by isolation, disinfection, etc., wherever possible, recognizing the fact, however, that Eddyism, ignorance and recklessness on the part of the public will counteract much of our best effort. It is to be hoped that the elusive germs of this and many other disorders will before long reveal themselves to the workers in our pathologic institutes, or at least that enough may be learned to leave only matters of academic interest still unknown, as in the case of smallpox and yellow fever. The statement of such facts as these may seem a little platitudinous to medical men, but there is sometimes, even in our profession, a tendency to ignore them.

#### CEREBROSPINAL MENINGITIS.

According to reports received from Great Britain, cerebrospinal meningitis has broken out in Belfast, has assumed an epidemic form in Glasgow, and has shown itself in Edinburgh and other Scotch cities, some cases having occurred as far north as Inverness. Great Britain has been singularly free in the past from large epidemics of this disease; epidemics have occurred on a small scale, and in recent years sporadic cases have appeared in widely separated parts of the country. The disease has manifested itself in Belfast, in Ireland on a fairly wide scale, and shows few signs of abatement. The death rate has been about 50 per cent. A serum, the joint discovery of Professor Kolle of Berne University and of Professor Wassermann of Berlin, which is claimed to have proved efficacious in Europe, is being used in Belfast, but no reliable data as to results have been yet forthcoming. In Glasgow cerebrospinal meningitis is said to have been simmering for a considerable period, and a year ago the authorities resolved to place the disease on the notifiable list. During the past few weeks the cases of this disease have increased both in number and virulence, and it is stated that in 50 per cent. of the cases the patients were under 5 years of age. One or two cases have occurred in London and a few cases are re-

ported from Dublin. Some useful knowledge concerning the disease was gained by physicians at the time of the New York epidemic in the spring of 1905, and it may be assumed that American physicians know more in regard to the disease and its treatment than do their British confrères. As a matter of fact, however, our knowledge of cerebrospinal meningitis and especially of its effective treatment is elementary. There is no specific for this disease nor do remedies of any description appear to exert much salutary influence on its course. In some cases lumbar puncture is said to have a beneficial action, while in others the operation has been of no avail. Injection of diphtheria antitoxin was tried in several instances in New York in 1905, but the results were not such as to raise any enthusiasm. Osler<sup>1</sup> advises the application of cold to head and spine and also suggests the application of wet cups to the neck in order to relieve the intense pain in the head. Reports from Belfast in regard to the effect of the serum now being used on patients suffering from cerebrospinal meningitis will be awaited with interest.

#### NOSTRUM ADVERTISEMENTS ON DRUGGISTS' WRAPPING PAPER.

What a delightful situation for the physician who has written a prescription to have the druggist hand out the medicine called for wrapped in a circular extolling the virtues of a nostrum for the relief of the condition for which the patient consulted the physician, and declaring that physicians often fail to understand this condition, but that the company's Royal Balm is never known to fail. It is a wonder that a protest against this measure is not more often raised. As has been noted in our news columns, the Cass County (Ind.) Medical Society at a recent meeting felt strongly enough on this subject to pass resolutions asking druggists to cease this objectionable practice. To back up the request the society offered to furnish plain wrapping paper if the druggists wished them to do so. The matter is worth the attention of other societies.

#### AIDING THE TUBERCULOUS.

The fight against tuberculosis becomes more strenuous each year and not a month passes but some new organization is formed for the purpose of aiding the consumptive in his fight against the disease. A sixteen-page pamphlet, entitled *Relief*, issued by the St. Louis Society for the Relief of Consumptives, is one of the latest agents in this field. It contains many hints of value to the sufferer and gives much information regarding the conditions under which the consumptive poor live. The object of the society is not to aid in the prevention of tuberculosis—there are other societies doing that—but “to look after the interests of the consumptives of St. Louis, not otherwise provided for.”

1. Brit. Med. Jour., Feb. 16, 1907.



## Medical News

### COLORADO.

**Must Remove House Tents.**—The Fire and Police Board of Denver, on March 11, issued an order that all house tents in the city limits must be removed. It is said that there are thousands of house tents in Denver, a large portion of which are occupied by consumptives.

**Do Not Desire Publicity.**—At a recent meeting of the Boulder County Medical Society, the secretary was instructed to request the newspapers in the county to refrain from printing the names of any members of the society in connection with any cases to which they had been called professionally.

**Medical School Removal Bill Wins.**—On March 7 the House of Representatives adopted, by a vote of 51 to 10, the bill presented by Mr. Healy of Boulder, to allow the last two years of the medical course at the Colorado State University to be given at Denver. The bill provided that no additional expense should be saddled on the state by the change.

### ILLINOIS.

**Schools Closed on Account of Smallpox.**—It is stated that smallpox, which is reported prevalent among the suburban towns along the Rock Island Railroad, has caused the closure of the Calumet high school, whose 200 pupils have been recently exposed to infection.

**Internes in Eye Hospital.**—The Illinois Civil Service Commission is to hold examinations for surgeons, pathologists and internes in the Illinois Charitable Eye and Ear Infirmary April 16. Applications should be addressed to the commission at Springfield before April 13.

**Joint Society Meeting.**—At a joint meeting of the Vermilion, Piatt and Champaign County medical societies, held at Champaign recently, 53 members of the three societies were present and the visiting physicians were entertained at supper at the Hotel Beardsley. At the evening session Dr. Charles E. Wilkinson, Danville, vice-president of the Vermilion County Medical Society, presided.

**Reorganization of Hospital Staff.**—The directors of the Brokaw Hospital, Bloomington, have adopted a resolution declaring that as a considerable number of the members of the staff have lost interest in the work and aims of the hospital, the medical staff is dissolved, with a view to future organization of a staff with smaller membership and on such lines as will inspire greater interest on the part of its members.

**Personal.**—Dr. Ernest B. Mammen and daughter, Bloomington, expect to sail early in April for Europe, via the Mediterranean. —Dr. David T. Douglas, Colfax, expects to sail for Europe about April 1. —Dr. Archibald E. Franklin, Aurora, who has been ill for several weeks past with cirrhosis of the liver, has gone to Canada. —Dr. Lawrence R. Ryan, Galesburg, has returned from an extensive trip through the western and southwestern states.

**Legislative Matters.**—The house committee on license considered, on March 20, the itinerant medicine peddlers' bills known as senate No. 341 and house No. 474, to which reference was made in THE JOURNAL of March 16 and 23. A representative of the State Board of Health was present to oppose the passage of the bills. The hearing was deferred until April 3, when action will be taken by the committee. The legislative committee of the state medical society and the State Board of Health have sent communications to the physicians of the 34 counties represented by the members of the license committee, urging that the passage of these bills be opposed in the interest of the public health. The antivivisection bill (senate No. 267, see THE JOURNAL of March 16) and the osteopathic bills (house Nos. 318 and 319) abstracted in THE JOURNAL of March 9, have been favorably reported by the committees to which they were reported. The legislative committee of the state medical society has sent out a letter to the physicians of the state urging their opposition to these bills. The other osteopathic bills, mentioned in THE JOURNAL of February 9, viz., senate No. 21 and house No. 66, are apparently slumbering in their respective committees, but may resume activity at any day. The State Board of Health bill (house No. 568), amending the provisions of the sanitary act of 1877, is now on final passage in the House of Representatives. The State Board of Health has had introduced a bill making necessary amendments to the medical practice act. This bill, which has been approved by the committee on public relations of the

Chicago Medical Society, is in the committee on sanitary affairs of the House of Representatives.

### Chicago.

**Personal.**—Dr. Henry B. Favill has been elected director of the Chicago Relief and Aid Society. —Dr. Alfred C. Girard, brigadier-general, U. S. Army, retired, has been appointed librarian of the medical department of the John Crerar Library. He is now rearranging the library, especially the Senn collection, so that it may be made more easily accessible to the profession.

**Senn Lectures.**—Beginning April 3 Dr. Nicholas Senn will lecture on military surgery every Wednesday at 5 p. m. at Rush Medical College, taking up in succession ancient and medieval military surgery, the period of awakening of military surgery; the dawn of modern military surgery, and the evolution of the military surgeon. To these lectures military surgeons and the medical profession at large will be welcome.

**Ambulance Service.**—During the first four weeks of the ambulance service under the supervision of the health department 915 calls were responded to by the ambulance surgeons; 577 ill and injured were removed to hospitals; 296 individuals received first aid, and of this number 99 were taken to their homes; 67 patients with contagious diseases were removed to the county and other hospitals; 49 miscellaneous cases, including 5 insane and destitute persons, were cared for, and 915 individual reports were received and filed by the medical inspector.

**Deaths of the Week.**—The deaths for the week ended March 23 numbered 700, 16 more than for the previous week and 145 more than for the corresponding week of last year, the respective annual death rates being 17.29, 16.92 and 14.10 per 1,000. Of the increase in deaths, as compared with last week, 15 were due to nephritis; 27 to consumption; 3 to diphtheria; 15 to nervous diseases; 6 to scarlet fever, and 4 to typhoid fever. Pneumonia, as is usual at this time of the year, led the death causes with 137, followed by consumption, with 104; heart disease, with 57; nephritis, with 55; nervous diseases, with 34; violence (including suicide), with 33; cancer, with 27; scarlet fever and acute intestinal diseases, each with 24, and bronchitis, with 20. The first death from smallpox since September, 1905, occurred during the week; an unvaccinated child whose case was mistakenly diagnosed as measles.

### INDIANA.

**Reception for Faculty and Graduates.**—A reception was given to the faculty and graduates of the Indiana Medical College at Neuronhurst March 16. Dr. Mary Spink and other members of the faculty received the guests. Dr. Fletcher's residence was thrown open for a smoker and there was dancing in the gymnasium.

**February Disease and Death.**—Influenza was the most prevalent during the month, and then in order followed bronchitis, pneumonia and tonsillitis. Scarlet fever was seventh in area of prevalence and diphtheria tenth. Twelve schools were closed on account of scarlet fever, but during the month only six deaths occurred from that disease. One death occurred from smallpox; 241 cases of disease were reported in 25 counties, while in the corresponding month of 1906 152 cases in 15 counties were reported. Typhoid fever was present in 45 counties, 312 cases being reported, with 46 deaths. There were 131 cases of diphtheria, with 30 deaths, reported from 37 counties. Pneumonia caused 664 deaths, or 261 more than in the corresponding week of 1906. The record shows a greater prevalence of sickness and higher death rate for February than for the corresponding month of 1906.

**Personal.**—At the annual meeting of the Physicians' Defense Company, Fort Wayne, Dr. Miles F. Porter was re-elected president. —Dr. Zachary T. Funk is seriously ill at his home in Corydon. —Dr. John M. Nickles, Sellersburg, is in Florida on account of his health. —Dr. Jas H. Ford, Indianapolis, has been elected medical director of the Jefferson Life Insurance Company in that city. —Dr. J. W. Vizard, Pleasant Mills, representative in the legislature from Adams County, was presented by his fellow-members with a set of surgical instruments in appreciation of his services to them. —Dr. Walter N. Fowler, Bluffton, sails from New York with the Wellman expedition April 4. —Dr. Edward J. DuBois, assistant in the laboratory of the Indiana State Board of Health, will enter Harvard University for special work in bacteriology early in April. —Dr. Frederick P. Buche, Richmond, has been ap-



pointed a member of the medical staff of the Reed Memorial Hospital in that city.—Dr. John N. Hurty, Indianapolis, secretary of the State Board of Health, has had his salary increased from \$2,400 to \$3,000 a year.

#### MARYLAND.

##### Baltimore.

**Damage Suit Lost.**—The heirs of the late Dr. P. H. Reiche, who sued the City Railway for \$100,000 on account of the death of Dr. Reiche, had an adverse verdict rendered in the Circuit Court. It is said that they will carry the case to the Court of Appeals.

**Personal.**—Dr. Newdigate M. Owensby, chief of the medical staff of Bayview Asylum, in charge of the insane, sailed for Europe March 27.—The following are candidates for the city council: Drs. H. Edward F. Grempler, Tilghman B. Marden, Joseph E. Muse, John H. Groshans and George Heller.—Prof. Joseph P. Remington addressed the Baltimore Pharmaceutical Association March 20 on proprietary remedies and the relations of the medical and pharmaceutical professions. Many physicians were present.

#### MASSACHUSETTS.

**Epidemic Diseases.**—Out of 80 cases of scarlet fever reported to the Gardner board of health since January 1, 20 have been fatal, and out of 18 cases of diphtheria during the same period two children have died.

**Laboratory for Food Study.**—The executive committee of the Carnegie Institution, Washington, voted to establish a laboratory in Boston at a cost of \$100,000, to carry out exhaustive research of the nutritive value of food.

**To Clean Boston Harbor.**—The House of Representatives has taken the first step looking to the ultimate cleaning of Boston harbor by passing the order introduced by Representative Hoag directing the State Board of Health to report to the next General Court as to the best means to prevent the further pollution by discharge of sewage at Moon Island.

**Personal.**—Dr. John A. Leitch has been appointed town physician of Andover.—Dr. Victor A. Reed, Lawrence, is convalescent after a long illness.—Dr. Thomas M. Durell, Somerville, medical examiner of Middlesex, was seriously injured in a runaway accident recently. He was removed to the Somerville Hospital.—Dr. Nathaniel L. Berry has resigned as city chemist and bacteriologist of the Lynn board of health, to take effect April 1.

**Hospital Notes.**—The trustees of the Boston City Hospital have petitioned the city council that East Concord Street, between Harrison Avenue and Albany Street, be closed to all heavy traffic. This part of the street bounds the hospital grounds on one side.—The mayor of Boston has recommended an appropriation of \$83,000 as a new fund for the support and care of the feeble-minded, and the matter has been referred to the committee on appropriations of the board of aldermen.

**State Colony for Insane.**—The annual report of the State Colony for the Insane showed that at the beginning of the year there were 152 male and 101 female patients, a total of 253. During the year 184 were admitted, making the total number of patients in the colony at the close of the fiscal year, 403, 278 of whom were men and 125 women. During the year 445 patients were cared for, 312 men and 133 women. Of these 34 men and 8 women were discharged, 2 as recovered, 3 as capable of self-support, 1 as improved and 1 as not improved. Twelve men and 8 women were transferred to other institutions, and 6 men died from chronic diseases. Supt. Joseph B. Howland recommends that the senate be asked to make an appropriation for water supply, feed barn and stable; also that he be given permission to establish a burial ground on the colony land.

#### MICHIGAN.

**Medical Building for Detroit.**—At a meeting of the Wayne County Medical Society, March 16, plans were formulated for the erection and maintenance of a building to be used for meetings of the society, medical library and other uses of the profession. The matter was referred to a committee of seven, of whom Dr. Charles G. Jennings is chairman.

**Personal.**—Dr. Ernest L. Shurly, Detroit, who has been spending the winter in Europe, sails for home April 5.—Dr. Ernest F. Crummer has been elected president of Essexville.—Dr. Albert M. Barrett has been appointed professor of psychiatry and neurology at the University of Michigan and placed in charge of the neurology clinics at the University

Hospital.—Dr. Albert H. Steinbrecher, Detroit, has returned from Europe.

#### MISSOURI.

**In Memory of Dr. Hodgen.**—The St. Louis Medical Society of Missouri decided to commemorate suitably the memory of the late Dr. John T. Hogden, whose death occurred April 28, 1882. The following committee was appointed: Drs. Warren B. Outten, chairman; Charles D. Stevens, secretary; George Homan, Frank J. Lutz, H. C. Fairbrother (East St. Louis), John B. Shapleigh, H. C. Dalton, A. E. Ewing and B. M. Hypes. It is proposed to make the event an exceptional one in character, as Dr. Hodgen was a commanding figure in the profession and made a deep impression on his colleagues as a practitioner and on his students and classes as a teacher.

**Legislative Enactments.**—The committee on public health and legislation have reported to the St. Louis Medical Society of Missouri their success in having passed by the state legislature the "abortion bill," providing for the punishment of all parties concerned in producing criminal abortion, also a bill providing for the admission as evidence of the antemortem statement of women following an abortion for the prosecution of the abortionist. A bill was also passed amending the penal clause of the medical practice act, which will give the State Board of Health power to revoke the licenses of chariatans, who, owing to certain flaws in the wording of the act, had been immune from punishment. A pure food bill was also passed which is identical with the national Food and Drugs Act. A bill has been passed empowering the health commissioner to regulate "private hospitals," "baby farms," etc. In fact, owing to the activity of the committee, all bills asked for were passed, with one exception.

#### NEW YORK.

**Venerable Medical Society.**—The Medical Society of the County of Westchester has celebrated its one hundred and tenth anniversary by a dinner at the Hotel Astor. The society was organized in 1797 and is said to be the oldest organization of its kind in the United States. Dr. H. Beattie Brown of Yonkers presided and 123 Westchester physicians were present.

**Roosevelt Hospital Asks Hearing.**—The Huth hospital bill has been recommitted to the cities committees for a hearing through the influence of Roosevelt Hospital. This bill, advocated by Coroner Harburg, was intended to eliminate the alleged practice of some hospitals in New York City of transferring patients about to die to public hospitals in order to keep down their own death rate.

##### New York City.

**Smallpox in Steerage.**—A case of smallpox was discovered in the steerage of the Hamburg-American liner *Pennsylvania*, which prevented her leaving quarantine or landing passengers. There were more than 2,000 steerage passengers on the vessel, all of whom must be vaccinated.

**Legacies to Hospitals.**—By the will of the late Francis P. Furnald the trustees of the Presbyterian Hospital will receive on the death of the testator's wife \$100,000, which is to be spent in maintaining beds for wealthy applicants.—The Bethany Day Nursery will also receive \$100,000 in memory of Mrs. Furnald.

**Personal.**—Dr. and Mrs. Frederick Gould and Dr. and Mrs. Joseph Miller sailed for Rotterdam on March 20 on the *Nieuw Amsterdam*.—Dr. Henry W. Frink, a member of the second surgical division of Bellevue Hospital, has been operated on for septicemia and is still in a critical condition.—Dr. Bernard Lazarus, while making a professional call, was robbed of \$107 and his watch, worth \$150.—On March 8 Dr. William B. Cook was called in a similar way and lost \$500 and a watch worth \$125.

**Federation of Charities.**—The directors of the Jewish Institutions in the city came together March 21 to discuss the Federation of Contributors to Jewish Communal Institutions, which was organized a few months ago. The idea of the federation is that all moneys donated to charities be given in charge of the federation for distribution as it should see fit. Since the federation has been organized \$117,000 has been subscribed, which was \$66,000 more than was given by the same subscribers before the existence of the organization. Some opposed the federation on the ground that a contributor should be allowed to designate the disposition of his money.

**Health Board Takes Decided Stand on Milk Question.**—The board of health issued a statement to the effect that it had for many years recommended the boiling or pasteurization of



all milk not certified that was used in the feeding of infants. The department has done everything in its power to extend the usefulness of the Strauss milk depots and had provided in its sanitary code for the sale of pasteurized milk. Dr. Darlington also called the attention of the board at its last meeting to the fact that unless his corps of inspectors was increased so as to enable him to make inspection of general herds equivalent to certification, he should be compelled to take a stand compelling the pasteurization of all milk entering the city and not certified. The department passed a resolution defining the line between true and commercial pasteurization, which demands that all milk be labeled to show whether true pasteurization has or has not been employed. The resolution calling for reports regarding the health of employes and their families was also passed.

**Health Resolutions.**—The following resolutions have been adopted by the Section on Public Health of the New York Academy of Medicine:

*Resolved*, That the Section on Public Health recommends that the New York Academy of Medicine urge on the Department of Health of New York City the following requirement, namely, that the inspectors of the Department of Health observe the same precautions as to clothing and personal disinfection, when their duties bring them into contact with communicable diseases, as are required by the physicians in attendance at the Willard Parker Hospital.

*Resolved*, (1) That the Section on Public Health of the New York Academy of Medicine does not believe in the necessity of the compulsory pasteurization of all of the milk supply of New York City, but recommends for the present to all those whose milk can not be proved to be thoroughly inspected and wholesome, and mainly the milk destined for the feeding of infants unless it is "certified," to boil their milk when delivered in the morning for three minutes.

*Resolved*, (2) That the health of the City of New York demands a persistence in the policy of supervision of farms, dairies, and creameries, supervision of all the milk during transit and on delivery in the city, and supervision at the points of distribution in the city to the consumer, whether the milk that is distributed has been pasteurized or not.

*Resolved*, (3) That local and state health authorities and the Bureau of Animal Industry of the United States Department of Agriculture should cooperate with the milk producers to prevent the occurrence of communicable disease in cattle and their caretakers.

*Resolved*, (4) That the Section on Public Health recommends that the New York Academy of Medicine adopt the above resolutions, and that a copy be sent to the members of the Committee on Public Health of the Board of Aldermen, to the Committee of the New York State Legislature having under consideration the Reece bill, and to the medical and the lay press.

#### NORTH CAROLINA.

**Class Returns to College.**—The sophomore class of Leonard School of Medicine, Raleigh, which was suspended because of its opposition to the disciplining of one of its members, has returned to college, accepting unconditionally the terms of the faculty.

**Personal.**—Dr. Richard H. Lewis, Raleigh, secretary of the State Board of Health, has recently been re-elected secretary of the State Audubon Society.—Dr. George W. Long, Graham, formerly president of the state medical society, will deliver an address to the graduates in medicine at the State University next month.—Dr. Alpheus E. Disosway, Plymouth, has been appointed surgeon of the North Carolina Naval Reserve, with the rank of lieutenant.

#### OHIO.

**Communicable Diseases.**—The public schools of Wakeman have been closed on account of scarlet fever.—There is much scarlet fever in Mt. Vernon.—The State Reformatory has been placed under quarantine for two weeks on account of smallpox.—At Canton two cases of smallpox have been discovered.—Spinal meningitis is reported in and near Castalia, where 10 cases have been reported up to March 1, with seven deaths.—Measles is reported to be epidemic around Piqua and at Bowlsville and Springfield, where about 75 cases are reported.

**Merger of Medical Schools.**—The consolidation of the Ohio Medical University and the Starling Medical College, Columbus, has been consummated and a charter has been issued to the combined institutions under the name of The Starling-Ohio Medical College. The board of trustees of the combined institutions as follows: President, Drs. W. O. Thompson of the Ohio State University; Charles S. Hamilton, William J. Means, Charles F. Clark, Andrew J. Timberman, Thomas C. Hoover, John E. Brown, Frank Winders; Messrs William R. Lazenby, Edgar B. Kinkead; Fred J. Heer and H. J. Booth. Dr. Thompson has been elected president and Dr. William J. Means, treasurer.

**Personal.**—Dr. Robert C. Longfellow, Toledo, has completed and moved into his new laboratory, the Toledo Clinical Lab-

oratory.—Dr. and Mrs. William B. Van Note, Lima, are taking a trip to Cuba.—Dr. W. A. Welch, Canton, has been appointed a member of the medical staff of Newburgh Insane Hospital.—Dr. Harry W. Blair has been made health officer of Mount Vernon.—Dr. William F. Emery, Ashland, has been elected censor of the Ashland County Medical Society to fill a vacant term.—Dr. Vogt G. Wolfe, Urbana, was operated on at Grant Hospital, Columbus, March 15, for appendicitis.—Dr. Edwin J. Emerick, Columbus, on March 19, was elected superintendent of the Columbus State Hospital for Feeble-Minded Youth, vice Dr. Estelle H. Rovick, resigned.—Dr. S. M. Sherman has been appointed a member of the State Board of Health for five years.—Dr. Charles H. Clark, Washington, D. C., was elected superintendent of the Newburgh Insane Asylum, March 20, vice Dr. Adams B. Howard, resigned.—Dr. Arthur G. Hyde, Rows, has been appointed assistant physician at the Cleveland State Hospital.—Dr. and Mrs. John E. Myers, Springfield, are taking a trip to California.—Dr. I. H. Hague, Shreve, is reported to be critically ill with cerebral hemorrhage.—Dr. George D. Upson, Cleveland, is recovering from an operation for appendicitis at the Charity Hospital.—Dr. Theron S. Wilson, Findlay, has been elected censor of the Hancock County Medical Society.

#### PENNSYLVANIA.

**Typhoid Epidemic.**—Typhoid fever is epidemic in the village of Trainer, near Chester. Two persons, an adult and a child, are dead, and several men, women and children are suffering with the disease.

**Examination for Internes.**—An examination for the appointment of two resident physicians for the Easton Hospital, Easton, Pa., will be held at the hospital on Saturday, April 6, 1907, at 11 a. m.

**Inspection of Hospital.**—State Senators Thompson, Gerberich and Wilbert visited the Pottstown Hospital March 16, to inspect the institution and to investigate the claims made for \$15,000 state appropriation for maintenance and \$5,000 toward a new surgical ward. They were satisfied with the business-like appearance of things, but said that there were too many free patients and not enough cash subscriptions to maintain the hospital.

**Bill to Prohibit Establishment of More Hospitals in Philadelphia.**—Representative Stradling has introduced a bill in the legislature to prevent the establishment of any more hospitals in built-up sections of Philadelphia. Mr. Stradling explained that it was intended to revive a statute repealed in 1895 through the efforts of Mayor Ashbridge, when it was desired to move the Municipal Hospital to its present location. That purpose having been accomplished, he believed that it is in the interests of the city to replace the restriction.

#### Philadelphia.

**Society Elects Officers.**—At its recent meeting the Philadelphia Neurological Society elected Dr. Alfred Gordon, president, and Dr. T. M. Weisenburg, secretary, for 1907.

**Assistant Bacteriologist Appointed.**—Director Coplin has appointed Dr. Evelyn Witner, Germantown, to be second assistant bacteriologist in the bureau of health. The vacancy was caused by the recent resignation of Dr. Mary E. Pennington, who will engage in private bacteriologic work.

**Children's Ward Dedicated.**—The dedication of the new children's ward of the Methodist Episcopal Hospital took place March 20. It was recently built at a cost of \$7,700 and has room for 40 beds. The ward is not yet occupied and is the first separate accommodations for children the hospital has had.

**Twenty-fifth Annual Banquet of Medical Class.**—Sixty physicians, members of the medical class of 1882 of the University of Pennsylvania, held their twenty-fifth annual banquet March 19. Dr. Horace Jayne presided. Dr. James Tyson was the guest of honor. Dr. Tyson is one of the three surviving members of the faculty at the time of the 1882 graduating exercises. Historical sketches were read by Drs. Judson Daland and William Johnson Taylor.

**Bequests.**—According to the will of the late Frederick Bauer, \$100 is left to the German Hospital.—The will of Mary A. Parker devises \$1,000 to the Episcopal Hospital.—According to the will of Samuel Elkin, the Jewish Hospital receives \$5,000, the Jefferson Hospital, operating department, \$3,000, the Episcopal Hospital \$5,000, Presbyterian Hospital \$5,000, St. Agnes' Hospital \$5,000, and the Home for Crippled Jewish Children \$10,000.



**Deaths.**—With 688 deaths reported to the bureau of health in the week ended March 23, the number for any other week this winter is largely exceeded. These figures show that there were 97 more deaths than in the corresponding week of last year and 33 more than the number reported in the previous week. There were 111 deaths alone from pneumonia, which with other diseases of the lungs caused the increase in the death rate; 136 new cases of typhoid are reported, a decrease of 167 as compared with those returned last week.

**Symposium on Standard Remedies vs. Nostrums.**—A symposium on standard remedies as against nostrums will occupy the regular stated meeting of the Philadelphia Branch of the American Pharmaceutical Association, to be held at the College of Physicians April 2, 1907, at 8 p. m. Dr. M. S. Mussell will read a paper on "Simplicity in Medication and the Evident Duty of the Pharmacist." I. V. S. Stanislaus, Ph.G., will speak on "The Need for Discouraging the Use of 'Patent' as Well as Proprietary Medicines." Dr. N. Clayton Thrush will speak on "The Value of U. S. Pharmacopeial and N. F. Preparations as Compared with Proprietarys," and Joseph P. Remington, Ph.D., on "The Exhibition of U. S. Pharmacopeial and N. F. Preparations at the Coming Session of the American Medical Association."

**The New Frankford Hospital.**—The return of a committee which visited Harrisburg during the past week has strengthened the hope of the people of the suburb of Frankford regarding the appropriation of \$140,000 desired for the Frankford Hospital. Of this \$100,000 is to complete the new building now in course of erection and \$40,000 for two years' maintenance. The report of the hospital, recently issued, shows that during the past year 14,146 cases were treated, against 13,914 for the previous 15 months. In order to provide for this increased demand the capacity of the building was taxed to its utmost. In the accident ward 1,947 cases were treated, and 464 medical and surgical cases were admitted to the hospital. Of this number 381 patients were treated free of cost. In the dispensary 2,799 new patients were treated. Last year the trustees of the hospital purchased as a site for the new building the property at the southeast corner of Frankford Avenue and Wakeling Street, and the house is now being remodeled for an administration building, private wards, quarters for physicians and nurses and a temporary operating-room. In the rear of this building a modern two-story building is being erected for a dispensary ward and for general hospital purposes. It is hoped that it will be completed by the early part of July, when the hospital will celebrate its fourth anniversary.

#### TENNESSEE.

**Epidemic Diseases.**—The health officer of Pulaski County reports three cases of smallpox near Chattanooga.—Several new cases of smallpox are reported near Dresden.—Measles is reported to be epidemic in Memphis.

**Personal.**—Dr. Charles A. Abernathy, Pulaski, has been appointed a member of the State Board of Medical Examiners, vice Dr. Robert Pillow, Columbia.—In the suit of Dr. Andrew M. Trawick against the Nashville Railway and Light Company for personal injuries he has been given a judgment for \$7,000.—Dr. Bennett G. Henning, Memphis, recently suffered severe bruises in a collision between his carriage and a street car.—Dr. William B. St. John, Bristol, is visiting in Los Angeles.—A defective flue in the residence of Dr. John R. Fowlkes, Greenfield, caused the destruction of the house by fire.

**Medical Societies Meet.**—At the annual meeting of the Memphis-Shelby County Medical Society, March 19, Dr. Alexander Erskine, Memphis, was elected president; Dr. George R. Livermore, Memphis, vice-president; Dr. J. Wesley Price, Memphis, secretary (re-elected). The following delegates were elected to the State Medical Association: Drs. Louis Leroy and Max Goltman, Memphis, and Elgin K. Leake, Collierville; alternates, Drs. Newton F. Raines and John L. Jelks, Memphis, and William H. Baldwin, New South Memphis.—The Obion County Medical Society at its annual meeting elected the following officers: President, Dr. David M. Pearce, Union City; vice-president, Dr. Philip N. Matlock, Masonhall; secretary, Dr. Marvin A. Blanton, Union City; treasurer, Dr. James M. Rippey, Union City; censor, Dr. Virgil J. Jernigan, Obion; delegate to state medical association, Dr. Marvin A. Blanton, Union City, and alternate, Dr. Virgil J. Jernigan, Obion.—Roane County Medical Society at its annual meeting, held in Harriman, March 15, elected the following officers: President, Dr. Joseph J. Waller, Oliver Springs; vice-president, Dr. John Roberts, Kingston; secretary, Dr. George C. G.

Givan, Harriman (re-elected); treasurer, Dr. Charles W. Greene, Harriman (re-elected); delegate to the state medical association, Dr. George C. G. Givan, Harriman; alternate, Dr. John Morgan Clack, Rockwood.

#### TEXAS.

**Yellow Fever on Steamer.**—A case of yellow fever was discovered on the British steamer *Basil*, which arrived in port March 16, nine days out from Para, Brazil. The patient was conveyed to St. Mary's Infirmary, where he died. The steamer was thoroughly fumigated and placed under guard in quarantine the required six days, to determine whether there were any other cases.

**Personal.**—Dr. L. O. Dudgeon, formerly of Galveston, physician at the San Pedro mine, Mexico, for the last two years, was thrown from a street car in a railway accident and sustained a compound comminuted fracture of the pelvis and severe scalp wounds.—Dr. John S. Berry, Waxahachie, has been appointed health officer of Ellis, vice Dr. Charles W. Simpson, resigned.—Dr. Isaac F. Johnson, Gatesville, has been appointed physician at the State Reformatory.—Dr. J. W. McLaughlin, Jr., Austin, has been appointed attending physician at the State Institute for the Blind in that city, vice Dr. S. E. Hudson.—Drs. John B. Burford, Rosebud, and Judson M. Andrews, Wharton, are making a tour of inspection of the fruit ports in Central America.

**Epidemic Diseases.**—Scarlet fever is reported to be epidemic at Georgetown and Justin.—Diphtheria is said to be epidemic at Justin.—Influenza is said to be epidemic at Calvert, San Angelo, Waco, Fort Worth, and in fact all over eastern Texas.—Measles is reported to be epidemic in Waco and Dodge, where the public school has been indefinitely suspended.—Measles is reported to be epidemic at Justin, Coupland, Denton and Temple.—On account of the prevalence of smallpox in Navosota the pupils of the public school were vaccinated and the school closed for thorough fumigation.—More than 3,000 vaccinations have been performed in Houston up to March 1.—Scarlet fever seems to be most prevalent in the districts between Austin, Dallas and Fort Worth. Many of the cases are of a mild type.—Houston reports 30 cases at the pest house March 11.—From Raines County 102 cases of smallpox were reported.

#### GENERAL.

**Ray Medical Society.**—A notice has been received that the Ray Medical Society, which is composed entirely of practitioners of the name of "Ray," whose last meeting was held in St. Louis in 1904, will hold a reunion this year at either Newark or Los Angeles. The date and place of meeting are not yet definitely determined.

**Urge Check of Leprosy.**—A strong appeal has been made to the Mexican authorities for measures to prevent the spread of leprosy at Culiacan. Many lepers are said to be in that city and the disease is reported steadily to be increasing. For some time the Mexican government has talked of establishing a leper colony on the Tres Marias Islands in the Pacific Ocean, but thus far nothing has been done.

**Saved from Drowning.**—The American squadron, which arrived at Shanghai from Nanking, March 18, reports a daring rescue by Ensign John C. Fremont, Jr. While the vessels were anchored at Chin Kiang, Dr. Paul R. Stalnaker of the *West Virginia* fell overboard. Ensign Fremont, although encumbered by a heavy overcoat, jumped over after the surgeon and saved him from drowning.

**Government Takes Over Quarantine.**—Dr. Joseph H. White, United States Public Health and Marine-Hospital Service, has been appointed quarantine inspector for Louisiana, Mississippi and the Central American fruit ports. This is the first effect of the assumption of the maritime quarantine by the Federal Government. By this enlargement of his scope of action Dr. White has been given sanitary jurisdiction over a large part of Central America.

**National Arbitration and Peace Congress.**—This congress is to be held in New York, April 14-17, to advocate the peaceful settlement of international misunderstandings. The President of the American Medical Association was asked to appoint two delegates, and he has appointed Dr. Abraham Jacobi, New York, and Dr. John H. Muser, Philadelphia. Among those who are to deliver addresses are the following: Hon. James Bryce; Baron d'Estournelles de Constant (France); Baron Descamps (Belgium); President Roosevelt; Hon. Elihu Root, Secretary of State; Hon. Oscar S. Straus, Secretary of Commerce and Labor; Gov. Charles E. Hughes; Mr. William Jennings Bryan; Archbishop Farley.



**Visit of German Ophthalmologist.**—Prof. Carl Hess, the famous ophthalmologist of Würzburg, Bavaria, will be a guest of the Section on Ophthalmology of the American Medical Association at the Atlantic City session in June. He comes in April at the order of the Kaiser to deliver lectures before the universities of Pennsylvania, Chicago and New York. He will sail for America April 9. In Philadelphia he will be the guest of Dr. Charles H. Frazier, dean of the medical school of the university.

**Health Defense League Incorporates.**—The Public Health Defense League, which was formed to work against practices and conditions of every kind that are dangerous to the public health and morals and to assist in the enforcement of laws against quackery and charlatanism, and the prevention of adulteration of drugs and food substances, and the sale of narcotics, alcohol and dangerous substances, filed corporation papers with the Secretary of State on March 15. The directors include Austen G. Fox, Dr. Ernest J. Lederele, Rev. Thomas R. Slicer, Dr. Thomas Darlington, New York; Howard J. Rogers, Albany; Robert E. Belcher, Boston, and Henry W. Cottell, Philadelphia.

**Health of Canal Zone.**—In the report for January of Col. William C. Gorgas, M.D., U. S. Army, chief sanitary officer of the Panama Canal Zone, he states that the principal causes of death among the employes were pneumonia, which caused 17 deaths, and malaria, which caused 12. In August last the first-named disease caused 55 deaths and malaria 29. Among the 5,000 American employes there were only 5 deaths, equivalent to an annual death rate of 12 per 1,000. No death occurred among the 800 American women and children in the zone. During January more than 5,600 people arrived in the Canal Zone, and the working force was increased by nearly 2,000. During August, 1906, 42 out of every thousand men were on the sick list every day. In December the death rate dropped to 29 per thousand and in January it was 26 per thousand.

**Warning Against Forger.**—The H. K. Mulford Company, Philadelphia, has notified us of the attempts made by one Remus J. Barrow, M.D., to victimize a number of physicians and manufacturers in Philadelphia. The detective service of the Philadelphia police has sent out a warning, stating the following facts about the man:

Age, 39; height, 5 ft. 9 in.; weight, about 190 pounds; light eyes; very light hair, worn closely cropped, except front, which is usually worn curly pompadour, parted in center; regular, small, even teeth, prominent when talking; square, firm jaws; very broad shoulders; smooth face. German, speaks English with strong German accent, also Spanish and French. When last seen wore long Surtout overcoat. Wears hat very low on head. Wears in lapel of coat the button of American Medical Association, i. e., dark blue enamel with red cross in center, gold line and border, with initials A. M. A. He claims to practice medicine and to own a private hospital in León, Mexico, as well as some mines. His method of operation is to leave large orders with wholesale druggists, manufacturers of pharmaceuticals, chemicals, surgical and hospital supplies, to pay for same with checks or forged bank drafts drawn on Bank of Aguas Calientes, Mexico, in excess of purchase; he has the balance placed to his credit for future purchases, but later secures a portion of the overpayment in cash.

#### CANADA.

**Smallpox Epidemic.**—Smallpox is epidemic in Charlottetown, P. E. I. All schools, churches and other places of public meeting have been closed.

**Personal.**—Dr. H. B. Cushing, Montreal, is returning home after graduate work in Germany.—Dr. S. C. Corbett, Winnipeg, sailed from Boston March 16 for the Mediterranean.—Dr. P. H. Bryce, chief medical officer of the department of the interior of Canada, has left Ottawa for the Pacific Coast to arrange for the erection of the new detention hospital in Vancouver.

**Medical Course Lengthened.**—Henceforth any one desiring to obtain the degree of M.D., C.M., from McGill University must attend the college five years instead of four. The present curriculum will be spread out so that studies will continue uninterruptedly for the five years. The bill before the recent session of the Quebec legislature, to make a five years' course compulsory in the province of Quebec, was thrown out by the legislative council.

**New Association to be Organized.**—The superintendents of the various hospitals in Ontario will hold a meeting in Toronto to form the Association of Hospital Superintendents of Ontario. Dr. R. R. Ross, Buffalo, president of the American Hospital Superintendents' Association, will give an address. Dr. Edward Ryan of the Provincial Hospital for the Insane at Kingston, will read a paper on the relation of the work of general hospitals to that of hospitals for the insane. The Toronto superintendents will entertain the visiting superin-

tendents at luncheon in the parliament buildings, where the meeting is to be held.

**Hospital News.**—It has been decided to demolish the old building of the Montreal General Hospital and to erect a new one at a cost of \$500,000. The new hospital will occupy the old site with the addition recently purchased at a cost of \$120,000, and the grounds will now occupy an entire square. It is the intention of the governors to place the hospital on an equal footing with the best hospitals on this continent.—The Marine Hospital at St. Catherine's, Ont., has been given, for a new hospital, a large modern residence and three acres of land, valued at \$15,000. The residence will be used for a nurses' home and a new hospital will be built at once.—A movement to establish a Jewish hospital in Montreal is progressing favorably. It will be known as the Mount Sinai Hospital.—The special committee of the Toronto General Hospital has returned from visiting various hospitals in the United States and reports that while it costs \$1.33 to treat each patient per day in the Toronto General Hospital, it costs from \$1.97 to \$2.50 in the hospitals visited in New York, Philadelphia and Baltimore.

#### FOREIGN.

**Physicians in Legislative Assemblies.**—We learn that the new Russian *douma* contains 28 members who are physicians, while the newly elected German *reichstag* has 7 medical members.

**Antituberculosis Congress in Portugal.**—The fourth annual meeting of the forces organized in Portugal to combat tuberculosis will be held at Oporto April 4 to 9. An exhibition along the line of the tuberculosis exhibitions in this country will accompany the congress and be continued for some time afterward.

**Plague in China.**—The United States deputy consul-general at Newchwang reports that an epidemic of plague has again broken out in that city and that the disease seems to be in the most malignant form, death occurring within a few hours. The first symptoms are headache and fainting spells, which are followed in a few hours by bloody foam running from the mouth. Steps have been taken to prevent the spread of the disease.

**Sale of Stamps to Raise Funds for Crusade Against Tuberculosis.**—In Holland some new stamps have been placed on sale which cost one-half more than other stamps of the same denominations. The extra amount thus paid in is to be set aside by the government to be used exclusively for the crusade against tuberculosis, erection of sanatoria, fresh air colonies, etc. It is said that the public is cooperating well in purchasing these special stamps.

**Plans for Public Baths in Villages.**—A German society was organized some time ago to promote the movement for public baths in every community. It offered prizes for the best work suggesting plans for securing bathing facilities in country villages throughout the entire year. The seven best works out of the number received have been published with further suggestions from the officers of the society, and the whole question seems to have reached a practical solution in these plans. The *Allg. med. Ct.-Ztg.* remarks that they represent a notable advance in the progress of civilization. The pamphlet can be obtained from the central office of the society, Berlin NW, 6, Karlstrasse 19.

**Medical Women in France and Germany.**—Since 1899 women have been admitted to the German universities, but only in a few of the states do they have all the privileges of the men students. They now form 4 per cent. of the total number of medical students in Germany, that is, 300 out of the total of 7,219 medical students. In France 454 women are studying medicine. A large proportion of the women medical students in both France and Germany are foreigners, but there are now 50 duly registered medical women practicing in Germany and 27 in Hungary. An editorial in the *Deutsche med. Wochschr.*, No. 7, states that the opposition to the admission of women to the medical profession is gradually dying out, but that it behooves all who have the responsibility for the career of a young woman—parents, guardians and family physician—to deliberate well before deciding that the young woman in question is physically and intellectually equal to the severe demands of the long years in the university and professional school, and later for the struggle of establishing herself in professional life.

**Society for Sanitary and Moral Prophylaxis in the Argentine Republic.**—A society with this name has recently been organized with headquarters at Buenos Ayres. It is modeled on



the pioneer French society, organized mainly by Fournier's efforts. Fournier's pamphlet, "For Our Sons When They Get to be Eighteen," has been translated into Spanish and is to be distributed in large numbers to university students, factory employes and other young men. The society also is at work to organize day and evening dispensaries for free treatment of venereal diseases, in connection with each hospital. The society further, wishing to reduce the stigma associated with venereal disease in the lay mind, proposes to introduce a new term for it, similar to what has been done in France, where syphilis is now currently called "avariosis," and gonorrhea "neisserosis," and both are grouped as "avarie." The Argentine society suggests the term "avena" to designate the consequences of the venereal peril. E. R. Coni is the president of the new society and C. Lloveras, vice-president, with J. A. Muñiz as secretary—all names well known in international hygiene and sanitation. An antituberculosis society was organized in Argentina six years ago, and some of its achievements have been chronicled in these columns, among others the printing of advice in regard to tuberculosis on the boxes in which matches are sold at retail.

**Report of the Medical School Inspectors of Berlin for 1905-6.**—The *Deutsche med. Wochschr.* for February 21 comments on this recently published report that it shows that parents are taking more and more interest in the medical inspection of their children and are paying more heed to the advice on hygiene given at the same time. No attempt is made to examine repeatedly all the children, but only those who are suggested for the purpose by the school authorities. From 10 to 20 per cent. of the children come to school without a warm breakfast. The school inspectors remark that poverty was only exceptionally the cause of this, but generally neglect or temper. The fact that it is principally on Mondays that the children come breakfastless to school is significant. In from 6 to 40 per cent. the children do not have a separate bed, and in 6 per cent. more than 2 persons sleep in the bed. In some of the schools half the children had no tooth brush. Tickets were given to a hundred children with defective teeth, entitling them to free dentistry, but only 2 children applied. About 3 per cent. of all the children were found by the inspectors to be scrofulous, weakly, rachitic or tuberculous. Here, again, the inspectors say that ignorance and lack of conscientiousness are responsible for the poor health of the children rather than poverty. They advise provision for house-to-house inspection and education in hygiene to combat these conditions and the prevalence of vermin.

**Death of Noted French Chemist, Henri Moissan.**—Not long after his return from Stockholm, where he had been the recipient of the last Nobel prize for chemistry, Henri Moissan died February 21, aged 54. His fame began with research on biologic chemistry, and his isolation of fluorine and discovery of some of its combinations, a few of which are being used in therapeutics. He then perfected an electric furnace with which he produced temperatures of 3,500 C., and was able to distil gold, copper, iron, nickel, uranium and other metals and to make microscopic diamonds. This furnace is merely a block of lime containing in a central cavity the electrodes from a powerful dynamo and the objects to be heated. The mass of the sun is known to be composed of the metals which he was able to distil at this temperature, and he consequently believed that the surface of the sun must be at a lower temperature than that which he was able to induce in his furnace. Incidentally he noticed one day the formation in his furnace of a grayish substance which he recognized as calcium carbide and found that it produced a gas on contact with water, and this was the origin of the acetylene gas industry. He theorized that diamonds were the result of vaporization of carbon under immense pressure, and he realized these conditions by mixing carbon with iron, heating to 3,000 C. and then plunging the mass into ice water. The outer layer hardened while the inside was still molten, and as the metal within dilated as it cooled, the vaporized carbon inside was subjected to immense pressure, with the result that microscopic diamonds were found when the block was opened. Moissan was professor of pharmacy at Paris, and titular member of the French *Académie de Médecine*, while he was honorary member of numerous scientific societies in this country and abroad. The fatal weakness of the heart, complicating appendicitis, is ascribed by his friends to inhalation of gases in working with his furnace.

**Danish Law Aiming at Repression of Venereal Disease.**—The full text of the law of March 6, 1906, which went into effect in Denmark last September, is published in the *Deutsche med. Wochschr.*, No. 8, on one of the advertising pages. It abolishes

all reglementation of prostitutes, and applies to them the regulations in vogue against vagabondage in general. It is prohibited to maintain a brothel or to rent rooms to prostitutes under 18 or for assignation purposes under penalty of imprisonment, with a penitentiary term of two years in case of repetition of the offense. Strict penalties and liability for damages are also imposed for transmission of venereal disease when the other party is not aware of the danger of contagion. Physicians are required to make weekly reports of the number of patients with venereal disease in their care, and are enjoined to warn such patients of the dangers of transmission of the disease. Circulars for this purpose are supplied by the authorities. Provision is made for gratuitous treatment of venereal disease for every one, whether able to pay for it or not, and the provision is also made that a patient of this category, being treated in a hospital, must not leave the institution until he is dismissed by the physician. Disregard of this regulation carries a penalty of from 20 to 30 days' imprisonment. The police are empowered to forbid the proprietors of hotels, restaurants and saloons from employing women who have been previously sentenced on any of the above counts. It is further forbidden to give a syphilitic infant to another woman to nurse, and for a syphilitic wet nurse to take a healthy child to nurse. A child is regarded as suspicious of syphilis, even when presenting no signs of the disease, if either father or mother had contracted syphilis less than seven years before its birth, and when less than three months have elapsed since its birth. Arrangement is made for payment by the state or municipality of the physicians who make the examinations and treat the patients, either *per capita* or by an annual stipend, and these physicians are not allowed to ask or take any fee from the patients.

#### LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, March 12, 1907.

#### Quack Remedies in Great Britain.

There is no doubt that the British public is greatly addicted to the proprietary and "patent-medicine" habit and is peculiarly susceptible to the wiles of the medical quack. Such people flourish to an extraordinary degree in Great Britain at present, and their number is a remarkable tribute to the gullibility of the British public as well as an example of the manner in which proprietors of newspapers and magazines, for the sake of gain, will aid them in their predatory methods. A weekly paper named *Truth* is published in London, and one of its objects for many years has been exposure of frauds and swindles of every description. Medical quacks have fallen under the lash of the editors of this paper, which publishes at the end of each year what it terms a "cautionary list," containing the names and description of all the fakes which have come under its notice during the year. Of late this list has been of much interest to American readers. Since the operation of the law in the United States which forbids the use of the mail for carrying on a quack business in that country, a large number of quacks have flocked to Great Britain, where they can carry on their nefarious operations with impunity. Below will be found some of the names of Americans in Great Britain copied from *Truth's* "cautionary list:"

American College of Sciences, Rochester, New York: This institution sells a worthless course of instruction in personal magnetism and hypnotism, and together with the Yabe School and K. Leo Minges, mentioned below, is the enterprise of one F. D. Shoemaker, jeweler of 59 Page Street, Providence, R. I.

K. Leo Minges, Rochester, N. Y., and 7 Avenue de l'Opera, Paris: Proprietor of a "cartilage" treatment which is guaranteed to add two or three inches to the height. It is undiluted humbug.

Liquozone: A nostrum widely advertised by a firm of American quacks, calling themselves the British Liquozone Company, as a cure for all germ diseases. It is nothing more than a weak solution of sulphurous acid, a drug which is likely to prove dangerous if administered by inexperienced hands. At an inquest in June, 1905, on two children who died after taking the stuff, the jury returned a verdict that they "died from exhaustion after vomiting and diarrhea set up by taking liquozone." It may also be stated that on several occasions the *Lancet* called attention to the worthlessness and dangerous properties of liquozone as a remedy.

Nutriola Company, Chicago, and 9-15 Oxford St., London: This is the enterprise of an American named Hanson, the "president" of the company. Not content with advertising its ability to cure everything, the company has also advertised purchase of its shares as the shortest way to wealth. A fraud order has been entered against the company by the United States Postoffice.

Viavi Company, British, Regent Street, W.: A quack establishment of American origin, dealing in remedies for female ailments. Women employes go about the country pretending to possess medical knowledge, delivering "health lectures" which they have mostly learned by heart, and persuading deluded women that they are in serious danger unless they take the viavi remedies, and submit themselves to the treatment of the viavi agents.



The five concerns in the following list have been officially declared to be carrying on a fraudulent business in the United States, and a "fraud order" has been entered against them:

Dr. Knapp Medical Company, Detroit; Falliopa Lynn Company, St. Louis; Institute of Physicians and Surgeons, Rochester, N. Y.; "Professor" R. E. Dutton, Lincoln, Neb.; "Professor" Thomas F. Adkin, Rochester, N. Y.

The above-mentioned are by no means all that are black-listed by *Truth*, but a sufficient number have been cited to demonstrate the fact that American quacks, like the wicked, "flourish as the green bay tree" in Great Britain.

#### Metric System for Great Britain.

A bill is to be brought into the British Parliament proposing that from April 1, 1910, all the present weights and measures used in Great Britain shall be replaced by those of the metric system. This bill will insure easy education in the new system by ordering local authorities to provide local standards at least twelve months before the act comes into operation.

#### National Physique and Anthropometry.

The government has been urged to establish a national anthropometric survey on the lines recommended by the interdepartmental Committee on Physical Deterioration in July, 1904. The machinery for such survey is ready, but a grant of from \$20,000 to \$25,000 from the government is necessary in order to put it into efficient action. The object is to get a continuous record of exact measurements of the physical and mental characters of the population and to note the environment in which the subjects of the measurements live. It is proposed to form a central department consisting of a director, two assistant directors, six surveyors and measures, and six statistical clerks. The surveyors would be sent to take measurements in about 100 different districts of the country, and would measure in each about 2,000 adults and 4,000 school children. A recent survey carried out in Scotland showed that in Glasgow hair and eye colors have changed so radically that the population of the town could no longer be considered to belong to the same race as the normal population of Scotland. The change is supposed to be due to the industrial environment in which Glasgow people live, which, to a large extent, has eliminated certain types of the population and completely changed its composition. Anthropometry has proved conclusively that in industrial environment people with fair hair and blue eyes—the Saxon type—die out and disappear, as they more easily fall victims to the diseases common in industrial areas and slums than do dark people. In rural districts, on the other hand, the fair man should be superior to the dark. The prime minister, Sir H. Campbell-Bannerman, promised that the request would receive the careful consideration of the government.

#### The Care of Children.

A sensation has been created by a series of articles contributed to the *Tribune*, the leading liberal paper, by Mr. G. R. Sims, the well-known writer, on the manner in which children are reared in the slums of London. Mr. Sims found that the saloons are invaded by women who bring babies and small children into the heated and poisonous atmosphere. The mothers not only drink cheap alcohol, vitiating their powers of suckling, but actually dose new-born infants and tiny children with gin and other alcoholic liquors, in order "to keep them quiet." As a result, the *Tribune* arranged a conference at its office, which was attended by leading authorities on children's diseases, philanthropists, bishops, Salvation Army officers, health officers and others. The government was represented by Dr. Macnamara, parliamentary secretary to the local government board. There was a general consensus of opinion that Mr. Sims' pictures were not in the least overdrawn. The following resolutions were carried: 1, No child under the age of 14 shall be allowed to enter any licensed house other than a residential hotel; 2, definite teaching in temperance should form part of the curriculum of public elementary schools; 3, that the conference resolve itself into a committee for supporting the previous resolutions as legislative measures.

#### VIENNA LETTER.

VIENNA, March 10, 1907.

#### Protection of Infant Life.

(From Our Regular Correspondent.)

A movement has been set on foot to amend the present regulations with regard to the care of destitute or neglected children, and a committee, including representatives of the local boards, of the boards of education and of several philanthropic organizations, has been asked by the government to draw up a bill to be presented to the new house of commons in May.

The main object of the movement is to obtain legal control over persons keeping "baby farms," and to enable the local boards to remove infants kept by persons who are either unfit or incapable of taking care of babies, or from tenements which are unfit or unhealthy or otherwise unsuitable for living purposes. In addition, it is proposed to secure better protection for nursing mothers, especially under the form of continued sick pay, and the right to ask for a full month's pay in the case of a working woman giving birth to a living child. Legislation is at last compelled to take care of the youngest citizens, as the official statistics prove that the yearly loss of life due to neglect of infants amounts to about 50,000 for Austria alone. On the other hand, it has been shown what good results can be obtained by proper care, chiefly by education of the mother as to the rational feeding and by distribution of good milk for infants.

#### Prevalence of Influenza in Austria.

The unstable weather conditions throughout the central parts of Europe have had a very deleterious effect on the general health of the population, and influenza bacilli are often present in catarrhal affections of the upper air passages. A special feature of this year's epidemic, for so it must be termed, are the complications. Inflammation of the frontal sinus is present in nearly 35 per cent. of all cases, and acute otitis, mostly of the hemorrhagic type, has been reported to be very frequent, although the percentage of its occurrence could not be ascertained. A curious fact, not noticed or reported hitherto, is the liability of certain patients to be affected several times by influenza during the same epidemic, and each subsequent attack proves to be stronger than the preceding one. Perhaps the virus becomes more active by "passage." In such cases endocarditis and pleuritic effusions were noticed to be the rule at the third attack. The track of the disease is shown on the map to be exactly in accordance with the main directions of the cyclonic and barometric traces.

#### An Outbreak of Anthrax.

An outbreak of anthrax occurred quite recently in one of the hair factories here, and of the 6 cases affected, 4 proved rapidly fatal. Investigation showed that all 6 patients had been working in the same room, and the material used by them could be traced to a Russian bale of goods. Immediately work was suspended in the factory, and very exhaustive measures were adopted to have the premises and the goods disinfected thoroughly. At the same time the inspectors of the slaughtering houses were advised to keep up very strict supervision of their respective districts, with the result that a case of anthrax was found in a group of 27 cattle. The necessary measures were thereon instituted and the carcass of the animal burnt. As regards the treatment of the affected factory hands (4 male, 2 female), the first 4 patients were beyond any hope of recovery when brought to the hospital. The disease had not been recognized by the medical man in attendance; the other 2 patients were treated in time by excision simply, and they recovered. The necessity of international notification of similar outbreaks has now been proved *ad oculos*. In quiet times this would hardly have occurred, but the civil disturbances in Russia have brought it about that infectious material is exported.

#### Liquid Air as a Sensitizer for Finsen Phototherapy.

Privat Docent L. Freund reported to the Medical Society of Vienna on his experiments with liquid air which was used by him to shorten the time of exposure in Finsen phototherapy. He has found that the intense cold produced by the vaporization of liquid air is not only a powerful anesthetic for local purposes, producing profound anemia with subsequent hyperemia, but that it renders the tissues of the body exceptionally sensitive to the chemical effects of the electric light. The vicinity of the area to be treated is covered by a piece of wood, in which a hole has been bored corresponding to the diseased area. The liquid air is poured into this hole and the Finsen lamp is turned on for six minutes while the intense anemia lasts. Then the process is repeated, so that anemia is rapidly alternating with hyperemia, and the result thus obtained is much more satisfactory than by the usual method. As the tissues are sensitized, the action of the Finsen light is materially enhanced, and the same or better results can be obtained with the shorter exposures. He is now experimenting with liquid air as a sensitizer for the Roentgen rays. He announced that it is possible to induce at will, with the liquid air, erythema, excoriations and even ulcerations, according to the length of the contact, but that they all heal smoothly.



## Pharmacology

### LABORDINE.

#### A Report by the Council and Some Pertinent Comments Added Thereto.

The following report was submitted to the Council on Pharmacy and Chemistry by the subcommittee which examined Labordine:

*To the Council on Pharmacy and Chemistry:*—Your subcommittee presents the following report on Labordine, sold by the Labordine Pharmacal Co., St. Louis.

Labordine is advertised to physicians as having the following composition:

	Per cent.
Apium Graveolens (true active principle) "Process-Laborde" .....	35%
Gaultheria Fragrantissima (true active principle) "Process-Laborde" .....	25 1/8
Acete Amide-Phenyle .....	15 1/8
Quinina .....	1 1/8
Benzoyl-Sulphyonic-Imide .....	23 1/4

It is stated to be a "vegetable antipyretic;" that it "reduces temperature without heart depression," and physicians are warned to "avoid acetanilid poisoning and danger from other coal-tar antipyretics."

While the "formula" and the statement just quoted are sufficient evidence of the fraudulent character of the product, yet an abstract of the reports of the chemists who analyzed it is given to further demonstrate its character.

Taking the average of the reports of analyses, Labordine contains:

	Per cent.
Acetanilid .....	37.9
Free salicylic acid.....	6.9
Quinin .....	present
Saccharin.....	not found
Corn starch .....	present
Milk sugar .....	34.7

The report of analysis only makes apparent that Labordine is not what it is claimed to be. While it is claimed to contain 23 1/4 per cent. saccharin, this substance was not present, or mere traces only. While, in a disguised way, it is stated to contain 15 1/8 per cent. acetanilid, it contained nearly 40 per cent.

It is recommended that Labordine be not approved and that this report be published.

The recommendation of the subcommittee was adopted by the Council, and in accordance therewith the above report is published.

W. A. PÜCKNER, Secretary.

#### COMMENTS.

A concrete illustration of some general principles previously laid down is furnished by a nostrum too unimportant to be of any value, save to "point a moral and adorn a tale."

About thirteen years ago Labordine was advertised under the name of Analgine-Labordine, "A purely vegetable product," "a combination of the active principles of *Camellia Thea*, *Apium Graveolens*, saccharin and carbohydrates," "Superior to Antipyrine, Phenacetine, Antifebrine, Acetanilid"—note the use of two names for the same thing—"or any of their imitations," and "unexcelled by any coal-tar product or their compounds." In 1894 the name was changed to Labordine, in order, as its owner stated, to prevent it being mistaken for a coal-tar product of similar name.

What its composition was at this time we do not know, since there is no guarantee of the permanence nor stability of nostrum formulas except "the honor and reputation of the manufacturers," which, as investigation has shown, is not always unimpeachable. There has been nothing to prevent alteration of the formula, if the proprietors desired, with every change of the moon. But the name and the general tone of the advertising has been the same. The claim of superiority over coal-tar products has been constantly made.

As to the present conditions, a circular enclosed with a sample of Labordine, recently sent from the St. Louis office, contains the formula given in the above report of the Council. In the same circular are also found these illuminating statements: "The medical profession has long appreciated the dangers involved in the administration of various mineral remedies now so commonly employed, and the value of a safe, effective and reliable vegetable antipyretic is universally recognized. Such a remedy is Labordine. It is purely vegetable in its

composition and produces none of the evil after-effects of the coal-tar derivatives. . . . Labordine . . . is a purely vegetable cardiac stimulant. . . . There is nothing mysterious about Labordine or its constituents. . . . The 'Process Laborde' gives the true active principles of the Celery and Indian Wintergreen, something heretofore difficult to obtain. To this is added the fact that absolutely chemically pure Acet-Amide-Phenyle is used. The latter is the most valuable and, in fact, the only vegetable antipyretic known."

The above report of the Council shows the following facts:

1. *Apium Graveolens* (true active principle), "Process Laborde" is probably powdered celery seed. One chemist says: "The powder has the characteristic odor of celery, while a microscopic examination shows the presence of a substance having the characteristic structure of seeds in general." If celery seed has any "active principle" it has never been isolated. As to its therapeutic value, nothing whatever is known. It is, we understand, highly beneficial in the case of singing canaries, but authorities in scientific therapeutics have never discovered that it possessed any remarkable medicinal qualities.

2. *Gaultheria Fragrantissima* (true active principle), "Process Laborde," is probably ordinary every-day salicylic acid. One analysis showed salicylic acid to be present to the amount of about 7 per cent. The question of whether or not salicylic acid could in any way be considered the "true active principle" of *Gaultheria Fragrantissima*, was submitted to Prof. John Uri Lloyd of Cincinnati, the eminent authority on the chemistry of the proximate principles of plants, who replies:

The advertisement is evidently so worded that, although the name of the Indian plant *Gaultheria Fragrantissima* is employed, its true and active principle being wintergreen oil, the concocter can mystify his patrons and at the same time use the well-known wintergreen oil, made in America, which in my opinion, so far as any chemical test might be concerned, could not be distinguished from the methyl salicylic acid (wintergreen oil) derived from the Indian plant. Concerning whether salicylic acid is a proximate constituent of *Gaultheria Fragrantissima*, in my opinion, it would be a misnomer to make such an announcement. Salicylic acid, *per se*, does not exist, in my opinion, in the plants mentioned, being made by chemistry.

3. The third and most important ingredient in this "purely vegetable antipyretic" is brazenly announced as "Acete-Amide-Phenyle," but it is only necessary to say that this imposing designation is an attempt to "Frenchify" a scientific name for acetanilid.

Analysis shows that this coal-tar product is present to the amount of 37.9 per cent., or 1.89 grs. in a 5-grain tablet.<sup>1</sup> In other words, this imposing Labordine, made by a mysterious and elsewhere unheard of "Process Laborde," is simply one more of the herd of acetanilid powders that have been foisted on our profession and that have filled our journals for years past. The only thing in it that is of practical therapeutic value is 2 grains of acetanilid to a 5-grain tablet. The statement that Labordine is a purely vegetable preparation is probably intended by the proprietors as a good joke on the medical profession. Acetanilid is not usually regarded as a vegetable product, at least it is not ordinarily found in market gardens. The only vegetable source from which acetanilid can be obtained is the beautiful flowering coal-tar bush, from which so many other nostrum vendors obtain their "perfectly harmless, purely vegetable antipyretics," all composed of acetanilid and something to hide it." If the statements made by one of the company's employes and quoted below are true, Labordine is not "manufactured and made chemically pure in the laboratories of the Labordine Pharmacal Company," and this company has no laboratory, as its product is manufactured for it.

4. Our readers will be interested to know that the important ingredient entered under the imposing name of Benzoyl-Sulphyonic-Imide is simply a highly scientific name for saccharin. Even on this point, however, the formula is misleading, since it claims 23 1/4 per cent. of this substance, whereas the analysis shows that the presence of saccharin could not be proved. If it is present at all it is in quantities much less than stated, and so small as to be difficult of recognition. Instead it appears that the product contains common starch and about 35 per cent. of milk sugar.

1. Since this article was prepared we find that the national Food and Drugs Act has forced the proprietors of Labordine to put on the label the amount of acetanilid it contains, viz., 40 per cent., or 2 grains in a 5 grain tablet.



## THE COMPANY ITSELF.

One of the humiliating phases of the proprietary medicine business is that, in many instances, these preparations are foisted on our profession by men who know nothing of medicine, pharmacy or chemistry, yet not only presume to concoct our medicines for us, but also assume to instruct us how to use them.

Gould's Commercial Register for 1907 gives the officers of the Labordine Pharmacal Company as H. M. Coudrey, president; M. Crawley, vice-president, and D. E. Gamble, Jr., secretary and treasurer. The place of business is given as 420 Market Street, St. Louis. We are informed that Harry M. Coudrey is an insurance agent and the present member of Congress from the Twelfth Missouri District; that Mark Crawley is a clerk in the insurance office of H. M. Coudrey; and that Mr. Gamble is cashier in the same office. A recent visit of a representative of THE JOURNAL to 420 Market Street, St. Louis, showed that the office of the Labordine Pharmacal Company is in Room 12 on the third floor of an old dilapidated building. There was no sign on the door of the office, but on the wall next to an old elevator was a very small sign which read "Labordine Chemical Company, Room 12." The office at the time of the visit was apparently in charge of a young woman about 20 years old. Careful scrutiny of the furniture and fixtures showed that the room contained an old oak roll-top desk in one corner and a kitchen

knowing the composition of Labordine, wishes to prescribe it and prescribes it intelligently, he has a perfect right to do so. If he wishes his patient to have 2 grains of acetanilid, 1/20 of a grain of quinin, and 1/3 of a grain of salicylic acid, and considers a mixture of ground celery seed, starch and milk sugar as a proper vehicle for this medication, no one will question his right to administer it. No physician, however, has any right, either moral or professional, to prescribe a preparation, concerning the ingredients of which he knows absolutely nothing.

Is it possible that such carelessness may be one of the causes of waning public confidence in our profession? We leave it to our readers to determine whether such a moral can be drawn from this typical nostrum story.

## Patented Remedies and Their Substitutes.

The *Pharmazeutische Zeitung*, Oct. 13, 1906, discusses the objections made by the Swiss Apothecary Association to the patenting of medicinal preparations which it considers of importance as affecting not only Switzerland and the chemical industry in that country, but the manufacture of medicinal chemicals in other countries as well. The objections made are chiefly two: The enhanced price which accompanies patented articles and the difficulty of control of their identity and purity and of comparison with their unpatented substitutes.

**Avoid Acetanilid Poisoning and Danger from Other Coal-Tar Antipyretics!**

**FORMULA.**

Apium Graveolens (true active principle) "Process-Laborde" 35 3/8%

Gaultheria Fragrantissima (true active principle) "Process-Laborde" 25 1/8%

Acete Amide-Phenyle 15 1/8%

Quinina 1 1/4%

Benzoyl-Sulphyonic-Imide 23 1/4%



**LABORDINE**

*Vegetable Antipyretic*

Try Labordine in a critical case where other antipyretics have failed to give the desired results.

**Dose, 5 to 10 Grains.**

Prepared in Powder and 5 grain Tablets.

**REDUCES TEMPERATURE WITHOUT HEART DEPRESSION.**  
**RELIEVES PAIN WITHOUT BAD AFTER-EFFECTS.**

Quantity sufficient for clinical test on request.

**Labordine Pharmacal Co., St. Louis, U. S. A.**

This advertisement is reproduced from the *Therapeutic Gazette* of November. For brazen effrontery and shameless mendacity the caution "AVOID ACETANILID POISONING AND DANGER FROM OTHER COAL-TAR ANTIPYRETICS" is hard to beat, when the stuff contains nearly 40 per cent. of acetanilid. And yet this is but a fair sample of nostrum advertising that intelligent physicians tolerate in medical journals they help to support. For how much longer???

table, on which were piled about half a dozen packages of Labordine. The floor of the room was bare and very dirty. In an adjoining room, the door of which was open, was piled a lot of broken furniture. No laboratories nor chemical apparatus were visible. The young woman in charge stated that Labordine was made by the Mallinckrodt Chemical Works, at No. 3600 North Second Street, St. Louis.

This is a fair sample of the nostrums and of the methods of exploiting them. The bitterly humiliating fact about the whole business is that a preparation, advertised under such palpably misleading claims, could actually be advertised in medical journals, even in journals of a supposedly high scientific standard, and could be bought and prescribed for years by supposedly intelligent and conscientious physicians. It is not supposed that every physician should be enough of a chemist to detect the ridiculous discrepancies between the published formula and the therapeutic claims made for such mixtures. But that members of a supposedly learned profession should fail to have enough interest in the preparations they prescribe for their confiding patients to find out that acetanilid is being masked under an obsolete and little used name, that only saccharin is hidden under an imposing polysyllabic designation; that the so-called "active principle Process Laborde" (whatever that may be), is only equivalent to 1/3 grain of salicylic acid in a 5-grain tablet, and that the advertising matter sent out for years by this company contained absolute falsehoods regarding the composition and therapeutic benefits of its preparation, is certainly just cause for shame and humiliation. If a physician,

The pharmacopeias have done little to provide reliable and standard methods of testing these preparations. Only three patented or trademarked preparations have been received into the new edition of the German pharmacopeia and the supplement gives the pharmacist little help in his endeavor to test these preparations for himself. On the other hand, the Swiss pharmacopeia commission has gone to the extent of preparing tests for a large number of remedies protected by patent or trademark by which they may be compared with their substitutes which are found in the market. Dr. J. Thomann has made comparative tests of a number of these preparations, using the commission's methods, and finds that in a considerable number of cases the substitute found in the market equals or excels in purity the original patented preparation. The comparison of tannigen and diacetylated tannin revealed differences in the melting point (which is not constant); in other respects the substitute appeared to be fully equal to the original. The same was true of thiocol and potassium ortho-guaiacol-sulphonate and of salophen and its substitute acetamido-salol. In regard to protargol a marked difference was found between different samples of silver proteid offered as substitute. Two samples showed substantially the same proportion of silver as protargol (8 per cent.), while others fell as low as from 3.8 to 4 per cent. In one substitute for xeroform, free tribromphenol was detected.

The testing of tannalbin by digestion with pepsin showed that the kind of pepsin used made an essential difference in the result, indicating the necessity of careful specification of the



processes prescribed for these tests. Thomann suggests a standing committee whose function shall be to devise and publish methods for testing new preparations during the intervals of the editions of the pharmacopeia.

#### Another Death from Mrs. Winslow's Soothing Syrup.

Dr. John M. Edwards, Commissioner of Health, Mankato, Minn., reports the death of Mary Veigel, aged 18 months, from an overdose of Mrs. Winslow's soothing syrup. He writes:

"The undertaker came to my office for a burial permit for a child who had died, the parents said, of measles. The undertaker called my attention to the fact that the parents made a request for a burial permit worded that way. The coroner was called and asked me to assist him in making an investigation. The child had been the youngest of a family of five, all of whom had measles. The child had been doing very well, so its mother said, until twelve hours before its death, when it became peevish and cross. At 8 a. m. she gave the child the first dose of Mrs. Winslow's Soothing Syrup. The child being fussy and fretful, the mother continued to give her this medicine until she had taken about half the contents of the bottle. About 2 or 3 o'clock in the afternoon the child died. I put down the chief cause of death as poisoning from Mrs. Winslow's Soothing Syrup, and the contributing cause as measles. As the child had been sick, her system was more or less undermined, and she fell an easy prey to the medicine.

"I submitted the remaining part of the bottle which I took from the house to the laboratory of the State Board of Health, at St. Paul, and I have on file in my office the analysis of the contents in which the chemist found morphin."

#### Support the Association.

Under this head the *California State Journal of Medicine* makes the following appreciated comment: "Doubtless but few realize as yet the tremendously valuable work which is being done for the medical profession of this country by the American Medical Association, through its Council on Pharmacy and Chemistry. The work of the Council is entirely a labor of love. The Councilors receive no compensation, we believe, for the work which they are doing for us, and the actual expenses of doing the work, which are borne by the Association, must be very great. Shall all this work and this expense be thrown away? That is a question which the medical profession of the country must decide; it is up to you, individually, as much as to anyone else. Will you follow the work of the Council, recognize the frauds it discloses and bear them in mind; will you refuse to use or recommend any of the extra-pharmacopeial preparations presented to you, unless they have passed the close scrutiny of the Council and received its approval? That, it would seem, is about the least that you, as a self-respecting physician, can do in justice to yourself and your patient. Any remedial preparation that you do not find in the list of 'New and Non-Official Remedies,' as issued by the Council, is one to look on with suspicion; it may be a good and legitimate product, but the chances are that it is not, or that the proprietors have uttered exaggerated statements as to its value. The *Journal* will print, every month, a list of all preparations approved by the Council. Look for it, study it, keep it handy for reference."

**An Eclectic's Attitude Toward Proprietaries.**—Dr. C. E. Frazier, Weatherford, Texas, writing in the *Eclectic Medical Journal*, March, 1907, has this to say about proprietaries:

"Every mail brings samples, samples, samples, and advertising literature until you can not rest, and I have often thought: 'What does all this mean?' 'From where does all the money come to keep up all this large amount of expensive advertising?' 'Are the physicians over the country patronizing them?' And I have been sad in my soul to admit that they were; and as I have watched this process evolve and develop, my sadness has turned to disgust, and disgust to vexation, as I have seen my fellow practitioner (to use a common term) 'worked.' To illustrate, Marchand's peroxid of hydrogen was at first advertised and sampled only to physicians; then, when the manufacturers got a few indorsements from prominent physicians (that seemed all they wanted),

they then threw their preparation wide open to the public; the lay press is full of advertisements of Marchand's peroxid; everybody knows all about peroxid of hydrogen; and this same thing is true, in a measure, of antikamnia, glycothymoline, listerine, antiphlogistine, and many others. Some of them have not come out quite so strong as Marchand, but their product is not quite so well known to the public, and I am convinced that all they are waiting for is a little more (ethical) advertising, and then they will all come out."

#### Importation of French Proprietaries into Russia.

According to *Progrès Médical*, Feb. 23, 1907, an arrangement has been entered into by which the Russian government will accept the reports of analyses of French proprietaries made by certain laboratories which are to be designated by the French government. The laboratories act in this case without any official character and they are not called on to give an opinion as to the quality of the medicines, but simply to state the composition. The analyses made are for the purpose of satisfying the requirements of the Russian administration and can not be invoked in France in opposition to legislation applicable to the case.

**A Sensible View of Medical Etiquette.**—Medical ethics, according to the London *Spectator*, instead of being kept up, as people so often imagine, in the interests of physicians, are really maintained in the interests of the public. It is the public, not the doctors, who would suffer most, were medical ethics entirely done away.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS.

UTAH State Board of Medical Examiners, Salt Lake City, April 1. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, April 1-2. Secretary, Dr. Anell Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, April 2. Secretary, Dr. S. D. Van Meter, 1723 Tremont St., Denver.

IDAHO State Board of Medical Examiners, Boise, April 2. Secretary, Dr. J. L. Conant, Jr., Genesee.

MINNESOTA State Board of Medical Examiners, the Old Capitol, St. Paul, April 2. Secretary, Dr. W. S. Fullerton, St. Paul.

MONTANA State Board of Medical Examiners, the Capitol, Helena, April 2. Secretary, Dr. W. C. Riddell, Helena.

GEORGIA ECLECTIC Board of Medical Examiners, Senate Chamber, State Capitol, Atlanta, first week in April. Secretary, Dr. L. F. Bugg, Madison.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, April 30-May 1. Secretary, Dr. E. R. Anthony, Griffin.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, April 2-4. Secretary, Dr. H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, State House, Providence, April 4. Secretary, Dr. Gardner T. Swarts, Providence.

ARKANSAS State Medical Board, Little Rock, April 9. Secretary, Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Medical Board, Little Rock, April 9. Secretary, Dr. V. H. Hallman, Hot Springs.

WEST VIRGINIA State Board of Health, Wheeling, April 9-11. Secretary, Dr. H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Supervisors in Medicine, Washington, April 12. Secretary, Dr. Geo. C. Ober, Washington.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 16. Secretary, Dr. Chas. L. Tisdale, San Francisco, Cal.

MISSOURI State Board of Health, St. Louis and Kansas City, April 16-18. Secretary, Dr. J. A. B. Adeock, Warrensburg.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, April 17-19. Secretary, Dr. J. A. Egan, Springfield.

KENTUCKY State Board of Health, City Hall, Louisville, April 23. Secretary, Dr. J. N. McCormack, Bowling Green.

TEXAS State Board of Medical Examiners, Austin, April 30-May 2. Secretary, Dr. T. T. Jackson, San Antonio.

TEXAS Eclectic Medical Board, Dallas, about April 25. Secretary, Dr. L. S. Downs, Galveston.

**Reciprocity Convention.**—The American Confederation of Reciprocating, Examining and Licensing Medical Boards will hold its next annual session in Chicago, Tuesday, April 30, 1907.

**Arkansas October (1906) Report.**—From correspondence with Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, we learn that the failure charged against the Southwestern University Medical College, Dallas, Texas, in the report published in THE JOURNAL, Jan.



5, 1907, page 75, was made by an undergraduate and, therefore, the college is not to be held responsible.

**Drake University Adopts Higher Entrance Requirements.**—By a resolution adopted by the faculty, March 11, 1907, the Medical Department of Drake University at Des Moines, Iowa, commencing with the college year 1910, will require in addition to a four-year high school education, two years of work in a college of liberal arts as a prerequisite to the study of medicine. There are now 41 medical schools which by 1910 will require one or more years of work in a college of liberal arts as a prerequisite to medical study.

**Establishment of Course in Pharmacy in University of Minnesota.**—One reason for the dependence of physicians on proprietary ready made mixtures is because of their lack of familiarity with materia medica and pharmacy. It is conceded by all that this lack of knowledge is because of poor instruction in schools of medicine, along these lines, especially as regards courses in pharmacy, including the writing of prescriptions, the proper combination of drugs, their incompatibilities and doses. Instruction in medical schools is insufficient because, as a rule, these courses are given by physicians who are not sufficiently familiar with the subject, or else they are given by pharmacists who are not teachers. It is, therefore, gratifying to note that the regents of the University of Minnesota have appointed the dean of the School of Pharmacy to give a course of instruction in the College of Medicine and Surgery. Professor Wulling is well known as a competent pharmacist and as an efficient and enthusiastic instructor. His appointment, therefore, can only be to the best interests of medical education.

**Michigan Reciprocity Report.**—Dr. B. D. Harison, secretary of the Michigan Board of Registration in Medicine, sends us a list of physicians licensed through reciprocity during the year 1906. The following colleges are represented:

REGISTERED THROUGH RECIPROCITY.		
College.	Year Grad.	Reciprocity with.
College of P. and S., Chicago, (1900), (1901), (1902), (2, 1904), (3, 1905),	(2, 1906)	Illinois
Northwestern University, (1900), (2, 1902), (2, 1906)		Illinois
Illinois; (1897), with Wisconsin.....	(1903)	Iowa
Rush Med. Coll., (1901), (2, 1904), (1905) with		
Bennett Coll. of Ecl. Med. and Surg. ....	(1901)	Illinois
Hahnemann Med. Coll., Chicago.....	(1901), (1905), (4, 1906), with Illinois.....	(1888)
Chicago Med. Coll. ....	(1890)	Illinois
Chicago Homeo. Med. Coll. ....	(1901)	Ohio
Hering Med. Coll. ....	(1899), with Indiana; (1904)	Kansas
Indiana Med. Coll. ....	(1906)	Indiana
Ft. Wayne Coll. of Med. ....	(1905)	Indiana
Drake University, Des Moines.....	(1894)	Iowa
University of Iowa ....	(1883)	Iowa
Hospital Coll. of Med., Louisville.....	(1889), (1892)	Missouri
University of Maryland.....	(1902)	Maryland
Baltimore Med. Coll. ....	(1905)	Maryland
College of P. and S., Baltimore, (1902), (1897, with		
Iowa; (1895), with Ohio.....	(1891)	Wisconsin
University of Michigan, Coll. of Med.....	(1890)	Montana
University of Michigan, Homeo. Dept. ....	(1902)	Indiana
Michigan Coll. of Med. and Surg. ....	(1897)	Wisconsin
St. Louis Coll. of P. and S. ....	(1891)	Missouri
University of Nebraska ....	(1904)	Nebraska
College of P. and S., New York.....	(1899)	New York
Cleveland Homeo. Med. Coll. ....	(1905)	New York
Jefferson Med. Coll. ....	(1900)	Ohio
Hahnemann Med. Coll., Philadelphia.....	(1906)	Maryland
Laval University, Montreal, Que. ....	(1894)	Maine
McGill University, Montreal, Que. ....	(1875)	Minnesota
Western University, London, Ont.....	(1906)	Wisconsin
Toronto University, Ontario.....	(1904)	Wisconsin
Royal Imperial University, Vienna.....	(1885)	Indiana
University of Maximilian, Germany.....	(1873)	Missouri
Heidelberg University, Germany.....	(1902)	Iowa

Marriages

FREDERICK HOLME WIGGIN, M.D., New York City, to Miss Christina Ferguson Orr of Litchfield, Conn., March 14.

HOMER CUTLER CROWELL, M.D., Kansas City, Mo., to Miss Sarah Estelle Bean, at New York City, March 16.

ANNA BARTSCH, M.D., Washington, D. C., and HAROLD EDMUND DUNNE, M.D., of Ridgway, Pa., March 5.

WILLIAM GARR SHADRACH, M.D., Albuquerque, N. M., to Miss Mary E. Smith of Glasgow, Mo., March 7.

WILLIAM FRANCIS MITCHELL, M.D., to Miss Frances Shull, both of Lancaster, Mo., March 12.

WILLIAM M. WALLIS, M.D., St. Joseph, Mo., to Miss Nettie Douglas, at Kansas City, recently.

G. W. WALKER, M.D., Hyattville, Wyo., to Mrs. Blanche M. Bell, at Sheridan, Wyo., recently.

OLIVER W. BOATMAN, M.D., to Miss Elizabeth Mercer, both of Burlington, Iowa, March 12.

Deaths

William J. Wakeman, M.D. U. S. Army, Yale University, Medical Department, New Haven, Conn., 1879; who was appointed assistant surgeon, with the rank of first lieutenant, May 23, 1882; was advanced to the grade of captain five years later, and promoted to the grade of major and surgeon, Feb. 21, 1900; who served as major and brigade surgeon of volunteers during the Spanish-American War, and had recently been stationed at Fort Thomas, Ky., died at Fort Monroe, Va., March 20, from obstructive jaundice, aged 52.

Leander P. Jones, M.D. New York Homeopathic Medical College and Hospital, New York City, 1874; of Greenwich, Conn.; a member of the American Medical Association; state senator in 1894; warden of the borough, chairman of the school committee and town health officer; who was mainly instrumental in the establishment of the Greenwich General Hospital; for many years fleet surgeon of the Indian Harbor Yacht Club, died at Bellaire, Fla., March 18, from kidney disease, after a long illness, aged 61.

James Utley, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1874; a member of the surgical staff of Newton (Mass.) Hospital for 13 years, and one of the best known physicians of eastern Massachusetts; for many years physician at the Middlesex County jail, East Cambridge, died at his home in Newton, March 15, from disease of the stomach, after a prolonged illness, aged 68.

Rodney C. F. Combes, M.D. Bellevue Hospital Medical College, New York City, 1875; a member of the state and county medical societies, the Long Island Medical Society and the Brooklyn Neurological Society, of which he was once president, died at his home in Brooklyn, March 18, from typhoid fever contracted during a recent trip to Mexico, aged 59.

William Henry Donnelly, M.D. Baltimore Medical College, 1905; assistant house physician on the Boston Floating Hospital in 1905; and later house physician at the House of Providence Hospital, Holvoke, Mass., died at the home of his mother in Worcester, Mass., February 9, from brain tumor, after an illness of three weeks, aged 27.

Joseph Hanson Hare, M.D. Medical Department of the University of Nashville (Tenn.) 1889; for many years president of the board of health of Bluefield, W. Va., died from hypostatic pneumonia, February 22, at his home, after an illness of about two years with obscure nervous disease, aged 51.

Thomas Benjamin Noble, M.D. Medical College of Ohio, Medical Department of the University of Cincinnati, 1851; one of the oldest and most beloved practitioners of Johnson County, Ind., died at his home in Greenwood, March 8, from arteriosclerosis, after an illness of two months, aged 80.

Jennings P. Crawford, M.D. University of Iowa College of Medicine, Iowa City, 1883; a member of the American Medical Association; district surgeon for the Chicago, Milwaukee & St. Paul Railway at Davenport, Iowa, died at his home in that city, March 24, from arteriosclerosis, aged 51.

James B. Murfree, Jr., M.D. Vanderbilt University, Medical Department, Nashville, 1893; a member of the American Medical Association, city physician of Murfreesboro, Tenn., and a prominent practitioner of that city, died at his home, March 15, after an illness of two days, aged 37.

Herbert A. Barney, M.D. Long Island College Hospital, Brooklyn, 1888; a member of the American Medical Association; supervisor of the town of Belmont, and coroner and jail physician of Allegany County, N. Y., died suddenly at his home, March 16, from quinsy, aged 42.

John B. McDowell, M.D. Medical Department of Kemper College, St. Louis, 1845; Missouri Medical College, St. Louis, 1859; a veteran of the Mexican War, died at his home in Mason City, Ill., March 16, from cerebral hemorrhage, after an illness of one day, aged 89.

Albert M. Warner, M.D. Vermont Medical College, Woodstock, 1842; said to have been the oldest practitioner of Waukesha, Wis.; county physician of Waukesha County for several years, died at the home of his adopted daughter in Chicago, March 15, aged 91.



**John George Reinberg, M.D.** The Netherlands University of Utrecht, Holland, 1871; a member of the American Medical Association, died at his home in McBain, Mich., February 22, from pneumonia complicating typhoid fever, after an illness of two weeks, aged 62.

**James M. McClanahan, M.D.** Medical College of the State of South Carolina, Charleston, 1868; one of the oldest practitioners of Oconee County, S. C., died March 14, from an accidental fall from the second story of his barn at Petreat, aged 78.

**Oscar Robert Bluthardt, M.D.** Rush Medical College, Chicago, 1886; assistant physician at the Cook County Institutions, Dunning, died at his home in Chicago, March 12, from cerebral hemorrhage, after an illness of four weeks, aged 54.

**Iral L. Brown, M.D.** Central College of Physicians and Surgeons, Indianapolis, 1878; one of the oldest practitioners of Montgomery County, Ind., died at his home in Alamo, March 18, from cerebral hemorrhage, aged 80.

**James B. McGrew, M.D.** College of Physicians and Surgeons, Baltimore, 1883; formerly a practitioner of Pittsburg, Pa., died at the home of his brother in Finleyville, Pa., March 16, after a prolonged illness, aged 52.

**Charles Mervin Fenn, M.D.** University of California, Medical Department, Toland Medical College, San Francisco, 1865; died at his home in San Diego, Cal., from chronic nephritis, March 7, aged 71.

**James Harper North, M.D.** Pennsylvania Medical College, Gettysburg, 1857; the oldest member of the staff of Clifton Springs (N. Y.) Sanitarium, died at the sanitarium March 12, aged 83.

**William A. Harris, M.D.** Chicago Physio-Medical College, 1889; died at his home in Monee, Ill., from pneumonia complicating typhoid fever, March 6, after an illness of 10 days, aged 62.

**Perie Comerford, M.D.** Northwestern University Medical School, Chicago, 1903; died at his home in Appleton, Wis., March 9, from nephritis, after an illness of two years, aged 26.

**Philip Barbour Pendleton, M.D.** Jefferson Medical College, Philadelphia, 1845; died at his home in Cuckoo, Va., March 16, from paralysis, after an illness of several weeks, aged 89.

**Joseph Henry Sweeney, M.D.** Jefferson Medical College, Philadelphia, 1894; died at his home in Lehr, N. D., February 8, from pneumonia, complicating acute nephritis, aged 35.

**Henry H. McDonough, M.D.** Cleveland Medical College, 1876; for a number of years postmaster at Vanceville, died at his home in Claysville, Pa., March 16, from cardiac dropsy, aged 71.

**James H. Anderson, M.D.** University of Pennsylvania, Department of Medicine, Philadelphia, 1848; died at his home in Easton, Md., March 11, from heart disease, aged 80.

**Alois F. Hinz, M.D.** University of Nebraska, College of Medicine, Regular Department, Lincoln, 1886, died suddenly at his home in Minneapolis, Minn., February 28.

**Daniel M. Foster, M.D.** Louisville (Ky.) Medical College, 1841; a pioneer resident of Bloomington, Ill., died at his home in that city, March 17, aged 90.

#### Deaths Abroad.

**Ernst von Bergmann**, the eminent surgeon and leader of the medical profession in Germany, died at Wiesbaden, March 25, after an operation for appendicitis, aged 70. His seventieth birthday was celebrated Dec. 16, 1906, with great enthusiasm. He was born in Riga, Russia, and his brother is still a practi-

tioner at Riga, while a nephew is a surgeon of Irkutsk, Siberia. He became prominent by his revolutionary ideas in regard to military surgery as he served in the Franco-Prussian and Turko-Russian campaigns, and was the first to advocate the rational or conservative treatment of wounds in war. After serving as professor of surgery at Dorpat and Würzburg, he was called to Berlin in 1882 as successor to von Langenbeck in the chair of surgery, and he also assumed the editorship of the *Archiv f. klinische Chirurgie*, founded by von Langenbeck. Volume lxxxi of the *Archiv*, just published, is dedicated to von Bergmann. The first part is from his friends and colleagues, the second part from his present and former assistants. Some of the articles in it are devoted to the subject of brain surgery, in which von Bergmann was the authority in Germany. Fischer ascribes his meteoric rise to prominence as due to his vast and successful literary work, commencing with his publications on the causes of sepsis and its control by means of ferments, in which he experimented among others with trypsin. In the course of this research he became infected and was critically ill with lymphangitis for a time. His

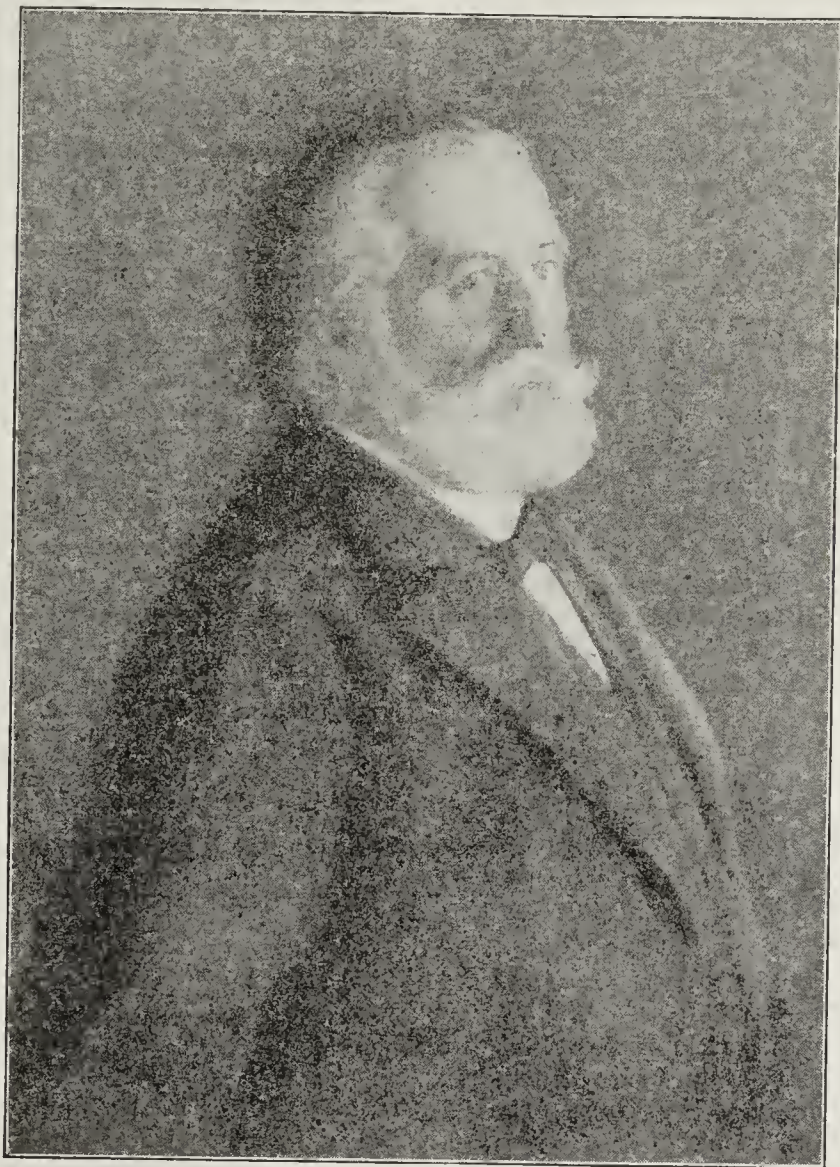
tireless efforts to promote the welfare of the profession in every respect were gratefully lauded in the recent birthday speeches, to which von Bergmann replied that he deserved no credit for what he had done—he had not been one of the pushers, but only one of the pushed—it was the greatness of the times that had lifted him into prominence. He was very affable and yet dignified, liberal, hospitable and careful to observe all the niceties of professional etiquette. He had the largest clientele among crowned heads of any man in Europe, and had been heaped with honors of all kinds, including a life membership in the senate.

The present stage of organization of the profession in Germany is largely the result of his disinterested labors for all the material interests of the profession. In 1897 he summoned physicians and laymen to concerted action to secure proper provision for first aid in emergencies in Berlin, with most successful results. He preached and worked for professional unity and organization, attending nearly all the meetings of the local medical chamber, of which he was president, and guiding its deliberations for years. The new system of free postgraduate lectures now in operation throughout Germany, with courses in 38 cities, and with its new central building,

the Kaiserin Friedrich-Haus at Berlin, where the museum, the offices and the "flying exhibitions" are installed, is a grand monument to his memory, as the inception and success of the whole scheme are largely attributed to his influence on the press, in the legislature and with persons of authority. He was president of the whole system, and cooperated in the publication of its official organ, the *Zeitschr. f. aerztliche Fortbildung*. He was also with König and Richter, the publishers of the *Centrbl. f. Chirurgie*.

**M. Duval, M.D.**, professor of histology at Paris, and author of several works on anthropology, embryology and histology, including a manual of anatomy for the use of artists, died March 7, aged 63.

**O. Israel, M.D.**, professor of pathologic anatomy at Berlin and formerly assistant to Virchow, died recently, aged 53. Since Virchow's death he has been editor of Virchow's *Archiv*, which was continued by Orth, Virchow's successor in the medical faculty. Israel has published a number of works on congenital anomalies, circulatory affections, infectious diseases, cancer and the like.



ERNST VON BERGMANN.



## Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

### Graduate Work in County Societies.

The following letter has been received from Dr. W. C. Gates, Bucyrus, Ohio:

"For many years I have felt the need of systematic post-graduate medical study and I know that very many of my professional brethren feel the same need. The county society, while valuable, is far from working at its greatest efficiency. For several years I have been trying to think of some plan to reach the individual physician working alone, as well as those in a position to work in the local society.

"I think that the American Medical Association ought to take up some method of reaching and helping its members and others in postgraduate study at home. It has a building, printing plant and office force, and is well equipped for the work, and can do it cheaper and more efficiently than others. Again, this work naturally falls to the Association. It will need but a few more good men to carry out whatever plan is adopted.

"Many of our universities are giving extension courses of study by correspondence, with credit and satisfaction. While a correspondence school of medicine would be ridiculous, I think that a correspondence course of postgraduate study, conducted by the American Medical Association, would be practical, popular, and most serviceable to the general practitioner.

"With good men at headquarters, outline courses of study could be prepared in pamphlet form on each of the various subjects of medicine and surgery. A graduate student (country physician or other) could send in for the pamphlet outline on any given disease in which he was most interested at the time, the instructors could answer his questions and give him the benefit of all that is valuable in the new books and journals on the subject in which he was interested. If the physician chose to take an examination in the subject, after a proper amount of study, he could receive credit, and a certain amount of credits would entitle him to a certificate in the graduate work.

"Again, this idea ought to be modified for use through the county society. It would make the societies much more efficient and attractive, and would open up a wealth of material to its members and to the individual physician, which is at present inaccessible to them. It would bring to the Association reports of interesting cases which at present never find their way into print. This idea is practical, and can be worked out so as to be most efficient to the Association and of great lasting benefit to the individual professional worker."

Dr. Gates has outlined substantially the same plan that has been under consideration for several years past, but which has not been put into operation for various reasons. The advantages of such a plan are unquestionable. It is also probably true that something along this line will be inaugurated just as soon as there is a sufficiently wide interest taken to justify such a measure.

### The Courtesies of Correspondence.

Physicians as a class have at various times been accused of many shortcomings and delinquencies. Their sins of omission and commission have varied in enormity with the imagination of the accuser from blatant atheism to simple discourtesy. Like all sweeping generalities such charges are largely without basis. No set of men—no profession—has a monopoly either of vice or of virtue. It is admitted that physicians, being human, are liable to err, and that their lives being full ones, such errors are apt to be those of omission. We were not surprised, therefore, when we received recently a letter from a physician in which he complains in strong language of the lack of courtesy among physicians as evidenced in correspondence. The particular shortcoming in this case was the failure of many physicians, who had written for information, to enclose a stamp for reply. While every thinking man knows that when writing a business letter that calls for a reply in which he alone is interested, it is but simple courtesy to enclose a stamp, yet it is surprising how few men,

either in or out of the profession, live up to this axiom of business correspondence. And yet if faults are ever to be condoned, and if shortcomings are ever to be excused, we believe the case in point is one that calls for leniency of judgment.

The medical man in this country, thanks largely to the enterprise of the manufacturer of proprietary medicines, is simply deluged with mail of greater or less importance and value—usually less. Every nostrum vendor in the country seems to make it his duty to pour on the unoffending physician a cataract of form-letters and literature. No small proportion of these letters request that the "Dear Doctor" write and relate his experience with this or that "proprietary"—but the infrequency with which such firms enclose stamps for replies is probably an indication of the number of answers they expect. It is not altogether to be wondered at, then, that the physician's feelings along this line become a little blunted. So that while we believe with our correspondent that as "members of a learned profession we should observe those little courtesies which are an index of intelligence and character," we would call attention to the reverse of the shield.

### A Summary of the Insurance Fee Question.

At the quarterly meeting of the South Idaho District Medical Society, held at Weiser on January 15, Dr. Jesse C. Woodward of Payette read a paper on life insurance examination fees, giving a comprehensive summary of the life insurance situation, as well as the methods used in his district for obtaining an expression of opinion and concerted action from the medical profession. Dr. Woodward discussed the entire question at length, and closed his paper with this summary:

1. In a controversy over fees, the examiner and not the company should determine the amount to be paid.
2. The statement of the companies that the reduction in fees is due to legislation is false.
3. It is not true that the companies are not able to pay a flat fee of \$5.
4. It is impossible for an individual to combat immense, splendidly organized concretions of capital.
5. The graded fee schedule, so-called, is a delusion and a snare.
6. Whatever the fee, an honest examination should be given.

The companies will enforce their demands by:

7. The discharge of the present examiners who refuse to make examinations for \$3 or less.
8. The appointment of other and cheaper examiners.
9. The importation of permanent competing physicians.
10. The temporary introduction of physicians to do the examining, or by the exportation of the applicant.
11. The employment of an examiner at a stated salary to do all the examining within a given area.

We may resist unjust coercion by:

12. Organizing and standing together.
13. Individual effort to promote the signing and observance of a uniform agreement.
14. The formation of a state organization, outside of the societies, to work to this end alone as outlined.
15. Every man resolving for himself that no matter what others may do he himself will not examine for less than \$5.

The following methods were used to elicit an expression of opinion from the members of the profession: A letter was sent to every medical man in the district, asking him to sign an agreement to make no old-line examinations for less than \$5. All of the physicians of New Plymouth, Weiser and Payette, Idaho, and Vale, Nyssa and Ontario, Ore., signed the agreement. A copy of this agreement, with the signatures, was then sent to every physician in the state of Idaho, enclosing a postal card, on which was printed the same agreement. Out of 85 replies received at the time of Dr. Woodward's report, 75 were unconditionally in the affirmative, 9 were affirmative, with some conditions, and a single reply was negative.

### What One Physician Is Doing in the State of New York.

Dr. Samuel A. Gluck, Brooklyn, is the author of several very excellent bills that have been presented before the General Assembly of the State of New York, of which body he is a distinguished member.

The first is an act to amend the penal code in relation to cigar making, providing that it shall be unlawful for any persons making cigars to place any cigar or material comprising it to tongue or lips while in the progress of making. This is of the utmost importance to the public health, as syphilis and other infectious diseases are often contracted by the habit which the bill seeks to suppress.



The second bill is an act regulating and restraining the practice of midwifery in the city of New York. The importance of such regulation is too obvious to require comment.

The third bill is an act to amend the public health law, extending the powers and duties of the health commissioner, and placing in his hands the proper disinfection of public buildings, railroad depots, coaches, sleeping cars, etc.

Dr. Gluck is a member of the public health committee of the General Assembly of New York, as well as a member of the Auxiliary Legislative Committee of the American Medical Association, and is a prominent, active worker in all things pertaining to public health. It is to be hoped that these three bills will be adopted by the General Assembly.

#### The Way One Problem Was Met.

The necessity for concerted action on the part of the profession, if the agitation against the reduction of fees in insurance examinations is to be successful, is emphasized by *Southern Medicine and Surgery* in its December number. In speaking of the problem to be met the editor says:

"Occasionally individual members for imperative financial reasons feel that they can not yield their appointments even with reduced fees. I know of such an instance which occurred recently in Georgia. One of the most honorable members of a county society said he absolutely could not support his family and meet his obligations without his income from insurance examinations. This exigency was promptly met when several of his more prosperous confrères visited him, expressed their appreciation of his situation, and offered to throw him sufficient work as anesthetist, assistant and otherwise, to permit him to lose, if need be, his insurance appointments. This resulted in a unanimous action on the part of that large county society, and exemplified a very practical and generous manner of avoiding individual embarrassment, yet achieving unity of action."

The Ingham County (Mich.) Medical Society has issued a letter to its membership announcing the establishment of a post-graduate course in the form of a series of clinical demonstrations. For the March meeting lesions of the heart will be demonstrated. In May different forms of tuberculosis will be shown. The meeting in September will be devoted to skin diseases. If this sort of work keeps up in Ingham County it will not be long before the members of the county society find that four meetings a year give them far too little time to do the work and carry out the discussions which they will find necessary. A busy society always finds that its meetings are too short and too far apart.

The copy of the program of the Newcastle County (Del.) Medical Society shows a membership of 65, with an average attendance for the past year of 20. The program for the January meeting was devoted to a symposium on eclampsia, papers being presented by different members of the society on etiology, diagnosis, symptomatology, pathology, eye and nervous manifestations and treatment. A general discussion closed the meeting.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

#### YOHIMBIN.

—, ILL., March 20, 1907.

To the Editor:—Kindly inform me regarding yohimbin, its origin, use and dosage, as I am unable to find anything in the literature at hand.

L. R. K.

ANSWER.—The following description of yohimbin is given by Sollmann (Text-book of Pharmacology, 2d edition, p. 225). Yohimbin ( $C_{22}H_{28}N_2O_3HCl$ ) is an alkaloid isolated by Spiegel (1896) from the bark of the Yohimbe tree (family of *Apocynaceæ*) growing in German West Africa. The local application (1 to 2 per cent. solution) produces the same anesthetic effects as cocain, and is less

toxic. The effect begins in 10 to 15 minutes and lasts  $\frac{1}{2}$  to  $1\frac{3}{4}$  hours. The vessels are rather dilated, even when adrenalin is added. In the eye the anesthesia occurs more promptly ( $\frac{1}{2}$  to 1 minute, lasting from 10 to 15 minutes). It should not be used in this organ since it causes considerable irritation, lasting 4 to 6 hours. Accommodation is but little affected. When it is given by the mouth or hypodermically in moderate doses it produces a general vasodilation in the skin, mucous membranes, and particularly in the sexual organs. In consequence of the latter and perhaps by a direct action of the spinal centers, it produces erection. It does not seem to stimulate the production of spermatozoa or sexual desire.

In consequence of this action on animals, the alkaloid has been used as an aphrodisiac in neuropathic impotence; apparently with fair success. The reports must be accepted with caution, considering the possibility of psychic suggestion. The effect in animals occurs immediately; that in man only after some four to six weeks. This makes it difficult to explain the clinical observations by the animal experiments. The continued administration of the alkaloid is said to lead to no bad effects; however, the resemblance of its actions to those of cocain would suggest that it may perhaps create a habit. Ordinary doses produce a psychic excitement similar to that of cocain (this has been referred to dilation of the cerebral vessels). There is also some distension of the cerebral vessels and vertigo. Gastric disturbance has been noticed. The effects of larger doses also agree with those of cocain. Toxic doses cause general stimulation and subsequent paralysis of the nervous centers, particularly in the medulla. Death occurs by respiratory paralysis. (Loewy and Mueller: Muench med. Wochsch., No. 15, 1903.)

The free alkaloid and the solutions of the hydrochlorid being unstable, the dry salt is marketed in the form of tablets, containing 0.005 gm. ( $1/12$  grain); three tablets per day are the ordinary dose.

According to A. Loewy (Therapie der Gegenwart, December, 1906), yohimbin has been applied successfully in several cases to secure the return of the rut in cows, bitches and sows. He thinks this offers encouragement for its use in women where sexual frigidity is complained of. Several authors have used it for this purpose with favorable results, among them Kronfeld, Euler-Rolle, Topp and Berger; Schalenkamp, on the other hand, could not observe any effect in a case under his care. Loewy thinks that it will be useful in cases of irregular and scanty menstruation, and cites favorable reports by Simons, Schalenkamp and Toff. He thinks it should also be recommended in premature occurrence of the menopause.

#### THE FIRST FRENCH PUBLICIST.

PHILADELPHIA, March 20, 1907.

To the Editor:—In your editorial on page 2016 of THE JOURNAL, Dec. 15, 1906, about the middle of the first column, you say: "Thirteen years later the Paris faculty found itself impelled to decree the free use of antimony." Is it a fact that the faculty "decreed" the use of antimony, and what right had the faculty to "decree" anything?

S. H.

ANSWER.—At that time the Faculty of Medicine of Paris exercised a great deal of autocratic power in medical matters. The introduction of antimony and other "clinical medicines" by Paracelsus (1490-1541) and his followers was opposed not only by the faculty in Paris, but also by other bodies of similar scope, as, for instance, the College of Physicians and the Society of Apothecaries in England. In Paris the struggle was especially bitter. Owing to the favor of the king (Louis XIII) and Cardinal Richelieu, Renaudot was able to maintain himself in spite of the opposition of the faculty, which allowed no one but those promoted by itself to practice in Paris. When Richelieu died the faculty cancelled Renaudot's license. In the meantime Renaudot and others had spread the knowledge of the therapeutic use and value of antimony and eventually the Paris faculty withdrew its opposition to antimony (presumably by virtue of established custom and privilege) and formally decreed that its free use was permitted.

## The Public Service

#### Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 23, 1907.

Appel, A. H., surgeon, the leave granted in S. O. 24, Feb. 1, 1907, Philippines Division, is extended two months and fifteen days.

Banister, William B., surgeon, relieved from duty at Jefferson Barracks, Mo., and will proceed to San Francisco, and take transport to sail from that place about April 5, for the Philippine Islands, and on arrival at Manila, to report to the commanding general, Philippines Division, for assignment to duty.



Rich, Edwin W., asst.-surgeon, will accompany the battalion of the 23d Infantry at Fort Ontario to Jamestown, and on arrival to be assigned to duty as surgeon of that regiment.

Nelson, Kent, asst.-surgeon, will proceed from Fort McHenry, Md., to Fort Myer, Va., in due time to accompany the 3d Battery, Field Artillery from that post to Jamestown, and remain with it during the encampment.

Banister, John M., deputy surgeon general, left Omaha on 14 days' leave of absence.

Crosby, Wm. D., surgeon, ordered to accompany Company E, 14th Infantry, from Vancouver Barracks, Wash., to Presidio of Monterey, Cal.

Wakeman, Wm. J., surgeon, died at hospital, Fort Monroe, Va., March 20, 1907.

Farr, Charles W., asst.-surgeon, granted 3 months' leave on surgeon's certificate of disability.

Morris, Samuel J., asst.-surgeon, granted leave of absence for 21 days, effective May 25, 1907.

Collins, C. C., asst.-surgeon, granted 2 months and 20 days' leave of absence.

Steer, Samuel L., asst.-surgeon, the resignation of his commission as an officer of the Army has been accepted by the President, to take effect July 3, 1907.

Smart, Robert, asst.-surgeon, ordered to report in person on Tuesday, May 14, to Major William C. Borden, surgeon, president examining board, Army Medical Museum Building, Washington, D. C., for re-examination to determine his fitness for advancement.

The following named first lieutenants, asst.-surgeons, will report in person on the dates specified, to Major William H. Arthur, surgeon, president examining board at Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for advancement:

April 23, 1907: Nelson Gapen, William T. Davis.

April 30, 1907: Charles F. Morse, William M. Smart.

May 7, 1907: Will L. Pyles, Cary A. Snoddy.

May 14, 1907: Haywood S. Hansell, Jay W. Grissinger, Charles C. Billingslea.

The following named first lieutenants, asst.-surgeons, will report in person on the dates specified, to Lieut.-Col. Geo. H. Torney, deputy surgeon general, president examining board at the General Hospital, Presidio of San Francisco, for examination to determine their fitness for advancement:

April 23, 1907: Louis C. Duncan, William L. Keller, Harold W. Cowper.

May 14, 1907: Samuel E. Lambert, Clarence H. Connor.

May 21, 1907: Junius C. Gregory, Harry S. Purnell.

June 18, 1907: Robert M. Blanchard.

Rhoads, Thomas L., asst.-surgeon, will, in addition to his present duties, assume charge of the office of the chief surgeon, Department of the Missouri. In the performance of this duty Captain Rhoads will make not to exceed six trips each week from Fort Crook, Neb., to Omaha, and return.

Wing, Franklin P., dental surgeon, left Fort Robinson, Neb., and arrived at Fort Mackenzie, Wyo., for duty.

Chambers, William H., dental surgeon, relieved from duty in the Philippines Division in time to sail, May 15, for the United States, for station.

Voorhies, Hugh G., dental surgeon, relieved from duty in the Philippines Division in time to sail for the United States on the transport *McClellan* for station.

Sanford, Joseph L., contract surgeon, ordered to accompany 27th Battery, Field Artillery, from Fort Ethan Allen, Vt., to San Francisco, and then return to proper station, Fort Washington, Md.

Greenwell, Samuel A., contract surgeon, granted leave of absence for one month.

Love, Joseph W., contract surgeon, arrived at San Francisco, from Philippine service, and ordered to Fort Preble, Me., for duty.

Brown, Polk D., contract surgeon, arrived at San Francisco, from Philippine service, and ordered to Fort St. Philip, La., for duty.

### Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 23, 1907:

Scott, T. W., pharmacist, ordered to the Naval Academy.

Curl, H. C., surgeon, ordered to the U. S. Naval Medical School, Washington, D. C.

Brooks, F. H., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., ordered to the *Annapolis*.

Bagge, C. P., and Alfred, A. R., surgeons, ordered to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

Holcomb, R. C., P. A. surgeon, detached Naval Station, Culebra, W. I., to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

Shaw, H., P. A. surgeon, detached Naval Hospital, Pensacola, Fla., ordered to Naval Station, Culebra, W. I.

Waggener, J. R., medical director, ordered to Naval Recruiting Station, Providence, R. I., April 1.

Payne, J. H., P. A. surgeon, detached Naval Recruiting Station, Providence, R. I., ordered to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

### Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 20, 1907:

Wertenbaker, C. P., surgeon, granted leave of absence for 3 days from March 18.

Gardner, C. H., P. A. surgeon, detailed as a member of the Revenue-Cutter Service Retiring Board convened to meet in San Francisco, Cal., April 2.

von Ezdorf, R. H., P. A. surgeon, relieved from duty at Havana, Cuba, and directed to proceed to New Orleans, reporting arrival by wire.

Hobdy, W. C., P. A. surgeon, detailed as a member of the Revenue-Cutter Service Retiring Board convened to meet in San Francisco, Cal., April 2, 1907.

King, W. W., P. A. surgeon, directed to proceed to Missoula, Mont., via Chicago, for special temporary duty, on completion of which to rejoin his station at Hygienic Laboratory, Washington, D. C.

Fox, C., P. A. surgeon, directed to proceed from Port Townsend, Washington, to San Francisco Quarantine Station for duty and assignment to quarters.

Amesse, J. W., P. A. surgeon, leave of absence granted for 14 days from May 4 amended to be effective May 14, 1907.

Berry, T. D., P. A. surgeon, granted leave of absence for 1 day.

Lloyd, B. J., P. A. surgeon, granted leave of absence for 2 days from Feb. 8, 1907.

Campbell, Clarence R., acting asst.-surgeon, granted leave of absence for 3 days from March 12, 1907, under paragraph 210 of the Regulations.

Primrose, R. S., acting asst.-surgeon, granted leave of absence for 3 days.

Terry, M. C., acting asst.-surgeon, granted leave of absence on account of sickness for 30 days from Jan. 1, 1907, and 30 days' annual leave from Jan. 31, 1907.

### BOARDS CONVENED.

A board of medical officers was to meet at the Bureau at 10 a. m., April 15, 1907, for the purpose of examining applicants for the position of assistant surgeon in this Service. Detail for the board: Surgeon L. L. Williams, chairman; P. A. Surgeon H. S. Mathewson; P. A. Surgeon Joseph Goldberger, Recorder.

A board of medical officers was to meet at Boston, March 21, 1907, for the physical examination of an officer of the Revenue-Cutter Service and an applicant for the position of second assistant engineer. Detail for the Board: Surgeon R. M. Woodward, chairman, and P. A. Surgeon B. S. Warren, recorder.

### Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 22, 1907:

#### SMALLPOX—UNITED STATES.

California: San Francisco, March 2-9, 1 case.

Illinois: Chicago, March 9-16, 5 cases.

Indiana: Indianapolis, Feb. 24-March 10, 9 cases.

Iowa: Davenport, March 1-15, 1 case.

Kansas: Lawrence, Feb. 1-28, 1 case; Topeka, March 2-9, 5 cases.

Louisiana: Shreveport, Feb. 23-March 2, 1 case.

Ohio: Cincinnati, March 8-15, 1 case; Cleveland, 1 case.

Pennsylvania: Homestead, Feb. 28-March 7, 2 cases.

Tennessee: Nashville, March 9-16, 1 case.

Wisconsin: Milwaukee, March 2-9, 2 cases.

#### SMALLPOX—INSULAR.

Philippine Islands: Mariveles Quarantine, Jan. 26-Feb. 2 (on *S. S. Pioneer*).

#### SMALLPOX—FOREIGN.

Africa: Cape Town, Jan. 26-Feb. 2, 1 case.

Argentina: Buenos Aires, Jan. 12-26, 12 cases, 3 deaths.

Brazil: Bahia, Jan. 12-Feb. 16, 26 cases, 1 death; Para, Feb. 2-9, 1 case; Pernambuco, Jan. 15-31, 60 deaths; Rio de Janeiro, Feb. 2-9, 1 death.

Canada: Digby County, N. S., Feb. 2-9, 36 cases, 3 deaths.

Chile: Coquimbo, Feb. 6, 25 cases, 2 deaths.

China: Shanghai, Jan. 6-13, 1 case, 1 death.

Columbia: Cartagena, Feb. 24-March 3, 3 deaths.

Ecuador: Guayaquil, Feb. 16-23, 2 deaths.

Egypt: Cairo, Feb. 18-25, 3 cases, 1 death.

France: Marseilles, Feb. 20-March 6, epidemic.

Great Britain: Cardiff, Feb. 23-March 2, 2 cases; Hull, Feb. 16-23, 2 deaths; Newcastle-on-Tyne, Feb. 16-23, 1 case.

India: Calcutta, Feb. 2-9, 50 deaths.

Italy: General, Feb. 1-28, 7 cases.

Mexico: Aguas Calientes, March 2-9, 2 deaths.

Netherlands: Rotterdam, Feb. 23-March 2, 1 case.

Russia: Odessa, Feb. 16-23, 28 cases, 7 deaths.

Siberia: Vladivostok, Jan. 21-28, 1 case.

Spain: Malaga, Feb. 16-23, 1 death.

Turkey: Constantinople, Feb. 17-March 3, 3 deaths.

#### YELLOW FEVER—UNITED STATES.

Texas: Galveston, March 17, 1 case, 1 death (from *S. S. Basil* from Para).

#### YELLOW FEVER—FOREIGN.

Brazil: Para, Feb. 2-23, 1 case, 6 deaths; Rio de Janeiro, Feb. 2-9, 1 case.

Ecuador: Guayaquil, Feb. 16-23, 7 deaths.

#### CHOLERA—INSULAR.

Philippine Islands: Provinces, Jan. 6-12, 43 cases, 23 deaths.

#### CHOLERA—FOREIGN.

Ceylon: Colombo, Jan. 26-Feb. 2, 1 case, 1 death.

India: Calcutta, Feb. 2-9, 105 deaths.

#### PLAGUE.

Argentina: Buenos Aires, Jan. 12-26, 3 cases, 1 death.

Australia: Brisbane, Jan. 12-19, 8 cases, 1 death.

Brazil: Bahia, Jan. 12-Feb. 16, 4 cases, 6 deaths; Para, Feb. 2-23, 9 deaths.

Chile: Antofagasta, Feb. 6, 14 cases, 6 deaths; Santiago, Feb. 2, present.

China: Nanchang, Jan. 23-30, 39 cases, 36 deaths.

Egypt: Provinces: Beni Souef, Feb. 15, 1 case, 1 death; Gherga, Feb. 17-21, 4 cases, 4 deaths; Kena, 4 cases, 4 deaths; Kouss, Feb. 21, 1 case, 1 death; Minich, Feb. 19-21, 4 cases, 4 deaths.

India: General, Jan. 26-Feb. 9, 20,262 cases, 20,706 deaths; Calcutta, Feb. 2-9, 21 deaths.

Peru: Callao, Feb. 8-16, 1 case; Chiclayo, Feb. 7, 6 cases, 6 deaths; Ferrenafe, 7 cases, 7 deaths; Lima, 6 cases, 4 deaths; Mollendo, 1 case; Pacasmayo, 2 cases, 1 death; Pueblo Nuevo, 2 cases; Trujillo, 12 cases, 3 deaths.



## Miscellany

### AN APPRECIATION OF THE LATE DR. GEORGE CHISMORE OF SAN FRANCISCO.

By Douglas W. Montgomery, M.D.

SAN FRANCISCO.

Robert Louis Stevenson once put forward, as an ideal life, an adventurous youth and a serene and prosperous old age. He may have been thinking of his friend, George Chismore, whose youth was spent in the sough of the forest and the surge of the ocean, and whose latter days were passed in the kindly practice of the most beneficent of professions. The following anecdotes will probably give a more vivid picture of his sympathetic nature than any detailed description.

A salient feature of George Chismore's character was self-respect, and he frequently jokingly remarked that he did not need other people's respect, as he furnished such a fine brand of the article for home use. He loved to tell stories, especially Scotch ones, bearing on self-respect.

Chismore followed many vocations in his day, and among others had been a dentist, and as he used to remark, "a good one, too." Even after he began the practice of medicine this was of use to him, as in the early days here the general practitioner, as Chismore then was, did everything. One day an old Scotchman called at the office holding his jaw, and with an expression of pain, asked:

"Can ye pull a tooth?"

"Yes, I can."

"How much will ye charge me?"

"Two dollars and a half." The usual fee for an office consultation in those days.

"I winna pay it." And the old man, still with his hand to his jaw, turned to leave.

"Stop," said Chismore, "it is a rule with me never to allow a man to leave this office suffering pain, if I can alleviate it. I'll pull your tooth for nothing."

"I'll noo do that neither." And the old man pursued his course with relentless pertinacity and self-respect.

If a man properly esteems himself and his own rights, it is the nearest way to get a just idea of the rights of his fellows. The following will throw a clear light on Chismore's ideas in this regard:

Chismore and I were in the smoking room of a train coming from Chicago, when he fell to telling of having been called not long before to Monterey to see a patient, an elegant looking, elderly Englishman, refined in dress and in speech. The patient soon began talking of diamonds and of some mines in which he was interested, and showed several fine stones both cut and in the rough. He then, said Chismore, proceeded to relate how those stones were obtained, and in doing so detailed, but without the least appreciation of its horror, one of the most glaring crimes against human dignity. He told how they hired negro miners by contract, shut them up in a corral, and at the end of their term, after purging them, searched them in the most intimate recesses of their bodies. "Now," said Chismore, "what can be the moral attitude of a man, turned loose on the desert with the little money owing him flung at him, and after such a search?" "But," said a picture dealer who was present, "if the owners didn't do that the men would steal." "Well," said Chismore, "if every man who had the opportunity to steal were so searched, very few of us would escape the painful experience." The picture dealer subsided.

The above shows an admirable feature of Chismore's character, and one that I am afraid we medical folk are apt to become dulled in; a keen appreciation of sexual shame and privacy. We become so used to seeing human nakedness exposed that we finally, if not on the alert, begin to lack the sense of one of the most beautiful of human attributes, and one the piety of which we can not afford to transgress.

Another story Chismore loved to tell was of a man who was relating the way some capitalists from Europe, on a famous railroad inspection tour in 1883, treated the people of the country through which they passed. As he told of inso-

lence after insolence committed by some of these, the bystanders vented their indignation in picturesque frontier language against the perpetrators; all but an old Scotchman who stood silently by. "Well, Donald, what do you think of that?" said the speaker as he related a particularly striking instance of brutal impudence. "Dom the people that'll stan' it!" was the deliberate and emphatic response. This was a view directly after Chismore's own heart, for the old Scotchman had hit the nail on the head, and Chismore wrung the old man's hand in lively appreciation of the sentiment.

Many a time have I thought of this while reflecting on the arrogant, insolent and high-handed manner some of the English fire insurance companies are exhibiting in settling their losses in this city. "Dom the people that'll stan' it!"

The following can only be appreciated by knowing the Highland characteristic of being laconic, and of calling everything "she." It is said of a Highlander that he calls everything she but his wife, and that's he. The scene of the incident was, if I am not mistaken, the Hudson Bay Company's factory in Vancouver. The floor was of hardwood, and was as smooth as glass, and highly polished by grease and by the moccasined or bare feet of the Indians. An Indian was seated on the floor facing the wall at one end of the apartment, lost in contemplation after the manner of his kind. An old Scotchman was standing in the middle of the room examining a gun, a beautiful piece of mechanism. It was double barreled, one barrel a rifle and the other a shot gun, and the barrels swung on a swivel, so that they came into place as required. The Scotchman was holding the gun in the bend of his left arm and amusing himself by swinging one barrel and then the other into place. The day before he had been doing the same thing in the open, and one of the barrels had accidentally gone off. This time the same accident again happened, and the shot gun went off with a bang, the shot striking the hard polished floor a short distance this side of the Indian, and ricochetting into his body. He sprang up with a yell, and disappeared rapidly through the door and down the street. The Highlander looked up quietly and remarked of the gun in an even voice, "She'll kill somebody yet."

Chismore lived long in Alaska, and delighted to tell of his experiences with the Indians, to whom he was much attached. He at times regretted leaving there, and thought that possibly he had made a mistake in coming back to civilized life. In fact, he at one time applied to the Smithsonian Institute to secure a pension in his old age, should he spend his life in noting the Indian habits. He wished the old age pension because the Indians then neglected their aged, and frequently killed them as other savages do. One of his Indian tales was very amusing.

One day while walking along the seashore he saw an Indian acquaintance bathing in a pool that was partially frozen over.

"What are you doing in there, Joe? Isn't it cold?"

"Stay here ten minutes—keep warm all day—no chop wood."

"That's right," said Chismore, "do anything to avoid cutting wood."

I suppose the Indian was a lineal descendant of Adam, who was so sure that work was a cursed thing.

At one time Chismore was a contract surgeon in the United States Army, and camped from spring to spring through that desert that is now fertile southern California, and pushed on still farther south. As the troops approached the Gila river, Chismore and the officer in charge were somewhat in the rear, but on spying the flowing water they hastened their steps to enjoy a bath after their hot dusty march. They quickly stripped and plunged in the river, but instantly scrambled to the shore again, for the water was scalding hot. They then realized why a row of naked privates were seated on a hillock nearby grinning from ear to ear. They had had the same luck, and were waiting to see the captain and doctor perform.

Later on Chismore's fate led him to settle in San Francisco, where I first met him shortly after my arrival here in 1886. He and Harry M. Sherman had the strangest *ménage* I have ever seen. It consisted of four rooms, a large front room and three toward the rear. One of the latter was Chismore's bedroom, and the head of his bed was on a line with the bedroom door and also with the front door. A man therefore lying in



bed commanded both doorways, and when Sherman first went in with Chismore he was warned, if he came in late at night, that he must answer immediately if hailed, as otherwise he might be shot. In those days Chismore never locked the front door, although it led directly downstairs into Market street, the chief thoroughfare of the city. The gun was the only door-lock, for that was the law of the frontier. After a time his friends prevailed on him to lock his door for their sake if not for his own. The day following this innovation a thief broke in and made a large haul. Chismore explained to his friends the folly of their advice, but nevertheless always afterward locked his door.

The rooms were low ceiled and dingy looking, the carpets matched, and when I tell you the treatment Chismore's bed received you can imagine its appearance. Sherman's office hours ran from 11 a. m. to 1 p. m., and Chismore's from 1 to 3 p. m. My office was in another locality, but being new to practice and having nothing to do, and Sherman having a like amount of occupation, I used to visit Sherman during his office hours, and we would stretch out on Chismore's bed and practice pistol shooting across the foot of it at a mark on the opposite wall. By this means, and by telling stories and in musing on what we would do when we should have a large practice, we managed to kill the tedious hours. We were rarely interrupted by patients; all these came in the afternoon during Chismore's hours. One great comfort of the bed was that one could lean over anywhere and pick off the floor a piece of jerked venison, the fruit of the doctor's many hunting expeditions. I never heard that Chismore complained of the appearance or of the discomfort of his bed; it would have been unlike him to have done so.

Stacked against, and hung around, the walls were guns, rifles, pistols and totem poles, and among these were beautiful pictures, for Chismore was always fond of art. There were books, too, for the man loved reading. In the most remote room was an elaborate set of tools for working in iron, an occupation he was always fond of, and which he turned to good account in perfecting his lithotrite.

Chismore once told us in these days when we were waiting for our luck, of his own first hardships in getting a practice. At one time he had not enough money to get ordinary food, and lived on milk alone. While doing this he used to run a given stretch each day to test his strength, and to find if he were failing. I think he said he kept this up for a week, and then on getting a fee, he gave himself a French dinner, the like of which he never afterward ate. He rapidly acquired a remunerative practice, and in so doing he had many strong aids. In the first place he had the solid basis of working hard and ingeniously for the comfort and recovery of his patients, and in the second place he loved his fellow-man and his fellow-man knew it; and thirdly, he was a born optimist. He was fond of his patients, and never believed that anything so mean as disaster could befall them, and heartened them by assuring them of it. A physician is more kindly remembered by the hopeful things he says to his patients than for his sinister prophecies, no matter how scientifically accurate these may be.

Chismore was as tolerant of human imperfections as Anatole France. At 2, or thereabouts, in the morning a rap would occasionally come on the front door. A wreck of a man with one eye would enter, and walking over to Chismore's bed would waken him. Chismore would fumble in his pockets for 50 cents, hand it to the man, and turn over to sleep. The wreck would try to close the door as softly as possible, but it always made a sharp elir-r-r in the hollow night, for it was a frail structure with many panes of glass in its upper part. Unsteady steps descended the stairs and all became silent as before. One morning the exasperated Sherman told Chismore that the next time that miserable beggar would come he would fire him. "No, don't do that," said Chismore; "he is a morphia fiend, and only comes to ask help under the extremest pinch of necessity."

Though kindness itself to those who relied on him, he had no patience with the arrogant rich. He was called once to see a very rich man, who had come by his wealth suddenly in a mine, and who was suffering from hemorrhoids. During the examination the patient was as insolent as his nature con-

strained him to be, and Chismore returned immediately to his office, wrote out a bill for a good fee, and forwarded it by a messenger boy. The boy quickly returned with the money, and Chismore considered his connection with the case closed. The day following, however, he was sent for again, and, on arriving, found his majesty the brute tamed. An operation was proposed, assented to and performed, and the patient, after the operation, was particularly admonished against getting out of bed or sitting up. On entering the room at the next visit what should Chismore see but the patient sitting in a chair before the fire. He was leaning forward, and as the doctor entered he half turned his head and leered that evil smile that we all of us have seen when an ill-natured patient thinks he has gotten ahead of the doctor. Chismore stopped short, pointed his finger at the bed, and said: "You get back there or I'll lick you." The patient slid quickly into bed, drew up the clothes and looked timidly over the sheets at Chismore, who was now standing at the foot. Chismore explained in vigorous English, in which he was particularly felicitous when aroused, that he had not sought the operation, but that once having operated he was responsible for the result, and that being so, his orders had to be obeyed and punctiliously, or there would be trouble. On such occasions he gave utterance to remarks that induced reflection. The man made a good recovery, and in afterward recommending a patient, said that Chismore was a fine doctor, but a little hasty tempered.

Toward the end of his days Chismore's naturally fine shrewd face grew ethereal looking, and even more noticeably kind. If there is a Heaven, George Chismore will surely be in it, and if there are other human beings there he will enjoy himself.

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**The Physician, the Brain; the Surgeon, the Hands.**—An article is going the rounds of the medical press abroad which affirms that when the family physician decides that an operation is necessary he should take complete charge of the case as the contractor takes charge of a building to be erected. "Medical practice," the writer says, "will become what it should be when the surgeon is put in his proper place, which is in a position subordinate to the physician. The physician should diagnose and plan the operation, should select the surgeon, and the fees should be fixed by the physician, the bill be rendered by him, and paid to him. The amount charged should be commensurate with the responsibility incurred and the patient's pecuniary position." The article (*Gaz. Méd. Belge*, March 7) continues to the effect that when an individual applies directly to a surgeon and there is no emergency, the surgeon should refer the patient back to a physician, saying that he does not know whether medical measures have been tried to the fullest extent, and, if operation is necessary, he must first consult with a physician knowing something of the constitution and clinical past of the patient. The writer continues: "Many surgeons would be astonished if we were to tell them that they rob their medical confrères of hundreds of dollars every year by their present methods, and to the direct detriment of their patients."

**Sale of Drugs in Turkey.**—The Constantinople correspondent of the *Lancet* states that several fatalities are reported as the result of selling drugs to the public without a prescription. A law exists in the Ottoman Empire prohibiting this, but like many other good laws in Turkey it remains a dead letter for lack of a strong will and hand to compel its enforcement. All kinds of drugs, even the most poisonous, have been sold by all kinds of shops to any one on demand. The abuse has been especially great with regard to proprietary articles, the composition of which is unknown. The law entrusts the whole matter to the prefecture of the city, and this, in turn, has to see that every medicine and pharmaceutical preparation is sold to the public only by authorized, duly qualified pharmacists and officially recognized specialists, and only then when the properly signed prescription of a medical man is presented. Recently a new official communication has been sent to all the pharmacists and druggists in Constantinople reminding them of the law and calling attention to the penalties that will follow further indiscriminate sale of drugs.



## Book Notices

**SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY.** An Introduction to the Study of Obstetrics and Gynecology for Medical Students and Practitioners. By W. P. Manton, M.D. Third Edition, Revised and Enlarged. Cloth. Pp. 136. Price, \$1.25 net. Philadelphia: F. A. Davis Company, 1906.

While this work is especially designed for, and will be found particularly useful to, students in their first and second years at college, it is also a desirable manual for review and reference for the general practitioner. It is not intended to take the place of the exhaustive text-books on embryology, but is primarily for use in the class-room, supplementary to the lecture, and for laboratory guidance. It can also be used for self-instruction and in laboratory work in connection with the usual text-books. The present edition has been carefully revised and many new illustrations have been added.

**RETINOSCOPY (or Shadow Test) In the Determination of Refraction at One Meter Distance, with the Plane Mirror.** By J. Thornton, A.M., M.D., Author of "Refraction and How to Refract," etc. Fifth edition, revised and enlarged, with fifty-four illustrations, ten of which are colored. Cloth. Pp. 67. Price, \$1.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

In this new edition much that is modern and valuable is added to a work already recognized as a standard. Many new instruments have been added, notably an illustration of the DeZeng luminous retinoscope, with a description of its mechanism and method of application. The colored plates illustrating the pupillary reflexes seen in the different forms of refractive error are particularly good.

**PRACTICAL TEXT-BOOK OF MIDWIFERY FOR NURSES.** By R. Jardine, M.D., M.R.C.S., F.F.P., and S. F.R.S., Professor of Midwifery in St. Mungo's College, Glasgow, etc. Third edition. Cloth. Pp. 276. Price, \$1.50 net. Chicago: W. T. Keener & Co., 1906.

This book is based on lectures delivered to nurses of the Glasgow Maternity Hospital and is primarily intended as a text-book for them. The book, as the author admits in the preface, may be considered rather too comprehensive for nurses but he states that midwives are a very old institution and are likely to continue in existence so long as the poor are with us, and that those who teach them should endeavor to make their training as thorough as possible.

**NATURE AND HEALTH.** A Popular Treatise on the Hygiene of the Person and the Home. By E. Curtis, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, Columbia University, New York. Cloth. Pp. 313. New York: Henry Holt & Co., 1905.

In this book the author considers briefly the most important points in hygiene and sanitation. The book is intended for the laity and is written in simple language. The deficiency of air space in the average dwelling is commented on and directions are given for ventilating. The author regards the open fire as ideal and prefers hot-water heat to steam or hot air. Singing as a general adjuvant to the well-being of the breathing apparatus and, indeed, of the whole economy, is recommended. The comparative value of the different foodstuffs is considered and the author calls attention to the evils of over-eating as well as of under-feeding. He discusses the importance of a pure water supply and mentions the various methods of purification. Subsequent chapters take up: Seeing, hearing, clothing, disposal of waste, disinfection, exercise of body and mind, sleep, work and play, living and dying.

**PATHOLOGY OF THE EYE.** By J. H. Parsons, B.S., D.Sc., F.R.C.S., Assistant Ophthalmic Surgeon, University College Hospital, etc. Vol. III. General Pathology—Part I. Cloth. Pp. 1128. Price, \$3.50 net. New York: G. P. Putnam's Sons, 1906.

In this volume Parsons takes up the subject of the general pathology of the eye, including congenital abnormalities, ametropia, the circulation and nutrition of the eye, the normal intraocular pressure and glaucoma. Nearly one-half of the book is devoted to the congenital abnormalities of the eye. An exhaustive résumé of the literature of this subject is presented, and there are many illustrations, both macroscopic and microscopic. Myopia is the subject of one of the most interesting chapters of the book. The various changes in the ocular tissues are taken up separately and explained on an anatomic and pathologic basis. Here, as throughout the work, are to be found exhaustive references to the literature. This par-

ticular feature makes the work invaluable as a source of reference. In the chapter on the circulation of the eye the author has drawn freely on the material furnished by the experiments of Leber in this field. In addition to the studies made on the circulation of the human eye, comparative studies of the circulation of the eye of the dog are given. The subject of glaucoma begins with the discussion of the normal intraocular pressure. The various forms of apparatus for measuring this pressure are illustrated and their manner of application explained. This is probably the most interesting portion of the book, embodying as it does the essentials of all of the theories and studies on this important subject. The pathologic studies of glaucomatous eyes are well illustrated and thoroughly discussed.

**HEALTH TALKS ABOUT CHILDREN.** A Plea for the Child. By J. Grimshaw, M.D., B.S. Second Impression. Paper. Pp. 83. Price, 40c. Philadelphia: P. Blakiston's Son & Company, 1906.

This book consists of a series of talks delivered to mothers. The language used is clear and forceful, and free from technicalities. Directions are given for feeding the child—preparing its food, etc.—caring for it in health and sickness, and diet of the mother. An appendix contains a list of things to do and not to do, and dietary lists. The book is a valuable one for mothers.

**GYNECOLOGICAL DIAGNOSIS.** A Manual for Students and Practitioners. By A. E. Giles, M.D., B.Sc., F.R.C.S., M.R.C.P., with 35 Original Illustrations. Cloth. Pp. 212. Price, \$2.50 net. New York: William Wood & Co.

In an introductory chapter the author calls attention to the fact that the expert diagnostician makes the most successful practitioner and mentions the difficulties encountered in acquiring the necessary experience in gynecologic work. Instead of taking a disease and naming the symptoms, thus reasoning from cause to effect, Giles takes the predominating symptom or symptoms and reasons back to the cause. Part 1 considers the methods of recording history, present condition, treatment and after history, with methods of examination, instruments, significance of symptoms and physical signs. Part 2 is devoted to diagnosis of individual cases from leading symptoms.

**DISEASES OF THE STOMACH AND INTESTINES,** with an Account of Their Relations to Other Diseases and of the Most Recent Methods Applicable to the Diagnosis and Treatment of Them in General. By B. Reed, M.D. Second Edition. Cloth. Pp. 1021. Price, \$5.00. New York: E. B. Treat & Co., 1907.

This book retains the lecture form with a certain familiar style of diction which serves to lend impressiveness to what the author has to say, although his method tends to interfere somewhat with the systematic presentation of the subject. Comparatively little space is given to pathologic anatomy, while, on the other hand, some unnecessary subjects, such as urinalysis, are included, presenting merely repetitions of what can be found in text-books on clinical diagnosis. The work has an advantage in that it combines in one volume the diseases which are generally found combined in practice.

**INDICATIONS FOR OPERATION,** in Disease of the Internal Organs. By Prof. H. Schlesinger, M.D., Extraordinary Professor of Medicine in the University of Vienna. Authorized Translation by K. W. Monsarrat, M.B., F.R.C.S., Surgeon to the Northern Hospital, Liverpool. Cloth. Pp. 498. Price, \$3.00. New York: E. B. Treat & Co., 1906.

As stated in the preface by the author, this work is intended essentially for the practitioner as a guide in determining the necessity for surgical interference in diseases of the internal organs. In this it is highly successful. With small exception, the indications given are in accord with sound modern surgical principles. The value of the book is enhanced by concise but clear setting forth of the etiology, clinical course, pathologic anatomy and diagnosis of internal surgical diseases with much useful information as to the results of operative interference.

**ESSENTIALS OF HUMAN PHYSIOLOGY.** By D. N. Paton, M.D., B.Sc., F.R.C.P., Ed., Superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh. Second edition, revised and enlarged. Cloth. Pp. 444. Price, \$2.75 net. Chicago: W. T. Keener & Co., 1905.

This is not the sort of text-book that appeals to those whose interest in medical education demands that students



shall be taught the biologic sciences as sciences, and not as something from which a few kernels are to be gleaned for their value to medicine, the rest to be discarded as worthless. While the book is as full and accurate as this sort of book can be expected to be, yet it represents the unfortunate compromise between quiz compend and text-book that is so popular with a certain class of medical students and instructors. Students who are brought up on this type of book can hardly be expected to develop that investigative frame of mind which is essential to the student who is to do his own thinking, instead of relying implicitly on any "authority" who speaks to him from the printed page. Let it be understood that we are not condemning the present book in particular, but rather deploring the fact that there still seems to be a market for the type of book it represents. This book is now in its second edition, and has the advantage of being fairly modern in its handling of the subject of physiology. It does not seem to possess any peculiar merit beyond this, and, of course, is not to be compared with several larger text-books that seek to avoid the criticisms mentioned above. It must be added, also, that the illustrations of histologic structures are so imperfect and crude that they at once prejudice the reader against the text that accompanies them.

**ELEMENTARY MANUAL OF REGIONAL TOPOGRAPHICAL DERMATOLOGY.** By R. Sabouraud, Director of the City of Paris Dermatological Laboratory, St. Louis Hospital. English Translation by C. F. Marshall. Cloth. Pp. 570. Price, \$5.00. New York: Rebman Company, 1906.

As indicated by the title, this volume differs from other works on dermatology by describing the various lesions, not according to their nature, but according to their location. Thus, under "Nose and Cheeks" are described all the lesions likely to occur on these parts of the body. The arrangement is slightly confusing to one accustomed to the classification ordinarily adopted in works on dermatology, and its practical usefulness remains to be demonstrated. The descriptions of the lesions and the illustrations are good, but more space might be devoted to treatment.

**ATLAS AND TEXT-BOOK OF DENTISTRY.** Including Diseases of the Mouth. By G. Preiswerk, M.D., Ph.D. Authorized Translation from the German. Edited by G. W. Warren, A.M., D.D.S. Cloth. Pp. 343. Price, \$3.50 net. Philadelphia: W. B. Saunders Company, 1906.

Among the few translations of general dental text-books Preiswerk's "Atlas of Dentistry" is a most meritorious contribution. It is a credit to the author, but its value to the student is in the illustrations. The colored productions (copies of Professor Arkovy's reduced in size and the author's own original ones) certainly should aid the student in making a diagnosis of many diseases and a solution of some of the many puzzling questions dominant in dental pathology. The text, however, is only a condensed review of subjects, which may be found in any American or English text-book. What the dental student needs is a text-book of original research into the biologic studies of his specialty. A broader knowledge of general medicine (which this work does not contain) is necessary for the rational treatment of diseases of the mouth, jaws and teeth. Credit is due to the editor, Dr. George W. Warren, for the excellent translation.

**PRINCIPLES OF MICROSCOPY.** Being a Handbook to the Microscope. By A. E. Wright, F.R.S., Hon. F.R.C.S.I. Cloth. Pp. 250. Price, \$6.50. New York: The MacMillan Company, 1907.

It may be as well to state in so many words that this handsome book in no sense is a guide to microscopic methods, clinical or otherwise. There are no directions here for fixing tissues, cutting sections, preparing smears, counting or staining various objects for microscopic study. The book "addresses itself to those . . . who desire to master the scientific principles of microscopy, even at the price of some intellectual effort." It is the microscope itself and the principles on which it is constructed that constitutes the theme of the distinguished author, whose name now is so familiar because of his discovery of opsonins and introduction of therapeutic inoculation. No extended review will be attempted. The work, which evidently is the result of much study over

many years, is divided into two parts. Part I deals with the object or stage picture, and Part II with the development of the magnified microscopic image. Numerous experiments are outlined in order to help the reader understand the statements in the text. There are many illustrations. New technical terms have been coined as freely as seemed necessary to the author to make himself clear in order to avoid unnecessary circumlocution and mathematical formulæ. "Mathematical signs as a substitute for speech can be defended only in the case of the inarticulate classes of the learned." The style is peculiarly characteristic of the author. The subject-matter is carefully arranged in logical sequence, and it will be a pleasure to those who really wish to learn something about the scientific principles of the microscope, and not remain content, as most do, following a system of rule of thumb, to study this book; for it is a book to understand which will require actual study and experimentation.

**PLASTER OF PARIS AND HOW TO USE IT.** Martin W. Ware, M.D., Instructor of Surgery in the New York Postgraduate School. Cloth. Pp. 88. Price, \$1.00. New York: Surgery Publishing Company, 1906.

This little book gives in a comprehensive way the various uses of which plaster of Paris may be put by the surgeon. The subject is clearly presented, and with the illustrations the book makes a useful manual of instruction. Details are given in full, from the making of a bandage to its application. The mechanical work is well done and the book presents a very neat appearance.

**THE NEW HYGIENE.** Three Lectures on the Prevention of Infectious Diseases. By Elie Metchnikoff, with preface by E. Ray Lankester. Cloth. Pp. 104. Price, \$1.00 net. Chicago: W. T. Keener & Co., 1906.

These interesting lectures were delivered by Metchnikoff in London at the invitation of the Council of the Royal Institute of Public Health. They will be read with interest by medical as well as non-medical persons. The first lecture deals with "The Hygiene of the Tissues." Here Metchnikoff discusses the means whereby the body rids itself of infectious microbes, with special emphasis on the rôle of the phagocytes. It is quite entertaining to note the skill with which he puts to one side everything that in any way tends to lessen the importance of phagocytosis as developed by him and his school. Even the opsonins are denied the rôle currently assigned to them in the mechanism of phagocytosis. In the concluding part of the lecture he points out certain practical applications of our knowledge of the defenses against infection. The second lecture deals with "The Hygiene of the Alimentary Canal." Probably the majority of medical men will take issue with Metchnikoff as to the importance of worms in causing appendicitis. Certainly the surgeons have missed a great discovery if Metchnikoff's hypothesis on this point is found to have a basis in fact. Be that as it may, the evidence, slight though it be, is presented with great skill and suggestiveness, followed with a plea for measures that may prevent contamination of our vegetables with the ova of worms. In the third lecture, "Hygienic Measures Against Syphilis," the recent knowledge obtained from experimental syphilis in apes and monkeys is clearly set forth, especially from the point of view of preventive inoculation with attenuated virus. The small chance for prophylactic treatment of syphilis by means of having vaccines ever becoming practical is acknowledged. The various observations on the prophylactic inunctions of mercurial ointments immediately after suspicious contact, including the experimental work of Metchnikoff and Roux on apes and monkeys, as well as man, are then recounted and the method tentatively recommended for practical use. The possible objections of moralists to this plan, which, if found valuable, might serve to encourage vice, are skilfully met. There is about these lectures a certain charm, already familiar to the readers of Metchnikoff's previous writings, that makes the reading pleasant and profitable, even though one may be compelled to differ from some of the views presented. The truly philanthropic spirit of the author makes itself felt on every page, and the reader is impressed with the great value of scientific work in infectious diseases.



## Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

### Angina Pectoris.

(Concluded from page 972.)

Professor Lemoine, in *Le Nord Medical*, gives a brief résumé of things to be avoided in treating this condition. In true angina pectoris, caused by ischemia of the heart in the course of arteriosclerosis, at the time of the attack heart tonics, such as digitalis, ergot, caffein, strophanthus, convallaria majalis, should not be given; these agents would only increase the arterial tension, which is already too high. They should not be employed until the period of the disease occurs when the myocardium, attacked by sclerosis, is enfeebled, so that the cardiac fiber becomes inefficient. Huchard is of the opinion that during the attack the usual nerve sedatives, such as antipyrin, potassium bromid, sulphonmethane, paraldehyd and chloral hydrate should not be used. He also denies any therapeutic utility to belladonna and cocain in these cases. Lemoine advises against using potassium iodid for too long a time, as the potassium salts act unfavorably on the heart structures. After a brief period sodium iodid may be substituted for the potassium salt. The benefits of general sedatives and hypnotics should not be refused to patients suffering with pseudo-angina pectoris, when the pain is the most prominent symptom. The underlying general condition which may cause the symptoms, such as gout or diabetes, must be treated. The well-established principle of revulsion (especially the ice-bag and wet cups over the precordial region) must not be regarded as useless in cases of angina pectoris of infectious origin.

Anders, in his "Practice of Medicine," also advocates the application of cold to the precordial region, and states that rarely hot applications (hot cloths or mustard plasters) may give better results. He gives from 3 to 5 drops (0.18 to 0.30) of amyl nitrite by inhalation and states that if this does not give relief from the pain morphin, gr. 1/3 (0.021) should be given hypodermically. In cases in which the arterial tension is habitually exalted, Anders advises giving nitroglycerin, beginning with min. 1 (0.06) and increasing the dose by min. 1 (0.06) every five or six days, until the physiologic effects are produced. He states that sodium nitrite may be employed similarly, the dose being gr. 1 to 3 (0.06 to 0.18) three or four times a day. When hypertrophy of the left ventricle is excessive the following combination, Anders says, is effective:

R. Tincturæ aconiti .....m. xlviii    3|10  
Sodii bromidi .....3ss    15|  
Elix. simplicis, q. s. ad.....3i    90|  
Ft. mist. Sig.: Four teaspoonfuls three times a day.

This may be omitted at the end of every two weeks for two or three days.

[It might be well to commence with a smaller dose of the aconite till the effect on the patient could be noted.—Ed.]

### Phenolphthalein as a Purgative.

Phenolphthalein is a yellowish powder, very slightly soluble in water, readily soluble in alcohol and in aqueous solutions of hydroxids and carbonates. It is colorless in acid solutions and red in alkaline liquids. So far as our present knowledge goes, it produces no noticeable physiologic effect except that of a purgative. When absorbed it is excreted in the urine, unchanged in chemical character, but sometimes in combination so that its characteristic color with alkalis is only shown after the combination is broken up by heating with an acid. It has long been in use by chemists and clinicians as an indicator of alkalinity in determining the acidity of gastric contents, urine, etc.

Its introduction into therapeutics is more recent and has

attracted comparatively little attention. The discovery of its purgative properties is stated to have been due to its use in artificial Hungarian wines to prevent their substitution for the genuine wines. It was noticed that when these cheap wines were "denatured" by the addition of phenolphthalein their use was regularly followed by diarrhea. This led to the introduction of phenolphthalein as a proprietary remedy, and it has been advertised in Europe, especially in Great Britain, for the last five years under the name of purgen (see *THE JOURNAL*, Nov. 8, 1902, page 1218; Jan. 5, 1907, pages 64 and 70). Other trade names for phenolphthalein or substances containing it are: Purgen konfekt, paraphthalein, purgatol, purgotin, purgo, purglets, purgella, purgolade, purgylum, laxiconfekt, laxine, and el zernac. Phenolphthalein is also an active constituent of the proprietary probilin pills.

As yet it has received little attention from pharmacologists, its medicinal use remaining unnoticed in the latest textbooks, even so extensive a work as the "National Dispensatory" stating that it is not used in medicine.

The investigations of Vamossy, Dornblüth, Tunnicliffe and others seem to show, however, that it is a safe cathartic, acting without pain, in from four to six hours, and leaving less tendency to sluggishness of the bowels as an after-effect than other cathartics. From the evidence presented it would seem that phenolphthalein will be valuable in the treatment of habitual constipation.

In Martindale and Westcott's "Extra Pharmacopeia" (British), page 24, it is stated that phenolphthalein is "useful where a prompt purgative is required as in jaundice," and further that it "does not irritate the kidneys."

The dose generally recommended varies from 0.06 gm. (1 grain) to 0.30 gm. (5 grains), but it must be borne in mind that certain individuals possess a marked idiosyncrasy to phenol compounds and that in such cases phenolphthalein should be prescribed with caution. It may be given in the form of pills, capsules, tablets or powders. Pharmaceutical manufacturers are beginning to put it up in tablets and in other forms for medical use, but of course any pharmacist can procure the drug and dispense it as prescribed.

It may be prescribed as follows:

R. Phenolphthalein .....3i    4|  
Div. in capsulæ No. xx.

Sig.: One capsule at bedtime when necessary.

Powders may be ordered instead of capsules.

It is a reflection on our means of diffusing information and on the readiness of physicians to apply new discoveries that our knowledge of a valuable remedy should depend on the propaganda of commercial interests. Practical physicians who are looking for a new cathartic should try this substance under its own name and avoid its exploitation under fancy titles by commercial interests. It is well to remember that this substance is a perfectly definite chemical compound which can be easily obtained.

[Phenolphthalein belongs to a class of bodies known as Triphenylmethane-dyes, to which also fuchsin, eosin and fluorescein belong. Triphenylmethane may be considered as derived from methane,  $\text{CH}_4$ , by replacement of 3 hydrogen atoms by 3 phenyl groups, thus:  $\text{CH}(\text{C}_6\text{H}_5)_3$ . By replacement of the remaining hydrogen atom by hydroxyl, OH, and of one phenyl group by  $\text{C}_6\text{H}_4\text{COOH}$ , an acid is obtained having the formula,  $\text{C}(\text{OH})(\text{C}_6\text{H}_5)_2(\text{C}_6\text{H}_4\text{COOH})$ , which may be called hydroxy-diphenyl-phenylcarboxy-methane. This acid is unstable, and by loss of water passes to a compound having the composition  $\text{C}(\text{C}_6\text{H}_5)_2(\text{C}_6\text{H}_4\text{COO})$ , which is known as phthalophenone.]

Bodies of this kind are generally known as phthaleins and are obtained by the action of phenols on the anhydrid of phthalic acid  $\text{C}_6\text{H}_4(\text{COOH})_2$ , so named because commonly made from naphthalene. Thus, phenolphthalein is obtained by the action of carboic acid on phthalic acid anhydrid,  $\text{C}_6\text{H}_4(\text{COO})(\text{CO})$ . Phenolphthalein differs that 2 hydroxyl groups have been introduced into the 2 phenyl radicles, thus:  $\text{C}(\text{C}_6\text{H}_4\text{OH})_2(\text{C}_6\text{H}_4\text{COO})$ . The nature of the change

which occurs when phenolphthalein is turned red by alkalis is still a question. It is quite possible that when treated with sodium hydroxid the red compound which is formed has the following composition  $\text{C}(\text{C}_6\text{H}_4\text{ONa})(\text{C}_6\text{H}_4\text{:O})(\text{C}_6\text{H}_4\text{COONa})$ .

### Tar in Eczema.

H. Waldo (*British Med. Jour.*, March 2, 1907) says that it is almost unnecessary to mention that cleanliness of the eczematous surface should be carried out with weak alcohol, or, if the eczema is very acute, with weak warm gruel instead of soap and water.



When much thickening has occurred, and especially if fissures have formed, eczema rimosum, nothing is so satisfactory as local dressings of some reducing agent, as salicylic acid in various strengths. In severe cases of eczema, and when an extensive surface is involved, the good effect of rest should be remembered, and the patient confined to bed.

Although alcohol is valuable externally, it disagrees if given internally in eczema by dilating the peripheral vessels. Waldo asserts that if an adult's eczema is receiving suitable treatment, to which it does not favorably respond, the abuse of alcohol should be suspected. If the surface of an eczema does not show much redness, a weak preparation of alcohol and tar painted on once or twice in the twenty-four hours, in addition to the ordinary application, at once relieves the itching and cures the eczema if the case selected is found to tolerate this interference.

Crocker, "Diseases of the Skin," states that tar in some form is one of the most efficacious remedies in this condition, if used at the right stage of the disease. As it requires much experience to know just when to apply it, Crocker advises trying it over a small area to see how it suits the case before extending its use to the entire surface, for, if wrongly used, it is almost as powerful for harm as for good. Tar acts best, according to Crocker, in the squamous and papular forms of eczema, as it relieves the intense irritation better than anything else. It may be used in a mild form by adding a small quantity to the astringent ointments.

Hebra, quoted by Crocker, recommends that the pure wood tar or the oil of cade be brushed firmly into an eczematous patch after thorough removal of the scales, and reapplied until a thick coat adheres. This kind of treatment, Crocker states, is best suited to indolent patches, and the tar must be rubbed in vigorously. If only a small area is involved the tar may be soaked off with strips of flannel soaked in olive oil. If a limb or the whole body is involved the patient may soak the part affected in warm water for an hour or two. Hebra allows the tar to remain till it separates spontaneously.

Butler, "Text-Book of Materia Medica," states that the tarry preparations are valuable antipruritics and of service in pruritus and various itching diseases of the skin, although their tendency to produce irritative and inflammatory effects when continuously and injudiciously applied should not be overlooked.

#### The Alleged New Opium Cure.

Within the past few weeks a number of articles have appeared in the secular press regarding a new cure for the opium habit, alleged to have been discovered in the Malay Peninsula. Edward M. Holmes, the curator of the Pharmaceutical Society of Great Britain, in a communication in the London *Times*, gives the species as *Combretum sundai-cum*, Miquel, a woody climber growing abundantly in certain parts of the Malay Peninsula. The medicinal properties of the natural order of plants to which it belongs, the *Combretaceæ* are not well known, though, according to Mr. Holmes, some of the species have been used in malarial fevers, two are known to possess vermifuge properties and one is used in poisoning bats. The few preliminary tests made with the small amount of material in the research laboratory of the Pharmaceutical Society so far have revealed only an astringent principle and a coloring matter. The tests give no definite proof of the presence of any alkaloid or glucoside, although the leaves appear, Mr. Holmes says, to contain some substance as yet unknown to chemists. From missionary reports it would appear that the plant has been used with much faith, which must be based on some apparent success, but details of how it acts in destroying the appetite for opium have not been given and sufficient time has hardly elapsed to test the permanence of the cures. According to the accounts, the leaves seem to be the efficient part of the plant. The opium question is a most important one here as well as in the East, and if this new drug successfully meets the test of experience and has its value confirmed by chemical and physiologic tests, it will be a valuable addition to materia medica.

#### Alteratives for Children.

Dr. Herman B. Sheffield, New York, states that arsenic, iodine and mercury are the leading remedies of this group. Arsenic is best given as Fowler's solution in plain water. Syrup of the iodide of iron with simple syrup forms a palatable and useful hematinic and alterative for children. Sodium and potassium iodide may be prescribed in peppermint or orange water with a little simple syrup, or in compound syrup of sarsaparilla, or elixir of taraxacum. Calomel, the practitioner's panacea, is readily taken by children in powder form with a pinch of sugar.

Cod liver oil, the almost indispensable tissue builder in all wasting diseases of childhood, is the stumbling block, Sheffield asserts, of the pharmaceutical reformer. Cod liver oil always tastes of the oil so long as there is any in the mixture. In the case of infants it is advisable to try giving cod liver oil by inunction. The majority of children can be persuaded to like the following emulsion:

R. Olei morrhue	.....f. ʒiv	120
Extracti malti		
Syrupi calcii hypophos., (N. F.)	āā...f. ʒi	30
Glycerini		
Pulveris acaciae, āā.....	ʒss	15
Aquæ cinnamomi, q. s. ad.....	f. ʒviii	240

#### Antipyretics and Antirheumatics.

The same authority declares that the best antipyretic for children is water internally and externally. If the coal-tar derivatives and salicylates are indicated they may be administered in powder form triturated with sugar to which a minute quantity of essence of peppermint may be added as flavoring. When prescribing sodium salicylate in solution its nauseating sweet taste may be disguised by a drop or two of the tincture of nux vomica.

### Medicolegal

#### Embolism and Cause of Death—Province of Jury.

The Second Appellate Division of the Supreme Court of New York says, in the case of *Kelly vs. Wills*, that an employé of the defendant fell 15 or 20 feet, building stones and mortar tubs falling on him. He was taken to a hospital at once, and examination showed that his left leg was broken in two places, his right ankle was partially fractured and dislocated, and he was bruised about the body, especially on the left side thereof. He remained in the hospital about twenty-six days, when he suddenly died. The physician who had charge of the case in the course of his regular attendance at the hospital for the last fifteen or sixteen days testified that he died of embolism. Another physician, of great experience in ascertaining the cause of death, in answer to a hypothetical question, said that in his opinion the cause of death could not be told, but that it was a mere matter of conjecture, without an autopsy. Four or five other physicians testified to something of the same effect. Under these circumstances, the court says that, if it was the duty of the jury to determine the exact and definite cause of death with the scientific certainty of a physician, and if the jury were to decide that question solely on the medical testimony, it was quite true that the question was in much doubt. But the question of cause was for the jury, who were neither required to find that cause beyond a reasonable doubt, nor to find specific affliction of the heart with the certainty of medical determination, who were not bound to base their verdict on the medical testimony, and who were at liberty to disregard the opinions of the experts called by either side. And on the evidence, and in the absence of proof of any intervening efficient cause, the court thinks that there was sufficient evidence to sustain the verdict, which was that the injury was the cause of the death. They may have rejected the testimony of the defendant's experts, or they may have concluded that it was very true, from their testimony and that of the other physicians, that an autopsy was the only certain method of determining the exact cause of death; but they were not bound to be certain, or to establish a certain medical opinion, of the exact cause of the death.



**Charity Hospital not Liable for Negligence—Principles Stated in Hot-Water Bottle Case Against College Hospital.**

The Kansas City Court of Appeals says, in the case of *Adams vs. University Hospital*, in which it has denied a rehearing, that the plaintiff was a patient at the defendant's hospital, whither he had gone to have a surgical operation performed on him. While yet under the influence of an anesthetic administered for the purpose of the operation and after the performance of the operation, he was placed in the care of one or more of the defendant's nurses, who, it was charged, were not competent, and by reason thereof they permitted him to be severely burned on the legs by rubber bottles filled with hot water, whereby he was painfully and permanently injured. The defendant contended that it was a benevolent or charitable institution and as such was not liable to an action for damages caused by the acts of its employes; that, as such an institution, it was exempt from application of the doctrine of *respondeat superior* (the master must answer).

Now, if the defendant's liability was to be ascribed to the negligence of its nurses, the manner of the injury was such, the court says, as to authorize the rule of *res ipsa loquitur* (the matter speaks for itself) to be invoked. And if such liability was to be based on the negligence of the defendant in selecting competent nurses that rule would also apply. For, in either case, the injury was, of itself, a sufficient showing, unexplained, that it resulted from one or the other of these sources of negligence, and the court can see no reason why the defendant (if liable at all) should not be held to be obliged to exculpate itself by showing, in the latter instant, that it had used proper care in the selection of its nurses, as it would in the former by showing that the nurses had not themselves been negligent.

The question as presented here related to the liability of a private, or quasi private, charity for damages caused by the negligent acts of its employes, or by its own negligent act in employing incompetent employes. The court assumes that the evidence tended to show that the plaintiff was injured either by the negligence of one of the defendant's nurses or by her incompetence. If by the latter, the court assumes, for the purpose of disposing of the case, that there was enough in the record to justify a verdict that the defendant was careless in selecting her. But as, in the court's opinion, the defendant was neither liable for the negligence of one of its employes, nor for its own negligence in selecting an incompetent employe, it could make no difference which of the two acts caused the injury.

Every member of the public, the court goes on to say, is interested in the building up and maintenance of a charitable institution designed for the alleviation of human suffering, and every one may be supposed to be concerned in such institution, and to be a party to a line of action or conduct which would disable every other from doing anything which has a tendency to prevent the institution from performing the functions intended by its founder. The state itself is concerned that its citizens may be restored to health, and to that end may have places always open where those in need may obtain relief. So it may be said that any citizen who accepts the service of such institution (it making no difference whether in any special instance he pays his way) does so on the ground, or the implied assurance, that he will assert no complaint which has for its object, or perhaps the court should say, for its result, a total or partial destruction of the institution itself.

If an organization for charitable purposes founded on the bounty of others who supply funds for the purpose of administering relief to those in need of relief, and of extending aid, care and protection to those who have no one to call on by the ties of Nature, may have its funds diverted from such kindly purpose, would it not inevitably operate to close the purses of the generous and benevolent who now do much to relieve the suffering of mankind? Let us see what the practical result might be. With a view to supplying care, protection and education to dependent children without parents,

some good man puts in trust for building an orphans' home the sum of \$25,000, and for its perpetual maintenance the further sum of \$100,000, to be put at interest or otherwise invested. The trustees may unfortunately, without proper inquiry or care, employ an incompetent servant. That servant, in the first year's existence of the home may, from ignorance, or from negligence, do, or omit to do, something causing damage which, under our liberal measure of compensation for personal injuries, would be sufficient to take up the whole fund, and thus, for a single mishap, the generous object of the donor would be thwarted, and what was intended as perpetual relief to succeeding generations of helpless children would be wiped out. That funds supporting organizations for charity can not be thus diverted, in other words, that charitable institutions or corporations are not liable for the negligence of an employe, nor for the want of care in the selection of an employe, is sustained by authority and by reason.

The question arose in England, and was decided in the House of Lords. *Heriot's Hospital vs. Ross*, 12 Clark & F. 507. In that case Heriot, a jeweler, by his will, in the year 1623, left a large part of his estate to certain officers of the city of Edinburgh in perpetuity for founding and maintaining a hospital for the "maintenance, relief, bringing up and education of so many poor fatherless boys, freemen's sons of that town, as the means which I give and the yearly value of the lands so purchased shall amount and come unto." The hospital was to be governed by rules formulated by a certain doctor named in the will. The rules, as framed, admitted to the hospital boys between certain ages. More than 200 years after it was founded, a boy, alleging that he was wrongfully excluded, brought his action against the feoffees (trustees) of the hospital in their official capacity, for damages. Opinions of Lords Cottenham, Brougham and Campbell are reported which are remarkable for the vigor with which they assail the proposition that the funds of a charity may be diverted to the payment of damages for malfeasance of the trustees. Lord Campbell pronounced the suggestion that persons damaged could be indemnified out of the trust fund to be "contrary to all reason and justice and common sense." He stated that there was "not any authority, not a single shred to support" such a view of the law. In reversing the decree of the lower court he further stated that "it is to be hoped that we shall never again hear of a decision like the present, contrary to reason, sense and justice." In the course of their opinions, the judges referred as authority to the case of *Duncan vs. Findlater*. From the fact that *Duncan vs. Findlater* was stated to be authority supporting the holding in *Heriot's Hospital vs. Ross*, and that the former was afterward overruled, the notion came to prevail, in some quarters, that the latter case was also discredited. But an examination of the cases, and others of similar character, will disclose that they belong to different classes and that the principle or foundation on which they rest is radically unlike.

In this country whatever conflict in the authorities may appear has arisen from applying rules to charities which were laid down as governing an entirely different class of cases—cases clearly involving governmental functions, or substitutes for private enterprise. It would be against every principle of right and an outrage on justice to deplete a fund set aside for perpetual charity, by using it in paying damages caused by the acts of those engaged in administering the trust. Charity funds are things apart from ordinary matters of business or trade. In the thoughts and consciences of men, charities are not loaded with the burdens put on other matters. Charity suggests different considerations and treatment from matters of ordinary business, and hence there has arisen out of the conscience, a principle which protects it in its beneficent and perpetual purpose.

To repeat a thought already suggested, every one, in the present or the future, coming within the object of a charity, has a right to the enjoyment of its benefits, and no one has a right to appropriate to himself in settlement of claims,



the fund whereby those benefits are secured. To permit it to be done would be not only setting aside the purpose of the donor, but would, in its results, allow the claim of one person to exclude the rights of all others who may come after him. It would be a matter of grave concern and regret if funds set apart for support of our charitable institutions should be made subject to the assaults of the damage claimant, and be called on, not only for compensatory recompense, but to stand for punishment in the way of exemplary damages. Especially would it strike one as unfortunate, when it is realized that such claimant has his primary right to hold to the strictest accountability the individual who does him the injury for which he makes complaint, and that in denying him the right to impoverish benevolence we do not deny him a remedy against the actual wrongdoer. So the weight of authority in this country supports *Heriot's Hospital vs. Ross* as being the rule which commends itself, not only because it carried out the donor's intention, but because it is more reasonable and just, and better subserves an enlightened public policy. *Parks vs. University*, 218 Ill. 381; *Fire Ins. Patrol vs. Boyd*, 120 Pa. 624; *Williamson vs. Louisville Reform School*, 95 Ky. 251; *Perry vs. House of Refuge*, 63 Md. 20; *Maia vs. Eastern Hospital*, 97 Va. 507; *Downes vs. Harper Hospital*, 101 Mich. 555; *McDonald vs. Hospital*, 120 Mass. 432; *Benton vs. Trustees*, 140 Mass. 13.

This court has found but one case, *Glavin vs. Rhode Island Hospital*, 12 R. I. 411, which takes ground against the view here endeavored to beset forth, and that does not do so in such pronounced way as has been said. It is there conceded (page 428 of 12 R. I.) that only the income of the institution could be held. But whatever breadth the case may be thought to have, it is learned from *Parks vs. University*, above cited, that the legislature of the state of Rhode Island has since nullified the effect of the decision. In the two cases last cited from the Supreme Court of Massachusetts that court, while upholding the doctrine as stated by this court, yet makes use of language in the opinions which leaves room for an inference that a liability might attach if the corporation had been negligent in selecting its surgeons in the one case and its superintendent in the other. The case of *Hearns vs. Waterbury Hospital*, 66 Conn. 98, 123-127, seems to concede that there would be a liability for the negligence of the employes themselves, if selected with due care. But it is manifest that, if this court should uphold a rule which would make an institution of charity liable to a patient who has been injured by an incompetent servant, negligently selected, it would destroy the principle it has endeavored to make plain, that charitable trust funds can not be diverted from the purposes of the donor. For it can make no difference, so far as the integrity of the fund is concerned, whether it be sought after by one who is injured by the negligence of a servant, or the negligent selection of such servant.

There are authorities which very properly hold that, where ship companies keep a physician on board (even though required to do so by law) to serve those who may choose to call him, he is not to be regarded as the company's servant, since his mode and manner of service is not under the control of the company. And that physicians and nurses which may be provided by railway companies at their hospitals, or the hospitals of employes, are not, for the same reason, the servants of the railroad. They are not charities, but are nothing more nor less than business associations formed for business purposes. But cases of that class do not reach the question here involved. For decisive considerations which arise in the one are not found in the other.

The hospital defendant in this case was established under a statute providing for the organization of benevolent, religious, scientific, etc., associations. Its charter provides that "the object of this association shall be to conduct and control the institution known as the 'University Hospital,' now owned and controlled by the University Medical College of Kansas City, to provide medical treatment free of charge for the poor, and to train and educate professional nurses,

and to confer on them a degree." There was no stock, nor dividends, and everything realized from an income by payments from paying patients went to the improvement of the hospital and the maintenance of an equipment. Surgeons and physicians made no charge, and people who could not pay, even for board, were, by the rules, to be received free. Other places known as free institutions were furnished by the defendant with physicians, nurses and medicines gratuitously. It was true that a large body of the patients seeking relief with the defendant paid their way, some more and some less, and that the plaintiff himself was a "pay patient." But that circumstance amounted to no more than a contribution by such persons to the support of the institution. The authorities are that such circumstance does not alter the character of the institution. *Downes vs. Harper Hospital*, 101 Mich. 555; *Parks vs. University*, 218 Ill. 381; *McDonald vs. Hospital*, 120 Mass. 432.

Wherefore, the court holds that the defendant hospital was not liable in this action, but that the plaintiff's remedy was against those who may have inflicted the injury on him, though, if it were not a charity hospital, it would be liable to this action though such institutions were exempt.

#### Employes Should Give Notice of Lack of Strength.

The Court of Civil Appeals of Texas says, on the appeal of *Galveston, Houston & San Antonio Railway Company vs. Bonn*, a personal injury case brought by the latter party, that the jury was instructed that when a man undertakes employment and service with another, his employer has the right to assume that he is physically able to do the work which he undertakes to do, and, if he suffers from any weakness or infirmity which renders him unfit to perform the labor, then it is his duty to disclose this to his employer. If the work changes, and if he goes under the command of another foreman who does not know of the disabilities, if any, and that foreman directs him to do different and heavier work which may probably cause injury to him, it is his duty to inform that foreman of his disabilities, if any. Applying this rule of law to the facts in the case, if the plaintiff was, at the time he attempted to carry the rail in question, in a physical condition which made him susceptible to injury from carrying the ordinary burdens which men of his appearance could sustain with reasonable safety, and such physical condition, if any, was unknown to the foreman, the foreman had the right to assume that he could with safety bear such a burden. In harmony with this, the court holds that, if the plaintiff was afflicted so as to make it extra-hazardous for one in his condition to engage in lifting weights, engaging in it without notifying his foreman of his condition, would bring his conduct under the head of contributory negligence which was embraced in the charge.

## Current Medical Literature

### AMERICAN.

Titles marked with an asterisk (\*) are abstracted below.

#### Medical Record, New York.

March 16.

- 1 \*Ocular Lesions of General Arteriosclerosis. W. B. Marple, New York.
- 2 \*Radical Mastoid Operation for Cure of Chronic Suppuration of Middle Ear. S. Oppenheimer, New York.
- 3 \*Abortive Treatment of Pneumonia. G. L. Curtis, New York.
- 4 \*Primary Carcinoma of Inferior Turbinate. W. W. Carter, New York.
- 5 \*Embolism. J. N. Study, Cambridge City, Ind.
- 6 \*Inoperable Round-Celled Sarcoma of Ovary. H. C. Coe and W. B. Coley, New York.

1. **Ocular Lesions of Arteriosclerosis.**—According to Marple, there may be a general change in the size of the arteries and veins of the eye grounds in the color of the arteries and in the caliber of the vessels (this is the most characteristic phenomenon).

2. **Radical Mastoid Operation.**—Oppenheimer believes that in the selection of cases for operation a large experience rather than rigid rules constitutes the best safeguard against



the risk of delay or of performing an unnecessary operation. The most important object of the operation is the thorough removal of all diseased tissue, and second to this, is the securing of free and permanent drainage. He considers the operation absolutely contraindicated in advanced cases of pulmonary tuberculosis and in cases of serious organic diseases.

3. **Abortive Treatment of Pneumonia.**—Curtis finds ozonation an ideal remedy for all stages and degrees of congestion, although in treating pneumonia, he does not rely on any single remedy. He has employed ozonation in 69 cases, covering all degrees of severity and all stages of the disease, with complete recovery in every instance. He claims to have demonstrated repeatedly that by the proper application of ozonation, pneumonia can be aborted at any stage, resolution becoming established within 48 hours from the beginning of treatment. This should be applied from half an hour to two hours at a time, and repeated several times daily, according to the severity of the case, but never so frequently as to interfere with a proper amount of sleep. It should be applied over the head, spine and abdomen, as well as over the congested area.

The apparatus employed consists practically of an ozone generator fed by a high-tension coil which multiplies the voltage of the commercial current a million or more times and practically eliminates all amperage. To the generator are attached brushes or corrugated wires from which ozone is given off in large quantities, and also connected with it, by means of a wire cord, is a vacuum tube through which ozone is forced into and through the body, thereby oxidizing all pathogenic products and re-establishing nutrition and vitality. Connected with this apparatus is an electric cabinet which generates light and heat coupled with ozone.

4. **Primary Carcinoma of Inferior Turbinate.**—Carter reports a case of primary carcinoma of the inferior turbinate, occurring in a woman, 38 years of age. The diagnosis was confirmed microscopically. The tumor, a typical columnar-celled epithelioma, was of five months' standing. The growth, and all the surrounding tissues in the superior maxilla were removed, and at the present, three months after the operation, there is no recurrence.

5. **Embolism.**—Study reports two cases of embolism, one of the pulmonary artery, following a comparatively trivial pelvic trouble, which terminated fatally. The second case was one of embolism of the lung, following fracture of the leg. It manifested itself on the twenty-first day after the injury and terminated in recovery.

6. **Sarcoma of Ovary.**—Coe and Coley report a case of inoperable round celled sarcoma of the ovary occurring in a woman, 32 years of age, in which treatment by the mixed toxins of erysipelas and *Bacillus prodigiosus*, combined later with operation, was successful; that is, the patient was restored to health for nearly two years, when she contracted pneumonia and died within a few days. In a closing note the authors state that from a recent letter received by them, there seems a possibility that there was metastasis in the lung instead of a typical pneumonia.

#### New York Medical Journal.

March 16.

- 7 \*Limitations of Surgical Treatment of Uterine Fibroids. H. C. Coe, New York.
- 8 \*General Infection by Colon Bacillus with Rapidly Fatal Septicemia and Fatal Hemoglobinemia. A. D. Blackader and B. D. Gillies, Montreal.
- 9 Trachoma, Clinically and Socially Considered. H. F. Hansell, Philadelphia.
- 10 Pathology and Symptomatology of Chronic Adhesive Pericarditis. M. H. Sicard, New York.
- 11 \*Rhinoscleroma Treated with Roentgen Ray. M. J. Ballin, New York.
- 12 \*Spondylitis Deformans. P. Le Breton, Buffalo.
- 13 \*Significance of Bladder Symptoms in Relation to Some Spinal Cord Lesions. J. B. Squier, New York.
- 14 \*Gonorrheal Joint Disease and Its Treatment. P. W. Nathan, New York.

7. **Limitations of Surgical Treatment of Uterine Fibroid.**—Coe urges that the general practitioner should be sure that

the patient has a tumor before he informs her of the fact or advises an operation. He says that the whole question of uterine fibroid turns on the proper recognition of the variety, site and symptoms caused by the tumor and not on the mere presence of a growth. Furthermore, the safety of a surgical procedure does not justify its performance in a case in which the indications are not clear and well defined.

8. **Fatal General Infection by Colon Bacillus.**—Blackader and Gillies report a case of general infection occurring in a young woman, 27 years old, which supervened suddenly, while the patient was in fair health and spirits, and proceeded to a fatal termination in 48 hours. The patient was seized with severe abdominal pain, nausea and vomiting, associated with uterine hemorrhage, evidently the result of the taking of abortifacients. Cultures from the blood gave a pure culture of the *Bacillus coli communis*. It is evident, say the authors, that the abortion was followed by a colon bacillus infection of the uterus, and that this infection became general. There was an extreme amount of hemolysis which adds to the interest in the case.

11. **Roentgen Ray in Rhinoscleroma.**—Ballin reports a case of rhinoscleroma in which the treatment was limited to the use of the Roentgen ray, the result being a most satisfactory one. All the tumefied masses disappeared, although nasal respiration is not yet restored. Interesting features in this case are: its long duration, 16 years; the complete freedom from the disease of the larynx; the large size of the nose, and the failure of all other forms of treatment to give any relief.

12. **Spondylitis Deformans.**—Seven cases of spondylitis deformans are reported by Le Breton, in two of which the cause of the spinal condition was probably the toxins of tuberculosis.

13. **Significance of Bladder Symptoms in Relation to Spinal Cord Lesions.**—Squier emphasizes the necessity for a closer discrimination between urinary symptoms arising from degenerative changes in the motor or sensory center in the cord and those due wholly to organic conditions in the bladder and its adnexa. Four cases in point are cited. In one case, a diagnosis of locomotor ataxia had been made. Squier did a suprapubic cystotomy and removed two calculi. No further symptoms of the tabes were manifested. In a second case, similar to the first, 11 stones were removed from the bladder. In the remaining two cases there was definite spinal disease, but the urinary disturbances did not originate in the cord lesion.

14. **Gonorrheal Joint Disease.**—According to Nathan, proper mechanical or operative treatment of gonorrheal joint disease will nearly always succeed when all other methods have failed to give relief. Even in the more acute cases he has rarely found it necessary to resort to narcotics.

#### Boston Medical and Surgical Journal.

March 14.

- 15 \*Tuberculous Scleritis, a Commonly Unrecognized Form of Tuberculosis. F. H. Verhoeff, Boston.
  - 16 Studies in Psychopathology. B. Sidis, Brookline, Mass.
  - 17 Relative Value of Massage, Exercises and Baths in Treatment of Heart Affections. D. Graham, Boston.
  - 18 Pulse-Pressure Estimation. J. J. Putnam, Boston.
  - 16 Studies in Psychopathology. B. Sidis, Brookline, Mass.
  - 20 Ocular and General Symptoms in Nasal Obstruction. H. C. Parker, Boston.
15. **Tuberculous Scleritis.**—Verhoeff reports 13 cases of tuberculous scleritis, all of which were tested with tuberculin; 11 of the patients were admitted to the hospital for this purpose. A positive, general reaction was obtained in all cases, and a local reaction in the eye in 9. All of the patients were females; the youngest was 11 and the oldest 46 years old. The scleritis was active in one eye only, but in three cases there were corneal opacities in the other eye. With only one exception, the patients were well nourished and apparently in good health, aside from the ocular trouble. At least three of the patients several times showed exacerbations during menstrual period. All these patients were



treated with tuberculin, and the results of treatment have convinced Verhoeff that tuberculous scleritis may be regarded as a disease amenable to treatment. He says that there is no class of cases in which the use of tuberculin is more strongly indicated. He used the old tuberculin.

#### Lancet-Clinic, Cincinnati.

March 16.

- 21 \*Intestinal Obstruction. H. O. Walker, Detroit.
- 22 Cancer: What Can Be Done for It. J. W. Carpenter, Cincinnati.
- 23 Curettage: Indications, Technic and Complications. J. Miller, Cincinnati.
- 24 Tinea Sycosis. J. V. Shoemaker, Philadelphia.
- 21. See abstract in THE JOURNAL, Nov. 24, 1906, page 1761.

#### St. Louis Medical Review.

March 9.

- 25 Heart Block. F. C. Fahlen, St. Louis.
- 26 Physiology of the Heart. E. P. Lyon, St. Louis.
- 27 Anatomy and Pathology of Heart Block. H. D. Senior, St. Louis.

#### Surgery, Gynecology and Obstetrics, Chicago.

February.

- 28 \*Ectopia Testis Transversa. A. E. Halstead, Chicago.
- 29 \*Treatment of Hip Disease. J. L. Porter, Chicago.
- 30 \*Perforation of Gastric Ulcer. W. Hessert, Chicago.
- 31 \*Rupture of Abdominal Wall. C. Kahlke, Chicago.
- 32 \*Secondary Sarcoma. G. A. Dowling, Chicago.
- 33 \*Multiple Aneurisms of Large Vessels. C. F. Yerger, Chicago.
- 34 \*Operative Treatment of Wounds of the Diaphragm. E. W. Andrews, Chicago.
- 35 Recent Progress in Surgery of the Conjunctival Sac. W. E. Gamble, Chicago.
- 36 \*Uterine Prolapse. F. H. Martin, Chicago.
- 37 \*Terminations and Treatment of Extrauterine Pregnancy. A. P. Heineck, Chicago.
- 38 Gunshot Wounds of the Cranium. C. Adams, Chicago.
- 39 Pyelonephritis in Pregnancy. C. B. Reed, Chicago.
- 40 \*Tuberculous Peritonitis in the Female. A. Bybee, Chicago.
- 41 \*Abdominal Gunshot Wounds. E. C. Riebel, Chicago.
- 42 Surgery of the Abdomen. E. W. Andrews, Chicago.
- 43 Primary Field Dressings. P. J. H. Farrell, Chicago.
- 44 Gunshot Wounds of the Neck. T. J. Sullivan, Chicago.

28. **Ectopia Testis Transversa.**—In the case reported by Halstead, both testicles were found to occupy the left scrotal pouch—both having a common tunica vaginalis. The epididymes diffused from the middle third downward to the globus minor. The patient, aged 42, applied for relief from an irreducible inguinal hernia. As there was nothing to justify the removal of the testicles, they were replaced in the scrotal pouch and the hernia operation completed without transplanting the cord.

29. **Treatment of Hip Disease.**—Porter discusses more particularly the correction of late deformities incident to hip-joint disease by means of an apparatus devised by him and which is a modification of the original Bartlett machine. The procedure is described in full. Porter claims to have had excellent results from the use of this apparatus.

30. **Perforation of Gastric Ulcer.**—Hessert reports two cases in which an operation was done, both patients recovering. In one case, the perforation was closed by through-and-through sutures of silk, and over this a roll of Lembert sutures. In the other case, which simulated a carcinoma, and in which such a diagnosis was made but changed after the operation, a typical posterior gastroenterostomy was made six months after the perforation had been closed by sutures as in the first case.

31. **Rupture of Abdominal Wall.**—Two cases are reported by Kahlke. In one of them a rupture occurred in the upper right quadrant of the abdomen as the result of a fall from a third-story window. Under suitable treatment the patient recovered. The second patient was run over by a milk wagon, but no serious disturbance manifested itself until about eleven weeks after the injury occurred. The patient then noticed a lump about the size of a hen's egg near McBurney's point. Two weeks later the swelling ruptured and some pus was discharged. The mass consisted of suppurating omentum. The hernia had evidently occurred as the result of a partial rupture of the aponeuroses of the external oblique and a localized rupture of the muscular portion of the internal oblique and transversalis muscles. There was no sac. This patient also recovered.

32. **Secondary Sarcoma.**—Dowling reports a case of sarcomata of the lungs and pleurae secondary to sarcoma of the tibia.

33. **Multiple Aneurisms of Large Vessels.**—Among 85 cases of aneurism of the heart and aorta, or other large vessels seen in the postmortem room of Cook County Hospital, 8 cases were found in which the aneurisms were multiple. Yerger adds one case recently observed by him in which he found three sacculated aneurisms of the arch of the aorta and of the abdominal aorta.

34. **Wounds of Diaphragm.**—Andrews reports two cases. One was a case of diaphragmatic hernia brought about by a blow on the abdomen, which terminated quickly in death. The second case was one of recovery by operation from a stab wound of the lung, diaphragm and stomach. In this case it was difficult to suture the diaphragm, and the expedient was adopted of making a transpleural exclusion by one or two deep loop or mattress stitches which extended through the intercostal space, across into the peritoneum and through the diaphragm. In this way the thin edge of the pleural cavity, as well as the two wounds, were occluded, the lung having receded. The rushing of air at once ceased when the stitches were tied.

36. **Uterine Prolapse.**—Martin reviews the surgical treatment of uterine prolapse and describes an operation devised by him in which he utilizes the ligaments of the uterus in supporting the upper diaphragm. The operation is said to be applicable to women, who have passed the child-bearing period, and in whom there is no objection to the removal of the uterus.

37. **Extrauterine Pregnancy.**—Heineck presents a very complete summary of the clinical history of extrauterine pregnancy, and embodies a report of 32 cases, seen at Cook County Hospital. In this series there was only one death. In this case the abdomino-vaginal route was employed. The abdominal route was employed in 30 cases, and the vaginal route in one case. All these cases terminated favorably. Signs of pregnancy were noted in about half the cases. The youngest patient was 18 years old; the oldest was 42. Fifteen cases occurred between the ages of 20 and 30. Pain in the lower abdominal region, menstrual irregularities and a palpable mass in one or the other fornix or in both fornices, were present, respectively in 30, 28 and 31 cases. Heineck believes that these three symptoms are highly suggestive of ectopic gestation.

40. **Tuberculous Peritonitis.**—Of 30 cases of tuberculous peritonitis, collected by Bybee from the postmortem records of Cook County Hospital, 28 were in the male and 2 in the female. He concludes that peritoneal tuberculosis is from two to four times as frequent in the male as in the female; that the genital tract of the female is not a factor in the etiology of peritoneal tuberculosis, and that the genital tract of the female furnishes a degree of immunity to peritoneal tuberculosis above that of the male.

41. **Abdominal Gunshot Wound.**—Riebel analyzes 28 cases of gunshot wounds of the abdomen, the history of each case being given in full.

#### Annals of Surgery, Philadelphia.

February.

- 45 \*Sequestration Anemia in Brain and Skull Surgery. R. H. M. Dawbarn, New York.
- 46 \*Papillary Cystadenomata of Breast. R. B. Greenough, Boston, and C. C. Simmons, Cambridge, Mass.
- 47 \*Puerperal General Peritonitis. E. McDonald, New York.
- 48 \*Subacute Perforation of Stomach and Duodenum. B. G. H. Moynihan, Leeds, England.
- 49 \*Large Number of Foreign Bodies in Stomach. A. E. Benjamin, Minneapolis.
- 50 \*Sarcoma of Small Intestine and Mesentery. G. Barling Birmingham, England.
- 51 \*Congenital Lumbar Hernia, at Triangle of Petit. C. N. Dowd, New York.
- 52 \*Tuberculosis of the Bladder. G. Walker, Baltimore.
- 53 \*Recurrent Intermittent Retention of Urine Occurring with the Remissions in Pernicious Anemia. J. H. Cunningham, Jr., Boston.
- 54 \*Arthroplasty on the Elbow Joint. C. L. Scudder, Boston.



**45. Sequestration Anemia in Brain Surgery.**—Dawbarn claims that with entire safety one can withdraw into the limbs some quarts of blood; that is, sequester before operation and retain in the limbs by cordage enough fluid to make a striking difference in loss of blood from the field of operation; enough, as Dawbarn has convinced himself, to constitute in many cases the difference between life and death, between shock and absence of shock, in a gravely severe case. This temporary bleeding is controlled as to degree by the finger on the pulse. The sequestration proceeds until there is plainly noticeable softening and lessening of tension. At this point begins the operation, and every cut vessel spurts less than otherwise would be the case. A towel folded lengthwise is wrapped about each thigh very close to the trunk and on this the rubber tube is tightened. After from five to ten minutes the softened pulse will indicate that the operation may be proceeded with. The congested limbs are, however, first warmly wrapped up and hot-water bags placed about them. Only in case the limbs are excessively swollen, or the pulse demands a change, is the tension altered during the operation. Dawbarn reports five cases of brain and skull surgery in which this method was employed with the greatest satisfaction. Less of the anesthetic is needed; hemorrhage during the operation is controlled easily, and, as stated before, there is lessened danger of sudden death. No mean advantage is the greater space obtained between brain and brain case, thus lessening the risk of laceration of the brain surface.

**46. Papillary Cystadenomata of the Breast.**—Greenough and Simmons analyze 20 recorded cases of papillary cystadenomata of fibro-epithelial tumors of the breast.

**47. Puerperal General Peritonitis.**—McDonald reports 11 cases in which the streptococcus was the infecting organism alone in 3 and associated with other bacilli in 3 cases. The *Staphylococcus aureus* alone was the infecting organism in 2 cases; the pneumococcus in one case, and the gonococcus alone in one case and associated in one case.

**48. Subacute Perforation of Stomach and Duodenum.**—Moynihan has operated on 15 patients; on 5 during the early stage, on 10 after the lapse of months or years. In 4 cases an hour-glass stomach was found. A correct diagnosis was made and without difficulty in every case. Moynihan says that if the patient is seen at the time of the onset of perforation, there need be no hesitation in advising instant operation. All the cases are reported in full.

**49. Foreign Bodies in Stomach.**—Benjamin reports the case of a professional glass and nail-eater who had followed this vocation for twenty years without any mishap. While walking on the street he was taken suddenly with severe pain across the stomach and in the region of the heart. He vomited considerable matter of a black color, which tasted like iron rust. The stools were also black in color. There was a feeling of weight in the stomach, pain on breathing, and a sensation of some object in the stomach. Fifty-two 6, 8, 10, and 20-penny-nails were removed from the sacculated cardiac end of the stomach. They were in various stages of erosion, two being like darning needles. The walls of the stomach were hypertrophied and fibrous and showed scars of healed ulcers. The stomach was greatly dilated. The patient left the hospital on the ninth day feeling perfectly well, and has remained so.

**50. Sarcoma of Small Intestine.**—A case of round-celled sarcoma of the small intestine is reported by Barling. The patient was a boy, six years of age. Six feet and five inches of the small intestine were removed close to the ileocecal valve, and an ileocolic anastomosis was made. The patient made an uneventful recovery.

**51. Congenital Lumbar Hernia.**—Dowd reports a case of this kind which was first noted when the patient was three and one-half years old. The hernia was about the size of a goose egg and bulged in a marked way on coughing or on exertion. The triangle of Petit was greatly enlarged. The sac

of the hernia was distinct. Its contents consisted of colon and appendix. There was no recurrence of the hernia after eight months.

**52. Tuberculosis of Bladder.**—In the preparation of this paper Walker studied 447 cases of tuberculosis of the bladder collected from the literature and elsewhere. His conclusions are to appear in a subsequent paper.

**53. Recurrent Intermittent Retention of Urine.**—The interest in Cunningham's case is the recurrent intermittent retention of urine dependent on remissions or exacerbations of anemia in the course of a pernicious anemia. The case also illustrates the value of the Bottini operation in affording relief to prostatic obstruction by incising the obstructing portion of the gland in a class of cases which will not stand a general anesthesia or the shock and convalescence attending prostatectomy.

**54. Arthroplasty on Elbow Joint.**—One year and four months following the operation in the case reported by Scudder, the man had a strong and useful arm with which he is able to do all the work about a small farm. There is no pain and no discomfort and only a small amount of limitation of motion. A rectangular skin flap taken from the posterior surface of the upper arm was swung into the joint and placed between the ends of the exposed bones. The flap covered the lower end of the humerus and sigmoid cavity of the ulna and the upper end of the radius. The wound was not drained. Gentle passive motion was given at the end of about ten days.

**Wisconsin Medical Journal, Milwaukee.**  
*February.*

55 \*Nervous and Mental Diseases in General Practice. R. Dewey, Wauwatosa, Wis.

56 \*Open-air Treatment of Pneumonia. A. J. Patek, Milwaukee.

57 Those Who May Be Classed as Feeble-Minded. A. W. Wilmarth, Chippewa Falls.

58 \*Endometritis. J. M. Evans, Evansville, Ind.

59 Membranous Colitis, Mucus or Mucomembranous Colitis and Desquamating Colo-proctitis. L. Hopkinson, Milwaukee.

55.—See abstract in THE JOURNAL, July 14, 1906, page 145.

**56. Open Air Treatment of Pneumonia.**—This treatment of pneumonia in children is endorsed fully by Patek, and he reports three cases in which it was employed successfully.

58.—See abstract in THE JOURNAL, July 14, 1906, page 144.

**Pennsylvania Medical Journal, Athens.**  
*February.*

60 \*Laryngology. I. J. Dunn, Erie.

61 Electricity in Treatment of Disease. J. V. Shoemaker, Philadelphia.

62 \*High-Frequency Current in Pulmonary Tuberculosis. M. L. Barshinger, York.

63 \*High-Frequency Currents in Chronic Rheumatism and Rheumatoid Arthritis. G. E. Pfahler, Philadelphia.

64 \*Intranasal Conditions as Bearing on the Etiology of Diseases of the Ear. G. Hudson-Makuen, Philadelphia.

65 \*Plea for Creation of a State Hospital for Inebriates and Drug Habitues. T. Diller, Pittsburg.

66 \*Internal Use of Saline Solution in Fever. J. M. Taylor, Philadelphia.

67 Hepatic Insufficiency. W. H. Glynn, Pittsburg.

68 Subperitoneal Myxo-Sarcoma Simulating a Sciatic Hernia. N. G. L. Shillito, Allegheny.

69 Five Interesting Neurologic Cases. T. Diller, Pittsburg.

60.—See THE JOURNAL, Oct. 6, 1906, page 1131.

**62. High-Frequency Current in Tuberculosis.**—As the result of careful observation of the effects produced by the treatment of four cases of pulmonary tuberculosis with the high-frequency current, Barshinger is of the opinion that the current stimulates, increases, and maintains the metabolism of the body, securing a reversal of the progressively lowered metabolism which takes place in tuberculosis. The pulmonary circulation is also improved, and thus the congestion and inflammation in the lung tissues are relieved. Barshinger advises, however, that careful attention must be given to the diet and hygiene of the patient. He reports in great detail the clinical entity of one of his patients, and refers briefly to three other cases.

**63. High-Frequency Currents in Rheumatism.**—Pfahler says that in chronic rheumatism the high-frequency currents give



relief from the pain and stiffness in the joints, increase metabolism and improve the circulation of the part, thus helping to remove the exudate and to restore function. Brief mention is made of an illustrative case.

64.—See abstract in *THE JOURNAL*, Oct. 6, 1906, page 1132.

65.—See abstract in *THE JOURNAL*, Sept. 29, 1906, page 1048.

66.—See abstract in *THE JOURNAL*, Nov. 10, 1906, page 1551.

#### Archives of Pediatrics, New York. February.

70 \*Importance of the Estimation of Caloric Value of Infant Food. J. J. Thomas, Cleveland.

71 \*Determination of the Caloric Value of Modified Milk. G. W. Moorhouse, Cleveland.

72 \*Impaired Resonance Behind and Beneath the Inner Third of the Left Clavicle in Normal Children. S. McC. Hamill, Philadelphia.

73 Significance of Albumin and Casts in the Urine in Children. F. E. Sondern, New York.

74 \*Scarlet Fever or Fourth Disease (Filatow-Dukes), Which? H. Illoway, New York.

75 Acute Alcoholism in Children. S. W. Moorhead, Philadelphia.

76 \*Treatment of Whooping Cough by Abdominal Belt. T. W. Kilmer, New York.

70. Estimation of Caloric Value of Infant Food.—Thomas says that the estimation of the food requirement of the infant and the caloric value of infant foods is of the highest importance, not only for the purpose of establishing infant feeding on a scientific basis, but also to guard against over-feeding.

71. Id.—Moorhouse describes a method for determining the caloric values of milk mixtures which he has employed successfully.

72. Impaired Pulmonary Resonance in Normal Children.—Hamill maintains that there exists in the chests of the majority of infants and children in perfect health impaired resonance behind and beneath the inner third of the left clavicle, and that this persists throughout childhood. It can be elicited by percussion of the clavicle and by percussion in the first interspace immediately beneath the clavicle, the child being in the recumbent position, although sometimes the findings are more distinct when the child is in the upright position.

74. Scarlet fever or Fourth Disease?—Attention is directed by Illoway to four cases seen by him in which the diagnosis was somewhat doubtful as to whether they were cases of scarlatina or the so-called fourth disease.

76. Treatment of Whooping-Cough.—In this article Kilmer states that in the three years which have elapsed since he first announced his treatment of whooping cough with an abdominal belt, the recorded cases show conclusively that about 95 per cent. of cases are positively benefited. This is especially true, he asserts, in regard to the cessation of vomiting. The belt first described by Kilmer in *THE JOURNAL* A. M. A., Dec. 10, 1904, was composed of a long strip of elastic webbing placed over a stockinette band; this, while efficacious, was warm to the child and expensive for the parents. The new belt described by Kilmer in this article is made of linen with a strip of silk elastic webbing two inches wide inserted on either side. The belt laces in the back and is worn over the undershirt or band. The width of the belt for infants is from four to five inches, and for older children from five to eight inches. Its length should be such that when complete it will measure three inches less than the circumference of the abdomen at the navel. The degree of constriction should be determined in the individual case.

#### Therapeutic Gazette, Detroit. February 15.

77 \*Medical Management of Pregnancy. E. P. Davis, Philadelphia.

78 \*Hygiene and Management of Pregnancy. G. M. Boyd, Philadelphia.

79 \*Management of Pregnancy. R. C. Norris, Philadelphia.

80 \*Management of Normal Pregnancy. B. C. Hirst, Philadelphia.

81 \*Artificial Feeding of Infants in Private Practice. M. H. Fussell, Philadelphia.

82 \*Clinical Significance of Variations in Blood Pressure. H. A. Hare, Philadelphia.

77. Medical Management of Pregnancy.—Davis discusses the care of the pregnant woman in all particulars, except such

as may demand operation, including the diagnosis of early pregnancy, and the preparation of the patient for labor.

78. Id.—Boyd covers practically the same ground in his paper as was considered by Davis. He urges that the physician should familiarize himself thoroughly with all the features of each case so that when labor begins he will be prepared properly to meet any emergencies that may arise.

79. Id.—Norris emphasizes the importance of frequent careful and thorough examinations of the urine in connection with the management of pregnancy. He also publishes a full list of articles which the mother is instructed to have in readiness after the seventh month of pregnancy. He says that because the physician ordinarily does not often meet with serious complications is no reason why he should not study each case thoroughly.

80. Id.—Hirst says that the chief danger to the pregnant woman is from toxemia; therefore, everything possible should be done to secure perfect elimination. The urine should be examined often.

81. Artificial Feeding of Infants.—Fussell is satisfied from personal experience that a modification of milk is practical for feeding infants. He favors the formula proposed by Rotch and Holt.

82. Variations in Blood Pressure.—Hare emphasizes the fact that in some conditions the tension which is above normal is not rarely present in moderate degree as an endeavor on the body to meet a need, and that sometimes a moderate degree of hypotension is in one sense physiologic in some illnesses, and should not be interfered with. The physician who whips up the circulation at this time solely because the tension is low, forces his patient to an expenditure of energy which is wasteful and dangerous. Hare claims that only when overaction of the heart is due to low tension, or when renal or pulmonary stasis results from this cause, is interference required. It is unwise, he declares, to give drugs to the patient simply because the arterial tension is high or low.

#### Archives of Ophthalmology, New York. November.

83 \*Prevention and Treatment of Eye Affections from Venereal Disease. H. Knapp, New York.

84 Dependence of Accommodation and Motility on Refraction of the Eye. H. Knapp, New York.

85 \*Sudden Blindness Following Suppurative Conditions About the Eyeball. A. Knapp.

86 Double Congenital Aniridia with Glaucoma and Cataract. D. N. Dennis, Erie, Pa.

87 \*Rare Path of Infection of an Orbital Abscess. C. Barek, St. Louis.

88 Atrophy of the Iris. A. Franck, Germany.

83. Eye Affections from Venereal Disease.—Knapp's paper is an address delivered before the Philadelphia Society for the Study and Prevention of Social Disease. In it he discusses briefly what is known of the ocular complications and sequelæ of gonorrhea and syphilis.

85. Blindness Following Suppuration About Eyeball.—That sight is occasionally suddenly lost when there is an acute suppurative process in the neighborhood of the orbit is shown by Knapp. The orbital symptoms are those of cellulitis of varying intensity, and the ophthalmoscopic picture is that of an embolism of the central retinal artery with consecutive optic atrophy and obliteration of the arteries. Three cases in point are reported: (1) Blindness following an operation for empyema of the frontal sinus; (2) blindness following periostitis of the superior maxilla of dental origin, and (3) blindness from penetrating wound of orbit with cellulitis.

87. Rare Path of Infection of Orbital Abscess.—Barek reports the case of a boy who was hit on the temple by a stone. Two days later high fever set in; on the third day the upper lid commenced to swell, and on the fourth day he was unable to open the eye. The boy became comatose and delirious. An operation was decided on and this led to the discovery that the infection from the temple wound had extended through an emissary vein into the orbit and from there to the meninges, which accounted for the symptoms manifested.



## Southern California Practitioner, Los Angeles.

February.

- 89 \*Review of 700 Cases of Smallpox. I. R. Bancroft, Los Angeles, Cal.  
 90 Shock in Relation to Surgical Procedures and Anesthesia. T. G. Davis, Los Angeles, Cal.  
 91 Health and Development of School Children. G. L. Leslie, Los Angeles.

89. **Smallpox.**—Bancroft reports on 700 cases of smallpox seen by him during an epidemic which occurred in Boston in 1901. Of the total number of cases, 18 per cent. occurred in patients under 5 years of age, while only 3 per cent. of the patients were between 6 and 10 years. The next largest number of cases, 114, occurred in individuals between the ages of 26 and 30. All the patients under the age of 10 showed either no vaccination or a doubtful one. As the effect of compulsory vaccination wears off the number of cases gradually increases, which accounts for the 16 per cent. occurring between 26 and 30 years. These cases further showed that a fatal case of variola does not occur after a recent successful vaccination, and that vaccination also has an effect on the length of sickness. On analysis of the cases that terminated fatally and in which vaccination was established, it was found that the youngest patient was 28 years old, and the average was 47 years. The 8 per cent. of mortality in these cases compares favorably with the 26 per cent. mortality among the unvaccinated. Bancroft affirms his belief in the absolute power of vaccination to prevent smallpox.

## Bulletin of the Johns Hopkins Hospital, Baltimore.

February.

- 92 Trachoma in the American Negro. J. Bordley, Baltimore.  
 93 Four Cases of Membranous Dysmenorrhea. E. Morse, Baltimore.  
 94 The Medical Life of Oliver Wendell Holmes. J. H. M. Knox, Jr., Baltimore.  
 95 \*The Blood in Pernicious Anemia. C. P. Emerson, Baltimore.  
 96 Volume and Color Index of the Red Corpuscles. P. Wroth, Jr., Baltimore.  
 97 \*Pulsating Empyema. W. J. Calvert, Columbia, Mo.

95. **Blood in Pernicious Anemia.**—A careful study of 89 cases of pernicious anemia was made by Emerson from the viewpoint of the blood. The results are presented in such detail as to preclude the making of an abstract.

97. **Pulsating Empyema.**—Calvert presents additional experimental results obtained by him in the study of this condition.

## Fort Wayne Medical Journal-Magazine.

- 98 \*Have We a Specific for Typhoid. J. L. Gilbert, Kendallville, Ind.  
 99 \*Multiple Invaginations of the Bowel. D. C. Wybourn, Sheldon, Ind.  
 100 \*Terminations and Treatment of Extrauterine Pregnancy. A. P. Heineck, Chicago.

98. **Specific for Typhoid.**—Gilbert suggests as a specific for typhoid the administration of one grain of sulphate of copper every four hours for, perhaps, three days.

99. **Multiple Invaginations of Bowel.**—Wybourn reports the case of a girl, 6 years old, who suffered from sudden and severe attacks of abdominal pain, accompanied by persistent vomiting. An operation having been decided on, in order to reduce a supposed intussusception, the abdomen was opened, but instead of finding an intussusception there were discovered three enteric invaginations, each about one and one-half inches deep, without inflammatory adhesions. The invaginations were reduced and the patient made a complete recovery.

100.—This article also appeared in *Surgery, Gynecology and Obstetrics*, February, 1907. See abstract in this issue of *THE JOURNAL*, paragraph 36, page 1138.

## American Journal of Surgery, New York.

March.

- 101 Cancer of the Uterus, with Special Reference to Wertheim's Operation. M. I. Rosenthal, Fort Wayne, Ind.  
 102 Rational Treatment of Fever in the Puerperium. S. M. Brickner, New York.  
 103 Combination of the English and French Obstetric Locks, for the Prevention of Dangerous Compression of Fetal Head by Forceps. A. E. Gallant, New York City.  
 104 Blood Examination in Surgical Diagnosis. I. S. Wile, New York.  
 105 Surgical Postures. M. W. Ware, New York.  
 106 Immediate Correction of Congenital Club-Foot. E. W. Ryerson, Chicago.

## Albany Medical Annals.

March.

- 107 The New Ellis Hospital. C. G. McMullen, Schenectady, N. Y.  
 108 Present Status of Bier's Method of Treatment by Congestive Hyperemia. J. M. Berry, Troy.  
 109 Inebriety Should Be Studied in Medical Colleges. T. D. Crothers, Hartford, Conn.  
 110 Diet in Diseases of Children. W. G. Murphy, Hartford.

## The Journal of the Outdoor Life, Trudeau, N. Y.

March.

- 111 Tuberculosis Congress. L. F. Flick, Philadelphia.  
 112 What Shall Our Tuberculosis Patients in the Southwest Do When Summer Rolls Around? W. Freudenthal, New York.  
 113 Outdoor Life as It Goes On, Summer and Winter, in the California Fastnesses. C. H. Shinn, California.

## Mississippi Medical Monthly, Vicksburg.

March.

- 114 Treatment of Cystitis. T. J. Ray, Deeson.  
 115 Obstetrics. W. H. Barnes, Homewood.  
 116 Nosebleed. S. L. Barnett, Arnold.  
 117 Curettage Under Cocain Anesthesia. E. A. Cheek, Arcola.

## Annals of Gynecology and Pediatrics, Boston.

February.

- 118 Ectopic Pregnancy. H. F. Quackenbos, New York.  
 119 Methods of Feeding at the Boston Floating Hospital. J. K. Wardwell.

## Philippine Journal of Science, Manila.

January.

- 120 Comparative Ecology of San Ramon Polypodiaceæ. E. B. Copeland.

## FOREIGN.

Titles marked with an asterisk (\*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional interest.

## British Medical Journal.

March 2.

- 1 \*Idiopathic Dilatation of the Colon. H. P. Hawkins.  
 2 \*Case of Enterospasm. E. O. Ashe.  
 3 \*Simple Colonic Adhesions a Cause of Intermittent Attacks of Abdominal Pains. A. E. Maylard.  
 4 \*Operations for Removal of Malignant Growths from the Nasopharynx. F. Eve.  
 5 \*Trypsin in Cancer. W. S. Bainbridge, New York.  
 6 \*Influenza Commencing with Sudden Unconsciousness and Excessive Dyspnea. W. Harris.  
 7 \*Cystine Calculi. F. A. Southam.  
 8 Kala-azar. L. Rogers.  
 9 \*Treatment of Eczema. H. Waldo.  
 10 \*Obstruction of Esophagus. D. McKenzie.  
 11 \*Antistreptococcal Serum in Puerperal Fever. E. W. Smyth.  
 12 \*Foreign Body in Appendix. E. J. W. Porter.

1. **Idiopathic Dilatation of Colon.**—The clinical history of this condition is illustrated most effectively by Hawkins in the recital of nine cases, occurring in patients ranging in age from three weeks to 48 years. He says that the difficulty lies in distinguishing the early stage of this condition from a simple constipation and in recognizing the point at which the case must pass from physician to surgeon. The picture of the condition comprises: 1. A history of constipation from birth or from the earliest recollection, which is compatible, however, with fairly good health, until the final stage is at hand, the first sign of failure being often a loss of weight. 2. A constipation which often alternates with diarrhea, and which at its worst is unlike that of obstruction, inasmuch as flatus is often passed and fecal matter may be drained away through a rigid rectal tube. 3. Abdominal enlargement, variable or constant, often asymmetrical, with prominence in the left iliac region, the abdomen, though distended, being seldom tense, and often surprisingly flaccid, and rarely presenting any impairment of resonance. 4. Slow alterations in shape, especially in the left iliac region, observable only with patience, quite unlike the tense peristalsis seen in real obstruction. 5. The absence or rarity of pain and vomiting. Neither with real intestinal obstruction nor with simple non-dilating constipation should there be any confusion when this condition is far advanced.

2. **Enterospasm.**—Ashe reports a case of enterospasm occurring in a strong, healthy woman, aged 22. At the operation it was found that the small intestine was very much narrowed for about seven inches of its length. There was no gradual tapering of the wide into the narrow part, but at the end of the narrow part the natural-sized bowel abruptly became contracted, and at the other resumed its natural caliber just as abruptly. The narrow part was



firmly contracted, but was to some extent pervious. The contracted part was covered with warm cloths while a further search was made for other causes of the spasm. Nothing was found, however, but on removing the cloths from the contracted part it was found to have resumed its normal appearance and size. The bowel was returned to the abdominal cavity without further intervention. The patient made a perfect recovery.

**3. Colonic Adhesions as Cause of Abdominal Pains.**—Maylard reports two cases, both occurring in women, in which simple colonic adhesions were responsible for severe attacks of abdominal pain. In one case, the symptoms suggested chronic appendicitis. Operative intervention afforded complete relief in both cases. Maylard suggests that the pain was caused more particularly by the dragging effects produced by the adhesions which interfered with the normal peristaltic action of the bowel.

**4. Removal of Malignant Growths from Nasopharynx.**—Eve describes several operative procedures which he has devised and employed with success. On two occasions he carried out a method of osteoplastic resection of the upper jaw, which completely preserves the integrity of the jaw and at the same time admits of the fullest exposure of the nasopharynx and upper and back part of the nose. A ligature is placed on the external carotid artery and laryngotomy is performed. An incision is made, extending from the angle of the mouth to the lower margin of the malar bone, at a point corresponding to the anterior end of the masseter. The parotid duct is separated at its entrance into the mouth by a circular incision and is then turned back. The malar bone is divided by introducing Gigli's saw through the sphenomaxillary fissure. The muco-periosteum of the hard palate having been divided in the median line the hard palate and alveolus are also severed by a Gigli saw which has been drawn through from the mouth by an aneurism needle passed along the inferior meatus and through a puncture at the junction of the hard and soft palates. The soft palate is severed from the hard, from the middle line as far as the posterior margin of the alveolus. A broad and blunt chisel is then driven horizontally between the tuberosity of the upper jaw and the pterygoid processes. By pressing the handle backward the upper jaw is levered out of its bed and turned upward and forward. As the skin incision is only carried as high as the lower level of the malar bone, the fibers of the facial nerve going to the orbicularis oculi are not divided. After removal of the growth the maxilla is replaced and the severed edges of the malar bone united by a wire suture. A piece of thin silver wire may also be passed round the incisor teeth on each side of the incision through the alveolar process anteriorly. The incision between the hard and soft palates and the two halves of muco-periosteum of the hard palate are sutured. The end of the parotid duct is thrust into the mouth and secured in position by a point of catgut suture. Finally the skin incision is closed.

5. This article appeared in the *New York Medical Journal*, March 2, 1907, and was abstracted in THE JOURNAL, March 16, 1907, page 974.

**6. Unusual Onset of Influenza.**—Harris reports the case of a man who had three attacks of influenza in the course of fifteen years, each attack commencing with sudden unconsciousness, lasting about 20 minutes, and followed by fever, severe headache, pains and bronchitis.

**7. Cystine Calculi.**—Southam reports one case of cystine calculus of the kidney and one of the bladder, the latter being the only instance of its kind seen by the author in a series of 140 cases. The stone in the bladder was removed by suprapubic cystotomy. The renal calculus was passed through the urethra.

9.—An abstract of this article appears in the Therapeutic Department of this issue, page 1133.

**10. Obstruction of Esophagus by a Pea.**—McKenzie reports a rather curious case of obstruction of the esophagus. There was no dyspnea, no cough, and no spasm, but the patient

was unable to get anything beyond the obstruction. The patient's story was that she put a dried pea into her mouth and it suddenly slipped over, giving rise to a violent choking. The woman also had an aneurism of the innominate artery and it was presumed that the pea was arrested at the place where the aneurism was pressing on the esophagus. It was possible to pass a catheter past the obstruction, but all food or drink that was taken was regurgitated. A quart of milk was run in through the catheter, and after the withdrawal of the instrument the patient vomited and ejected the pea. The foreign body had evidently been resting at the upper end of the narrowed portion of the gullet, where it lay loose, but in such a manner as to act like a ball valve. Its small size and spherical shape had prevented the usual esophageal regurgitant movements from seizing the body and passing it upward.

**11. Antistreptococcus Serum in Puerperal Fever.**—Smyth reports a case of puerperal fever occurring in a primipara in which the injection of three doses, 10 c.c. each, at 12-hour intervals, of a polyvalent antistreptococcus serum was followed by immediate recovery.

**12. Foreign Body in Appendix.**—In the case reported by Porter it was found at the operation that the attack of appendicitis in all probability was due to the presence in the lumen of the appendix of three grains of No. 6 shot. The patient, a soldier, stated that rabbit pie formed a frequent dish in his mess. Evidently a shot had found its way into the intestinal tract by this means.

#### The Lancet.

March 2.

- 13 \*True Aim of Medical Education and Evil of the Examination Fetish. L. E. Shaw.
- 14 \*Faints and Fainting. W. S. Gowers.
- 15 Kala-azar. L. Rogers.
- 16 \*Insanity, with Special Reference to Prognosis. A. R. Urquhart.
- 17 \*Uterine Fibroids. A. E. Giles.
- 18 \*Intestinal Obstruction in Children. E. P. Baumann.
- 19 Case of Pneumococcal Cerebrospinal Meningitis Simulating Spotted Fever. A. H. Cook and G. F. McCleary.

**13. True Aim of Medical Education.**—Shaw directs attention to the blighting influence of the examination system on the work of teachers and pupils from beginning to end of the modern medical curriculum. He maintains that the examination fetish, as he calls it, is year by year gaining a greater hold on medical education; that its influence is detrimental, and that it has a demoralizing effect. He says that one of the worst features of examinations is their tendency to be so conducted as to require the knowledge of an increasing number of facts from succeeding batches of victims. By a careful study of the examination papers and of the ways of particular examiners a teacher gradually learns to pack his pupils' brains with facts with so much regard to the ease of unpacking that the success of the dullest can be almost assured. Shaw advocates replacing the examination system by intelligent inspection.

**14. Faints and Fainting.**—Gowers emphasizes the fact that the functional state of the brain in syncopal unconsciousness is distinct from the failure of the blood supply that causes it, and may be nearly the same as that which occurs in epilepsy, apart from the state of the circulation. He also directs attention to the uncertainty regarding the precise mechanism through which heart failure is induced and to the occasional causal relation of syncope to epilepsy.

**16. Insanity.**—Although Urquhart regards the pathologic forms of insanity as of little moment in respect to prognosis under present conditions, as fixed, irrecoverable and already doomed, he regards ordinary insanity as uncertain, curable and now even hopeful.

**17. Uterine Fibroids.**—The basis of Giles' paper is a consecutive series of 150 cases of fibroid of the uterus treated by abdominal section. Over half the total number of cases occurred between the ages of 40 and 50; four occurred in patients under 30, and two in patients 60 years old and over. Of the 150 patients operated on 56 were unmarried and 94 were married. Of the latter, 34 have never been pregnant.



Fifty-seven patients had had between them 172 pregnancies, 38 of which terminated in miscarriages. Giles rather inclines to the belief that the absence of pregnancy predisposes to the occurrence of fibroids. He suggests that the modus operandi may be that the periodic congestion of the uterus in the preparation for this function expends itself, if continually thwarted, in pathologic, irregular and permanent, instead of physiologic, uniform and temporary hypertrophy. After the menopause, when periodic congestion no longer occurs, the liability to the onset of fibroids ceases. Hemorrhage, pain, abdominal swelling and pressure symptoms are the most prominent indications for operation. Abdominal myomectomy was done 27 times in Giles' series, abdominal hysterectomy 109 times, panhysterectomy 11 times and oophorectomy 3 times.

**18. Insatnity.**—Although Urquhart regards the pathologic reported by Baumann was of acute intussusception, which was reduced by manipulation. The second case was also one of intussusception but simulated dysentery. A diagnosis of dysentery was made and appropriate treatment instituted. On the ninth day the attending physician performed a laparotomy and the intussusception was discovered. The patient died two hours after; the intussusception in this case was incomplete. The diagnosis in this case was complicated by the fact that another child of the same family, at about the same time, passed blood-stained stools.

#### Australian Medical Gazette, Sydney.

January 21.

- 20 The Medical Ideal. A. J. Turner.
- 21 Precipitin Reactions in Relation to State Medicine and Public Health. D. A. Welsh and H. G. Chapman.
- 22 \*Fibroid of the Uterus Weighing 19 Pounds Removed from a Patient Aged 70. W. J. S. McKay.
- 23 \*Streptothrix Infections, with Special Reference to the Pulmonary Form. S. Jamieson.
- 24 \*Aspects of Spinal Anesthesia. F. Hinrichsen.

**22. Fibroid of Uterus.**—McKay's patient lost no blood whatever; she exhibited no signs of shock. The tumor, when bisected, proved to be an enormous submucous polypus which had grown from the fundus and had gradually distended the uterus and cervix, so that they were represented by a thin envelope of tissue which could be stripped off the polypus with ease.

**23. Streptothrix in Infections.**—James reports a case which illustrates the points of importance in differentiating between these cases and those of ordinary pulmonary phthisis. In streptothrix infections the lesion is more commonly situated in the base of the lung, whereas in phthisis it is the apex that is most frequently infected. In streptothrix infections the disease always tends to spread by direct continuity, irrespective of anatomic boundaries, and so in course of time ulceration through to the surface takes place, as in the case just reported. Excavation of the lung tissue does not occur to any extent, but rather a consolidation with infiltration by the *Streptothrix granulomata*. As a consequence thereof hemoptysis was a marked feature. Pleuritic pain was not a marked phenomenon. Temperature is more irregular in type in streptothrix infections than in ordinary phthisis, and is, as a rule, of lower range. James emphasizes the fact that in all cases of chronic pulmonary affection in which the physical signs are suggestive of phthisis, but in which examinations of the sputum on several occasions fails to reveal the presence of tubercle bacilli, the sputum should be stained by Gram's method and a systematic hunt made for filaments of a streptothrix.

**24. Spinal Anesthesia.**—Hinrichsen says that spinal anesthesia is still in the experimental stage and can not, therefore, be recommended for general use.

#### British Journal of Tuberculosis, London.

January.

- 25 Study of Tuberculosis; a Retrospect. C. Allbutt.
- 26 An Anticipation. R. W. Philip.
- 27 Care and Control of the Consumptive Poor in the British Isles. R. D. Powell, B. Bramwell and J. W. Moore.
- 28 Tuberculosis and National Efficiency. L. Brunton.
- 29 Climate as a Factor in Treatment of Tuberculosis. H. Weber.
- 30 The Combat with Consumption; a Contrast. S. Wilks.
- 31 Treatment of Hemoptysis by Amyl Nitrate. F. Hare.

#### Indian Medical Gazette, Calcutta.

February.

- 32 The Distribution of Two Species of Bedbug. W. S. Patton.
- 33 The Carbuncular Form of Plague. G. N. Mittra.
- 34 Surgical Treatment of Chronic Dysentery. E. F. G. Tucker.
- 35 Use of Adrenalin in Plague. K. B. N. H. Choksy.
- 36 Conservancy of the Smaller Towns in Burma. J. Entrican.
- 37 Extraction of Cataract in the Capsule. H. Smith.

#### Presse Médicale, Paris.

- 38 (XV, No. 7, pp. 49-56.) Experimental Surgery. (Chirurgie expérimentale.) T. Tuffier.
- 39 \*Medical Ethics. (La morale professionnelle du médecin.) A. Pinard.
- 40 Diet for the Tuberculous. (L'alimentation dans la tuberculose pulmonaire.) C. Malibrau.
- 41 (No. 8, pp. 57-64.) \*Gummatous Heart Block. (Maladie de Stokes-Adams par lésion scléro-gommeuse du faisceau de His—Herzblock.) Vaquez and Esmein.
- 42 \*Lactic Ferment for Disinfection of the Intestines. (L'emploi des ferments en vue de la désinfection intestinale.) A. Fournier.
- 43 (No. 9, pp. 65-72.) Fat Acids and the Tubercle Bacillus. (Acides gras et bacille tuberculeux.) J. Camus and P. Pagniez.
- 44 \*Disinfection of Japanese Troops on Their Return from Manchuria. (Désinfection des soldats japonais.) P. Desfosses.
- 45 \*Treatment of Hemorrhoids by Local Injection of Carbolyzed Glycerin. (Traitement des hémorroïdes.) H. Vuillet.
- 46 (No. 10, pp. 73-80.) \*Auscultation of the Apex in Young Soldiers. (Anomalies respiratoires.) G. H. Lemoine.
- 47 Aid for Maternity. (Assistance maternelle.) V. Bue.
- 48 Why and When to Use the Stomach Tube. (Sonde stomacale.) A. Martinet.

**39. Medical Ethics.**—Pinard quotes Voltaire, that there is only one morality, as there is only one geometry. Very few people know geometry, but as soon as they study it a little they are all in accord. He protests against the remark he so frequently hears from patients: "I consulted a little doctor around the corner," or "a little country doctor where I was staying." He drew the picture of these "little doctors" forever traveling around the city streets and climbing staircases or jogging along the country roads, going, going, going all the time, never refusing their services, going into the wretched retreats of poverty, knowing well from dire experience that they can not rely on being paid for their services, not even with gratitude, but going still, simply doing their duty as they see it. "These," Pinard remarks, "to my mind, are the great physicians." Among other phases of medical ethics he discusses the question of responsibility, observing that few professions require such prompt decisions as the medical profession or impose such a burden of responsibility. He has known physicians who gave up the idea of practicing after graduating with high honors, crushed by the weight of the responsibilities of a medical practice. Commenting on the fact that success does not always crown effort, even the most skilful, the most conscientious, he says that the physician is neither infallible nor all-powerful. In case of failure he must always expect to be blamed. In case of failure he may be arrested, treated as a malefactor and imprisoned, but the fear of blame should not deter him, even if it brings him in conflict with the courts of justice, if he acts according to the rules of the art. The question as to whether or not a physician should ever interrupt the course of a pregnancy, Pinard answers by saying that it is justifiable only when the mother is on the point of death from some affection caused or aggravated by the pregnancy. If the physician does not interfere, both mother and child will die, as the child is as fatally condemned as the mother. By interfering the physician has a chance of saving the mother. Referring to the question of professional secrecy Pinard says that it is a good symbol of the rôle of the physician in society, his task being to defend at the same time the interests of the individual and the interests of the public at large. Brouardel advised physicians to maintain the strictest professional secrecy at all times, but in daily life he frequently violated this rule, and Pinard thinks that there are many occasions when the physician would be acting contrary to his sense of right if he adhered strictly to the letter of the law. In case one of his clients, in a contagious stage of venereal disease, announced his approaching marriage, and could not be induced to postpone it, Pinard says that he would go directly to the father of the prospective bride and say to him: "Do not give your daughter in marriage to that young



man." This is all he would say, but this would surely be enough. He might be sued for damages by his client, and he might be condemned by the courts, but his conscience would be at peace. He thinks that this mode of conduct should be taught in the medical schools. In this point he differs from other French writers on medical ethics. He believes that the time is coming when the matter of health on both sides in the marriage contract will be regarded more than at present, and that the family physicians of the two families will confer, as the lawyers now confer over the marriage settlement. On the other hand, he declares that he would never denounce any one to the courts. He might testify that a man was the victim of poisoning, but he would never suggest who had done the crime. He would violate professional secrecy by reporting that a child to whom he had been called was the victim of inhuman treatment, and he would report to the authorities a case of epidemic disease, but no power could compel him to denounce the author of a crime. He would also warn a wet nurse that she would be incurring great risks if she took charge of a child whom he knew to have inherited syphilis, if the parents insisted on engaging her, against his warning. In regard to the question of fees, he says that the physician frequently gives advice to individuals and to communities which conflicts directly with his material interests. Members of no other profession do this, and physicians thus occupy a place apart. In charging for his services the physician should bear in mind the situation of his client and the importance of the service rendered. The patient sometimes fails to recognize the importance of the service rendered, as when the physician discovers some affection and refers him to a surgeon, but the sharing of the fee is only justifiable, proper and ethical when it is done openly before the patient.

**41. Gummatous Heart Block.**—Vaquez and Esmein give the clinical history of a case of a syphilitic lesion in the bundle of His, under observation for several months. The Stokes-Adams syndrome and the tracings of the pulse revealed the obstacle to the transmission of the impulse in the heart—the ventricular pause coinciding with the persistence of the contraction of the auricle. Autopsy showed the obstacle to be a sclero-gummatous lesion in the bundle of His. The patient was a man of 49, the first signs of trouble being syncope, with convulsions on waking, such crises recurring at intervals. Sometimes during a crisis the pause in the pulse lasted as long as 6 seconds; it ranged between 36 and 60 at other times. The recent researches on the anatomic basis for the Stokes-Adams syndrome have thrown much light on the origin of paroxysmal and permanent bradycardia.

**42. Ferments for Disinfection of the Intestines.**—Fournier says that the ideal disinfectant for the intestines would be an aerobic ferment able to transform sugar into formic acid, but nothing of the kind is known. Brewer's yeast answers some, but not all of the desired conditions for a disinfectant, and it frequently fails to exert any action, while the generation of alcohol is not always desirable, and the yeast is not resistant enough to act along the entire length of the digestive tract. The only ferment known to date which adapts itself to anaerobic conditions and acts directly on the carbohydrates, while very resistant to external influences, is the lactic ferment. The combination of the lactic streptobacillus and the lactic streptococcus in symbiosis is proving an efficient and reliable means of disinfecting the intestines.

**44. Disinfection of the Japanese Troops on Their Return from Manchuria.**—Desfosses gives an illustrated description of one of the disinfection stations where the 800,000 troops returning from the campaign in Manchuria were disinfected, persons, arms and baggage. Not even the highest officials were allowed to land without passing through the disinfecting station. About an hour and ten minutes were required for the process, the effects being disinfected while the men bathed, and afterward, in dressing gowns, smoked a cigarette and took a cup of tea in the last hall through which they were passed before their effects were returned to them in the bags in which they had been checked. The precautions against importation of disease were carried to such a point that all

the money brought from Manchuria was taken up in the stations and fresh Japanese bills given in exchange. Desfosses states that he does not know which to admire most, the spirit of detail, the spirit of organization, or the spirit of discipline which made this summary disinfection of 800,000 men possible. He adds that the Japanese apply the scientific methods learned from western civilization with a rigor and a fidelity which western countries might do well to imitate.

**45. Treatment of Hemorrhoids with Carbolized Glycerin.**—Vullier uses a 60 or 80 per cent. solution and injects the fluid at the base of each hemorrhoidal nodule, guided by the finger in the anus. A Pravaz syringe is used, and one or two drops are injected into the base of each nodule. The patient should be under the influence of an anesthetic to complete relaxation, and the sphincter should be stretched slowly with the thumbs bent at right angles. The nodules swell and turn a color that is apt to alarm the physician the first time, but there is nothing to fear. The patient has to stay in bed for from three to five days as the nodules gradually shrivel. No assistance is required for the injections and no special preparation. There is no bleeding, and the ultimate results, he asserts, are excellent, just as after more radical intervention.

**46. Anomalies in Respiration as Early Sign of Tuberculosis.**—Lemoine found in examining 945 men entering the military service that 99 showed some anomaly in respiration on auscultation at the apex. In 18 the anomalies were explained by an old pleurisy, but in the others they suggested a possible tuberculous process. They were observed almost exclusively with persons showing an inherited predisposition. In determining their aptitude for the military service the general condition was the principal factor considered. When this was good the soldiers were not dismissed, but were kept under observation, and weighed monthly. The results confirmed the advantages of military service in such cases, the conditions of life being more hygienic than in factories or the like. The men gained in weight and threw off their respiratory trouble with but few exceptions. In these, persisting emaciation, exaggerated fatigue and slight impairment of the general health were regarded as sufficient cause for dismissal, without waiting for other signs of tuberculosis. Lemoine's examination of thousands of men has demonstrated that inspiration is stronger on the right than on the left side in young men, except in the left-handed. The difference between the two sides is more marked in men who have occasion to use the right arm considerably. Auscultation of the preclavicular region is particularly instructive, as also of the top of the axilla. The examination should be repeated three times, with a month's interval for absolutely reliable findings. Among the 945 men examined, in 64 there was a settled and persisting diminution of the inspiration noted on auscultation of the right subclavicular region. In another group, besides the settled and persisting diminution in inspiration, expiration under the right clavicle was unduly prolonged. In another group the inspiration was rough and low on auscultation of the left clavicle, and in some there was unduly prolonged expiration. One man exhibited respiratory insufficiency of the entire right lung. He gained in weight and left the service at the end of his term in perfect general condition. The men thrived in camp and barracks, and the respiratory findings became normal, as after a course in a sanatorium.

#### Semaine Médicale, Paris.

49 (XXVII, No. 8, pp. 85-96.) Anatomic Conditions Necessary for Ileocecal Invagination. (Invag. iléo-cecales.) R. Leriche and P. Cavaillon.

50 \*Cancer. (Cancer et milieu intérieur). L. Legrand.

51 \*Uterine Hemorrhage in Syphilitics. (Métrorrhagies par lésions syph. de l'utérus.) A. A. Mouratov.

**50. Cancer.**—Legrand ascribes to the blood the rôle of maintaining in the normal path of development the cells of the vertebrate animals. The stability of the composition of the blood corrects the deviations impressed on the evolution of the cells by external influences. Cancer research, he thinks, should be conducted along the lines of the specific cytotoxic



serums, with special regard to the development of the innocent tumors as the first step toward knowledge of the pathogenesis of cancer. He points out as a significant fact that the vertebrates alone have the sad privilege of cancer, and that they do not have it during the embryonal stage when the conditions approximate more closely those of invertebrate existence.

**51. Metrorrhagia in Syphilitics.**—Mercurial treatment is sometimes able to conquer rebellious uterine hemorrhages even in women supposedly free from venereal disease. Several striking instances are related of complete relief from the distressing metrorrhagia under a few days of mercurial medication. The hemorrhage may occur in such cases without any appreciable lesion in the uterus.

*Archiv f. Verdauungs-Krankheiten, Boas', Berlin.*  
*Last indexed, XLVII, page 1420.*

- 52 (XIII, No. 1, pp. 1-100.) \*Total, Simple Inflammatory Contraction of the Stomach, and Fibroid Polyserositis—"Ieig Stomach." (Totale, einfache entzündliche Magenschrumpfung und fibröse Polyserositis—Zuckerguss. K. v. Sury.
- 53 \*Further Remarks on the Digestive Bead Test. (Perlenverdauungsprobe.) M. Einhorn.
- 54 Elastic Tissue of the Stomach. (Elastisches Gewebe des Magens.) E. Schutz.
- 55 \*Case of Rheumatism of the Stomach with Incidental Hematemesis of Uncertain Origin. (Rheumatismus des Magens mit gelegentlichen Hämatemesen.) H. Illoway.
- 56 Pathology of Catarrhal Icterus. (Icterus catarrh.) L. Fischl.

**52. Total Inflammatory Contraction of the Stomach.**—After reviewing 172 original articles from the literature bearing on gastric cirrhosis and fibroid degeneration, von Sury reports a case with the postmortem findings in which the clinical diagnosis had been cancer of the stomach, in a person long subject to valvular incompetency. The patient was a man of 65 and the anatomic findings also suggested diffuse scirrhus carcinosis of the stomach, involving the peritoneum, pleura and pericardium. The microscope, however, failed to confirm the diagnosis of cancer, and the findings are interpreted as representing the final stage of a simple, inflammatory, more or less general uniform contraction of the stomach, gastric cirrhosis, accompanied by a fibroid polyserositis. He concludes from these data that simple inflammatory contracted stomach is a morbid entity *sui generis*—in the present case the result of congestion from a cardiac defect. Differentiation is possible only with the microscope.

53.—This article has already appeared in *THE JOURNAL*, Feb. 2, 1907, page 407.

55.—See *THE JOURNAL*, Feb. 17, 1906, page 541.

#### Berliner klinische Wochenschrift.

- 57 (XLIV, No. 5, pp. 125-148.) \*Spirillum obermeieri. (Spirillum Obermeieri.) C. Fraenkel.
- 58 \*Experimental Study of Serum Diagnosis of Syphilis. (Wassermannsche Serodiagnostik bei Lues.) A. Schütze.
- 59 \*Juvenile Physiologic Albuminuria. (Juv. phys. albuminurie.) B. Ullmann.
- 60 \*Phototherapy in Dermatology. (Anwendung des Lichtes in der Derm.) Kromayer.
- 61 \*Importance of Infection from Milk for Origin of Primary Intestinal Tuberculosis in Children. (Bedeutung der Milchinfection.) J. Fiblger and C. O. Jensen. Concluded.
- 62 \*Treatment of Abdominal Bullet Wounds on the Field. (Behandlung der penetrierenden Bauchschüsse im Felde.) Hildebrandt.
- 63 (No. 6, pp. 149-180.) Present Status of Induced Premature Delivery. (Künstliche Frühgeburt.) J. Veit.
- 64 \*Serum Treatment of Dysentery. (Serothérapie bei Dys.) T. Skshivan and W. Stefansky.
- 65 \*Sphygmoseope. (Ueber ein Sphygmoskop.) M. Rheinboldt (Kissingen).
- 66 \*Infant Feeding. (Säuglingsernährung.) W. Lewin.

**57. Spirillum Obermeieri.**—Fraenkel's extensive experimental research has demonstrated, he claims, that various animals are susceptible to this spirillum, especially white mice, and that infection confers active immunity. The immunization, however, did not protect against African tick fever, confirming the assumption that American relapsing fever and the African tick fever are distinct entities.

**58. Serodiagnosis of Syphilis.**—Schütze's findings to date have always been corroborative of Wassermann's assertions in regard to the diagnostic value of the serum test based on Bordet's discovery of the specific complement binding. The test has been described in these columns as the hemolytic

test from deviation of the complement. In testing for syphilis, it is applied to the cerebrospinal fluid, obtained by lumbar puncture.

**59. Juvenile Albuminuria.**—Ullmann examined the urine of 42 school children a number of times and found albumin in a third of the cases, although the children were all healthy. Only one had passed through scarlet fever; 9 had had measles, and one recurring tonsillitis. In 3 instances the parents stated that the children had never had an acute infectious disease. On the other hand, a considerable proportion of the children free from albuminuria had a history of scarlet fever or measles in the past. The amount of albumin ranged from traces to 10 per thousand—this largest proportion being found in the urine of a girl in apparently robust health. He remarks that this juvenile physiologic albuminuria usually vanishes without treatment or persists whatever treatment may be instituted. It does not seem to have any effect on the general health or life expectancy.

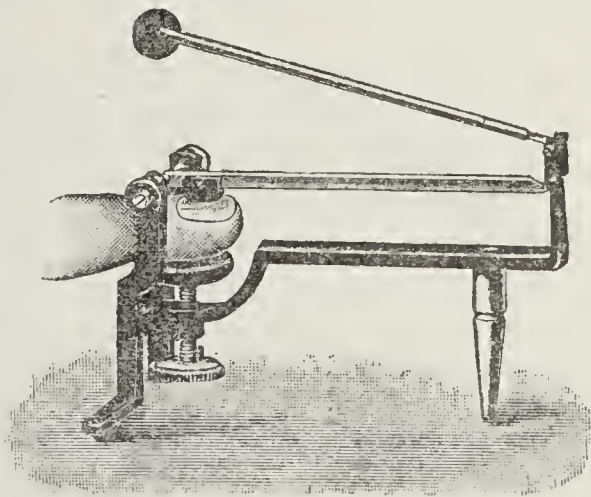
**60. Phototherapy in Dermatology.**—Kromayer relates his favorable experiences with the quartz lamp which he has devised for application of the chemical rays to cutaneous affections.

61.—See abstract No. 89 in *THE JOURNAL*, March 9, 1907, page 914.

**62. Treatment of Abdominal Bullet Wounds on the Field.**—Hildebrandt reviews the publications of the last few years on this subject, and states that the fate of those wounded in the abdomen depends in a great measure on the care with which they are handled and on complete abstention from food and drink. In his experience in South Africa he remained with the wounded of this class, collected in a field hospital, relying on the consideration of the victorious enemy, and ascribes the low mortality, 44 per cent., to the circumstance that no attempt was made to transport the wounded.

**64. Serum Treatment of Dysentery.**—In this communication from Odessa, experiences in Russia with serum treatment of dysentery are reviewed and compared with those obtained elsewhere. A series of 15 cases is reported in which the patients were treated with serum from a horse immunized with filtrates of three-week cultures of the Shiga bacillus. In the course of a year, 1,280 c.c. had been injected; the curative serum obtained had a purely antitoxic action. Slight if any by-effects were observed and the curative results were most gratifying.

**65. Sphygmoscope.**—Rheinboldt has succeeded in producing an instrument which shows each pulse beat by the swinging of a long straw lever, thus allowing visual inspection of the pulse rate. He does not apply the apparatus to the radial pulse but to the ball of the finger, the change in the circumference of the finger at each pulse wave being thus visually



The Sphygmoscope.

recorded. The pulse wave of course loses some of its force by the time it reaches the finger tip, and allowance must be made for this. The illustration shows the little apparatus with the magnifying double lever used. The patient sits beside the table, the forearm bent at a right angle and resting its entire length on the table, parallel to the edge. The convenience and



easy reading of the findings renders the apparatus especially useful when prolonged examination of the pulse rate is required to determine its frequency, regularity and evenness. Any kind of arrhythmia is at once rendered objectively evident. In one instance Rheinboldt was able with this apparatus to convince a hypochondriac patient of the regularity of his pulse rate; in another case to prove to the patient the cure of his previous arrhythmia under treatment. In 2 cases the behavior of the lever suggested the possibility of unsuspected aortic insufficiency, which further examination revealed. In case of extremely feeble heart action, the apparatus sometimes fails, but, if applied again after physical exertion or hearty eating, then gives positive findings. The sphygmoscope by no means takes the place of the sphygmograph, but can be used a dozen times where the complicated Riva-Rocci procedure would scarcely be thought of. Rheinboldt is convinced that this apparatus will prove extremely useful in daily practice.

**66. Successful Infant Feeding.**—Lewin reports five years of unflinching success in infant feeding with undiluted cow's milk. He believes that an organ develops better when demands are made on it, and from the fourth week gives the infants in his charge undiluted cow's milk. At first they are given 200 c.c. (nearly 7 ounces) of milk and the same amount of water. Each week 50 gm. (1½ ounces) are added to the amount of milk and the same amount of water is omitted. By the end of the first month the children are taking 400 c.c. (13½ ounces) of undiluted milk, and this amount is increased by 100 c.c. (3 ounces) each month. The only modification of the milk which he allows is the addition of milk sugar, of which two tablespoonfuls are added to each quart. At first the children are fed every two and a half hours; the last feeding is at 10 p. m., after which nothing is given until morning, as he believes that the infant stomach needs rest as much as the adult. On this diet the children thrive, have no tendency to constipation, and they urinate less, thus relieving the child of chafing and eczema which is so often followed by furunculosis. No signs of rachitis have ever been observed in the children he has fed on these principles, and they do not have the large bellies noticed so often among artificially fed infants. He gradually reduces the number of feedings to four. The milk, in an earthen jar, is set in a pan of water and boiled up once; it is then covered and placed in a cool place. The less handling and the simpler the vessels used, he says, the more easily they are cleaned and the less danger of contamination of the milk. He adds that although these views contradict those generally accepted, they are the result of years of experience and observation, and the children have thrived, not only at the time, but afterward. The principles are not new, but have never been given the attention they deserve, while the general infant death rate still keeps appallingly high.

*Deutsche medizinische Wochenschrift, Berlin and Leipsic.*

- 67 (XXXIII, No. 5, pp. 169-208.) \*Improved Technic for Rapid Staining of Blood Parasites, Spirochetes, Gonococci, Diphtheria Bacilli and Other Micro-organisms. (Neues Verfahren zur Schnelfärbung, etc.) F. Loeffler.
- 68 \*Spinal Anesthesia. (Lumbalanästhesie mit Tropicocain.) P. Bosse.
- 69 \*Frequently Favorable Influence of Quinin on Uterine Contractions. (Einfluss des Chinins auf die Wehentätigkeit.) A. Mäurer.
- 70 \*Fever with Carcinoma. (Fieber bei Carc.) A. Alexander.
- 71 Ultra-violet rays in Ophthalmology. (Uviolbehandlung und Augenkrankheiten.) Axmann.
- 72 Aspirating Pipette for Measuring Amounts of Serum for Agglutination Test. (Saugpipette zur Widalschen Reaktion.) Fischer.
- 73 Deafness and Its Causes in School Children. (Schwerhörigkeit und deren Ursachen.) H. Laser.
- 74 Statistics of Breast Nursing. (Stillen.) F. Prinzing.
- 75 Lack of Suitable Dwelling Places. (Wohnungsmängel.) Landsberger.
- 76 \*J. Loeb's Artificial Parthogenesis and Heterogeneous Hybridization. (Die Untersuchungen J. Loeb's.) E. Schwalbe.
- 77 (No. 6, pp. 209-248.) \*Hysteria and Sickness Insurance. (Hysterie und Invalidität.) E. Meyer.
- 78 \*Early Diagnosis of Chronic Lead Poisoning. (Frühdagnose von chron. Bleivergiftung.) Frey.
- 79 Two Cases of Enlargement of Colon in Adults. (Hirschsprungsche Krankheit.) von Schuckmann.
- 80 General Anesthesia with Mixed Chloroform and Oxygen. (Die Narkose mit dem Roth-Draegerschen Tropf-Apparat.) B. Rosenthal.

- 81 Precocious Menstruation and Sexual Characteristics in Child 3 Years Old. (Eine 3 jährige Virgo.) A. Stein.
- 82 Recent Legal Decisions in Medical Matters. (Rechtsprechung in ärztlichen Angelegenheiten.) Flügge. (Commenced in No. 3.)

**67. Improved Technic for Staining Micro-organisms.**—Loeffler has found that by slightly modifying and boiling the Giemsa stain it is possible to show up the bacteria, the pale spirochete, and other micro-organisms within a few minutes. He has been making extraordinary efforts to find some technic that will show the germ of foot and mouth disease which is so small that it passes through filters and can not be detected even with the strongest microscope. He has been unsuccessful in these attempts, but the improved technic which he describes is one of the side issues in this research. The specimens must be thin and be fixed in alcohol-ether. They are then treated with four solutions: 1, a 0.5 per cent. solution of malachite green crystals with zinc bichlorid (Chlorzinkdoppelsalz); 2, a 0.5 per cent. solution of soda arseniate; 3, a 0.5 per cent. solution of pure glycerin, and 4, the Giemsa stain. Three drops of the arsenic solution and one drop of the malachite green solution are added to the specimen and allowed to remain in contact one minute. The specimen is then rinsed vigorously. Then 5 c.c. of the glycerin solution are poured into a test tube and from 5 to 10 drops of the Giemsa stain are added. The whole is then heated to boiling point over a flame and poured hot over the cover glass, where it is left for from 5 to 10 minutes, and is then poured off, after which the specimen is rinsed again under running water. The glycerin-Giemsa mixture can be boiled and used over and over again. He commends this technic as the simplest, most rapid and most effective known to date. For blood parasites and gonococci he uses a different technic which he believes to be equally an improvement over those now in vogue. To 4 parts of 2.5 per cent. borax and 1 per cent. methylene blue, one part polychrome methylene blue is added, and to the mixture is then added an equal amount of a solution of 0.05 per cent. bromeosin B extra. The specimen is then stained with the mixture, slightly warmed, for one minute, and then decolorized with a mixture of 5 parts tropäolin 00; 0.5 parts acetic acid, and 100 parts water, after which the specimen is rinsed anew. The blood corpuscles show pale with this technic, and the parasites in and between them stand out very prominently. Anthrax, plague, diphtheria, and influenza bacilli are also shown up well by this technic. With gonococci he decolors with a mixture of 177 parts alcohol, 20 parts of a 1 per thousand solution of bromeosin and 3 parts acetic acid. This draws the stain out of the nuclei of the cells, but not out of the gonococci, which take and keep the stain so intensely that they show well even under a low power microscope.

**68. Spinal Anesthesia.**—Bosse reviews the history of spinal anesthetics to date and states that experience has shown them to be by no means such harmless measures as was at first assumed.

**69. Influence of Quinin on Contractions of Uterus.**—Mäurer reports from Pfannenstiel's clinic 78 cases in which quinin was given during parturition to induce more energetic labor. In 61 cases the favorable influence of the quinin was unmistakable. It is entirely harmless for both mother and child, and proved exceptionally useful in promoting labor pains in induced premature delivery and in treatment of abortion. The quinin seems to make the uterine musculature more sensitive to the action of the nerves. It failed to show any influence in 17 cases, probably either because the musculature was abnormally weak or the dose too large, paralyzing instead of stimulating. About 1 gm. (15 grains) was given by the mouth and this dose repeated in two, four or five hours as the effect subsided. In very few cases was as much as 3 gm. (45 grains) required. About 11 hours had been the previous minimum duration of induced premature delivery in the clinic with the hystereurynter. This period was shortened by several hours by the quinin, so that delivery was complete in four and a half hours in two cases. In one case hemorrhage followed a fall in the fourth month of pregnancy. After five



days, the hemorrhage still continuing, 0.3 gm. (about 5 grains) of quinin was given and repeated in half an hour. Labor pains followed and the ovum and decidua were expelled within five hours without further hemorrhage. As a rule, 1 gm. (15 grains) of quinin is given, and, if no effect is observed, 0.5 gm. after an hour and 0.5 gm. half hour later.

**70. Fever with Cancer.**—Alexander relates a number of instances of fever in cancer patients, the result of autointoxication from absorption of the toxic products elaborated by the carcinoma. This is particularly liable to occur with cancer in the digestive tract. He states that there does not seem to be any characteristic type of the fever in these cases.

**76. Artificial Parthogenesis.**—Schwalbe has translated into German J. Loeb's publications on this subject, and is convinced that they represent a suggestive contribution to our knowledge in regard to the causation of malignant tumors. In Loeb's experiments the cells are stimulated to extraordinary development by chemical influences, and recent research on cancer has rendered it probable that something of the kind is responsible for the excessive proliferation of the cancer cells. Loeb's experiments also throw light, he thinks, on certain problems in teratology.

**77. Hysteria and Sickness Insurance.**—Meyer reports several cases of pronounced hysteria in which the disturbances were so severe that they interfered with the earning capacity, and the individual was thus entitled to part pay from the sickness insurance society. He reviews the differentiating points, remarking that hysteria is a psychic affection and that the psychic symptoms are the ones to be regarded as most important, though the physical symptoms must not be overestimated. In all doubtful cases the patient should be under stationary observation. The longer the patient is left untreated, the smaller the prospects of improvement. Treatment by "letting alone" can be successful only when the patient is under stationary observation. Cases in which the severe symptoms have recently developed are more amenable to proper treatment than when these are long established. The prospects are less favorable in the cases of hysteria which develop on the basis of long continued physical exhaustion or the menopause. These belong more in the domain of hysteroneurasthenia.

**78. Early Diagnosis of Chronic Lead Poisoning.**—Frey states that for diagnosis, control of the results of treatment, and for personal prophylaxis, determination of granular degeneration of the red corpuscles is of the utmost importance. Grawitz was the first to call attention to the value of this sign in certain affections, and Frey has found it peculiarly instructive in lead poisoning. When cancer, intermittent fever, pernicious anemia, sepsis and intestinal putrefaction can be excluded, the discovery of the basophilic granules in a person exposed to lead poisoning is a sign that he is seriously affected by the poison. Grawitz recommends that workers with lead should have their blood examined from time to time as a prophylactic measure. Frey reports his experiences in this line with 39 workers on lead whose blood was examined, confirming Grawitz's assertions in every respect.

#### Münchener medizinische Wochenschrift.

- 83 (LIV, No. 5, pp. 201-248.) Spirillum of Tick Fever. (Spirillen des Zeckenfiebers.) C. Fraenkel.
- 84 \*Do the Leucocytes Have a Heterolytic Action? (Wirken weisse Blutkörperchen heterolytisch?) M. Mosse.
- 85 \*Heredity in Ulcer of the Stomach. (Heredität beim Ulcus ventriculi.) A. Huber.
- 86 \*Pathology of Appendicitis. (Appendizitis.) M. Flesch.
- 87 Unilateral Clubbed Fingers. (Einseitige Trommelschlägelfinger.) T. Groedel.
- 88 \*Frequency of Gonorrhea in Germany. (Tripper in Deutschland.) A. Blaschko. Id. H. Vörner.
- 89 Color Index of the Red Corpuscles. (Färbeindex.) W. Türk.
- 90 Causal Agent of Vaccinia. (Was wissen wir über den Vakzineerreger?) Mühlens and Hartmann.
- 91 Superficial Action of Percussion. (Oberflächenwirkung des Perkussionsstosses.) A. Weil.
- 92 (No. 6, pp. 249-304.) Resistance to Anthrax and Origin of Anti-anthrax Substances. (Milzbrand, etc.) M. Gruber and K. Futaki.
- 93 \*Antitoxin and Albumin. (Antitoxin und Eiweiss.) F. Hamburger.
- 94 \*Nervous Phenomena Accompanying Passage of Stomach Content Into the Intestine. (Nervöse Erscheinungen beim Uebergang des Mageninhaltes in den Darm.) F. A. Kehrer.

- 95 Determination of Blood in the Feces. (Blut in den Fäzes.) O. Schumm.
- 96 Two Cases of Eosinophilia of Intestinal Origin. (Darmeosinophilie.) E. Fricker.
- 97 \*Treatment of Mastitis with Cupping Apparatus. (Mastitiden und Saugapparaten.) F. Hartmann.
- 98 Rubber Gloves Not Indispensable for Country Midwives. (Sollen die Landhebammen mit Gummihandschuhen ausgerüstet werden?) H. Walther.
- 99 Lead Box for Roentgen Tubes. (Bleikasten für R.-Röhren.) G. W. Schiele.
- 100 Explanation of Tuberculin Reaction by Antituberculin in Tuberculous Focus. (Tuberkulinreaktion durch Antituberkulin im tub. Herd.) E. Weil.
- 101 \*Hospitals of Western Coast of American Continent. (Hospitäler der Westküste Süd-, Mittel- und Nordamerikas.) F. Apelt.

**84. Heterolysis of Leucocytes.**—Grawitz has announced that leucocytes are considerably more transparent for the ultraviolet rays than the lymphocytes, suggesting chemical differences in the structure of their nuclei. Others have shown that the leucocytes have a proteolytic action, digesting albumin. Mosse has been studying the subject and the action of bone marrow juice on lung tissue. He found no signs of heterolysis by either leucocytes or lymphocytes.

**85. Heredity with Ulcer of the Stomach.**—Huber reports 30 cases of ulcer of the stomach in which the influence of heredity was strikingly apparent through two or more generations and in relatives. He has noted a racial predisposition, especially in regions where there is much intermarrying.

**86. Heredity in Appendicitis.**—Flesch gives the genealogic trees of a number of families in which appendicitis occurred in series of cases. In one family, 3 out of 24 persons were affected, and in another family 6 in two generations. Considering the circumstances he thinks that the cause for the repeated cases is a functional one in the main. Physical and dietetic measures to keep the bowels regular are the most important means of warding off appendicitis. The series of cases in his experience generally occurred in persons living under the same conditions and the same influences.

**88. Frequency of Gonorrhea and the Effect on Wives.**—These articles by Blaschko and Vörner were reviewed editorially in THE JOURNAL, March 2, 1907, page 800.

**93. Antitoxin and Albumin.**—Hamburger found that the milk of goats and rabbits after subcutaneous injection of horse serum contained both antitoxin and horse albumin.

**94. Nervous Phenomena When the Stomach Content is Passing Into the Intestine.**—Kehrer urges study of the phenomena that occur in some persons as the stomach content is passed along into the duodenum. He thinks that regulation of the diet might prevent the annoying phenomena. He speaks of three phases, the phase of sensation of over-loading of the stomach; the digestive phase, during which the stomach is quiet, and the phase of expulsion of the stomach content. During the phase of expulsion local phenomena occur in the stomach, heart and lungs. They consist in oppression in the epigastrium, oppression or pain in the heart region, especially when lying on the left side, palpitation and suffocation. These symptoms are probably due to direct mechanico-chemical irritation of the ramifications of the vagus, or reflex action from the stomach nerves on the nerves of the heart. The oppression causes nightmare. Any mechanical interference with the respiration, for example, by a blanket covering the face of the sleeper, may cause nightmare. Another group of nervous phenomena at the beginning of the phase of expulsion consists in waking out of the first sleep with bad dreams. Kehrer thinks that the changes in the circulation of the brain from the flow of blood to the digestive organs, causing comparative anemia of the brain, are not so important a factor in these phenomena as generally supposed. More probable, he thinks, is the assumption that some of the chyme passing into the intestines is absorbed immediately by the mucosa of the small intestine, and is passed by way of the blood to the brain and there induces the above phenomena of irritation. Whether it is the peptones, the fat acids or the bile pouring out into the duodenum, or whether with morbid digestion abnormal products are generated, or whether irritating substances from the food are the cause of the disturbances is a question still undecided. Their fur-



ther study, however, may prove very important for dietetics in general and for individual cases. Persons who suffer from these disturbances should not eat just before going to bed, or, if they eat late, should allow a certain interval to elapse before retiring. It is wise also to refrain from filling the stomach too full, and, especially at night, to take easily digested food.

97. **Treatment of Mastitis with Suction Apparatus.**—Hartmann has been very much pleased with the results of treatment of mastitis with Bier's suction apparatus. The bell must be large enough to embrace the whole breast, and incisions should be made early, each fully 1, 2 or 3 cm. long. It is unnecessary to drain. Pain is relieved at once and the fever reduced. Hartmann regards this as by far the best treatment of mastitis known to date, except for the subacute, nodular, non-suppurative forms. Exploratory suction shows by the circumscribed redness exactly where to incise for the abscess. He remarks, in conclusion, that this cupping treatment is a boon to suffering humanity, when rightly applied, and opens a wide field for gratifying work on the part of the physician.

101. **Hospitals of the Western Coast of the American Continent.**—Apelt describes his impressions of the hospitals in North, Central and South America, which he visited on a recent voyage in the Eastern Pacific. He pays high tribute to the work of the profession in San Francisco after the fire and also in the Canal Zone. He describes, further, the peculiar disease observed in Peru, called verruga peruana—Peruvian wart. He says that when a certain railroad was built, 75 per cent. of the imported workmen suffered from this disease. He was also impressed with the great frequency of tuberculosis in Central and South America.

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*Last indexed XLVII, page 1519.*

- 102 (IV. No. 3, pp. 525-740.) \*Tumors in Fish, Frogs, Salamanders and Lizards. (Geschwülste bei Kaltblütern.) M. Plehn.
- 103 Function of Tumor Cells. (Funktion der Geschwulstzellen.) D. v. Hansemann.
- 104 Primary Enchondroma of the Lung. (Prim. Enchondrome der Lunge.) C. Hart.
- 105 \*Tumors in Fowls. (Tumoren bei Hühnern.) M. Ehrenreich and L. Michaelis.
- 106 Carcinoma and Its Treatment in the Light of Biology. (Carcinom und seine Therapie.) D. Hellin.
- 107 Histogenesis of Inoculation Tumors on Mice. (Krebs der Mäuse.) W. Lowenthal and L. Michaelis.
- 108 Tumors in Hilus of Kidney. (Tumoren des Nierenhilus.) A. Salomon.
- 109 \*Appeal to the Public for Early Operative Treatment of Cancer. (Aufforderung, etc.) J. Dollinger.
- 110 "Schüller's Corpuscles." (Schüllersche Körperchen.) M. Schüller.

102. **Tumors in Cold-Blooded Animals.**—Plehn relates the details of nearly 24 cases of tumors in fish, frogs or eels, and reviews the literature on the subject. Certain kinds of tumors are observed only in certain species, carcinoma of the thyroid only in salmon and trout, for example, superficial tumors only in certain other species. The reasons for this selection will repay study. He declares that fish are specially adapted for study of inherited conditions. In one pond 7 per cent. of the trout were affected with carcinoma of the thyroid, while the trout in neighboring ponds were entirely free from tumors.

105. **Tumors in Poultry.**—In this communication from the Berlin Cancer Research Laboratory a number of cancers found in poultry are reported. They include 2 cases of fibroma in the mesentery, 2 of carcinoma and 1 of sarcoma of the small intestine. Other tumors were found which contained always relics of the yolk of an egg, and were usually adherent to the ovary.

109. **Appeal to the Public for Early Operative Treatment of Cancer.**—Dollinger gives the text of the circular which he now hands to every applicant at the clinic and dispensary in his charge at Budapest. It is headed: "Cancer can be cured if operated on early." It warns of the danger of delay, emphasizing the prospects of cure with early operation, and giving the signs of cancer in the various organs, with warnings in regard to the danger of wasting time on quacks and their remedies.

## Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

MANUALE PRATICO DELL' IGIENISTA, Per uso degli ufficiali sanitari, degli aspiranti ad uffici nella amministrazione sanitaria dello stato e dei comuni, degli allievi dei corsi complementari di igiene e degli studenti di medicina, farmacia e veterinaria. By C. Tonzigi and G. Q. Ruata, con Prefazione del Prof. A. Serafini. Con. 243 incisioni. Cloth. Pp. 64. Milan: Ulrico Hoepli, 1907.

CATHOLIC CHURCHMEN IN SCIENCE. Sketches of the Lives of Ecclesiastics Who Were Among the Great Founders in Science. By James J. Walsh, M.D., Ph.D., LL.D., Professor of Medical History, Fordham University Medical School. Cloth. Pp. 221. Price, \$1.00 net. Philadelphia: The Dolphin Press, 1906.

OHIO HOSPITAL FOR EPILEPTICS AT GALLIPOLIS. Sixteenth Annual Report of the Trustees and Officers to the Governor of the State of Ohio, for the Fiscal Year ending Nov. 15, 1906. Paper. Pp. 82. Columbus: F. J. Heer, 1907.

PRINCIPLES AND APPLICATION OF LOCAL TREATMENT IN DISEASES OF THE SKIN. By L. D. Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital. Cloth. Pp. 142. Price, \$1.00. New York: Rebman Company, 1907.

SURGERY OF THE BRAIN AND ITS MEMBRANES. By C. A. Ballance, M.V.O., M.S., F.R.C.S., surgeon to St. Thomas Hospital. With Illustrations. Cloth. Pp. 405. Price, 15s net. London and New York: Macmillan Co., 1907.

THE NUMERICAL PROPORTIONS OF THE SEXES AT BIRTH. By J. B. Nichols. Memoirs of the American Anthropological Association. Vol. 1. Part 4. Paper. Pp. 300. Lancaster, Pa., New Era Printing Co., 1907.

LA TUBERCULOSI. By Mario Valtorta and Gino Fanoli. Con Prefazione del Prof. Augusto Murri. Manuali Hoepli. Con 11 tavoli. Cloth. Pp. 64. Cloth. Milan: Ulrico Hoepli, 1907.

GEDANKEN UND MEINUNGEN DES LAZARETTGEHILFEN NEUMANN. Herausgegeben by Dr. Fr. Erhard. Paper. Pp. 38. Munich: Verlag der Aertztlichen Rundschau, 1907.

GIFT ODER HEILMITTEL IM UNGLÜCK? Briefe eines Arztes by Dr. med. G. Vorberg, Hannover. Paper. Pp. 26. Munich: Verlag der Aertztlichen Rundschau, 1907.

UEBER ARTERIENVERKALKUNG. By Dr. med. Hirsch. Bad Nauheim. Dritte Auflage. Paper. Pp. 24. Munich: Verlag der Aertztlichen Rundschau, 1907.

SURGERY OF GENITO-URINARY ORGANS. By J. W. S. Gouley, M.D. Cloth. Pp. 531. Price, \$3.00. New York: Rebman Company, 1907.

DINING AND ITS AMENITIES. By a Lover of Good Cheer. Demy 8vo. Cloth. Pp. 478. Price, \$2.50. New York: Rebman Co., 1907.

PUBLICATIONS FROM THE LABORATORIES OF THE JEFFERSON MEDICAL COLLEGE HOSPITAL. Vol. 3. Paper. Philadelphia, 1906.

## NEW PATENTS.

Patents recently granted of interest to physicians:

- 841701 Hypodermic syringe. Justin De Lisle, New York.
- 842140 Organic iodine preparation. Emil Fischer, Berlin, Germany.
- 842097 Atomizer or pump sprayer. Ernest A. Jahn, London, Eng.
- 841782 Apparatus for the treatment of lung and throat diseases. Charles S. James, Los Angeles.
- 841988 Artificial ear-drum. Abraham Leers, Atlanta, Ga.
- 841702 Device for handling, lifting or supporting invalids. Thomas A. Martin, Covington, Ky.
- 841714 Head-truss. Walter D. Peters, Minneapolis.
- 842608 Artificial leg. John T. Apgar, New York.
- 842609 Artificial leg. John T. Apgar, New York.
- 842612 Obtaining solutions of bacterial poisons. Peter Bergeil and F. Meyer, Berlin, Germany.
- 842390 Spray-producing point for atomizers. A. De Vilbiss, Toledo, Ohio.
- 842631 Apparatus for injecting solid vaccine matter. Hippolyte Deperdussin, Paris, France.
- 842669 Physicians' cabinet. Henry A. Hughes, St. Louis.
- 842800 Portable sick room tent. J. C. and A. E. Moore, Philadelphia.
- 842252 Truss. John Sault, Queensbury, N. Y.
- 842503 Massage apparatus. George F. Trotter and A. Bebout, St. Louis.
- 843319 Stethoscope. Peter A. Aurness, Minneapolis.
- 842875 X-ray tube. Mylius Ehrhardt, Berlin, Germany.
- 843354 Electrode for therapeutic use, etc. Everett T. Nealey, Bangor, Maine.
- 843168 Truss. Franklin A. Nims, Greeley, Colo.
- 842973 Spring and mattress for invalid beds. Edith B. Preston, Mexico, Mo.
- 843494 Container for surgical ligatures. H. Rosenberg, Berlin, Germany.
- 843663 Eye-exerciser. George Bullock, Poplar Bluff, Mo.
- 844097 Inhaler. Yancey O. Caldwell, Paris, Tenn.
- 843587 Surgical instrument. Henry H. De Pew, Chicago.
- 843674 Massaging apparatus. E. M. Funk, Wytheville, Va.
- 844137 Truss. Peter Kaseler, Brooklyn.
- 844054 Indicator for medicine bottles. A. R. Swope, Philadelphia.
- 843979 Surgical eye-magnet appliance. J. B. Wantz, Chicago.















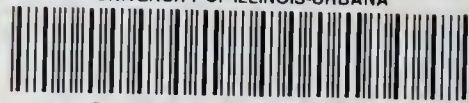








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